Bilingual/Immersion Education: Indicators Of Good Practice

Final Report to the Ministry of Education

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Our thanks to Group Māori, Ministry of Education, for commissioning this Report, and to Tove Skutnabb-Kangas and John Moorfield for their positive, insightful and useful review comments.

ISBN 0-478-13069-4
Web Copy ISBN no. 0-478-13070-8

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Executive Summary

1. This Report is submitted by the Wilf Malcolm Institute of Educational Research (WMIER), School of Education, University of Waikato. The Project Director was Professor Stephen May and the Principal Researcher was Richard Hill. Sarah Jane Tiakiwai contributed to Part 1 of the Report as a project writer.

2. The Report provides an overview of the international and national research literature on bilingualism and bilingual/immersion education. The aim of the overview is to situate Māori-medium education in relation to attested research and practice on bilingual/immersion education worldwide and, from that, to highlight indicators of good practice for the further development of Māori-medium education. These indicators of good practice can also be applied more broadly to other bilingual education contexts in Aotearoa/New Zealand, such as Pasifika bilingual education.

3. The Report is divided into two principal sections. Part 1 discusses the research literature on bilingualism – focusing on the debates about the cognitive, social and educational effects of bilingualism. It concludes that existing research points unequivocally to the cognitive, social and educational advantages of bilingualism when an additive approach to bilingualism is taken. An additive approach to bilingualism presupposes that bilingualism is a benefit and resource, both for individuals and the wider society, which should be maintained and fostered. In contrast, when a subtractive view of bilingualism is taken – one that presupposes that bilingualism is a problem and/or an obstacle to be overcome – negative cognitive, social, and educational consequences invariably ensue. This latter context occurs most often when bilingual students are required to learn an additional language, such as English, at the specific expense of their first language. This is still the most common experience for bilingual students in the world today and helps to explain why bilingual students, particularly those from minority language communities, are disproportionately represented in the lowest levels of English literacy achievement and wider school success.

4. Part 2 examines the most effective approaches to bilingual education, in light of the conclusions reached in Part 1. In other words, it explores which educational approaches are most effective in promoting long-term bilingualism and biliteracy. For a full understanding, it should be read in conjunction with Part 1, but it can also be read independently of it.

5. Drawing on the international research and evaluation literature on educational programmes for bilingual students, Part 2 concludes that non-bilingual programmes are unequivocally less effective than bilingual programmes for bilingual students. This is because they not only atrophy students’ bilingualism but also result in the most delimited educational outcomes for such students. English-only, or English submersion programmes, are the least effective programmes for bilingual students in this regard, followed by ESL withdrawal programmes. Integrated ESL programmes are more effective, but still less so than the majority of bilingual education programmes. These conclusions are of considerable concern, given the ongoing dominance of English-only and ESL withdrawal programmes as the dominant/default educational experience for bilingual students in Aotearoa/New Zealand schools.
6. In contrast, bilingual education programmes are consistently more effective, although the degree of effectiveness varies, depending on the particular programme. Transitional bilingual programmes, which aim to transfer students from their first language (L1) to a dominant language such as English, are the least effective of the bilingual programmes, given their subtractive bilingual approach. Maintenance and enrichment programmes, which are additive programmes that aim to foster bilingualism and biliteracy, are the most effective. Heritage language programmes, of which Māori-medium is one example, are clearly situated at the maintenance/enrichment end of the continuum.

7. Despite the attested effectiveness of maintenance/enrichment bilingual programmes, examination of the Aotearoa/New Zealand research highlights consistent concerns about bilingual/immersion programmes here. These concerns include:

   - The long-standing and ongoing under-resourcing of Māori-medium education.
   - The lack of sufficient specialist preservice and inservice teacher training in bilingual/immersion education.
   - Ongoing concern about teacher fluency in te reo Māori.
   - The lack of sufficient Māori language assessment resources.
   - The lack of a coordinated national policy on bilingual/immersion education (including the continued absence of a Pasifika bilingual education plan).
   - Ongoing, and widely held, public misunderstandings about bilingualism and bilingual/immersion education.

8. As a consequence, key issues that need to be urgently addressed include:

   **For teachers:**
   - The need to continue to improve the fluency of teachers in Māori-medium education.
   - The particular challenges of teaching in a medium that is a 2nd language (L2) for many students (requiring teacher knowledge of 2nd language acquisition and 2nd language teaching and learning strategies).
   - Further access to, and training in, Māori-medium language assessment resources.
   - Further access to specialist preservice and inservice training in bilingual/immersion education.
For programmes:
The promotion of additive and long-term bilingual/immersion programmes.

Recognizing that a 50% level of immersion is the minimum level of immersion for an effective bilingual/immersion programme.

Consistently using Māori as an instructional (not just organisational) language.

The need to teach academic English language proficiency specifically at some point in Māori-medium programmes, irrespective of the level of immersion.

Keeping languages of instruction separate.

For policy:
The greater equalization of funding for Level 1 and 2 Māori-medium programmes, given that both reach the minimum threshold necessary for effective bilingual/immersion programmes.

The possible redesignation of Level 3 and Level 4 programmes as non-bilingual programmes.

The possible adoption of school profiling as a basis for the future funding of bilingual/immersion programmes.

The promotion of bilingual/immersion programmes for other language groups (particularly Pasifika).

The need for specialist teacher training in bilingual/immersion education that combines language proficiency training in te reo Māori with specialist training in bilingual/immersion education and 2nd language acquisition.

The need to encourage/inform parents and whānau to keep their children in bilingual/immersion programmes for a minimum of 6 years in order to achieve bilingualism and biliteracy successfully.

A wider information strategy that provides parents, whānau, teachers and policy makers with accurate, research-based, evidence on the considerable advantages of bilingual/immersion education.

