

Module: Task Analysis

Task Analysis: Steps for Implementation

Szidon, K., & Franzone, E. (2009). *Task Analysis*. Madison, WI: National Professional Development Center on Autism Spectrum Disorders, Waisman Center, University of Wisconsin.

Task analysis is the process of breaking a skill down into smaller, more manageable components. Once a task analysis is complete, it can be used to teach learners with ASD a skill that is too challenging to teach all at once. Other practices, such as discrete trial training, video modeling, and reinforcement, can be used to teach the individual components, building one upon another, until the skill is complete.

Step 1. Identifying the Target Skill

1. Teachers/practitioners identify the target skill that they want to teach the learner with ASD.

Using the learner's Individual Education Plan (IEP)/Individual Family Service Plan (IFSP) goals, teachers/practitioners should identify the skill that the learner needs to acquire. The target skill should consist of a series of chained **discrete** steps. A single discrete skill is not appropriate for task analysis, nor is a task with multiple variables and/or outcomes.

EXAMPLE #1

Too simple: Turning on the sink faucet (discrete skill)

Just right: Washing dishes

Too complex: Preparing, serving, and cleaning up dinner (multiple variables and multiple outcomes)

EXAMPLE #2

Too simple: Pushing the "on" button on the computer (discrete skill)

Just right: Logging onto the computer and starting a familiar program

Too complex: Logging onto the computer and creating a personal web page (multiple variables and multiple outcomes)

Module: Task Analysis

Of course, all instruction should be individualized. For example, a skill that may be too complex for one learner may be manageable for another. Skills that require a task analysis typically consist of multiple components that comprise a larger skill (e.g., washing dishes, putting on a coat).

Task analysis is frequently used to teach self-help and other adaptive skills.

Step 2. Identifying the Prerequisite Skills of the Learner and the Materials Needed to Teach the Task

1. Teachers/practitioners determine whether the learner has the required prerequisite skills needed to learn the task.
2. **Teachers/practitioners define the necessary materials needed to teach the task.**

Using the learner's present level of performance on IEP/IFSP goals, teachers/practitioners should identify the prerequisite skills that are necessary for the learner to have in order to perform the target skill. Often this is done by collecting **baseline data** on performance of the target skill. The skills that are already mastered do not need to be included as part of the task analysis.

Once the prerequisite skills are identified, the instructor can decide how much detail the task analysis will include. For example, if he or she is teaching coin counting, the teacher would first assess whether learner could identify coins and their values and whether he or she could count by 1's, 5's and 10's. These skills are the prerequisites to coin counting. If the prerequisite skills are not mastered, they should be included as part of the task analysis. Sometimes, if there are too many prerequisite skills that need to be learned, the target skill itself might need to be redefined. In the example of coin counting, if a learner does not identify coins and their values and/or counting by 1's, 5's, and 10's, these skills should be taught before teaching the skill of coin counting.

After identifying the prerequisite skills that the learner knows and the skills that need to be taught, the instructor should identify the materials he or she will need to teach the task. The materials will depend on the unique needs of the learner as well as the resources available to the instructor. For coin counting, one might select a set of simulated coins, purchasing items, and worksheets. If the students have less ability to generalize skills to **in vivo** environments, the instructor might choose to use real coins, and school and community based instruction in which to practice purchasing real items.

Step 3. Breaking the Skill into Components

Module: Task Analysis

In Step 3, teachers and other practitioners break the skill down into smaller steps so that a learner can successfully demonstrate the skill by following the steps.

1. Teachers/practitioners segment the target skill into more manageable components by:
 - a. completing the skill themselves and recording each step or
 - b. observing another person (in real time or via video) complete the activity and recording the steps.
2. Teachers/practitioners confirm that each component consists of a discrete skill.

