

Effective Learning Skills

Many factors can affect academic performance besides intelligence. If processing speed is slow, performance may be poor—not because a student is a slow thinker or because he lacks ability, but because he has to wait for information to be processed before he can think about it. If a person cannot remember what he read, then he will not be able to reason with that information—not because he cannot think, but because he cannot remember. If a person cannot pay attention to what he has heard, he will not be able to reason with that information—not because he does not have the intellect to understand it, but because he cannot pay attention long enough or well enough to absorb the information. If processing is inaccurate, then information will not get to the thinking parts of the brain in a reliable state—confusion develops because the information is garbled or scrambled and has to be unscrambled before it can be reasoned with.

Effective and efficient learning requires the efficient use of many underlying skills. The specific skills used depend upon the particular academic task being performed, but always includes one or more of the following in addition to many others:

- Visual processing—extracting information from data coming in through the eyes.
- Auditory processing—extracting information from data coming in through the ears.
- Selective attention—giving attention to one item while ignoring other competing items.
- Divided attention—working with more than one task at a time in order to accomplish a goal.
- Auditory working memory—holding in memory information that has been heard, while manipulating that information to solve a problem.
- Visual working memory—holding in memory information that has been seen, while manipulating that information to solve a problem.
- Visualization—forming pictures in the mind of passages being read or discussed, or of symbols such as numbers, letters, and words.

In order for these skills to be useful in academic tasks they must be used accurately, efficiently, and quickly. If they are not, academic work will be slow, frustrating, and inaccurate, even when intelligence scores indicate that the student should have few difficulties understanding the tasks. And, because academics are difficult, attitudes toward learning will frequently be poor.

It must be emphasized again that students often perform poorly or slowly, not because the student does not understand the work, but because certain skills are unreliable. An illustration can be given using math facts as an example. For math to be done efficiently, math facts must be retrieved almost instantly. When a student sees the fact “7 X 6” he must immediately think, “42.” Sometimes, however, even though the student knows this fact, he cannot instantly retrieve it. It might take two or three seconds to pull the number out of memory. If that happens, math performance is slowed down tremendously, because a math assignment might require the retrieval of hundreds of math facts.

Providers of the PACE program (Processing and Cognitive Enhancement) recognize that it does little good to tutor a student if his problems are caused by poor foundational skills rather than by poor teaching, low intelligence, or poor effort. PACE was developed to improve academic performance by increasing the fluency and efficiency of underlying learning skills and by integrating those skills with each other.

PACE providers first test students to determine how well developed and how efficient these underlying skills are. If skills are deficient, they are taught very systematically and incrementally—that is, in very small and careful steps. But, just teaching the skills, even teaching them very carefully and very thoroughly, is not enough. The skills must become part of a student's automatic responses.

One of the problems that clinicians encounter is that oftentimes students are taught to do tasks in the setting of a clinic or learning center, but then don't apply those skills in their learning. A basic reason for this is that the tasks are not automatic—even though the student can do the task, it still takes effort. So, when academics get difficult, students fall back on old, familiar habits. They use old skills, skills that are not adequate to do the task, because those old skills are easier to apply than the new skills that they have learned.

To address this problem, an additional step is needed after the skills are learned. As skills are mastered, other increasingly complicated tasks and distractors are carefully added to them. Challenging skills in this way forces them to become automatic in order for the student to continue to do them successfully. (This step also provides a side-benefit of training the student's attention and concentration.) Thus, it makes certain that the skills are not just used in the setting of a clinic or learning center—they actually become part of the student's problem solving repertoire, and are used automatically when the student is addressing a problem.

Students who go through PACE procedures frequently find that both classroom learning and completion of academic work becomes faster and easier. Many find great satisfaction in being able to do schoolwork well and easily, often for the first time in their lives. For students who are inefficient learners, as with many other learning difficulties, there is *Hope*.

For additional information, please refer to the website, www.processingskills.com.