Further qualitative research/case-study based evidence of existing good practices in bilingual/immersion education in Aotearoa/New Zealand.
Part 1

Bilingualism:

Cognitive, Social and Educational Effects
1. **Part 1: Introduction**

The dominant monolingual orientation is cultivated in the developed world and consequently two languages are considered a nuisance, three languages uneconomic and many languages absurd. In multilingual countries, many languages are facts of life; any restriction in the choice of language is a nuisance, and one language is not only uneconomic, it is absurd. (Pattanayak, 1984: 82)

### 1.1 Key questions

1. **Who is bilingual?**
2. **How does one become bilingual and biliterate?**
3. **What are the cognitive consequences of bilingualism?** (Or, alternatively, how does bilingualism affect cognition?)
4. **What are the key theories of bilingual acquisition?**

Part 1 will thus concentrate on the extensive international research literature now available on bilingualism and cognition, examining and distilling its key research findings as a basis for comparing the types of bilingual education best suited to promoting bilingualism and biliteracy effectively. These latter programmes will thus be examined in Part 2, in light of the conclusions reached in Part 1.

### 1.2 Accounting for the wider social context

First, however, an important caveat needs to be signalled. Bilingualism (and language more broadly) can *never* be examined in isolation from the social and political conditions in which it is used. As Jacob Mey observes:

> linguistic models [including, in this context, models of bilingualism and cognition], no matter how innocent and theoretical they may seem to be, not only have distinct economical, social and political presuppositions, but also consequences ... Linguistic (and other) inequalities don’t cease to exist simply because their … causes are swept under the linguistic rug. (1985: 26)

The significance of the wider social and political context is immediately evident in debates on bilingualism – and, by extension, bilingual education – when we examine the different status attributed to the particular languages under discussion.

For example, bilingualism is often supported, and actively promoted, when it involves the acquisition of supposedly ‘elite’ or ‘majority’ languages such as English, French or German. Following from this, bilingual education in those languages, or even foreign language teaching in schools, despite the latter being a relatively ineffective model of language learning (Baker, 2001; Cummins, 2000b),1 are consistently regarded as providing an advantageous educational opportunity for students. We have seen this recently in Aotearoa/New Zealand, for example, in the widely positive public response to

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1 As Baker (2001) notes, fewer than one in twenty students in the USA become bilingual as a result of foreign language instruction.
the suggested extension of foreign language teaching in schools, signalled in June 2003 as part of the Curriculum Stocktake Review.

Students who experience this type of education are described in the research literature as ‘elective bilinguals’ (see 2.4 for further discussion) because they choose to learn an additional language. The context of such acquisition is also often described as ‘additive bilingualism’. Additive bilingualism sees the addition of a second language at no expense to the first, with the additional language usually being of high prestige. However, additive bilingual contexts need not be limited to the acquisition of so-called elite languages.

In contrast, ongoing bilingualism in a so-called minority, indigenous or community language is still regarded by many as an educational, and wider social impediment, particularly for minority students whose first or preferred language is a minority one (May, 2002a, 2002b). Such students are described in the literature as ‘circumstantial bilinguals’ because the language they speak is not the majority language of the wider society – English, in the Aotearoa/New Zealand context. Consequently, they are required, by circumstance, to learn the majority language as an additional language.

Moreover, such students are often exhorted by others (including their parents and teachers) to learn the majority language as quickly as possible, at the specific expense of the minority language. Similarly, bilingual education for such students is regularly opposed – often by the very same commentators who hold to the benefits of ‘elite bilingualism’ (see May, 2003a for further discussion). The presumption here is that the ongoing retention of a minority language invariably impedes or delays the acquisition of the majority language, although, as we shall find, this presumption is contradicted by research on bilingualism.

What results for many of these minority students is a context of ‘subtractive bilingualism’, where a second (majority) language is seen as being in competition with, and eventually replacing a first (minority; low status) language. In the process, the bilingualism of these students is problematized, even pathologized. Consequently, the potential cognitive advantages attendant upon additive bilingualism are neither recognized nor harnessed in the education of many minority students. Not surprisingly, the subsequent educational trajectories of such students tend also to be markedly different from elective bilinguals, with many falling behind in school-based literacy assessments in English, and in education more generally, despite an emphasis on acquiring the majority language.

This begs a key question, first raised by Cummins (2000b): why should bilingualism be good for the rich, but not for the poor? The answer, of course, is that it need not. However, what we have here, clearly, is not a debate about the merits of bilingualism and bilingual education per se, but rather a social and political debate about the relative status of particular languages, and their speakers, within the wider society. This, in turn, has

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2 This phenomenon is particularly pressing in Aotearoa/New Zealand. International literacy evaluations have for some time now identified New Zealand as having the largest gap in literacy achievement between students whose first language is English, and those for whom it is not (cf. Wilkinson, 1998; PISA, 2000). The apparent contradictions implicit here – particularly, how an emphasis on the majority language at the expense of the minority one can entrench rather than mitigate negative educational outcomes for minority students – will be explored more fully in Part 1: Section 4.
positive or negative consequences for the actual bilingualism of the students involved, depending on how those students are positioned within the wider debates.

In short, bilingualism cannot be examined solely in relation to language itself, but must always be viewed within the wider societal context and with a specific understanding of the particular circumstances of the language communities in question (Hamers and Blanc, 2000; Baker, 2001). These language communities, in turn, are situated in widely different ways within society, with different access to power, recognition and opportunity (May, 2001). Suffice it to say, indigenous peoples, such as Māori, as well as many migrant groups, are most often the least enfranchised of such language groups.

1.3 Implications for educational policy

Adopting this more contextualized view also allows one to explore how the research on bilingualism and bilingual education has been addressed – or, more often, ignored – by educational policy makers, particularly with respect to minority students. While research for the last 40 years has consistently confirmed the cognitive and educational advantages of bilingualism for such students, as the remainder of Part 1 will highlight, its impact on educational policy, and wider public debate continues to be limited (May, 2002a, 2002b, 2003a). This need not remain the case, however, particularly in Aotearoa/New Zealand, where Māori-medium education, most notably via Māori immersion programmes, has already provided a strong, internationally recognized, model of bilingual education.

The review of the literature on bilingualism and cognition will thus provide an important backdrop for assessing the subsequent effectiveness of the variety of approaches and models adopted in bilingual/immersion education, the analysis of which will form the basis of Part 2.

