



# TASK ANALYSIS

*HIERARCHICAL; IF-THEN; AND MODEL-BASED*

## **PURPOSE**

To systematically describe, document, and analyze the activities, procedures, processes, and resources that are used by individuals or groups to accomplish current results.

## **NEEDS ASSESSMENT APPLICATIONS**

A task analysis explains the processes and inputs that are being used at this time to accomplish results. As a consequence, a task analysis defines what individuals and teams are both doing and should be doing in order to contribute to current results. In completing a needs assessment the task analysis is a vital tool for mutually informing the diagnosis of needs as well as the detection of potential remedies for improving performance.

In many ways, a task analysis process parallels the performance analysis process, although the former begins with the results currently being achieved, while the latter begins with the desired results that should be accomplished in the future. Sometimes these starting places are one and the same. Yet, from their unique vantage points, the two processes parallel each other as they identify the tasks, processes, procedures, tools, and resources that are used to achieve results. During a task analysis, your focus is on systematically documenting what individuals or groups are doing (or should be doing). From observable processes and behaviors to scripted procedures and organic creativity, it is important to detail current events so that they may be compared to desired events when identifying future actions

## **ADVANTAGES AND DISADVANTAGES**

### *ADVANTAGES*

- Through a task analysis you can attain a clear definition of what resources, processes, and results are related to current tasks that are (or will be) related to your program or project.
- By using a task analysis to systematically review the completion of current tasks and their results your needs assessment will be better prepared to make recommendations regarding changes to current procedures and/or new tasks.
- A task analysis will help you identify both what is working well and what is not working as well within the current organization.

### DISADVANTAGES

- Effective task analyses require do require time and resources that may not have been included in your initial planning.
- It can be challenging to determine if and how the completion of tasks would change due to needs assessment recommendations, and how those results may impact on other parts of the system.

### GENERAL PROCEDURES<sup>1</sup>

1. Identify key positions and tasks related to the completion of results within your results framework. For example, if you results framework identifies a necessary product being the review of environmental policies by the Ministry of Interior as an essential result for improving performance in the overall system, then you would want to identify which positions and tasks within the Ministry of Interior are (or would be) responsible for the successful completion of this effort.
2. Select a task analysis method. There a several systematic task analysis methods that can be applied, each with advantages and disadvantages depending on the context. As a result you will typically want to use a mix of task analysis methods during any needs assessment. Here are some sample methods to consider:
  - **Hierarchical Task Analysis:**
    - This kind of analysis identifies both the component steps in completing the given task and their hierarchical (or sequential) relationship to one another. When desired results are not being accomplished, use the hierarchical analysis to provide insights into the obstacles preventing success. Equally, when desired results are being accomplished, use the analysis to detail the constructive processes that lead to accomplishment of objectives.
    - To begin, review, observe, and document each step taken by the performer in completing the task. Verify the appropriate sequence of steps for accomplishing results and identify the resources (e.g., supplies, computers, or other employees) used to complete the task. Routinely, processes will involve steps that cannot be observed. Talk with the individuals or teams that perform selected tasks to identify both internal and external behaviors. Most often the Hierarchical Task Analysis requires a combination of observation and interviews with expert performers.
    - For example, a task analysis may identify that receptionists complete the following steps in accomplishing a performance objective for the sales office:
      - Check voice mail messages.*
      - Take detailed and accurate notes on each voice mail message.*
      - E-mail district sales representatives with voice mail messages.*
      - Copy the sales manager on e-mails going to their sales representatives.*
      - Clear phone messages after e-mail messages have been sent.*

