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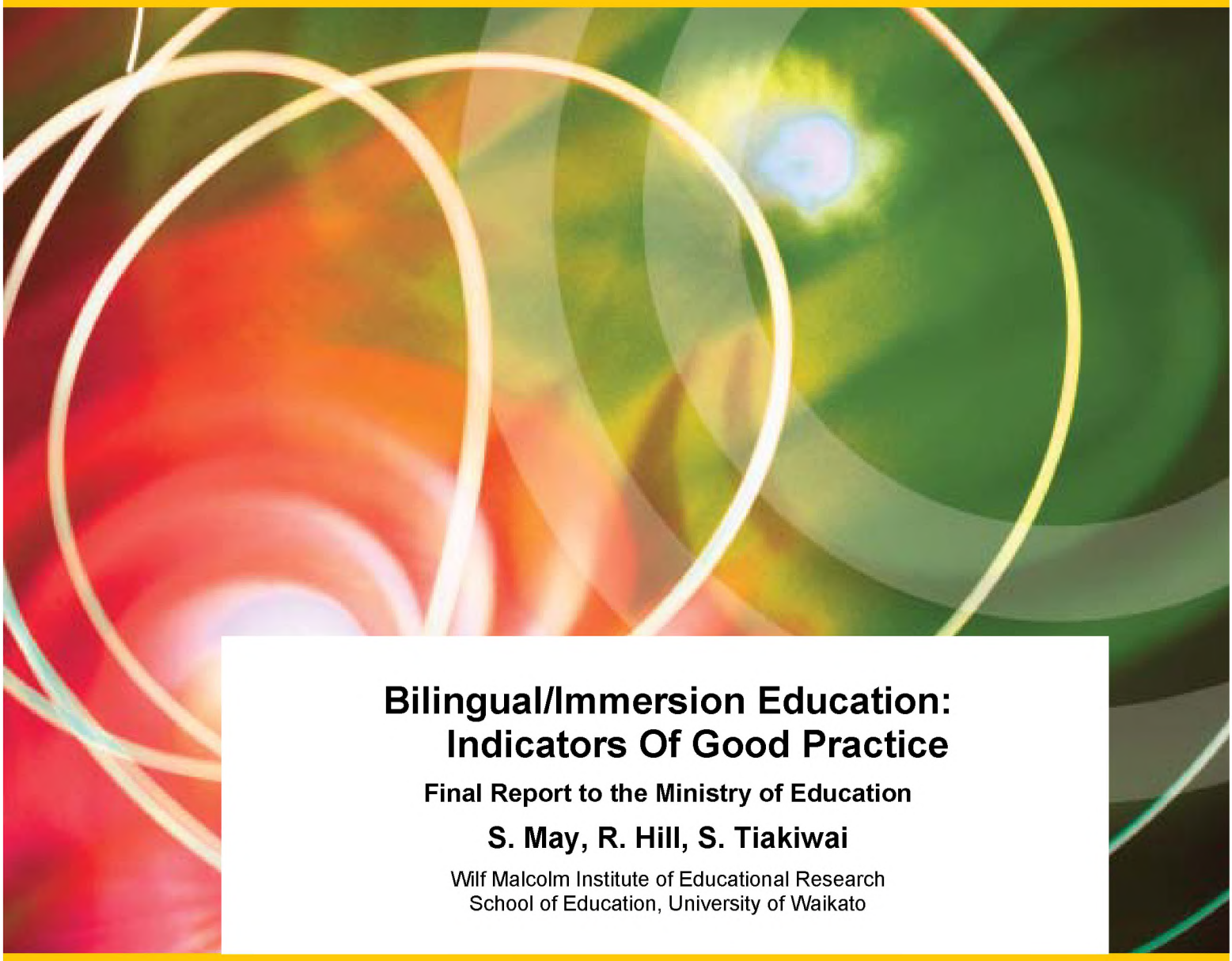

Bilingual/Immersion Education: Indicators Of Good Practice

Final Report to the Ministry of Education

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The University of Waikato
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4. Key Theories of Bilingualism and Bilingual Education

This final section in Part 1 highlights key theories that specifically attempt to link the cognitive dimensions of bilingualism with their education implications. It thus provides a direct bridge to Part 2, which will explore the educational implications of bilingual education, and extrapolate from these, key indicators of good practices.