Part 2 will specifically explore the efficacy of models of bilingual education in light of the research literature on bilingual education, as well as the research discussed in Part 1. As a result, it will recommend future policy directions for Māori-medium education. However, it is highly likely that these recommendations will also have direct relevance for other forms of bilingual education in Aotearoa/New Zealand, notably Pasifika bilingual education.
2. Defining Bilingualism

2.1 The problem of definition

One of the major challenges in research on bilingualism is finding an adequate definition of bilingualism itself. This is because, as with most cognitive and linguistic processes, bilingualism is an extremely complex phenomenon – one that may vary widely among individuals, and even within individuals with respect to the languages concerned. As Baker (2001: 2) observes, it is far from ‘simply being about two languages’. Following from this, the distinction between bilingualism and monolingualism is also far from clear-cut. As Baker has argued elsewhere:

Between the notions of complete bilingualism and complete monolingualism there are not only different shades of grey, but different shades of a great range of different colours. Deciding which colours must be included in definition and measurement and the strengths of the shades of colour is a near impossible task. There are no definitive cut-off points to distinguish the bilingual from the monolingual (1988: 2).

2.2 The range of definitions

Accordingly, it should come as no surprise that definitions of bilingualism have varied widely over time.

2.2.1 Early definitions

Early linguists (for example, Bloomfield, 1935; Haugen, 1953; Weinreich, 1968) proposed a range of alternatives that attempted to tether this extremely complex concept. It has been defined and described in terms of categories, scales and, perhaps most often, dichotomies that have been related, in turn, to factors such as proficiency and function (Romaine, 1995).

At one end of the scale, Haugen (1953) observed that bilingualism begins when the speaker of one language can produce meaningful utterances (however limited) in the other language. Macnamara (1966) defines bilinguals as those who possess at least one of the language skills (listening, speaking, reading and writing) in a second language, even if such skills are minimally developed. Weinreich’s (1968: 5) definition of ‘alternately using two languages’ adopts an intermediary position while Bloomfield’s (1935: 56) specification of bilingualism as ‘native-like control of two languages’ constitutes the other end of the scale.

2.2.2 Problems with early definitions

However, these early definitions were problematic for a number of reasons. Most notable among these were their arbitrariness, their ambiguity, and their highly contradictory views of what actually constituted bilingualism. For example, Bloomfield’s definition of ‘native-like’ control of two languages assumes that only the highest levels of language ability, in both languages, can be countenanced as bilingualism. In effect, Bloomfield viewed bilinguals as requiring the equivalent skills of monolinguals in both languages. However, his understanding of ‘native-like’ control, and how it can be defined and measured, is questionable on a number of fronts. First, what actually constitutes ‘native-like’ control of a language – is idiomatic use of a language evidence of native-like control; is the ability to speak and write complex grammatical constructions native-like
control? Second, even if native-like control of a language can be determined, how one might assess this? And, third, why should fluency in a language (see 2.3.1) be necessarily privileged over metalinguistic awareness, or knowledge of a language (see 3.4.2)?

Weinreich’s (1968) definition of ‘alternately using two languages’ is equally difficult to explain and defend, albeit for very different reasons. This is because it does not indicate a minimum or reasonable level of bilingual proficiency. Consequently, it could be used to describe a new language learner who has to codeswitch, or move between languages, in order to compensate for their lack of proficiency in the second language. Or, it could be used to describe a highly proficient bilingual speaker who is able to codeswitch, or swap language modes at will, dependent on context, audience, meaning, and appropriateness. Clearly, these two codeswitching contexts illustrate two quite different levels of bilingual proficiency.

Both Bloomfield’s and Weinreich’s definitions highlight another key limitation of early definitions of bilingualism: they tended to be either minimalist or maximalist in terms of who they included within their ambit (Baker, 2001). That is, they either included almost all people or virtually none. Haugen’s definition, for example, like Weinreich’s, is clearly located at the minimalist end, being so broad as to encompass any person who can make a meaningful utterance in more than one language. This might include a tourist, for example, who has memorized a number of phrases in a foreign language, but does not necessarily understand them.

In addition, these early definitions were invariably unidimensional in the skills that they described a bilingual as possessing; that is, they focused almost solely on the ability to speak a particular language and they ignored non-linguistic functioning (Hamers and Blanc, 2000). Macnamara’s (1966) definition is the only one where reference is made to the four language skills of speaking, listening, reading and writing and, by extension, the important distinction between receptive (listening; reading) and productive (speaking; writing) language skills.

As a result, these definitions of bilingualism cannot distinguish between someone who may speak two languages, but only read and write in one (or none), as opposed to someone who may listen with understanding and read a language – what is termed ‘passive bilingualism’ – but may not be able to speak or write in it. Again, we are clearly addressing very different contexts of individual bilingualism here. In short, early definitions of bilingualism took no account of the complexity and variability of bilingualism, as expressed within and among individual speakers.

### 2.3 Key attributes of bilingualism

In order to untangle the complexity and variability of bilingualism more effectively, we have to address the following key attributes of bilingualism that have been highlighted in subsequent research on bilingualism.

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3 Codeswitching – or codemixing as it is sometimes called – is often perceived negatively, particularly by monolingual speakers. It is taken to be a sign of linguistic deficit, ‘language interference’, or lack of mastery of both languages. However, codeswitching is a sophisticated linguistic tool, and one that almost all proficient bilinguals use instinctively. Codeswitching can be used to emphasize a particular point, clarify a point, reinforce a request, substitute a word, and/or express a concept that does not have direct equivalence in the other language. It can also be used for wider sociolinguistic reasons: indicating solidarity; humour; signalling a change of attitude or relationship; and/or including or excluding someone from the conversation (see Baker, 2001:100-104; see also 2.3.3).
2.3.1 Proficiency

The degree of proficiency that an individual has in each language is an obvious indicator of bilingualism. The key features of language proficiency can be further compartmentalized into issues of fluency in each language (which may differ in individual speakers), and the balance between the two languages – that is, the degree to which proficiency in both languages is comparable (Romaine, 1995, see also Valdes and Figueroa, 1994).

However, the ability to define and measure levels of language proficiency is not as straightforward as it might first appear. Questions persist as to the degree of fluency required of speakers in order to be classed as bilingual, on the one hand, and whether ‘balanced bilingualism’ is an appropriate or even useful benchmark by which to judge bilingualism on the other.

With respect to fluency, do speakers need to be as competent in both languages as a monolingual speaker in order to be classed as bilingual (as Bloomfield would have it)? If not, what degree of fluency is sufficient in one or other of the individual speaker’s languages in order for that speaker to be regarded as bilingual?

