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# Patterning and the Search for Meaning

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The brain has been a topic of interest for centuries. Deciphering the functions of the brain and how it works has been the goal of many sciences throughout the years. We have had primitive models of how the brain works for over 2,000 years. Throughout the centuries the brain has been compared to various things, from a switchboard, to a city, to a two-part organ and a three-part organ. Apart from making advancements in our knowledge about the brain, we have also made advancements in our knowledge of how people learn. We know that learning requires active and social participation, among other things (Vosniadou, 2001). As we combine the sciences of the mind, brain, behavior, and learning theory, educators are beginning to embrace a more holistic view of the brain in which the whole system is greater than its individual parts (Wilson, 2009). We call this new phenomenon “Brain-Based Education”.

Although there is controversy about Brain-Based education and its validity in the classroom, we have seen an emergence of research, (not all directly related to education), that has proven insightful about how the brain works, and more specifically learns. New advances in MRI and PET scans have allowed scientists to scan the brain and assess patterns of activity in an awake, thinking, human brain. The goal of Brain-Based Education is to use this research to enhance learning. Two front-runners on the Brain-Based Education scene are Renate Nummela Caine and Geoffrey Caine who have come up with twelve basic principles for educating based on the mind/brain and its functions. The twelve principles are designed to aid teachers as they try to best meet the learning needs of their students. All twelve principles are important, but the fourth principle, “The search for meaning occurs through ‘patterning’”, is of particular interest.

As humans, we have an innate need to search for meaning. Since the beginning of time, human beings have been asking such existential questions as “Who am I?”, “Why am I here?”, “What does it mean?”. Although we have much more complex understanding of how our world works, we still have a strong desire to search for meaning in the world around us. The brain has a natural tendency to search for meaning in the information which it receives. A natural, physiological process allows the brain to function holistically as it searches for meaning.

As humans, we are naturally curious and seek to make sense of experiences and things that we encounter in our environments. This curiosity is a survival skill and serves as a natural motivator for learning (Holistic Education: Teaching with Themes or "Thematic Teaching"). As the brain attempts to make meaning out of information, it perceives and creates connections or “patterns”. This is what scientists refer to as “patterning”. The ability to create patterns is crucial for learning and piecing together information. Patterns can come in many varieties, for example: visual/spatial patterns, patterns in nature, rhythmic patterns, verbal patterns, metaphoric patterns, mathematical patterns, or behavioral patterns. (Bell, Ford, & Wunderlich). There are many more types of patterns all around us and the ability to see them and make sense of them is at the heart of knowledge construction and finding meaning in what we experience.

The human brain does not easily learn things that have no meaning. This is why we continually search for meaning all around us. The human brain resists learning isolated, or “meaningless”, pieces of information (Herbozo, 2009). Therefore, when it receives information it tries to integrate it into information that is already stored in the brain. The brain looks for common patterns and uses these patterns to make sense of the small pieces of information and

create a more holistic picture, or in other words, all knowledge is embedded in other knowledge. The brain classifies smaller pieces of information and integrates them into larger pieces. This capacity for the brain to make patterns and to integrate information into “parts” and “wholes” has implications for the classroom.

As teachers, we must find the line between helping students create their own patterns and actually giving them the patterns. In order to create meaningful patterns, the students must create the patterns themselves. If vast amounts of seemingly random or unrelated information are presented to the students, it is hard for them to make meaningful patterns. For example, if a teacher tells the students to identify the parts of a plant and put each plant in a different color, it would be beneficial to let the students choose their own colors. This way, the students can choose colors that may be part of a more personally meaningful pattern than if the teacher chooses the colors and imposes a pattern on the students. Teachers must also use all available resources to make sure that students have the opportunity to add pieces of information to previous knowledge and create and identify new patterns (Bell, Ford, & Wunderlich). Educators can also use thematic themes and units so that students have the opportunity to see how smaller units fit into the larger, more holistic unit and create patterns that include many types of information.

Another aspect of patterning that is important for educators to keep in mind is that patterns are hard to break once made.

“It’s as if we go spend the first few years as an open system taking in information and experiences and drawing conclusions, and then the rest of our lives we go around proving that what we learned is in fact so.” (Herbozo, 2009).

As educators, it is important to help students make patterns that are based on accurate information and help to break patterns that have been falsely integrated into memory.

Patterning and the search for meaning are just two of the aspects of Brain-Based Learning. Caine and Caine’s twelve principles are meant to be a foundation for educators who strive to teach 21<sup>st</sup> century skills and create an environment of meaningful and engaging learning. Although much more research needs to be done in order to fully understand the mind and all of its capacities, we are now able to reconceptualize modern education and strive to continue moving forward (Caine & Caine, 2002).

## Works Cited

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