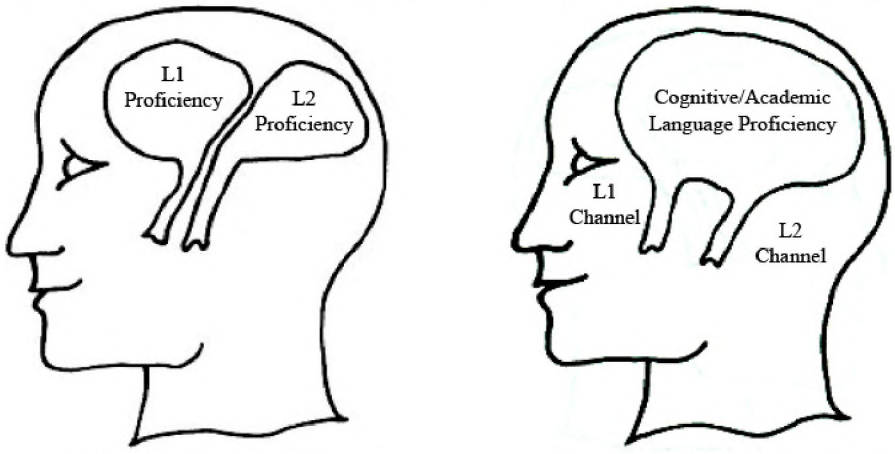
4.1 Cognition and the brain

One of the principal reasons why bilingualism has been viewed pejoratively for so long is because of a basic misconception about how the brain stores languages. In particular, the misconception – still widely held by parents, teachers, and policy makers – is that bilingualism may result in '**cognitive overload**' for the child. Many parents, for example, still decide against bilingual education on this basis, believing it might actually disadvantage their child, not only educationally but also socially and emotionally.

4.1.1 Separate and common underlying proficiency

This misplaced perception of bilingualism is predicated on a model of the mind that has been described in the research literature as the **Separate Underlying Proficiency (SUP)** model. Baker and Prys Jones (1998) describe SUP as viewing the mind as if two languages are housed separately within it – like two balloons, or as a set of scales, for example. In this view, the two language compartments are separated and they also have a limited storage capacity; half of the capacity of a monolingual mind in effect (see Diagram 1). The two languages also seem to work against one another. When some new language is added to one side of the scales, this causes an imbalance on the other side, and hence loss of some of the other language (Baker and Hornberger, 2001). This 'container' view of the mind also underpinned much of the early research on bilingualism (see 3.3).

Diagram 1: Separate Underlying Proficiency/Common Underlying Proficiency



Separate Underlying Proficiency **Common Underlying Proficiency**
(Baker and Hornberger, 2001: 131-132)

The problem with the SUP model is that it not supported by either research or practice. It is clear from the later research on bilingualism that learning a new language does not automatically result in the loss of the other language; there is no '**balanced scales**' (more of one; less of the other) effect. In fact, as Section 3 has highlighted, there are now more

than 150 major research studies which broadly conclude that when children continue to develop their abilities in two or more languages throughout their primary school years, they gain a deeper understanding of language and how to use it effectively (Cummins, 2002: 61).