Moreover, is the notion of ‘balanced bilingualism’, which is most often used as a point of reference in assessing degrees of bilingualism, an appropriate one? This is an important question to ask since those who tend, most often, to be balanced bilinguals are also those who are socially advantaged ‘elective’ bilinguals – that is, those who choose to speak particular languages and are freely able to do so wherever and whenever they please. In contrast, circumstantial bilinguals – perhaps the majority of bilinguals – are generally delimited in one way or another in their language use, often as a result of wider social pressures to speak one language over another.

Accordingly, many bilingual speakers generally have one language that is stronger than the other, exhibit varying degrees of control over their respective languages at any given point in time, and often use their languages in different domains and for different purposes. For example, an individual may still be in the process of acquiring a second language and is therefore likely to exhibit less proficiency in that language as a result. Alternatively, a bilingual speaker may have spoken two languages from childhood, but one language has since come to dominate. This may be because the dominant language is used more regularly in the particular language contexts in which the speaker finds him/herself and/or because of widely held negative views about the other language, resulting in a decision to speak the other language less, or to stop speaking it altogether (see also 1.2). Certainly, if balanced bilingualism is to continue be the accepted benchmark, then much closer attention needs to be paid to the wider social contexts that either promote or limit the opportunities of speakers to develop balanced bilingualism.

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4 It is when a sufficient number of individual language speakers become ‘convinced’ by these negative perceptions that speaking their language is no longer important, necessary or helpful, that language shift or loss occurs across whole language communities. This is what happened for Māori after the Second World War, when that generation of Māori-speaking parents opted not to continue speaking Māori to their children. This was the result, in turn, of consistently articulated, highly negative, views about te reo Māori within education and the wider society that were inevitably internalised by many Māori speakers over time. This pattern of language shift and loss for Māori is broadly representative of other minority language groups as well (see Skutnabb-Kangas, 2000; May, 2001).
The difficulty of defining degrees of bilingualism led Duncan and De Avila (1979) to clarify and systematize the varying levels apparent in bilingual subjects by rating oral language proficiency in both languages on a scale ranging from 1-5. Working with English-Spanish bilingual children, they used these Language Assessment Scales (one administered for English, one for Spanish) to determine the relative language proficiency (RLP) of English to Spanish for each child. Five levels of proficiency were defined:

1. Complete non-speakers of the language; they may be hearing the language for the first time or may, at most, be able to produce one word utterances.

2. Relative non-speakers of the language; able to speak two-word phrases and occasional simple sentences.

3. Speakers with limited speaking ability; speech contains complete sentences but also includes systematic syntax errors and codeswitching (moving between two languages).

4. Near fluent speakers; speech contains only occasional errors.

5. Totally fluent speakers; speech cannot be differentiated from the speech of a native-speaker of the language.

The 25 possible combinations of RLP that result saw Duncan and De Avila identify three categories of bilingualism: Proficient Bilingual; Partial Bilingual and Limited Bilingual. Two other linguistic comparison groups were also identified: Monolingual and Late Language Learner (that is, a learner who has come to language learning late, perhaps as the result of a trauma or brain injury). The possible combinations, and the categories to which they are attached, are outlined in Table 1:

<table>
<thead>
<tr>
<th>RLP</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1</td>
<td>Late Language Learner</td>
</tr>
<tr>
<td>1/4</td>
<td>Late Language Learner</td>
</tr>
<tr>
<td>1/3</td>
<td>Limited Bilingual</td>
</tr>
<tr>
<td>2/4</td>
<td>Partial Bilingual</td>
</tr>
<tr>
<td>4/4</td>
<td>Proficient Bilingual</td>
</tr>
</tbody>
</table>

(Adapted From Duncan and De Avila, 1979: 32).

There are problems with Duncan and De Avila’s construction of proficiency levels. In particular, there is a clear hierarchy of proficiency established, with a view of proficiency predicated on a ‘balanced bilingual’ approach, and on a definition of bilingualism that would seem to most closely accord with Bloomfield’s (1935) definition of ‘native-like control in both languages’. As has already been discussed, this may not be the typical experience of many bilingual speakers. It also brings into question the appropriateness of applying what is essentially a monolingual conception of language use (full, native-like proficiency in a language) to what are clearly more complex bilingual language contexts. As Hamers and Blanc (2000: 34) note, for example, the difficulties in measuring bilingual
language proficiency may well be due to a lack of hypotheses that focus on the bilingual as being ‘more than [simply] the sum of two monolinguals’.

Added to this limitation are the implicit notions of deficit that attend the ‘limited’ and ‘partial’ bilingual categories (see also the discussion of semilingualism in 4.3.1). In other words, rather than treating these categories as developmental stages of bilingualism – that is, asking what progress the speaker has made in each language at a given point – they are rather assessed in terms of what the speaker lacks. This is a common feature of discussions of bilingualism, and bilingual education (cf. 1.2), and in particular of so-called Non-English-Speaking Background (NESB) students, itself a deficit term (see May, 2002a). Suffice it to say, however ‘limited’ an NESB speaker’s grasp of English might be at any given time, that speaker is likely to exhibit a considerably greater degree of proficiency in English than a monolingual English speaker will in that student’s first language.5

Duncan and De Avila’s identification of degrees of proficiency is useful, however, in highlighting both the complexity and variability of proficiency between a speaker’s two (or more) languages and this, in turn, is useful in explicating the link between bilingualism and cognitive development.

2.3.2 Language use versus language ability

A further complicating feature in defining bilingualism is the issue of language use as distinct from language proficiency.

For example, if a person is asked whether he or she speaks two languages, they might be able to speak two languages, but tend only to speak one language in practice. Alternatively, the individual may regularly speak two languages, but their competence in one language may be limited. Another example might highlight a person who uses one language for conversation and another for reading and writing. The distinction between language proficiency (or ability) and language use therefore becomes important.

The distinction between language proficiency and language use is also sometimes referred to as the difference between degree and function (Hoffman, 1991). A bilingual’s use of their languages (as opposed to their ability in them) is termed functional bilingualism (Baker, 2001). Functional bilingualism relates to when, where, and with whom people use their two languages. Function or context is thus a crucial element when considering bilingualism since language behaviour does not and cannot exist outside the functions it serves. These functions include both the social and psychological, the communicative and the cognitive (Hamers and Blanc, 2000). The discussion in 2.3.1 of the potential limitations of the notion of ‘balanced bilingualism’ also suggests that the functions and uses to which a bilingual’s two languages are put will likely vary widely. Similarly, whether an individual is an ‘elective’ or ‘circumstantial’ bilingual (see 1.2), and whether or not the languages they speak are valued in the wider society, will influence the degree to which an individual speaker may be able to maintain the use of their languages over time.

