



# Understanding Top-down and Bottom-up Approaches in Occupational Therapy



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Occupation is at the core of occupational therapy. Our expertise in assessment and intervention for occupational performance and participation is one of our key contributions to the multi-disciplinary team, but because each individual we work with has unique needs and preferences, this can also lead to conflict in trying to balance the art and science of our profession. We want our intervention to be evidence-based and our assessment methods scientifically rigorous, but we simultaneously need to adjust our activities to accommodate each client's individual circumstances.

In terms of assessment, this has led us to conceptualise the premise of two different approaches; one to satisfy our need for scientific rigour, and the other to provide us freedom to address person, task and environment factors that are as varied and diverse as the number of different people we serve.

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## **Bottom-up Approaches: Assessing Body Structure and Function**

Bottom-up approaches assess at the level of body structure and function. They aim to identify which underlying components (for example hand strength, visual discrimination or bilateral coordination) are contributing to, or hindering, the successful completion of tasks and activities that are meaningful to the examinee. Bottom-up assessment tools typically require the use of specific, standardised materials, activities and instructions that allow us to compare our examinee's performance with a pre-determined standard or norm group.

Most norm-referenced assessments are bottom-up, although some attempt to approximate functional tasks. We often need bottom-up assessments for the normative scores they provide, for example when establishing eligibility for funding or services, or to evidence progress.

### **Commonly used bottom-up assessments include:**

- Beery VMI
- Bruininks-Oseretsky Test of Motor Proficiency (BOT-3) and the
- Peabody Developmental Motor Scales (PDMS-3).

Measures such as the Sensory Profile 2 and the Detailed Assessment of Speed of Handwriting (DASH-2) provide bottom-up information (scores related to sensory processing and handwriting speed, respectively) but comprise items that are more top-down in nature (i.e. questions regarding sensory experiences in everyday situations; performing handwritten tasks).

## Top-down Approaches: Observing Real-Life Tasks

Top-down assessment usually involves observing the examinee performing a task, or tasks, that they would regularly engage in as part of their daily life, ideally within the usual environment where the task is performed. Top-down assessment uses task analysis – another core skill of occupational therapists – to ascertain where the barriers to optimal participation are occurring. Because top-down assessment is individualised to each person, it is not possible to standardise the task or environment and no two assessments will look the same.

Any observation of a person doing everyday tasks, whether that be making a hot drink or tying their shoelaces, has the potential to be a top-down assessment when conducted by a skilled practitioner.

## Combining Top-down and Bottom-up Approaches

So – which approach is better/right? The easy answer is... **neither!** In fact, the best approach to a holistic evaluation of occupational performance involves a combination of *both* top-down *and* bottom-up assessments. The top-down component satisfies our need to be client- and occupation- centred and to focus on specific tasks and settings that are relevant to the individual, while we can use objective, bottom-up measures as a scientific “anchor” with which to ground our subjective observations. Usually, this means that we conduct our evaluations using several different tools – both formal and informal.

Occasionally we find standardised assessment tools that provide both bottom-up and top-down data. The top-down component generally takes the form of a questionnaire that is completed by a parent, teacher, other caregiver or the examinee themselves, to provide information about activities of daily living that are difficult to observe as part of a performance-based test. The PEDI-CAT is a measure that uses caregiver responses to calculate both norm-referenced and criterion-referenced scores regarding a child's functional *Mobility*, *Daily Activities* (e.g. dressing, feeding), functional *Social/Cognitive* skills and *Responsibility* for managing day-to-day tasks. The Movement ABC-3 contains a performance-based Test component, which gives bottom-up scores regarding a child or young person's competence in the domains of *Manual Dexterity*, *Aiming & Catching* and *Balance & Locomotion*, as well as a Checklist that contains questions grouped under the same domains, related to everyday life activities.

## Choosing the Right Assessment Tools

The choice of which assessment tools are best suited to your practice comes down to several factors including time, practicality and cost, as well as ensuring that the constructs being assessed are relevant to the clinical questions you want answered. By consciously including a mix of both top-down and bottom-up methods in your evaluations, you will ensure that you stay true to your OT “roots” and take into account the diverse factors influencing occupational performance for each client, while simultaneously generating data that will provide evidence of the need for services and allow you to objectively measure meaningful change.





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