Sequencing

One of the thought differences that is evidenced by individuals who have learning problems is that of sequencing. As with other thought differences, this phenomenon can be both a strength and a weakness. Some activities require the strict adherence to a sequence in order to produce successful results. Other activities do not require sequential operations and may actually produce better results when the flexibility of random order is used. Examples would include the creative and inventive processes and some problem solving strategies. On the other hand, individuals who cannot easily follow sequential order have difficulty with many activities. Examples of some of these activities are many math operations, sentence structure, computer functions, machine operations, assembly and some problem solving activities.

There are a number of reasons why people have difficulties with sequences. First, to varying degrees, they do not think in sequences. Their normal way of perceiving, processing and communicating is not sequential: instead it is random, tangential or circular. Therefore a person who does not naturally think in sequential order will have difficulty learning and using sequences. They often do not know that there is a sequential process involved or do not know, or cannot remember, all the steps involved. Another cause is not seeing patterns in the sequences or not paying attention to the steps. Another reason is the person uses different criteria than the norm in determining the order of the sequences. This way of thinking results in the person paying attention to other things rather than the sequences. A consequence of this different way of thinking is non-sequential logic. This process allows the person to skip over steps or see connections that others do not skip or see. Another reason is that the mind is going too fast. When the racing mind (ADD) combines with sequencing problems, it results in skipped steps and steps completed out of order often when the person knows the steps.

The person who thinks differently may find that some sequential processes do not present a problem while others do. Usually the more sequential steps involved, the more difficult it is for this person to follow the steps. The steps are either skipped, added or done out of order. Many everyday activities use thought processes which require sequencing; these include problem solving and decision-making. A concept used in business demonstrates this. Some business people use the traditional market technique of “ready, aim and fire.” While others use the process in a different order, “they fire, aim and get ready.”

Students who process sequences differently often encounter difficulty with language. Sentence structure is a sequential process so individuals who have difficulty with sequencing often have problems expressing themselves in speech and writing things like misplaced modifiers and dangling participles are common sequencing mistakes. Chronological order is a sequence and can be a problem for those who have difficulty with sequences.

In math, skipping steps or doing them out of sequence results in errors. It is common for individuals with sequencing problems to have difficulty with long division and other multi-step operations. Order of operation is a sequence that must be followed in order to complete higher-level math operations. A different way to sequence information is demonstrated by the following example. When presented with the problem: How many students would be on each
bus if there are 100 students and five buses? A student who thinks differently adds a step, and therefore does not have sufficient information to complete the problem. He said that unless you know who is friends with whom, you cannot solve the problem.

Individuals can improve their sequencing in a number of ways. First they need to know that processing information differently is not necessarily wrong or bad, instead they need to know when to apply sequential or non-sequential logic. Next they need to understand that they do have difficulty with sequences and therefore need to ask if sequential order is important to the task they are learning. Teachers can help by making the steps of sequences visual, using diagrams, charts, etc. Mnemonics clues, either visual or auditory, can be used to help the students remember the sequences such as the mnemonic for the Order of Operations in math (Please Excuse My Dear Aunt Sally for Parentheses, Exponents, Multiplication, Division, Addition and Subtraction). Practice exercises using sequences can be developed. When students need to learn a large number of steps these can be broken into groups of steps. Fifteen steps can be grouped into five groups of three or three groups of five. Students can develop skills using sequential steps by working with simple steps until they are mastered and then moving on to more complex ones.