Language Proficiency, Bilingualism, and Academic Achievement

JIM CUMMINS *Ontario Institute for Studies in Education*

EDITORS' INTRODUCTION

In this chapter, Jim Cummins proposes a distinction between two levels of language proficiency: surface-level conversational proficiency and the deeper level of cognitive academic language proficiency. His work in second language (L2) education is an elaboration of the earlier contributions of theorists in a variety of settings (e.g., Skutnabb-Kangas & Toukomaa (1976) with Finnish immigrants in Sweden, and Donaldson's (1978) studies of child language acquisition in Scotland). The distinction proposed by Cummins has far-reaching implications for both teaching and testing and bears careful consideration for its relevance to content-area instruction.

EVOLUTION OF A THEORETICAL FRAMEWORK FOR CONCEPTUALIZING LANGUAGE PROFICIENCY

Skutnabb-Kangas and Toukomaa (1976) initially drew attention to the distinction between "surface fluency" in a language and academically related aspects of language proficiency. They noted that Finnish immigrant students who were either born in Sweden or who immigrated at a relatively young (i.e., preschool) age appeared to converse in peer-appropriate ways in everyday face-to-face situations in both first language (L1) and second language (L2), despite literacy skills that were very much below age-appropriate levels in both languages. Following Skutnabb-Kangas and Toukomaa (1976), a distinction was introduced between "surface fluency" and "conceptual-linguistic knowledge" (Cummins, 1979b) and was later (Cummins, 1979a, 1980) formalized in terms of basic interpersonal communicative skills (BICS) and cognitive/academic language

proficiency (CALP). The former was defined in terms of "the manifestation of language proficiency in everyday communicative contexts," whereas CALP was conceptualized in terms of the manipulation of language in decontextualized academic situations.
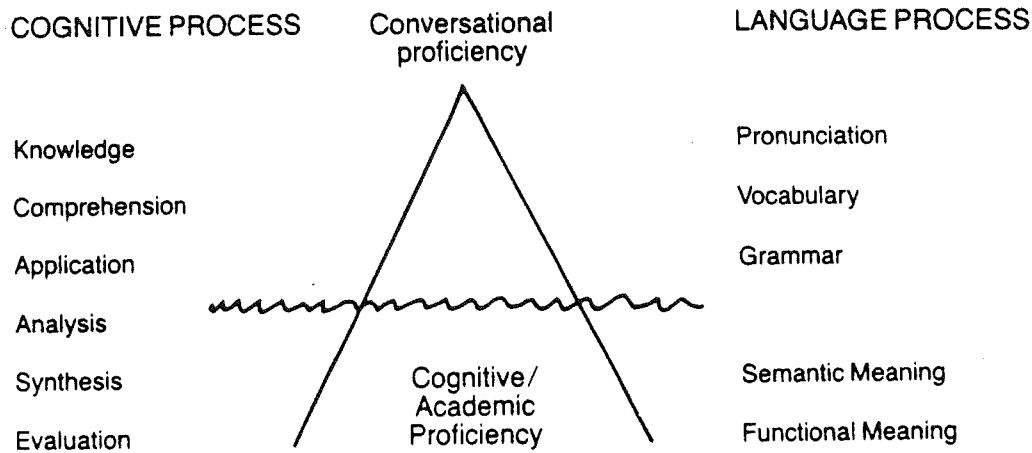
This distinction was applied to a broad range of theoretical and educational situations; for example, it was used to dispute Oller's (1979) theoretical claim that one global dimension could account for all individual differences in "language proficiency" as well as to emphasize the consequences of extrapolating from L2 BICS to L2 CALP in psychological assessment and bilingual education situations.

The distinction between BICS and CALP was expressed in terms of the "iceberg" metaphor adapted from Roger Shuy (1978, 1981). Shuy used the iceberg metaphor to highlight the distinction between the "visible," quantifiable, formal aspects of language (e.g., pronunciation, basic vocabulary, grammar) and the less visible and less easily measured aspects dealing with semantic and functional meaning ("pragmatic" aspects of proficiency in Oller's [1979] terms). He pointed out that most language teaching (whether L1 or L2) attempted to develop functional or communicative proficiency by focusing on the surface forms despite the fact that the direction of language acquisition was from deeper communicative functions of language to the surface forms.