TASK ANALYSIS EXAMPLE #1: Brushing Teeth (Matson et al., 1990)

- a. Obtains materials
- b. Takes cap off toothpaste
- c. Puts paste on brush
- d. Replaces toothpaste cap
- e. Wets brush
- f. Brushes left outer surfaces
- g. Brushes front outer surfaces
- h. Brushes right outer surfaces
- i. Brushes lower right chewing surfaces
- j. Brushes lower left chewing surfaces
- k. Brushes upper left chewing surfaces
- l. Brushes upper right chewing surfaces
- m. Brushes upper right inside surfaces
- n. Brushes upper front inside surfaces
- o. Brushes upper left inside surfaces
- p. Brushes lower left inside surfaces
- q. Brushes lower front inside surfaces
- r. Brushes lower right inside surfaces
- s. Rinses toothbrush
- t. Wipes mouth and hands
- u. Returns materials

EXAMPLE TASK ANALYSIS #2: Setting the Table (Goodson et al., 2006)

- a. Puts down the placemat
- b. Places the large plate in the center of the placemat
- c. Puts the small plate in the upper left hand side of the placemat
- d. Puts the butter knife on the small plate
- e. Places the napkin to the left of the large plate

Module: Task Analysis

- f. Puts the knife and spoon to the right of the large plate
- g. Puts the fork to the left of the large plate on the napkin
- h. Puts the dessert spoon and fork horizontally at the top of the large plate
- i. Puts the glass to the upper right of the large plate near the tip of the knife

EXAMPLE TASK ANALYSIS #3: Play Activity with Trains (Liber et al., 2008)

- a. Asks peer to play
- b. Tells peer, "Let's play trains"
- c. Gives peer at least two tracks
- d. Tells peer, "Let's make a train"
- e. Asks peer for train pieces
- f. Puts train pieces together with peer's pieces
- g. Asks peer for animals to put on train
- h. Moves train around track
- i. Tells peer, "Your turn!"
- j. Tells peer, "That was fun!"

Step 4. Confirming that the Task is Completely Analyzed

In Step 4, teachers/practitioners confirm that the component steps of the target skill are represented accurately and completely.

1. Teachers/practitioners confirm that the task is completely analyzed by having someone follow the steps verbatim.

By having a colleague or another student follow the steps of the task analysis, teachers/practitioners can make certain that all steps of the skill are included and that the end result is accurate and complete. Even if a skill is relatively simple, it is easy to leave out steps. Having another person follow the steps exactly as written confirms whether the task analysis is accurate. If needed, teachers/practitioners revise the component steps based on the feedback obtained through the trial.

Step 5. Determining How the Skill Will be Taught

In Step 5, teachers/practitioners decide how the steps identified in the task analysis will be taught. In deciding, the teacher/practitioner needs to decide whether the task is manageable or needs to be broken down into phases, the procedure they will use for chaining the behavior (total task, backwards, or forward chaining), and the evidence-based practice they will use to teach the skill. Before making these decisions, it is important to consider learner differences, goals, and experiences. Using professional judgment and understanding the learner's individual needs are important when selecting the most appropriate evidence-based practice and implementation strategy.

Module: Task Analysis

1. Teachers/practitioners select the appropriate teaching method by matching the method to:
 - a. the learner's temperament,
 - b. the learner's learning style,
 - c. the history of what has and has not worked for this learner,
 - d. the learner's IEP/IFSP, and
 - e. the environments within which the learner functions.

2. Teachers/practitioners present the steps of the task analysis to learners in an age and developmentally-appropriate manner.

Teachers/practitioners must decide how the steps of the task analysis will be represented for learners. A learner who reads may have the steps written out. Another learner may require pictures to represent the steps. Yet another learner may benefit from a video model. Regardless of the format, the steps should be provided in an efficient, clearly understood manner that does not attract undue attention to learners

Step 6. Implementing Intervention and Monitoring Progress

As noted in Step 5, a number of evidence-based practices, including prompting and reinforcement, may be appropriate for teaching specific skills. Please use resources (steps, implementation checklists, and data collection sheets) developed by the National Professional Development Center on ASD in this module to assist in teaching skills and monitoring learner progress.

1. Teachers/practitioners implement the evidence-based practices identified as appropriate to teach the target skills using the steps for implementation and implementation checklist for the selected practices.

2. Teachers/practitioners follow appropriate data collection procedures to monitor learner progress for the specific evidence-based practices chosen to teach the target skills.

References

Module: Task Analysis

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Liber, D., Frea, W., & Symon, J. (2008). Using time-delay to improve social play skills with peers for children with autism. *Journal of Autism and Developmental Disorders, 38*, 312-323.

Matson, J., Taras, M., Seven, J., Love, S., & Fridley, D. (1990). Teaching self-help skills to autistic and mentally retarded children. *Research in Developmental Disabilities, 11*, 361-378.