

Lesson 2: The Foundations of MAST Methodology

Part E

Input/Output theories are discussed next.

Examining Input Theory

Stephen Krashen, a linguist and educational researcher, devised the Input Hypothesis relating to how learners acquire ability in a second language.

The hypothesis states that we acquire language by receiving comprehensible input, which he defined as input that we understand but is slightly above our level of competence, that is, language that the learner can understand but would not be able to produce.

Think of a child learning to talk. If the mother always asks the child, “Do you want some water? Water?” before handing her some water, the child eventually learns to associate the word with the object, even if she is not yet able to repeat the word.

Examining Output Theory

Merrill Swain, a linguistics professor at the University of Toronto, devised the comprehensible output hypothesis. This states that we acquire language when we attempt to transmit a message, but fail and have to try again.

Think again of children learning to talk.

At first they utter incomprehensible gibberish.

But after many failures they are able to communicate their meaning to their parents, who have been trying to decipher their utterances.

As they practice talking, they at first can't be understood by others, so they hone their skills until they are able to communicate even with those who are not used to listening to their baby talk.

Putting Input/Output Theories Together

According to Krashen's input theory, in addition to comprehensible input, learners must also have motivation, self-esteem, and a stress-free environment in order to produce comprehensible output.

Think for a moment about how this relates to drafting in a MAST project. The MAST drafting steps are a prime example of input/output theory in action:

- First the translator must comprehend the source text.
- If the facilitator has done a good job, translators should feel:
 - Safe, with no fear of failure or embarrassment
 - Highly motivated
 - Confident that they can do the work
- This environment enables the translator to draft comprehensible output and improve it with self- and peer-checking.

Next you learn about some theories of brain-based education.

What Is Brain-Based Education?

Brain-based education is a learning approach that is optimized for the brain's natural way of learning. It is based on neuro-scientific research and covers many aspects of the brain and how its physiology impacts educational methods. Most of this research has taken place over the last two decades.

This research has provided new insight into how the brain processes and retains information. Brain-based education consists of various learning techniques to utilize that insight.

Examining Time Principles of Brain-Based Education

One aspect of brain-based education is time. Teachers may have the tendency to overload learners with information, often with the result that real learning does not occur. The brain can't process too much information in a short period. Students must have time, not only to learn, but also to reflect upon the concepts and to review the material.

New information is best processed in 7-11 minute chunks. As a general rule, when the material is complex or when the learner has less background knowledge, the chunk of content should be shorter.

Also, researchers have found that learning new concepts is most effective within the first two hours of waking and again within the last two hours before sleeping.

In MAST focus time, then, try to divide the information that is presented into sections or topics that can be presented in short time periods, depending on the complexity of the material and the learners' previous knowledge.

Examining Past Experiences Principles of Brain-Based Education

Past experiences are experiences that the brain has already recorded into long-term memory and can recall as needed.

Because the brain is always searching for meaning, when new learning is encountered the brain attempts to relate it to past experiences. When such a link is perceived, it transfers that past experience into working memory to interact with and help us find meaning in the new experience.

When students can make sense of new learning and find meaning in it, that new information is more likely to be stored in long-term memory. So the more a teacher can relate new learning to what has already been mastered by the learners, the greater the retention of that new information in the long-term memory of students.

In MAST focus time and any time the facilitator is coaching translators, it is helpful, then, to relate any new information to what has previously been discussed and learned.

For more learning theories, please proceed to Part F of Lesson 2.