What is Academic Language Proficiency?

by Stephen Krashen, *University of Southern California* (skrashen@yahoo.com) and Clara Lee Brown, *University of Tennessee* (clara1@comcast.net)

We propose that Cognitive Academic Language Proficiency, or Academic proficiency, can be analyzed as containing two components: (1) Academic language, characterized by complex syntax, academic vocabulary, and a complex discourse style. It has been assumed that academic language can be analyzed and taught directly, but this is an empirical question, open to investigation. (2) Academic content, the content of subjects such as algebra, history, literature, etc. Related to each component are strategies that serve to make input more comprehensible and thereby help in the acquisition of academic language, and strategies that help us learn new concepts and facts. It has been suggested that all of these strategies can be taught directly but this is an empirical question, a hypothesis that can and should be tested.

■ Introduction

We present here a framework for the continued study of Cognitive Academic Language Proficiency (CALP), sometimes referred to simply as Academic Proficiency. CALP was introduced into the field of language education by Cummins (1979), and is contrasted with Basic Interpersonal Communication Skills (BICS), or conversational fluency. In recent years, many second and foreign language programs have recognized the importance of academic language proficiency and consider it to be a central goal of language teaching programs: We want our students to be able to use their second language for demanding tasks, for business, science, politics, etc beyond carrying out daily conversation.

In this paper, we present a set of assumptions and hypotheses designed to ultimately deepen our understanding of academic proficiency. Although there is good evidence that these hypotheses are correct, they are an invitation for further research and discussion.

We propose that Academic Proficiency consists of two central components: Knowledge of academic language and knowledge of specialized subject matter.

- *Knowledge of Academic language:* This is knowledge of the special language used in school and the professions. In school, it is the language of story problems in math, social studies, and science texts. Outside of school, it is the language of business and finance, science, and politics. Studies show that there are differences in the specific academic languages used in different areas, but similarities also exist (Biber, 2006).
- *Knowledge of specialized subject matter:* This consists of knowledge of math, science, history, etc.

We also propose that there is a third component to Academic Proficiency: Strategies. This aspect of academic proficiency includes competence in the use of strategies that aid in the acquisition of academic language and that aid in subject-matter learning. Use of these strategies does not guarantee success, but they can have a powerful effect on both language development and learning subject matter. This view of Academic Proficiency is summarized in Figure 1.

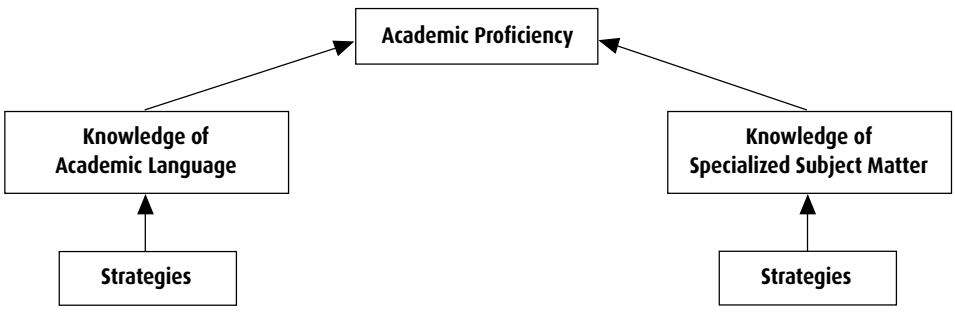

Figure 1 Academic proficiency

■ Assumptions

In discussing Academic Proficiency, we assume the correctness of the following hypotheses:

1. *The Comprehension Hypothesis.*
   We acquire language and develop literacy by understanding messages, not by consciously learning about language and not by deliberate memorization of rules of grammar and vocabulary (Krashen, 1981, 2003). Reading is a powerful form of comprehensible input for the development of academic language, whether 'heavy" or "light" reading (Krashen, 2004a). Those who read more do better on all aspects of academic language: They have larger vocabularies, spell better, read better, have a more acceptable writing style, and are more adept at handling complex grammatical constructions.
2. *The Problem-Solving Hypothesis.*
   The problem-solving hypothesis claims that we do not learn subject matter and new concepts by "study," but that they emerge as a by-product of problem-solving. This hypothesis is supported by empirical studies (reviewed in Krashen, 2003), and it is also consistent with the observation that people with encyclopedic knowledge of their fields never memorize facts and figures: Linus Pauling did not regularly review the periodic table with flash cards. Rather, these people devote a great deal of time attempting to solve problems in their field; as a result, they deepened their knowledge.

■ Strategies

We present here some sample strategies. Some strategies are useful for both language acquisition and content learning, but some apply only to content learning.