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5 Given the clear, deficit notions attached to the term NESB – describing students by what they lack (English) rather than what they bring (another language) to the educational context – this Report will avoid the term.
2.3.3 The age factor

The acquisition of bilingualism also varies with age and over time. **Simultaneous bilinguals** are those who acquire two languages simultaneously, usually in early childhood and as a result of family bilingualism. Such language learning contexts tend also to be largely informal. **Sequential or consecutive bilinguals** acquire a second language (L2) after the first language (L1), often in later childhood or in adulthood, and usually as the result of education. Such language learning contexts, at least with respect to L2, thus tend to be formal. Examples of simultaneous bilingualism in Aotearoa/New Zealand can be found among Māori or Pasifika families where te reo Māori, or a Pasifika language, is spoken as a language of the home. Examples of sequential bilingualism can be found in Kōhanga or Kura Kaupapa, with children whose first language, or language of the home, is English.

Early research on family bilingualism found that a very effective method of raising children bilingually is for each parent or caregiver to speak a separate language to the child (Leopold, 1949; Ronjat, 1913). This principle still holds true today (Baker, 2001), although subsequent research has highlighted that effective acquisition of two languages can also occur among families (and communities) that regularly mix languages (García, 1983; Romaine, 1995).

Recent research has also found that children as young as two years of age know how to differentiate language use – that is, which language to speak, to whom, and in what context (De Houwer, 1995; Deuchar and Quay, 1999; Lanza, 1997; Nicoladis, 1998; Nicoladis and Genesee, 1997; Quay, 1994). In a study of Dutch and English bilingual children, De Houwer (1995) discovered that children, at aged three years, could accurately choose the appropriate language with which to speak to a monolingual speaker. With speakers whom they knew to be bilingual, the same children would more readily codeswitch in their conversations. As De Houwer (1995) summarizes it:

…more and more evidence suggests that bilingual children do not differ much from monolingual children in their approach to the language learning task. Like monolingual children, bilingual children pay a lot of attention to the input they receive. They soon notice that this input differs depending on who is talking or where and in what situation someone is talking. Just like monolingual children, bilingual children attempt to talk like the people around them. Because of the bilingual situation, however, the bilingual child has more options that the monolingual one: … at a very young age bilingual children are skilled conversationalists who easily switch languages. (Houwer, 1995: 248)

For sequential bilinguals, education usually plays a far more central role – a connection that will be explored directly in Part 2. For our purposes here, sequential bilingualism usefully highlights the relationship between age and success in learning a second language. In other words, is there a ‘**critical period**’ for successful second language learning? One view is that the younger the child is, the more likely they are to acquire a second language and maintain proficiency in it over the longer term. Another view is that older children and adults bring more knowledge and understanding of language (metalinguistic awareness) to language learning (see also 3.3.1).

Singleton (1989) provides a useful summary of the debates over age and second language learning (see also Baker, 2001: 97-98):
1. Younger second language learners are neither intrinsically more nor less efficient and successful than older learners in second language acquisition.

2. Children who learn a second language in childhood do tend to achieve higher levels of proficiency in that language than those who begin after childhood. This does not mean, however, that an older learner cannot also become highly proficient in a second language.

3. In a formal classroom language-learning situation, older learners tend initially to learn quicker than younger learners, given their greater knowledge about language. However, the length of exposure to a language (e.g., the number of years of second language instruction) is an important factor in second language success (see also 4.5). Consequently, those children who begin to learn a second language early in primary school, and continue throughout schooling, tend to demonstrate higher proficiency than those who start to learn the second language later in their schooling. Again, however, this does not preclude later learners from becoming proficient, particularly when they are highly motivated.

One further general point can be made about age and bilingualism. If learners can become bilingual over time, then so too can bilingualism be lost over time. Thus, a simultaneous bilingual who may have acquired proficiency in both languages as a child could subsequently ‘lose’ proficiency in one in adulthood if one language is no longer regularly used. This highlights the need to distinguish between childhood, adolescent, and adult bilingualism. Along with the age of acquisition, other factors such as the context of acquisition, the use of the two languages, and the wider status attached to particular languages, become influential here.

2.4 Incorporating the attributes of bilingualism

The various key dimensions of bilingualism that have been discussed thus far have been summarized by Valdez and Figueroa (1994) as:

1. Age
2. Ability (proficiency)
3. Balance
4. Development
5. Contexts (of use)

To this can also be added the notion of language choice, reflected in the distinction between ‘elective’ and ‘circumstantial’ bilinguals discussed briefly in 1.2. As we saw there, elective and circumstantial bilinguals often have very different language choices. Elective bilinguals have the luxury of choosing the languages they want to learn. These, in turn, are often high-status languages that are deemed to add significantly to their cultural and linguistic capital. Circumstantial bilinguals are most often migrants and refugees who almost always have to learn another language, simply in order to survive and function in a new society. Moreover, their first languages are often viewed pejoratively and may be actively discouraged in the pursuit of acquiring the majority language. This results in a context of subtractive bilingualism that may lead to eventual language shift from the minority language to the majority language for the individual, and also often the wider group.
The legacy of subtractive bilingualism also explains the basis for many of the ongoing misconceptions about bilingualism and bilingual education, particularly evident among monolingual speakers of English (see also 4.1). Accordingly, any definition of bilingualism must acknowledge these wider social and cultural pressures on individual bilinguals.

2.4.1 Hornberger’s Continua of Biliteracy

The complexity of bilingualism highlighted thus far requires a model of bilingualism that does this complexity justice. One such model is Hornberger’s (1989) Continua of Biliteracy which usefully highlights the various interconnections between bilingualism and biliteracy. The strength of this model is its consideration of the multiple relationships between different types of bilinguals, and their language use, as a part of a continuum rather than as a dichotomy. Hornberger (1989) argues that rather than concern ourselves with ‘polar opposites, … in order to understand any particular instance of biliteracy, be it a biliterate individual, situation, or society, we need to take account of all dimensions represented by the continua’.