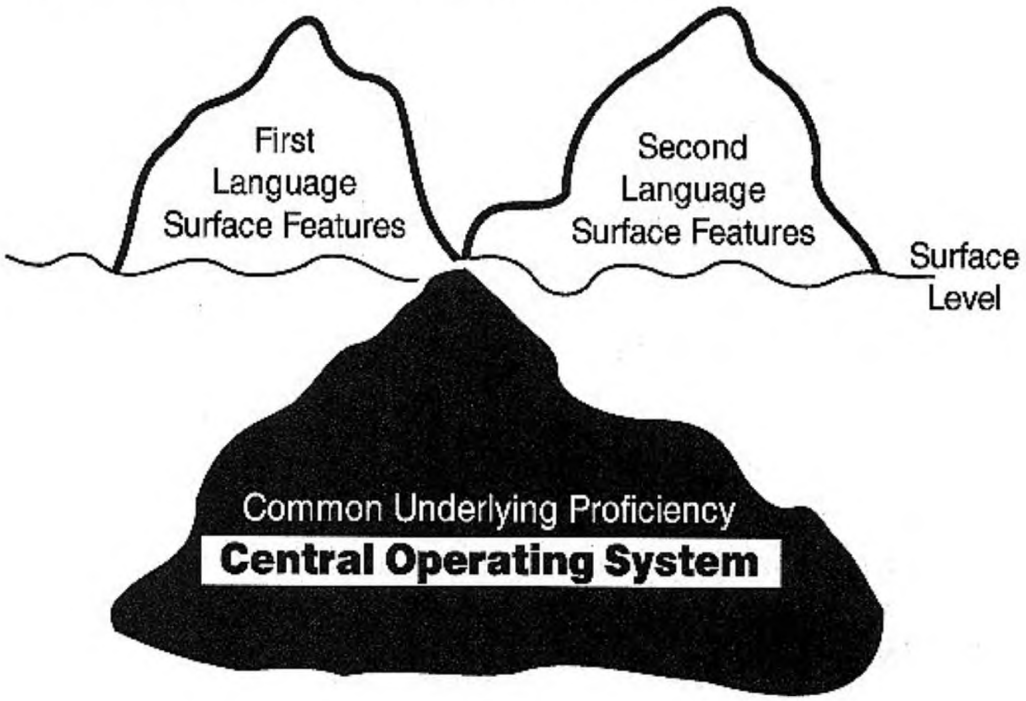
The SUP model is also contradicted by empirical reality. Bilingual or multilingual people actually constitute the majority of the world's speakers, and clearly live in their own contexts without any apparent detrimental effects from their bilingualism. Experience from many years of bilingual education also illustrates that children can be successfully taught to be bilingual (see Part 2) – having no detrimental effects on the acquisition of the other language. This is because skills and knowledge acquired in one language can be readily transferred to another (see 4.6), indicating in turn a link between the two languages in the mind.

In conclusion, the SUP model does not accurately reflect the workings of the mind. In fact, Hoffman (1991) states that this theory simply encourages the misplaced belief that bilingualism may result in some sort of linguistic deficit and that cognitive and educational development may become impaired by the bilingual experience.

The model that more accurately depicts the workings of the mind in relation to bilingual acquisition has been termed the **Common Underlying Proficiency (CUP)** model or the Iceberg Analogy. This model was first suggested by Vygotsky in the 1930s and was subsequently developed by Cummins (1980) in response to an allied misconception that there is a direct link between the amount of exposure to English in school and home, and subsequent achievement in English literacy. This is known as the '**time on task**' theory, and is premised on the notion that maximum exposure in the second language is required for successful language acquisition and learning to occur. Consequently, it is felt that instruction in L1 (for minorities whose first language is not English) lowers or impedes the levels of English proficiency that such students might acquire (Baker and Hornberger, 2001), a position that holds to the container notion of the mind outlined by SUP.