- Depending on the level of detail required for making useful decisions, additional analysis may be done on any single step within the process to determine more detailed actions taken by the expert performer (for example, what steps are required to check voice mail messages). The level of detail required for a task analysis varies greatly from initiative to initiative. Balance the desired level of detail for making improvement decisions with the available time and resources.
- **If and Then Task Analysis.**
  - If and Then analysis applies process logic to the determination of the important decisions steps in completing a task. When you have multiple decisions to be made in completing a task this analysis technique can be useful. For example, for the task of using a word processing software application, you may include: if a word in the text is underlined in red, then right-click on the word to identify options for revising the spelling of the word. As tasks gain in complexity there are typically multiple decisions to be made by the performer. The If and Then analysis then becomes an effective technique for identifying and documenting decisions and behaviors that cannot be observed.
  - Similar to the hierarchical analysis technique, you can use both observations and interviews with expert performers to complete an If and Then analysis. In addition, combinations of methods are commonly used to identify the constituent steps in completing many complex tasks.
  - Continuing the example, receptionists in another sales office might identify the following steps for achieving the same performance objective:
    - Check voice mail messages when you arrive at work. If there are messages, then take detailed notes on each voice mail message.*
    - If the voice mail was for a district sales representative, then e-mail the sales representative the contact information and message from the voice mail (and proceed to Step 4).*
    - If the voice mail message was for a manager, then forward the voice mail to the manager using the \*8 feature of the phone.*
    - Copy (or inform) the sales manager on e-mails going to their sales representatives.*
    - If you have completed Steps 2, 3, and 4 for all voice-mail messages, then delete phone messages.*
- **Model-based Task Analysis:**
  - You should use model-based analysis when the task being reviewed is vague and/or difficult to define. Since many “soft skills” or professional tasks (e.g., demonstrating leadership, group problem solving) are characterized by their elusive definitions and reliance on situational context, model-based analysis can provide you with essential information for describing how performance objectives get accomplished in these situations. In completing a model-based analysis you work closely with performers to

develop a model or framework for completing the task. Performance is then the result of applying the model even when there are ambiguous guidelines for performing the task.

- For example, for the “soft skills” task of mentoring sales office employees the analysis may identify the following performance model:

*Describe for the employee the optional techniques that may be used to complete their work. In mentoring the employee, use one or more of the following techniques: (a) use examples of other current and previous employees, (b) have them form a picture in their minds of performing the work at their desk, (c) demonstrate successful performing of the work related tasks, (d) have the employee practice the work steps and provide immediate feedback, and/or (e) suggest additional training opportunities offered within the organization.*

- Use interviews (or focus groups) with expert performers to define a model for a task. After a model is developed, expert performers should again review the procedures and options to ensure that it adequately represents a framework for accomplishing desired results. The ability of a model to represent the successful completion of a task is dependent on the flexibility of the model. If your model-based analysis does not result in a flexible framework that can be applied in a variety of contexts then you will want to review the task using another task analysis technique.

3. After completing a task analysis it is useful to have the participants in the analysis review your findings to provide clarifications and corrections when appropriate.
4. Write a summary report of the findings from task analysis.
5. The task analysis is an essential ingredient to a needs assessment and should be used a point of comparison with other assessment data (e.g., surveys, interviews, focus groups) in order to inform decisions.

## TIPS FOR SUCCESS

- Strive to be very systematic in your analysis.
- Communicate opening with those participating in your analysis to ensure them that the results of the analysis will only be used for improving results and not for blaming.
- Actions speak louder than words; it is better to observe someone performing the task than to simply ask them what they do.

## REFERENCES AND RESOURCES

Jonassen, D.H., Hannum, W.H., & Tessmer, M. (1989). *Handbook of Task Analysis Procedures*. Praeger Publishers.

Watkins, R. (2007). *Performance By Design: The selection, design, and development of performance technologies that achieve results..* Amherst, MA: HRD Press, Inc.

## **WEB SITES**

Tasks and Task Analysis:

<http://www.nwlink.com/~donclark/hrd/tasks.html>

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<sup>1</sup> Based in part on <http://www.nwlink.com/~donclark/hrd/tasks.html> and Watkins, 2007.