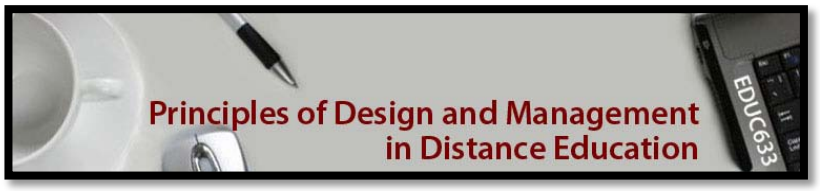
Module 3:Analysis (P2: Task Analysis)



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

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Introduction to Task Analysis

After an ID (or educator) has determined the problem or need for instruction via a formal or informal needs assessment and identified the goal, an ID commonly conducts a task analysis. A task analysis, also called an instructional analysis, is commonly considered the most important part of the ID process as it provides information about the content and tasks that are foundational to the instruction development. "Task analysis for instructional design is a process of analyzing and articulating the kind of learning that you expect the learners to know how to perform" (Jonassen, Tessmer, & Hannum, 1999, p. 3).

The purpose of the task analysis is to:

1. determine the instructional objectives
2. define and describe in detail the tasks and sub-tasks that the student will perform
3. specify the knowledge type (declarative, structural, and procedural knowledge) that characterize a job or task
4. select learning outcomes that are appropriate for instructional development;
5. prioritize and sequence tasks
6. determine instructional activities and strategies that foster learning
7. select appropriate media and learning environments
8. construct performance assessments and evaluation (Jonassen et al., 1999).

It also ensures that the instructional project will:

- Cover all information and steps that learners will need to know
- Exclude information that learners already know
- Exclude information that learners don't need to know

Case Example

Imagine you want to teach someone how to write and send a letter. You probably learned this skill when you were in grade school, so you don't consciously think about all of the mundane details it takes to mail a letter. You're an expert now; you're intuitively capable of those tasks. You'd actually have to stop and think about each step that you perform.

- Write the letter, including the introduction, body, and closing
- Address an envelope properly and legibly
- Affix proper postage to the envelope
- Deliver the envelope to the post office

That's a basic task analysis, but there are some assumptions here that could cause problems for someone just learning how to send a letter.

- The list never tells the learner to put the letter in the envelope.
- The list never tells the learner to seal the envelope.
- How does the learner determine proper postage?
- Where should the postage stamp be placed?

Taken from: http://www.intulogy.com/addie/instructional-analysis.html

Numerous approaches exist for task analyses. We will consider two. However, before we discuss these two, let's identify our objectives for this instructional unit.

Objectives

We will:

Unit Objectives:

- Define a task analysis
- Identify the processes of conducting a task analysis
- Describe how a task analysis can be used to identify instructional goals and tasks
- Create a goal statement for a distance education professionally developed lesson or workshop or unit.

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

Personal Objectives:

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Now, let's look at how some experts in the field suggest a task analysis should be done.

Morrison, Ross, & Kemp's Three Part Task Analysis

When conducting a task analysis, the scope and sequencing of content required for instruction should be influenced by two factors: 1) the goals derived from the needs analysis and 2) information about the learners (e.g., background, knowledge). Thus, conducting a task analysis should not be done in a vacuum based solely on content knowledge.

Morison, Ross, and Kemp (2004) propose 3 techniques for analyzing content and outlining the tasks:

1. **Topic Analysis** – Conducting a topic analysis is like creating a topical outline. You begin with the topic and identify subordinate information associated with that topic. This may be done in an outline form or a flow chart form. This process provides two forms of information: 1) the content that will be included in the instruction and 2) the structure of the content components.
2. **Procedural Analysis** - In a procedural analysis, steps to complete a task are outlined.
3. **Critical Analysis** – In this analysis, the knowledge and skills needed to accomplish a task or understand a topic are outlined.

Dick, Carey, & Carey's Instructional Analysis

Similar to a task analysis is an instructional analysis. Dick and Carey say that "an instructional analysis is a set of procedures that, when applied to an instructional goal, results in the identification of the relevant steps for performing a goal and the subordinate skills required for a student to achieve the goal" (p. 38). That is, in an instructional analysis, you take the skill(s) described in your goal statement and break them down into steps, and, then, identify additional relevant skills that might be necessary. Dick, Carey, and Carey describe this as a two part process:

1) **Goal analysis to determine the components of the instructional goal –** In the goal analysis the question, "what exactly would a learner be doing if they were demonstrating that they could already perform the goal?" (p. 37) is answered. Dick and Carey propose that goal analysis is a two step process: 1) Classifying Outcomes and 2) Determining Goal Steps. The first step requires understanding different types of outcomes and identifying the desired outcome.