Shuy's (1978, 1981) analysis can be seen as elaborating some of the linguistic realizations of the BICS/CALP distinction. Chamot (1981) and Skinner (1981) have suggested that the cognitive aspects can be elaborated in terms of Bloom's taxonomy of educational objectives (Bloom & Krathwohl, 1977). Specifically, the surface level would involve knowledge (remembering something previously encountered or learned); comprehension (grasp of basic meaning, without necessarily relating it to other material); application (use of abstractions in particular and concrete situations); while the deeper levels of cognitive/academic processing would involve analysis (breaking down a whole into its parts so that the organization of elements is clear); synthesis (putting elements into a coherent whole); and evaluation (judging the adequacy of ideas or material for a given purpose).

The conceptualization of language proficiency to which these notions gave rise is depicted in Figure 2.1. Clearly what is suggested here is not a precise model of proficiency but rather a series of parallel distinctions that are generally consistent with research evidence and appear to have important heuristic value. The major points embodied in the BICS/CALP distinction are that some heretofore neglected aspects of language proficiency are considerably more relevant for students' cognitive and academic progress than are the surface manifestations of proficiency frequently focused on by educators, and that educators' failure to appreciate these differences can have particularly unfortunate consequences for language minority students.

However, any dichotomy inevitably oversimplifies the reality, and it became clear that the terms "BICS" and "CALP" had the potential to be misinterpreted
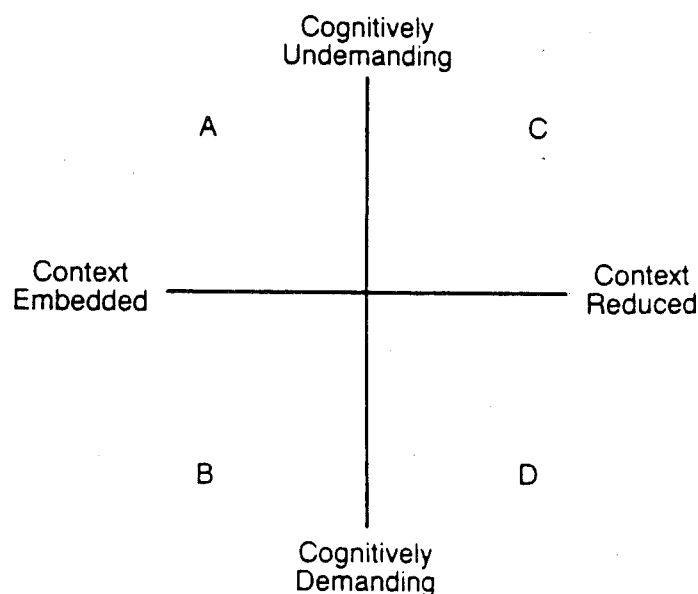
COGNITIVE PROCESS   Conversational   LANGUAGE PROCESS
                          proficiency

Knowledge   Pronunciation

Comprehension   Vocabulary

Application   Grammar

Analysis

Synthesis   Cognitive/   Semantic Meaning
                           Academic
Evaluation   Proficiency   Functional Meaning

Figure 2.1. *Surface and Deeper Levels of Language Proficiency*

(see, e.g., Edelsky et al., 1983; Rivera, 1984). Consequently, the theoretical framework was elaborated in terms of the contextual and cognitive dimensions underlying language performance while still maintaining the essential aspects of the BICS/CALP distinction.