Reading strategies

If our assumptions about language acquisition and content learning are correct, it follows that strategies that help in language acquisition and literacy development are those that help acquirers obtain more comprehensible input, that is, make academic language more comprehensible. We present two strategies here that apply to reading, that make academic texts more comprehensible.

The *narrow reading* strategy is to read texts by one author or about a single topic of interest, which helps ensure comprehension and natural repetition of vocabulary and grammar (Krashen, 2004b). This strategy contrasts with the usual approach of trying to do a "survey," e.g., selecting texts of different genres, often written in different eras. Narrow reading encourages early specialization. Narrow reading, however, does not mean that a reader will stay narrow forever: Readers gradually broaden their reading interests as they read more and their interests evolve (LaBrant, 1958).

We hypothesize that this is how scholars build their knowledge of academic language, as well as content knowledge, through doing a great deal of reading on specific topics.

Another strategy that appears to be helpful in reading is the utilization of background knowledge. A wealth of research confirms that background knowledge in the form of pictures, discussion, and easier reading helps make texts comprehensible, and the validity of this strategy is consistent with the results of studies showing that texts on topics familiar to readers are generally more comprehensible than texts on unfamiliar topics (e.g. Abu-Rabia, 1998; Johnson, 1981, 1982; Ribovich, 1979; but see Scott, 2004 for an interesting exception).

It has been hypothesized that one of the reasons for the success of bilingual programs is that they provide subject matter information in the first language, which makes subsequent instruction and reading in the second language more comprehensible (Krashen, 1999), in addition to resulting in more knowledge.

Note that narrow reading incorporates the background knowledge strategy: As we read in one area, or focus on the works of a single author, we build up background knowledge that makes subsequent reading more comprehensible. This helps explain why series books are so popular, and, we think, so effective in developing literacy (Cho & Krashen, 1994, 1995; Lamme, 1976).

Strategies for problem-solving: The composing process

There are a wide variety of strategies that are useful for problem-solving, and thus for gaining new knowledge. Here, we limit the discussion to problem-solving in academic situations.

Clearly, any strategy that makes texts more comprehensible will aid in problem-solving, but some strategies are unique to problem-solving. These include strategies that make up "the composing process," strategies that expert writers use to keep their place in their work and to come up with better ideas. The composing process deals, of course, with writing, but it is a powerful means of solving problems and thereby developing academic proficiency. (For evidence of the positive impact of writing on thinking and problem-solving, see Krashen, 2003.)

Evidence for each of the following strategies is well-established in the research literature (reviewed in Krashen, 2003; Krashen & Lee, 2004):

- *Planning:* Good writers have a plan before they write, but their plans are flexible; they are willing to change their plans as they write and discover new ideas.
- *Revision:* Good writers are willing to revise. They understand that as they move from draft to draft they come up with new ideas, and find new relationships among their previous ideas. In general, they will see things more clearly.
- *Delay Editing:* Good writers delay editing. They concern themselves with formal correctness only after they are satisfied with the ideas they put on the page.
- *Re-Reading:* Good writers stop frequently and reread what they have written.
- *Regular Daily Writing:* Productive writers write a modest amount each day, rather than waiting until they have large blocks of time available.

- *Incubation:* Good writers understand the importance of short breaks that encourage new ideas and solutions to problems that emerge when they give their minds a rest.

Note that this set of strategies deals with written output, not input, and, according to the Comprehension Hypothesis, do not contribute directly to language acquisition, in this case, the acquisition of academic language. (For evidence that output does not contribute directly to language acquisition, see Krashen, 2004a). These strategies are, however, of profound importance to cognitive development and in deepening knowledge. They are the means by which "writing makes us smarter." These strategies are most valuable when writing involves complex issues and difficult problems, that is, when it requires the integration of a great deal of diverse information, when a complex analysis is called for, or when data can be interpreted in different ways (for evidence, see Langer & Applebee, 1987). Writing, in other words, works best when we write about a real problem we are facing, and the solution emerges while we are writing, which is precisely the situation experts continually find themselves in, or place themselves in.

■ Are strategies acquired or learned?

Scholars who have emphasized the importance of strategies have usually made two assumptions. The first is that that we can determine what effective strategies are by examining expert performers, that is, highly literate people, "good language learners," and those with deep knowledge and accomplishment in areas of inquiry or performance. A second assumption is that once we have isolated the strategies, we can simply teach them to students. In other words, we assume that strategies can be taught directly and consciously learned.

Our position is that the method of examining the performance of experts is indeed a correct and useful method for discovering strategies that help develop academic proficiency. But this does not mean that all strategies should be taught directly. According to our experience, some strategies are quite teachable, and learning them may result in dramatic effects. The narrow reading, background knowledge, and composing process-related strategies fall into this category. (For a particularly dramatic example, see Boice, 1982, who provides strong evidence for the value of teaching the regular daily writing strategy). It has, however, not been established to what extent these strategies develop on their own: Some students may have discovered them, others not. An important task, thus, for strategy instruction, is to determine who needs strategy instruction and who does not. For second language acquirers, some of these strategies can be developed or taught either in the first language, with immediate or easy transfer or in the second language (Lee & Krashen, 2002).

