Introduction

Think It—Say It: Improving Reasoning and Organization Skills is designed to help speech-language pathologists improve verbal reasoning and language organization in children with cognitive and/or communication impairments. The material consists of seventy-five pictured situations, each with an accompanying page of questions.

The pictures are organized by content into three sections. The pictures in Section I show both a problem and a solution. Those in Section II show a problem but offer no solution. The pictures in Section III show no problem; here, you will present the problem orally.

The questions for each picture are divided into four categories: **Inferential Reasoning, Problem Solving, Determining Causality,** and **Generalizing.** Under those basic categories are thirteen subordinate areas (such as *Explaining an Inference* and *Identifying the Solution* to a problem). To use the materials, just select the areas for intervention, present a picture, and ask the client questions from those areas.

The questions were developed with children diagnosed with a variety of disorders including neurological impairments, learning disabilities, attention-deficit disorders, autism, schizophrenia, and hearing impairments. The conditions vary widely but produce a similar deficit in verbal reasoning and organization skills. The material is written at an elementary-school interest level and is intended for clients whose language age is from 4 to 10.

Much current literature addresses the need to develop organizational and problem-solving skills in the school-aged reading population. But such skills are critical for the *nonreading* population as well. This includes children who:

- have had little exposure to written material

- are not yet reading or are beginning to learn to read but are more able to understand information presented auditorily or in pictures than in written form

- will not become proficient readers due to cognitive impairments.

Pictures and spoken questions provide a way to work on organization and problem solving with such children.

For several reasons, pictures are also useful for children who *do* read. Pictures represent information in a different form than do written stimuli. They are organized differently—since individual pictures are *nonserial,* they are seen as a whole that can be broken down into parts rather than as a series of parts that must be combined to make a whole. Because they are *visual,* pictures are closer to actual experiences than is written material. And their use is *flexible;* organization and reasoning tasks can be presented solely through pictures or in conjunction with written material.

The ability to attend to and use auditorily presented information is crucial for both reading and nonreading children. *Think It—Say It* is intended to improve children's ability to attend to small amounts of information presented in a story-like format, which is similar to the way they encounter information in conversations and in narratives.

Using the materials should also help improve children's ability to attend to and answer various types of questions. *Think It—Say It* uses questioning to guide children's approach to the pictured situations and to teach organizational strategies. Questioning is an effective way to lead children through the thinking

process to their own answers—they encode information which *they* have discovered, instead of information which has been given to them. By internalizing this approach to situations, children become active seekers of knowledge and active problem-solvers, rather than passive recipients of information.

A Review of the Terminology

Organization

The term *organization* covers a very broad area. It refers to the intake, storage/processing, retrieval, and expression of information.

When information is presented to the child (through direct experience, pictures, in written form, or auditorily) the child selects those aspects of the situation to be noticed and stored. The selection process determines:

* what is to be actively attended to

* what is to be peripherally attended to (such as being able to recall the color of someone's shirt if asked later, even though it was not consciously observed at the time)

* what is to be actively ignored (such as ignoring traffic noises while talking with another person)

* what is to be passively ignored (such as not noticing the kind of ceiling a room has).

The selection process is influenced by the material's saliency to the child. Saliency varies among children and is shaped by the knowledge the child brings to the situation and by the child's more or less innate interests. This includes typical childhood interests in dynamic—as opposed to static—occurrences, people in the child's environment, and so on. Saliency is also affected by atypical interests such as the fascination with linear arrangements, clocks, and lights seen in some children with autistic tendencies.

Previously acquired knowledge is used to determine whether information is new or old, and to identify which new information fits easily with old information and which is discordant. The process of comparing new and old information is used to build concepts—both simple and complex—to which further information can be added. Such comparisons are necessary for comprehending relationships within current situations.

To develop a simple concept (such as *chair*), the child must recognize the critical elements of a chair and be able to generalize those elements to new instances of the concept. The development of more complex notions (such as *causality*) involves understanding and comparing a variety of relationships. More complex concepts draw on relationships which occur *within* a single event, such as the one between an action and a state (action: dropping a glass; state: the broken glass) and those which occur *between* a series of events (Mom was angry yesterday when I broke the window; Mom was angry today when I broke her coffee cup). In other words, how the child processes experiences and information relies on what the child already knows.

The child's retrieval of information will be influenced by *what* information is stored and *how* that information is stored. For instance, was the notion of a broken glass stored only in combination with that of a glass being dropped, or were the notions stored as separate events *and* as a whole? Was the broken