



Cognitive Tools and English Language Learners

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The concern has been how English language learners can not only become English proficient; it also continues to be how we can help them access their intellectual capacity so they can address the academic experience with success in our public schools. While learning a language is a process, the application of language for student's academic achievement is essential and must be addressed by teachers and administrators. To fulfill this obligation we examined the idea that students need cognitive tools to fully understand and construct meaning from their experiences, presupposing that thinking processes are differentiated. It would hold, then, that these fundamental thinking processes would benefit from a diverse toolkit in order for students to be able to transform information into knowledge. The saying, "*If the only tool you have is a hammer, then everything starts looking like a nail,*" is as aptly applied to students' search for meaning as it is for a carpenter building a house. In order to embrace the complexity of the content and respond to it skillfully and confidently, all learners, and especially English language learners require a highly developed set of cognitive processes supported by the necessary tools to give *full expression* to their ideas. Cognitive tools, then, are an educational imperative for English language learners, without which their ability to move beyond the plateau that only suggests proficiency will be severely and, perhaps irreparably, compromised.

The brain, as our developing understanding currently informs us, is a pattern detector. In order to remember, the mind (brain) must sort through information, make connections and store what is important and discard what is not. In order to remember the important parts of text, for example, the English language learner needs to sort the information presented against the structure in which it is presented. The failure to do so confronts the student with a wall of text, a wash of information difficult to understand and frustrating, if not overwhelming, to encounter. If it is true that text structure offers the reader a conceptual net for keeping information in mind, then the inability to recognize these cognitive text patterns and the lack of associated tools to mine them for meaning can severely handicap the learner. Understanding and recognizing the highest level functions and forms of language are necessary to attain the highest levels of learning. Our goal was to ensure that English language learners become proficient readers of English. Proficient readers are described in the document *Put Reading First* (Armbruster, 2002) as active and purposeful, self-monitoring and meta-cognitive. These skills and dispositions, then, need to be explicitly supported by specific, highly developed strategies and tools.

The work we have undertaken in the New Rochelle City Schools has been designed to address the challenges described above by utilizing strategies that were intended specifically for English language learners as well as the general student population thus benefiting all students. The use of visual models or non-linguistic representation has been advocated for all learners and has been supported by substantial research data. In several schools in New

Rochelle, it was decided to introduce students, teachers, and school leaders to the use of Thinking Maps®, a visual language for representing and applying fundamental thinking processes to all aspects of learning. Because of its developmental nature and its application across all content areas, Thinking Maps® were thought to be ideally suited for working with the English language learner. These *thinking maps*, comprised of eight graphic representations, are aligned to specific thinking processes. Researchers repeatedly found that visuals tools are regarded as an effective strategy for ELLs. These tools are especially effective when content-area teachers consistently use these supports to deliver instruction. The consistency and coherence the maps offered were essential characteristics to a successful language/learning experience. In addition, because of their direct association with fundamental thinking patterns, i.e. sequencing, compare/contrast, cause/effect, etc., Thinking Maps® were thought to be particularly well designed to address the challenge of providing ELL students and struggling learners with high level, differentiated cognitive tools for constructing meaning. The use of these tools, it was believed, would give students the opportunity to make visible the organizational patterns in text. They would allow students to concretely sort through text in order to identify and select critical information and use those same cognitive patterns to re-construct the text to communicate their understanding of it.

Implementation began with ESL and dual language teachers participating in a full day professional development experience supported by systematic, ongoing follow-up support that has continued over a two and a half year period. From the beginning, the focus has been on the transfer of the use of these tools to students for their independent use. Follow-up sessions have been designed to support teachers and students in their use of the maps at increasingly sophisticated levels. Other teachers within the buildings began to see the increase of language expression, vocabulary development and visual thinking of students especially by English language learners. The process of building capacity grew by training grade level teachers and then whole schools; quickly all teachers recognized that all students could reap the benefit of such cognitive tools.

Students have used multiple Thinking Maps® to represent the complexity of their thinking about various topics. The examples included with this article are representative of the diverse ways students have been representing their content and concept understanding at all grade levels and throughout the curriculum. Thinking Maps® have provided students, especially ELL students, with a cognitive bridge to language and literacy. As their fluency with these tools continues to develop, the students will have a road map, an internal compass, for engaging confidently and competently with increasingly complex information in school and for navigating their lives beyond formal education. “Although thinking is innate and spontaneous,” Art Costa wrote, “skillful thinking must be cultivated.” And to be fully realized, skillful thinking and language expression needs to be supported and enriched with instruction in the use of cognitive tools.

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