The CUP model (see Diagram 2) is presented in the form of two icebergs. The two icebergs are separate above the surface. That is, two languages are visibly different in outward conversation. Underneath the surface, however, they are fused so that the two languages do not function separately. This is where the storage of a person's two languages occurs. Here lie the associations between concepts, and representations (e.g., words and images) that belong specifically and separately to the two languages. There is also a common area where the two icebergs are fused. Both languages operate through one central processing system that both languages can contribute to, access and use (Baker, 2001; Baker and Prys Jones, 1998; Holmes, 1984)

Diagram 2: Common Underlying Proficiency Model



(Baker, 2001:165)

According to Baker (2001:165-166) the CUP model of bilingualism may be summarized in six parts:

1. Irrespective of the language in which a person is operating, there is one integrated source of thought.

2. Bilingualism and multilingualism are possible because people have the capacity to store easily two or more languages. People can also function in two or more languages with relative ease.

3. Information processing skills and educational attainment may be developed through two languages as well as through one language. Both channels feed the same central processor.

4. The language the child is using in the classroom needs to be sufficiently well developed to be able to process the cognitive challenges of the classroom.

5. Speaking, listening, reading or writing in the first or the second language helps the whole cognitive system to develop. However, if children are made to operate in an insufficiently developed second language (L2) in a subtractive bilingual environment (as occurs for many bilingual students in English-language-only classes), the system will not function at its best. If children are made to operate in these classroom contexts, the quality and quantity of what they learn from complex curriculum materials, and produce in oral and written form, may be relatively weak and impoverished.

6. When one or both languages are not functioning fully (e.g., because of an unfavourable attitude to learning through the second language, or pressure to replace the home language with the majority language), cognitive functioning and academic performance may be negatively affected.

In summary, the still widely held view that the bilingual mind treats languages as though they are housed in separate containers, with an attendant limitation on processing capacity, is *flatly* contradicted by the CUP model. The CUP model is consonant with wider cognitive and neurological research; it is supported by 40 years of academic research on bilingualism; and it is supported by the realities of life in bilingual contexts. Any ongoing misconceptions about the bilingual mind among the wider public can only therefore be explained by the influence of deficit theory, and the differential status and value that certain languages and cultures, particularly minority ones, have within the wider society (see 1.2).

4.2 Thresholds theory

Another widespread misconception is that because many bilingual students, and minority students more broadly, appear to experience limited success at school, this must be the result of their bilingualism. But as we have seen, this is contradicted by the clear weight of evidence in favour of the cognitive advantages of bilingualism. How can this be explained? To a large degree, by the level of bilingual proficiency that a bilingual child is *allowed* to attain.

As 3.4 highlighted, a considerable number of research studies on bilingualism have suggested that the further a child moves towards balanced bilingualism (i.e. high levels of bilingual proficiency in both languages), the greater the likelihood that certain cognitive advantages will accrue (e.g., Cummins, 2000a; Cummins and Mulcahy, 1978; Duncan and De Avila, 1979; Kessler and Quinn, 1982). This same research, however, has also highlighted that when bilinguals find themselves in subtractive bilingual contexts, these advantages may be attenuated and possibly even reversed.

A key theory that addresses these countervailing patterns for bilingual students, at least partially, is the **Thresholds Theory**, first postulated by Cummins (1976) and Toukomaa and Skutnabb-Kangas (1977). The Thresholds Theory was created to address the observation that academic proficiency transfers across languages, such that students who have developed literacy in their first language (L1) will tend to make stronger progression in acquiring literacy in their second language (L2) (see 4.6 for further discussion). Therefore, the use of the students' L1 as a medium of instruction will not detract from their learning an L2, in fact it is likely to *enhance* it (Gonzalez and Schallert, 1999).

The theory is important for two reasons. First, it sought to account for why minority students often fail to cope academically and linguistically when they are submerged in a school environment where their L2, or weaker language, is the language of instruction. Second, contrary to the 'time on task' notion (that is, the greater the quantity of instruction in L2 the better the educational outcome), instruction through a minority L1 does not appear to exert any adverse consequences on the development in the majority language and may, in fact, have considerable positive effects (Cummins, 2000b).