The model uses the notion of intersecting and nested continua (see Figures 1-3 below) to ‘demonstrate the multiple and complex interrelationships between bilingualism and literacy and the importance of the contexts and media through which biliteracy develops’ (Hornberger, 1989).6

As can be seen in Figures 1-3, Hornberger has represented the interrelated nature of the continua by means of the three-dimensionality of the individual figures depicted. Thus, for example, in Figure 2, biliterate development in the individual is seen in terms of three continua: the reception-production continuum, the oral language-written language continuum and the L1-L2 continuum. The reception-production continuum sees the traditional dichotomy between oral and written skills development, and production/reception skills, superseded by a continuum that allows for development in either direction. The oral-written language continuum likewise shows that oral and written skills lie on a continuum and are not simply unidimensional (cf. 2.2.2). Finally, the L1-L2 transfer continuum shows us that language development occurs not only within a language but also between an individual’s two languages, and in the interrelationship between them.

This highlights a wider point: that the development of bilingualism and biliteracy never occurs in isolation. As Hornberger (1989: 281) observes, ‘the development of biliteracy in individuals occurs along the continua in direct response to the contextual demands placed on these individuals’, thus explicitly linking developments in Figure 2 with those in Figure 1 (de Mejia, 2002).

Overall, the emphasis is not on any particular points that may be identified on a continuum. Instead, these points should be regarded as not ‘finite, static or discrete … [but] inevitably and inextricably related to all other points [on the continuum]’

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6 Hornberger’s original formulation had nine continua, relating to biliterate contexts, media and development. In a later version she and Skilton-Sylvester have included three more continua, relating to the content of biliteracy (Hornberger and Skilton-Sylvester, 2000). In this later version the original emphasis on sociolinguistic and educational aspects has been extended to incorporate political dimensions as well.
In this view, the interrelatedness and complexity of the phenomena of bilingualism are foregrounded, rather than a focus on individual characteristics (de Mejia, 2002).

**Figure 1:** Continua of biliterate contexts

**Figure 2:** Continua of biliterate development in the individual (Hornberger, 1989).

**Figure 3:** Nested relationships among the continua of biliteracy (Hornberger and Skilton-Sylvester, 2000)
3. Research on Bilingualism

The complexities involved in defining and understanding bilingualism are also clearly evident when we examine the history of bilingual research. In fact, the varying definitions of bilingualism that have been proffered over time (see 2.2) help to explain the different results that have been ‘discovered’ about bilingualism. In particular, the results from bilingual research prior to 1960 differ markedly from results after 1960, for reasons that will soon become clear.

3.1 Early bilingual research

Early research on bilingualism – conducted primarily between 1920-1960 – claimed to demonstrate that bilingualism was largely a negative phenomenon. These studies broadly concluded that bilingualism resulted in cognitive deficiencies, lower IQ scores, even mental retardation. Indeed, terms such as ‘mental confusion’ and ‘language handicap’ were often associated with bilingual children in these studies (Cummins, 1979a; 1984b) and it was argued that these factors, in turn, negatively affected their academic performance. Darcy (1953), for example, concluded that ‘the general trend in the literature relating to the effect of bilingualism upon the measure of intelligence has been toward the conclusion that bilinguals suffer from a language handicap when measured by verbal tests of intelligence’ (our emphasis).

Other studies reinforced this assumption by demonstrating a range of other supposed deficiencies exhibited by bilinguals. Specifically, the large majority of these studies reported that, in comparison with monolingual children, bilingual children exhibited a verbal deficit in both passive and active vocabulary, sentence length, and the use of complex and compound sentences. Bilingual children were also said to use more deviant forms in their speech, exhibit more grammatical errors, and have deficient non-verbal abilities in mathematics (Lee, 1996).

General indications from these early studies, then, were that monolingual children were up to three years ahead of bilingual children in various skills relating to verbal and nonverbal intelligence. In fact, even as late as 1966, one writer was still able to claim that bilingualism could impair the intelligence of a whole ethnic group (Weisgerber 1966, cited in Romaine, 1995).

3.1.1 Saer’s study

One of the most widely-cited studies to conclude that bilingualism had a negative effect on children’s intelligence was Saer’s (1924) study of 1400 Welsh/English bilingual children between the ages of 7 and 14 in five rural and two urban areas of Wales. Using the 1916 Stanford-Binet IQ Scale, in combination with other tests to measure intelligence, Saer found the following differences in the four language groups:
Table 2: Saer’s IQ Averages by Language Group

<table>
<thead>
<tr>
<th>Language Group</th>
<th>Average IQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Bilinguals</td>
<td>100</td>
</tr>
<tr>
<td>Urban Monolinguals (English speakers)</td>
<td>99</td>
</tr>
<tr>
<td>Rural Monolinguals (English speakers)</td>
<td>96</td>
</tr>
<tr>
<td>Rural Bilinguals</td>
<td>86</td>
</tr>
</tbody>
</table>

(Adapted from Baker, 1988: 11)

Although no real difference could be found between urban bilinguals and monolinguals, Saer concluded that bilingualism resulted in lower intelligence because of the lower scores obtained by bilingual children in rural areas. Saer’s explanation was that the urban children managed to resolve the emotional conflicts between the use of English and Welsh at an earlier age than rural children. On a Rhythm test bilinguals were also found to be two years behind their monolingual peers, further supporting Saer’s conclusion that bilinguals were ‘mentally confused’ and at a disadvantage compared with monolinguals.

Several criticisms can be made, however, about both the design and conclusions of Saer’s study. First, the disparity between urban and rural bilinguals is not satisfactorily accounted for in concluding bilingual disadvantage. The relative disadvantage of rural bilingual children could well be explained, for example, by a lack of opportunity and contexts to use and hear English. A later study by Morrison (1958) also indicates that when social class variables in this study are accounted for no differences in IQ between rural and urban bilinguals could be found. As Romaine (1995) observes, correlations of the type assumed by Saer simply do not allow inference of cause and effect relationships (see also 3.4.6).

3.2 Limitations of early bilingual research

Saer’s research is indicative of the deficiencies of much of the research conducted over this period of time. Baker (2001) argues that much of this early research is invalid by present standards because of deficiencies in testing, experimental design, statistical analysis and sampling. These limitations can be summarized as follows.

