Text Sequencing: Using a Common Theme to Define Text Complexity, the Progression of Reading Comprehension, and the Role of Vocabulary in Text Complexity

Brief by David Liben *Draft*

The triple goal of getting students to read complex texts, to acquire a rich vocabulary, and to use effective reading strategies requires a carefully constructed sequence of instructional texts. A principle determinant of text comprehension is the effective use of the reader's knowledge; a principle outcome of comprehension is building new knowledge from the information acquired from the text. To facilitate both, readers must be given a chance to work with texts within a specific knowledge domain that are carefully constructed in terms of increasing complexity of the texts themselves, the vocabulary used, and the reading strategies employed.

Text difficulty can be indexed by several Coh-Metrix measures - which ones are most useful is yet to be determined. Suppose we have a sequence of 25 texts on a certain topic, all about 1,000-to-2,000 words long, ranging from simple texts with minimal pre-knowledge requirements to complex, difficult texts with high pre-knowledge requirements. Each text is constructed in such a manner that it builds upon the information acquired by the previous texts, while adding new information that will be useful for the later texts in the sequence. This has two consequences: it makes it possible for students to read and understand a complex text, but it also teaches the student that they must use the knowledge they have acquired from one text in understanding the next. By staying within a single coherent topic, the student has a better chance of learning that crucial lesson than if he were reading texts that jump from one topic to another.

To make this argument more concrete, consider an example from Sally Hampton's and Eileen Kintsch's *Literacy Navigator* (2008, America's Choice, 7th grade). The topic here is "adaptation" and is illustrated with examples about dogs and other canines. It starts with an easy text about dogs as pets, stuff that every student would be familiar with or can easily understand; it continues to coyotes and wolves, behavioral adaptation, selective breeding, hybrid vigor, non-verbal communication, and man-dog symbiosis, illustrating and expanding the concept of adaptation in a variety of ever more complex ways.

Each text introduces a number of new words that 7th graders would not be expected to know. Each new word has prerequisite words that are necessary for its understanding, some of which may also be unknown. For example, among the prerequisites for understanding "genus" are "classification", "organism", "species", and "family", some are Tier 2 words, some Tier 3 words. The prerequisites are introduced in earlier texts, or as needed. Thus, a systematic vocabulary is built up by this text sequence. Methods for doing this automatically, and possibly at the level of individual students, are being developed by Landauer and Kyreyev, as I mentioned earlier.

At the same time, the text sequence invites (indeed, necessitates) the use of ever more sophisticated reading strategies. Sally Hampton is quite specific about that: starting with anaphora identification, main ideas, and summarization instruction also deals with issues of text structure (e.g., compare-and-contrast using graphic organizers), explicit information and inferences, author's purpose and different points of view. Thus, the automatic reading process of the expert reader is gradually approximated within a growing knowledge base by means of explicit, controlled reading strategies.

The coherent theme for the text sequence also offers motivational advantages. In the example above, what is taught is "adaptation", but it looks like "all about dogs" – which for most people has at least some intrinsic interest. More importantly, the gradual build-up of knowledge generates interest by itself: people are interested in things they know something about, but not too much – there is a U-shaped relation between familiarity and interest. Thus, as students learn more about adaptation, they are likely to become more interested in the topic, more motivated to study it.

The literacy instruction used for the topic of adaptation can be used in other areas of science, social science, and literature. Obviously, this means that comprehension instruction and domain learning are closely related and cannot be separated. Thus, literacy instruction becomes the task of the science and social science teacher, insofar as knowledge in those areas is acquired through reading. Literature itself is, of course, another domain for literacy instruction.

Constructing texts around carefully chosen general themes, where one lesson directly builds upon the other, is important for all three strands that we are concerned with here.