RECEPTIVE LANGUAGE

The problem

Some people have obvious difficulties communicating. Their contributions to conversations seem hesitant or not quite on-target, as if they don't quite understand what is being talked about. Their responses to questions might be "off-the-wall," not answering the question that was asked. There might be a response delay or processing lag--that is, a longer-than-expected gap between the question asked and the answer given. They frequently have difficulty following spoken directions. They seem "spacey", especially when being spoken to. They may continually ask questions, or ask that information be repeated.

These symptoms might be evident in ordinary conversation, or they might become noticeable only as the complexity and/or the intensity of the conversation increases. This becomes very evident in classroom interaction. Students have a difficult time participating in classroom discussions. They have difficulty understanding classroom lectures. Even though their intelligence is normal, they have difficulty understanding new concepts; frequently those concepts must be presented in several different ways, and must be gone over several times, before the student can grasp them.

This difficulty with receptive language has, in recent years, been intensely scrutinized by neuroscience researchers.. These researchers believe that the problem is, in many cases, directly related to how quickly the language centers of the brain can process spoken language.

When words are spoken, the sounds, and the sound parts from which they are made, occur very rapidly--lasting at best only tens of thousandths of a second. The brain must be able to quickly and fluently perceive, analyze, interpret, and derive meaning from these sound elements. Some individuals are unable to do this processing as rapidly as spoken speech demands. Information is therefore lost and confusion develops, leading to the development of a receptive language learning impairment, with possible related impairments of reading fluency, reading comprehension, and spelling.

A Solution

These researchers have developed a program to remediate this problem, which research and clinical use have shown to hold substantial promise. An initial nationwide project involving 500 language-learning impaired children demonstrated an average gain of 1 1/2 years in language processing skills during a 6-week trial using the program. Follow-up testing has shown that the gains seem to be permanent, not diminishing as time goes on.

The Fast ForWord program uses computer-generated speech that has been modified in such a way that it can be understood by individuals with language learning impairments. This is accomplished in three ways:

1. The sound elements of speech are "stretched out", or lengthened. This is done not only to sounds that can be easily lengthened in normal speech, such as the vowel sounds, but also with sounds that it is impossible to lengthen in normal speech, such as many consonant sounds.
2. The spaces between the sound elements are lengthened, relieving confusion and allowing more processing time.
3. Certain sounds that cause difficulties are emphasized in ways that are not possible in normal speech.

These modifications to speech have been incorporated into video games that required responses from the students playing the games.

The games begin with the speech being highly modified so that the student can more easily understand it. As the games progress and the student becomes more fluent in processing speech, the speech becomes less modified. The speed with which the speech elements are produced is gradually increased (thus shortening their length), the space between sounds is lessened, and the emphasis given to sounds is decreased, training the students to deal with more normal speech. Eventually, the processing centers of the brain are retrained to the point that they can process speech normally.

It is not longer necessary for students with receptive language deficits to struggle for years with this difficulty. For individuals with receptive language deficits, there is ***Hope***.

For more information, please refer also to the website, www.scientificlearning.com.

Receptive Language Deficits and the Classroom

Students with receptive language deficits often have obvious difficulties communicating. Their contributions to conversations seem hesitant or not quite on-target, as if they don't quite understand what is being talked about. Their responses to questions are sometimes "off-the-wall," not answering the question that was asked. There might be a noticeable response delay or processing lag--that is, a longer-than-expected gap between the question asked and the answer given. They frequently have difficulty following spoken directions. They seem "spacey", especially when being spoken to.

These symptoms might be evident in ordinary conversation, or they might become noticeable only as the complexity and/or the intensity of the conversation increases. This becomes very evident in classroom interaction. Students with language deficits have a difficult time participating in classroom discussions. They have difficulty understanding classroom lectures. Even though their intelligence is normal, they have difficulty understanding new concepts; frequently those concepts must be presented in several different ways, and must be gone over several times, before the student can grasp them. They frequently ask for material that has been orally presented to be repeated. Even worse, if they are shy they often *don't* ask, and therefore don't grasp the ideas presented.

There are few difficulties that are more frustrating for a teacher to deal with. It is disheartening to invest time and effort carefully crafting an explanation of a concept, only to have a student raise his hand and say, "I don't get it!"; or to find out that a student did not understand, only when it becomes obvious on the next test or assignment. It is, after all, the job of a teacher to teach, and most take that responsibility very seriously. It is also a burden to the teacher, who already is struggling to fit all that has to be done into the confines of the school day, to have to reteach individually what has already been carefully taught to the class.

As frustrating as it is to the teacher, it may be even more frustrating to the student. It is the student that must deal with the feeling that he can't keep up no matter how hard he works. It is embarrassing to constantly have to ask questions, even with an understanding and compassionate parent or teacher. There is often the perception of being an inconvenience. The student does his best to understand the material, but can't, and what generates inside is discouragement, coming from a conviction that he is just not very smart. This is reinforced by the groans and comments of his classmates when he asks for yet another repetition of the material. And, one cannot overlook the inconvenience to the other students, who may not get the attention they need because the teacher has to spend so much time with those who do not understand.

In the past, all that a teacher could do to deal with this problem was to grit her teeth and teach and reteach, using alternative teaching techniques in an effort to bypass the language processing difficulties. With the advent of Fast ForWord, the possibility presents itself to actually remediate the difficulty. With the retraining of language processing skills that Fast ForWord offers, there is hope for a problem that has plagued teachers and students since the first schools opened their doors.