3.2.1. The problem of ‘intelligence’

Early studies of bilingualism were almost always related to measures of intelligence, or IQ. However, both the concept of ‘intelligence’ itself and the use of intelligence tests are highly controversial. A simple view of intelligence can be comfortable for language majorities if they believe social inequalities are based on lack of ‘intelligence’ in an ethnic or linguistic minority, as was clearly the case in these early studies. However, such a view conveniently ‘releases one from an obligation to entertain the uncomfortable view that inequalities are created by ourselves, and are neither natural nor inevitable’ (Howe, 1997:139).
Baker (2001) identifies four related contentions about intelligence and intelligence testing:

1. Does intelligence comprise one unitary factor, or can intelligence be divided into a wide variety of factors or components? A multifactor view of intelligence, now widely accepted in studies of cognition, is more likely to reveal differences between monolinguals and bilinguals (see 3.3.1; 3.4). In contrast, many of the early research studies were premised on the assumption that bilingual children’s lower verbal intelligence was a result of the ‘balance effect’ whereby proficiency in a second language necessitated a loss in proficiency in one’s first language (Macnamara, 1966). This theory, employed by early studies to argue that bilinguals could never become as linguistically proficient as monolinguals, is now completely discredited (see 4.1.1).

2. There is ongoing fierce debate about the relative effects of heredity and environment on the development of intelligence. An environmental view of the origins of intelligence may be more appealing to supporters of bilingualism. The ‘extra’ experience of two languages may thus contribute to the nature and growth of intelligence.

3. IQ tests tend to relate to a middle class, white, Western view of intelligence. The cultural boundedness or relativity of IQ tests suggests that crosscultural generalizations are therefore dangerous and limited (Valdes and Figueroa, 1994). The fact that these tests were often used as a basis to deprecate other ethnic groups bears out this concern.7

4. If the problems with IQ tests were not enough on their own, the language of the IQ test given to bilinguals is also a significant factor in the results. It is obviously preferable here to test bilinguals in their stronger language or in both languages. However, in the early research, many verbal IQ tests were administered in English only, as for example in Saer’s study. This would almost certainly explain the poorer performance of bilinguals in ‘verbal intelligence’ scores.

3.2.2 Generalization
Another problem concerns sampling and the generalization of research results to the population of bilinguals. With all research, the findings should be restricted to the population that the sample exactly represents. In particular, research using a non-random sample of a population, merely a convenience sample, should theoretically have no generalization beyond that sample. Much of the early research on bilingualism and cognition was based on convenience samples, and so should be viewed accordingly.

A related factor here is that early research tended to use simple averages when comparing monolingual and bilingual groups. Statistical tests were often not performed to see whether the differences between the average scores were real or due to chance factors.

7 Hakuta (1986) specifically ties the negative bias of early bilingual research to the prevailing social and political climate in the early 1900s, particularly in the USA, that resulted in the widespread use of IQ tests as a means of screening (out) immigrant groups (see also, Gould, 1981).
3.2.3 Context
The specific language and cultural environment of the research sample also needs to be carefully considered. This relates to the notion of subtractive and additive bilingual environments. The subtractive environments that many minority language groups find themselves in may well explain subsequent negative, detrimental cognitive findings. Where bilingualism has high prestige in an additive environment, a more positive pattern of results may be more likely (see also 3.2.4; 3.3; 3.4; 4.2).

In addition, IQ and similar tests are presented as ‘context-free’ circumstances. In reality, ‘intelligent’ responses will invariably be affected by the particular context in which a task is completed.

3.2.4 Comparability
The problem of comparability is particularly important. To compare a group of bilingual children with monolinguals on IQ, or on any other measure of cognitive ability, requires that the two groups be equal in all other respects. To exert such control, subjects should either be matched in the study itself on variables such as socioeconomic status, gender, age, type of school attended, urban/rural contexts, and subtractive/additive environments. Alternatively, confounding variables should be accounted for statistically through analyses of covariance.

Cummins (1984b) observes that in many of the early studies of bilingualism, control of confounding variables, such as socioeconomic status, was noticeably absent. As with Saer’s study, bilingual children from lower socioeconomic groups were regularly compared with monolingual children from high socioeconomic backgrounds. The subsequent differences encountered between the two groups could thus well have resulted from these socioeconomic factors rather than bilingualism per se. Cummins (1979a; 1987), suggests, using the distinction between additive and subtractive bilingualism, that the negative findings of early research were almost always associated with subtractive forms of bilingualism (see also 4.2).

3.2.5 Classification
The question of matched groups relates closely to the wider problem of classification. Perhaps the major limitation of early studies of bilingualism was the failure to classify adequately the bilingual subjects involved with respect to the varying degrees of bilingualism they exhibited. If the varying dimensions of bilingualism described in 2.3 are any indication, it is clear, as Hornby (1977: 3) observes, that ‘bilingualism is not an all or nothing property, [it] is an individual characteristic that may exist to degrees varying from minimal competency to complete mastery of more than one language’. As such, a simple and unambiguous classification of subjects into a bilingual grouping is not possible.

Before any conclusions can be drawn about the possible effects of bilingualism on cognitive growth, questions need to be asked as to the dimensions used to determine subjects as competent in two languages, and concerning the degree of fluency they exhibit in each language (Tunmer and Myhill, 1984). This was invariably not attempted in early bilingual studies. In Saer’s study, for example, the child was determined as bilingual if a foreign language was spoken at home, regardless of who spoke it, or to whom (Skutnabb-Kangas, 1981).
While the focus of this section is on early bilingual studies, it is worth pointing out that later studies have also failed to account for these factors. Tsushima and Hogan (1975) found in a study of grade 4 and 5 Japanese-English bilinguals that these bilinguals performed at a significantly lower level on measures of verbal and academic skills than a monolingual group matched on nonverbal IQ. Tsushima and Hogan reported that the bilingual children had been exposed to both English and Japanese in the home from an early age. However, they gave no details of the present pattern of bilingual usage in the home, or of the bilingual’s relative competence in both languages – that is, their ‘relative language proficiency’, in Duncan and De Avila’s (1979) terms (see 2.3.1). Thus, while this particular study may provide evidence of an increasing deficit in verbal skills among these particular bilingual children between grades 3 and 5, it fails to provide any information on the bilingual learning conditions under which such a deficit might occur.