   A second step of goal analysis includes an outline, usually represented graphically in a flow chart (see below), of the steps that the learner will need to take to achieve an instructional goal.

   Note that the flow chart may also represent the acquisition of knowledge and information rather than a skill. Thus, the flow chart may also look like this:

   Note: This is only one way to create a flow chart. There are many examples online and in ID books. I have seen a rectangle, diamond, and circle used.

2) **Subordinate Skill Identification to identify skills that a learner needs to meet the instructional goal** – Once you have the main steps identified, you may need to determine the set of sub skills that a learner needs to meet an instructional goal are identified and outlined. This may also be represented in graphical form. Consultation with a content expert may be needed.

Think About it Activity 3.3

Virtual Field Trip

Visit GMU. Click the links below to see Techniques and Methods for Analyzing Tasks. What type of analysis would be useful for your ISD project?

- Hierarchical/Prerequisite analysis
- Conceptual Graph analysis
- Information-processing analysis
- Procedural analysis

Task Analysis: Mager's 5 step

Robert Mager (1988) also suggests another way to conduct a task analysis. He identified five-step process to translate vague instructional goals into a set of defined desired performances:

1. Write down the goal using whatever abstract terms express the intent and be sure the statement is written in terms of outcomes rather than process. For example, “Have a favorable attitude to…” rather than “Develop a favorable attitude to…”.
2. Think about achieving the goal in terms of people performance. What would people have to do or say or stop doing and saying before you would be willing to say that they represent the goal? List as many performances as you can think of.
3. Sort the list and identify steps until it can be said that if someone did these things and did not do these other things that would represent the goal.
4. Expand the words and phrases on the list into complete sentences that tell when or how often the performance is expected to occur. This will help to establish limits around the expected performance. It will enable the instructional designer to say “how much” performance is satisfactory to undertake the task successfully. For example, a goal analysis on security consciousness might include the item ‘no unattended documents’. When expanded into a complete sentence it may read “Employee always locks sensitive documents in safe before leaving room.”
5. Test for completeness. Review the performances on your list and ask:

If someone did these things would I be willing to say that he or she is _____”.

(Mager, R. *Making Instruction Work*. 1988, p. 45-46).

ISD Project Step 2: Develop a Task Analysis

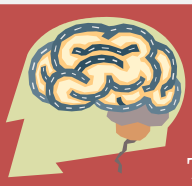
Using your goal statement that addresses a relevant need, conduct a task analysis based on the models discussed here or based on ideas discussed in your reading and research. If using the Dick, Carey, and Carey model, classify the goal based on Gagne's learning domains. Once you have categorized the goal, break the goal down into steps and sub-steps. To begin with, write down your goal statement. Here are some guidelines to follow to assist you in determining your steps:

- In bullet format, identify the major steps associated with the goal. Keep in mind that your finished project should be something that can be covered in a single lesson or workshop.
- Keep the number of steps between 3-5. Note: You may find that you need to revise your original goal in order to make it reasonable and manageable for one lesson.
- Break the 3-5 major steps down to sub-steps if needed.

- Use the information to create a flow chart. Although you may use Microsoft word, several programs may be beneficial in assisting you in developing a flowchart: Photoshop, Inspiration, Edge Diagrammer, SmartDraw, and Visio (Most of them allow you to download a 30-day full-featured trial version). If you use one of these other programs, you will need to insert your completed flowchart into your Word document or PDF that you submit.
- Ensure that the proper sequence for the steps are identified, or identify that there is no sequence and explain why.

When describing the steps, you may find that prerequisite skills or knowledge are required to be able to adequately perform the steps identified in the task analysis. Dick, Carey, and Carey identify these prerequisite as subordinate skills and entry behaviors. For example, if I was teaching an introductory course on using Microsoft Word for teachers, I may identify operation of a mouse and keyboard as subordinate skills and list this as a requirement to enter the course. If I am teaching a web-based course, I may expect my students have the knowledge and skills to navigate the content management system or other delivery platform. If not, I may need to provide instructional tutorials. These should also be identified in your flow chart.

Again, remember that for the purpose of this course, you are applying the instructional design process to one lesson; however, the same principles are applicable whether your area teacher designing a lesson or a course or a district technology manager designing a school or district program.



Think About It Activity 3.4

How can steps, substeps, and prerequisites be determined?

a. Experience
b. Observation
c. Subject Matter Experts
d. All of the above

Answer: d

Summary

Now you should be able to:

- Define a task analysis
- Identify the processes of conducting a task analysis
- Describe how a task analysis can be used to identify instructional goals and tasks
- Create a goal statement for a distance education professionally developed lesson or workshop or unit.

By the end of this unit, did you learn what you wanted to learn?

Personal Objectives:

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