There are other kinds of strategies that, we suggest, should not be taught, or taught only for specific circumstances. One such kind consists of those strategies that aim at conscious language learning, as contrasted with acquisition, or with "study," that is, the deliberate internalization of specific facts and concepts. An example is the use of mnemonics and paired associates for vocabulary learning. The problem with emphasizing these strategies for language development is that they lead to learning, not acquisition, which is a fragile form of linguistic competence that is hard to use, limited in application, and has little enduring effect. It also takes time and energy to learn the mechanics of some of these strategies, which takes time away from activities that would result in more comprehensible input for students. Danskin and Burnett (1952, discussed in Krashen, 2003) provide evidence against the teaching of study skills, although this was not their intent. They reported that excellent university students had poor "study habits" and did not do what "study skills" books advised. Instead of concluding that something might be wrong with the manuals, the authors, however, concluded that these highly successful students need to develop better study skills! What is more likely is that the successful students had mastered the real strategies for language development and problem-solving, and did not need strategies for "study."

There are, of course, cases in which we need to consciously learn aspects of language or facts, and in these cases, strategies for conscious language learning and deliberate memorization of facts will be of use. The most obvious example is studying for tests in school. We suspect, however, that outside of school, these kinds of situations are infrequent (e.g. taking a written test for a driver's license); thus, there will be limited use for strategies leading to conscious learning and memorizing facts.

Another category of counterproductive strategies are those that attempt to teach strategies that are innate or developed naturally. A clear example is "predicting," i.e. encouraging students hearing or reading a story to predict what they think will happen next. Smith (1983) notes that "everyone predicts –including children- all the time" (p.23), and argues that we need to predict in order to get through the day and to deal with the ambiguity and complexity of the world. Most of our predictions are correct, which is why we are so rarely surprised. Prediction, then, does not have to be taught. Readers naturally predict what will happen next if the text makes sense. Similarly, we do not have to be taught to visualize while reading. If a story or text is interesting, we can't help it.

Atwell (2007) argues that insisting that readers use certain strategies while reading interesting texts can disrupt the entire process: It can remove readers from "The Reading Zone," the trance state that readers enter when they are absorbed in a text, or "lost in a book" (Nell, 1988). Krashen (2007) hypothesizes that being in this state is optimal for language acquisition and literacy development.

Atwell describes her experiences in attempting to teach "meta-cognitive" strategies to her seventh and eighth graders, and getting them to practice the strategies as they read. For example, to teach the strategy of creating

visual associations, students were asked to "pause during their reading of a story and visualize and sketch an image inspired by the writing" (p.53). After a few weeks, her students rebelled, and told her that "Metacognition was interfering with the reading zone … (it) disrupted the flow of a great story, ate up precious hours that could have been devoted to living inside another great story, and wasted their time as readers … not one student could name a positive effect of the strategies on his or her reading performance" (p.54).

In all cases, the strategies Atwell discussed are those that we do anyway, that we are "wired to do" (p.56). Her experience informs us that use (or perhaps overuse) of some meta-cognitive strategies in some situations (when reading for pleasure) can be counterproductive.

We summarize the alternatives below:

Some strategies, we hypothesize should be taught to students who have not discovered them:

- Those that make input more comprehensible, e.g. narrow reading, obtaining background knowledge.
- Those that help content learning. These are strategies that aid in problem-solving, such as aspects of the composing process.

Strategies that should not be taught, or taught but used rarely, only under certain conditions:

- Those that lead to language learning, not acquisition.
- "Study skills" that lead to deliberate memorization.

Strategies that should not be taught: Strategies that everyone develops naturally and whose use disrupts language acquisition and content learning.

Of course, it remains to be determined conclusively which strategies are in fact universally developed in everyone. We hypothesize that visualization and prediction are universally developed, but this remains to be confirmed.

■ Summary and conclusion

We have suggested in this paper that academic proficiency consists of two different proficiencies: Knowledge of language and subject matter knowledge, and corresponding to each is a set of strategies that facilitates its development.

We also hypothesize that some strategies are teachable and are useful to learn. Others are less useful, limited only to conscious language learning and deliberate memorization. Still others, those that all humans naturally possess and use, may be counterproductive to teach.

Again, we must emphasize that these are hypotheses. They are, however, "good" hypotheses in that testing them will advance our knowledge in this area and help guide research. This research will be of great importance: Possession of strategies for gaining subject matter knowledge and acquiring language are the tools necessary for autonomy, which is the primary goal of education.

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