The framework in Figure 2.2 proposes that "language proficiency" can be conceptualized along two continuums. First is a continuum relating to the range of contextual support available for expressing or receiving meaning. The extremes of this continuum are described in terms of "context-embedded" versus "context-reduced" communication. They are distinguished by the fact that in context-embedded communication the participants can actively negotiate meaning (e.g., by providing feedback that the message has not been understood), and the language is supported by a wide range of meaningful paralinguistic and situational cues; context-reduced communication, on the other hand, relies primarily (or at the extreme of the continuum, exclusively) on linguistic cues to meaning, and thus successful interpretation of the message depends heavily on knowledge of the language itself. In general, context-embedded communication is more typical of the everyday world outside the classroom, whereas many of the linguistic demands of the classroom (e.g., manipulating text) reflect communicative activities which are closer to the context-reduced end of the continuum.

The upper parts of the vertical continuum consist of communicative tasks and activities in which the linguistic tools have become largely automatized (mastered) and thus require little active cognitive involvement for appropriate performance. At the lower end of the continuum are tasks and activities in which the communicative tools have not become automatized and thus require active cognitive involvement. Persuading another individual that your point of view is correct and writing an essay are examples of quadrant B and D skills respectively. (See strategies in Chapter 10 for adding contextual support in content-area instruction.)

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                        Cognitively
                       Undemanding
                            |
           A                |                C
                            |
                            |
  Context         _____|_____         Context
  Embedded                  |                    Reduced
                            |
                            |
           B                |                D
                            |
                        Cognitively
                        Demanding
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Figure 2.2. *Range of Contextual Support and*
Degree of Cognitive Involvement in
Communicative Activities

The framework is compatible with several other theoretical distinctions elaborated to elucidate aspects of the relationships between language proficiency and academic development: for example, Bruner's (1975) distinction between communicative and analytic competence, Olson's (1977) distinction between utterance and text, Donaldson's (1978) embedded and disembedded thought and language, and Bereiter and Scardamelia's (1981) distinction between conversation and composition (see Cummins, 1981, 1983b). The current framework owes most to Donaldon's distinction and thus it is briefly considered here.

Embedded and Disembedded Thought and Language

Donaldson (1978) distinguishes between embedded and disembedded cognitive processes from a developmental perspective and is especially concerned with the implications for children's adjustment to formal schooling. She points out that young children's early thought processes and use of language develop within a "flow of meaningful context" in which the logic of words is subjugated to perception of the speaker's intentions and salient features of the situation. Thus, children's (and adults') normal productive speech is embedded within a context of fairly immediate goals, intentions, and familiar patterns of events. However, thinking and language that move beyond the bounds of meaningful interpersonal context make entirely different demands on the individual, in that it is necessary to focus on the linguistic forms themselves for meaning rather than on intentions.

Donaldson (1978) offers a reinterpretation of Piaget's theory of cognitive development from this perspective and reviews a large body of research that supports the distinction between embedded and disembedded thought and language. Her description of preschool children's comprehension and production of language in embedded contexts is especially relevant to current practices in assessment of language proficiency in bilingual programs. She points out that:

> The ease with which preschool children often seem to understand what is said to them is misleading if we take it as an indication of skills with language *per se*. Certainly they commonly understand us, but surely it is not our words alone that they are understanding—for they may be shown to be relying heavily on cues of other kinds. (p. 72)

She goes on to argue that children's facility in producing language that is meaningful and appropriate in interpersonal contexts can also give a misleading impression of overall language proficiency:

> When you produce language, you are in control, you need only talk about what you choose to talk about. . . . The child is never required, when he is himself producing language, to go counter to his own preferred reading of the situation—to the way in which he himself spontaneously sees it. But this is no longer necessarily true when he becomes the listener. And it is frequently not true when he is the listener in the formal situation of a psychological experiment or indeed when he becomes a learner at school. (pp. 73–74)

The relevance of this observation to the tendency of psychologists and teachers to overestimate the extent to which ESL students have overcome difficulties with English is obvious.

Donaldson provides compelling evidence that children are able to manifest much higher levels of cognitive performance when the task is presented in an embedded context, or one that makes "human sense." She goes on to argue that the unnecessary "disembedding" of early instruction in reading and other academic tasks from students' out-of-school experiences contributes significantly to educational difficulties.

Application of the Theoretical Framework

How does the framework elaborated in Figure 2.2 clarify the conceptual confusions that have been considered above? The framework has been applied to a variety of issues which will be only briefly noted here.

First, the context-embedded/context-reduced distinction suggests reasons why ESL students acquire peer-appropriate L2 conversational proficiency sooner than peer-appropriate academic proficiency, specifically the fact that there are considerably more cues to meaning in face-to-face context-embedded situations than in typical context-reduced academic tasks. The implications

for psychological assessment and exit from bilingual programs have already been noted.

A *second* application of the framework relates to language pedagogy. A major aim of schooling is to develop students' ability to manipulate and interpret cognitively demanding context-reduced text. The more initial reading and writing instruction can be embedded in a meaningful communicative context (i.e., related to the child's previous experience), the more successful it is likely to be. The same principle holds for L2 instruction. The more context-embedded the initial L2 input, the more comprehensible it is likely to be, and paradoxically, the more successful in ultimately developing L2 skills in context-reduced situations. A central reason why language minority students have often failed to develop high levels of L2 academic skills is because their initial instruction has emphasized context-reduced communication insofar as instruction has been through English and unrelated to their prior out-of-school experience.

A *third* application concerns the nature of the academic difficulties experienced by most children characterized as "learning disabled" or "language disordered." These students' language and academic problems are usually confined to context-reduced, cognitively demanding situations (see, e.g., Cummins & Das, 1977; Das & Cummins, 1982). For example, children with "language learning disabilities" (Stark & Wallach, 1980) have extreme difficulty acquiring French in typical French as a second language classes where the language is taught as a subject, yet acquire fluency in French in context-embedded French immersion programs (Bruck, 1984). This suggests that it may be especially important for these children to experience instruction that is embedded in a meaningful context.

The framework is also relevant to theories of communicative competence (see, e.g., Oller, 1983a), in that it provides a means for carrying out a task analysis of proficiency measures and predicting relationships among them. For example, it is immediately apparent why the issue of the relationship between "oral" language and reading is so confused. Measures of "oral" language can be located in any one of the four quadrants, and consequently they often have very low correlations with each other (compare, for example, the Wechsler Intelligence Scale for Children [WISC-R] vocabulary subtest with a measure of conversational fluency).

In conclusion, the framework proposed above has the advantage of allowing the academic difficulties of both language minority students and students characterized as "learning disabled" to be conceptualized in terms of more general relationships between language proficiency and academic achievement. The context-embedded/context-reduced and cognitively undemanding/cognitively demanding continuums are clearly not the only dimensions that would require consideration in a theoretical framework designed to incorporate all aspects of language proficiency or communicative competence. However, it is suggested that these dimensions are directly relevant to the relationships between language proficiency and educational achievement and that they

facilitate the interpretation of research data on the linguistic and academic progress of language minority students. In the next section, the cross-lingual dimensions of language proficiency are considered.

CONCEPTUALIZING BILINGUAL PROFICIENCY

On the basis of the fact that in bilingual program evaluations little relationship has been found between amount of instructional time through the majority language and academic achievement in that langauge, it has been suggested that L1 and L2 academic skills are interdependent, i.e., manifestations of a common underlying proficiency. The interdependence principle has been stated formally as follows (Cummins, 1981):

> To the extent that instruction in Lx is effective in promoting proficiency in Lx, transfer of this proficiency to Ly will occur provided there is adequate exposure to Ly (either in school or environment) and adequate motivation to learn Ly. (p. 29)

In concrete terms what this principle means is that in a Spanish-English bilingual program, Spanish instruction that develops L1 reading skills for Spanish-speaking students is not just developing Spanish skills; it is also developing a deeper conceptual and linguistic proficiency that is strongly related to the development of English literacy and general academic skills. In other words, although the surface aspects (e.g., pronunciation, fluency) of, for example, Spanish and English or Chinese and English are clearly separate, there is an underlying cognitive/academic proficiency that is common across languages. This "common underlying proficiency" makes possible the transfer of cognitive/academic or literacy-related skills across languages. Transfer is much more likely to occur from minority to majority language because of the greater exposure to literacy in the majority language and the strong social pressure to learn it.

Continuing with the iceberg metaphor, bilingual proficiency is represented in Figure 2.3 as a "dual iceberg" in which common cross-lingual proficiencies underlie the obviously different surface manifestations of each language. The interdependence or common underlying proficiency principles implies that experience with *either* language can promote development of the proficiency underlying both languages, given adequate motivation and exposure to both either in school or in the wider environment.

What are some of the literacy-related skills involved in the common underlying proficiency? Conceptual knowledge is perhaps the most obvious example. An immigrant child who arrives in North America at, for example, age fifteen, understanding the concept of "honesty" in his or her L1 has only to acquire a new *label* in L2 for an already existing concept. A child, on the other hand, who does not understand the meaning of this term in his or her L1 has a very
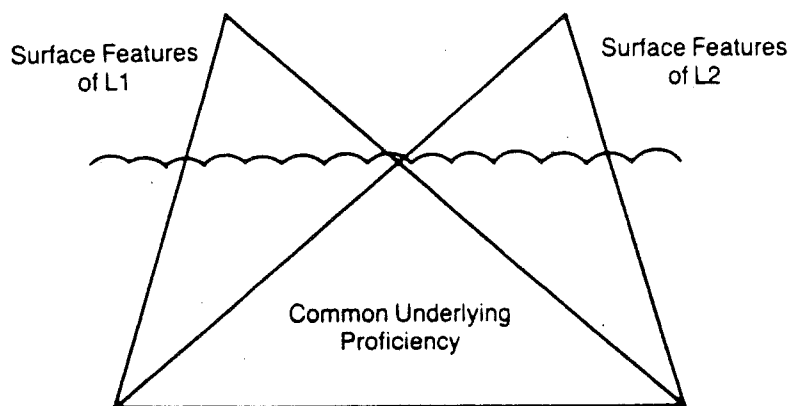
Figure 2.3. *The Dual Iceberg Representation of Bilingual Proficiency*

different, and more difficult, task to acquire the *concept* in L2. By the same token, subject matter knowledge, higher-order thinking skills, reading strategies, writing composition skills, developed through the medium of L1 transfer or become available to L2 given sufficient exposure and motivation.

Common experience also indicates the existence of some form of common underlying proficiency. For example, as John Macnamara (1970) has pointed out, if L1 and L2 proficiencies were separate (i.e., if there were *not* a common underlying proficiency), this would leave the bilingual in a curious predicament in that "he would have great difficulty in 'communicating' with himself. Whenever he switched languages, he would have difficulty in explaining in L2 what he had heard or said in L1" (pp. 25–26).[1]

Comprehensive reviews of the extremely large amount of data supporting the common underlying proficiency principle have been carried out. The supporting evidence is derived from (1) results of bilingual education programs (see Baker & de Kanter, 1981; Cummins, 1983a), (2) studies relating both age on arrival and L1 literacy development to immigrant students' L2 acquisition (see Cummins, 1983b), (3) studies relating bilingual language use in the home to academic achievement, (4) studies of the relationships of L1 and L2 cognitive/academic proficiency (Cummins, 1979a), and (5) experimental studies of bilingual information processing (Katsaiti, 1983).

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[1] Research data (Cummins et al., 1984) suggest that some aspects of context-embedded language skills are also interdependent across languages. Specifically, it was found that Japanese immigrant students in Canada manifested similar interactional styles in both Japanese and English and that these styles in L1 and L2 were related to personality variables. On the basis of these results, Cummins et al. suggest a distinction between "attribute-based" and "input-based" aspects of language proficiency: the former are cross-lingual in nature and reflect stable attributes of the individual (e.g., cognitive skills, personality) while the latter are largely a function of quality and quantity of exposure to the language in the environment.

CONCLUSION

In this chapter, research findings on how long it takes language minority students to acquire English proficiency were reviewed and interpreted within a theoretical framework concerned with the nature of language proficiency and its cross-lingual dimensions. The fact that immigrant students require, on the average, five to seven years to approach grade norms in L2 academic skills, yet show peer-appropriate L2 conversational skills within about two years of arrival, suggests that conversational and academic aspects of language proficiency need to be distinguished. It is apparent that, as a result of failure to take account of these two dimensions of language proficiency, many of the psychological assessments underestimated children's academic potential by assessing students whose academic functioning still reflected insufficient time to attain age-appropriate levels of English proficiency.

Some of the reasons why language minority children acquire L2 conversational skills more rapidly than age-appropriate L2 academic skills are apparent from the dimensions hypothesized to underlie the relationships between language proficiency and academic development. Considerably less knowledge of the L2 itself is required to function appropriately in conversational settings than in academic settings as a result of the greater contextual support available for communicating and receiving meaning.

A large amount of data suggests that L1 and L2 context-reduced, cognitively demanding proficiencies are interdependent or manifestations of a common underlying proficiency. This theoretical principle accounts for the fact that instruction through the medium of a minority language does not result in lower levels of academic performance in the majority language.

Thus, there is little justification for the frequent scepticism expressed by educators about the value of bilingual or heritage language programs, especially for students with potential language or learning difficulties. It is this type of student who appears to need and to benefit most from the promotion of L1 literacy skills and the development of an additive form of bilingualism.

These same findings also suggest how ill-advised it is for educators to encourage parents of bilingual children with learning difficulties to switch to English in the home. This is not only unnecessary in view of the common underlying proficiency principle, but it will often have damaging emotional and cognitive effects as a result of the lower quality and quantity of interaction that parents are likely to provide in their weaker language.

Finally, it is clear on the basis of the data supporting the common underlying proficiency principle that policy in regard to the education of minority students is not as bereft of research evidence as most educators and policymakers appear to believe. Although the causes of minority students' underachievement are not yet fully understood, we do have a partial theoretical basis for policy in that we can predict with confidence the academic outcomes of bilingual programs

implemented in a variety of societal contexts; specifically, we can predict that students instructed through a minority language for all or a part of the school day will perform in majority language academic skills as well as or better than equivalent students instructed entirely through the majority language. For minority students academically at risk there is evidence that strong promotion of L1 proficiency represents an effective way of developing a conceptual and academic foundation for acquiring English literacy.

FOLLOW-UP QUESTIONS AND ACTIVITIES

1. In Figure 2.1, Cummins places language process on the right-hand side and cognitive process on the left-hand side. How do you think the components of each reflect his notions of surface versus deep processing levels? What do you think he means by semantic and functional meaning? How might they relate to the cognitive processes of analysis, synthesis, and evaluation? Do you agree with his interpretation of the relationship between Bloom's taxonomy and BICS/CALP? Explain.

2. Take a look at the quadrants represented in Figure 2.2 that indicate the range of contextual support and the degree of cognitive involvement. Into which quadrant would you place the following activities? Be prepared to explain your decisions.
   a. Listening to a lecture
   b. Conducting a science experiment
   c. Talking on the telephone
   d. Taking standardized achievement tests
   e. Introducing someone to another person
   f. Reading a chapter in the textbook and answering comprehension questions at the end of the chapter

3. According to Cummins, research shows that immigrant students require, on the average, five to seven years to approach grade level in L2 academic skills. What are the implications of this finding for program planning and development? Consider the different program types discussed in Chapter 1. To what extent is each designed with this finding in mind?

4. Recall Cummins's notion of a Common Underlying Proficiency (CUP), which refers to his contention that a student's L1 provides a strong conceptual and academic foundation for acquiring literacy skills in L2. What theoretical support for bilingual education is provided by this notion? Think about the array of backgrounds from which language minority students come when they enter school. According to the principle of CUP, which students would you expect to succeed quite easily in content-area classes? Which students would have more difficulties?

5. Now that you have read this chapter and thought about some of the educational implications of Cummins's theories, what is your reaction to his distinction between BICS and CALP? Does it make theoretical sense to you? Cummins himself says in the chapter that any dichotomy tends to oversimplify reality and that the terms have potential for misinterpretation. What do you think he means? Do you think the concepts will be useful in guiding your instructional decisions and practices? If so, in what ways?