Similar criticisms can be made of Torrance, Gowan, Wu and Allioti’s (1970) study of over 1000 Singaporean grade 3 and 5 children attending English (L2) medium schools. They found that the bilingual children performed at a significantly lower level than monolingual children on the fluency and flexibility scales of the Torrance Tests of Creative Thinking. Despite the numbers involved, however, little detail was given regarding the comparability of the groups, neither in terms of IQ or socioeconomic status, nor about the level of bilingualism of the bilingual subjects.

3.3 Later bilingual research

Increasing concerns over the limitations of many of the underlying assumptions and methodological approaches used in early bilingual research led other researchers subsequently to adopt a different approach. This broad change in direction was due largely to the work of Peal and Lambert in the 1960s, and has resulted in a pattern of bilingual research, since then, that has consistently emphasized the positive, or additive dimensions of bilingualism.

3.3.1 Peal and Lambert

A major turning point in the research on IQ and bilingualism was reached in 1962 with the publication of Peal and Lambert’s research on French-Canadian children in Canada. This was one of the first well-controlled studies in which bilinguals scored better than monolinguals. It thus broke away from the otherwise almost uniformly negative pattern of results established for bilinguals in previous studies.

In this large scale Canadian study, Peal and Lambert compared the test performances of French-English bilingual and French monolingual children in Montreal. The two groups were carefully matched for social class, educational opportunities, age and degree of bilingualism. The sample of children used in the study comprised 164 10–year-olds from six middle-class French schools in Montreal with a gender ratio of six boys to every four girls. The original sample of 364 children had been narrowed down to 164 children by measures of bilingualism, which allowed for the inclusion of only ‘balanced’ bilinguals. Balanced bilinguals, who were equally proficient in both languages, were distinguished from ‘pseudo-bilinguals’ who, for various reasons, had not attained age-appropriate

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8 Used as a measure of divergent thinking; see 3.4.
9 That said, some early researchers – notably, Leopold and Vygotsky – had already recognized the positive dimensions of bilingualism, see 3.4.
10 The following summary is drawn primarily from Baker, 1988, 2001.
abilities in the second language. The authors then further reduced the sample to 110 children so that there would be equal numbers of bilinguals and monolinguals in each of the seven socioeconomic classes.

Having accounted for these variables, Peal and Lambert found that bilingual children scored better than monolingual children on both verbal and nonverbal tests of intelligence. In particular, they noted that bilinguals were especially good on the subtests that required mental manipulation and the reorganization of visual patterns, and on concept formation tasks that required mental or symbolic flexibility. Separate factor analyses revealed a difference in factor structure between bilinguals and monolinguals. As a result, Peal and Lambert suggested that this implied a difference in the structure of the intellect, with bilinguals having a more diversified intelligence. They concluded that the bilingual was at an advantage because the bilingual’s two language systems seem to ensure:

- a mental flexibility,
- a superiority in concept formation,
- and a more diversified set of mental abilities, in the sense that the patterns of abilities developed by bilinguals were more heterogeneous.

It is not possible to state from the present study whether the more intelligent child became bilingual or whether bilingualism aided his [sic] intellectual development, but there is no question about the fact that he is superior intellectually. In contrast, the monolingual appears to have a more unitary structure of intelligence, which he must use for all types of intellectual tasks (1962: 20).

Peal and Lambert's research, however, still has its own methodological flaws. It has been criticized on the grounds that its sample of 110 children (or the original 364 for that matter) is not representative of any defined population. Therefore, the results cannot be generalized beyond the particular children involved (see 3.2.2), while the use of ‘balanced’ bilinguals is also a source of contention (see 2.3.1).

Despite these methodological concerns, Peal and Lambert's research remains a watershed study. Baker (2001) has posited three reasons for its significance to the history of bilingual research. First, the research was methodologically more advanced, accounting for previous inadequacies in the control of variables, and including a more sophisticated statistical analysis. Second, and partly because of this obvious improvement on previous studies, its positive findings have since been widely quoted in support of bilingual policies in a variety of institutional and geographical settings. Third, and perhaps most significantly, it laid the foundations for future research to seek positive consequences of bilingualism, not in terms of the narrow concept of IQ, to which Peal and Lambert were still largely constrained, but in terms of a wider view of cognitive abilities (e.g., thinking styles and strategies). As Baker has observed elsewhere, ‘research after 1962 has tended to move away from the “monistic” notion of IQ to the “pluralistic” notion of a multi-component view of intelligence and cognition’ (1988: 20), a trend consonant with wider developments in cognitive research.
3.4 The advantages of bilingualism

Subsequent research on bilingualism and cognition has also been strikingly consistent in highlighting the cognitive advantages of bilingualism. These can be summarized as follows.

3.4.1 Cognitive flexibility: divergent and convergent thinking

One aspect of cognition that has shown a positive relationship with bilingualism is divergent thinking. Measures of divergent thinking provide subjects with a starting point for thought and ask them to generate a whole series of permissible solutions, for example, ‘think of a paper clip and tell me all the things you could do with it’. It has been suggested by some as an index of creativity while others simply view it as a distinctive cognitive style, reflecting a rich imagination and an ability to scan rapidly a diverse range of possible solutions (Lambert, 1977). In contrast, convergent thinking is measured by tests that provide a number of pieces of information that the subject must synthesize to arrive at the correct answer; the information is provided to converge on a particular solution.

Research has compared bilinguals and monolinguals on a variety of measures of divergent thinking. The majority of research findings have found that bilinguals are superior to monolinguals on divergent thinking tests (see Baker, 1988; Ricciardelli, 1992 for good reviews). This bilingual advantage suggests that the availability of two linguistic systems may enhance cognitive flexibility.

Scott (1973; cited in Cummins and Swain, 1986), for example, reported significant differences between experimental children in the St. Lambert bilingual programme in Montreal and monolingual comparison groups. Controlling for differences between the experimental and control groups for IQ and social class by analysis of co-variance, Scott found that the French-speaking skills of the experimental children at grade 6 level were significantly predicted by earlier (grade 3) divergent thinking abilities. Although the numbers of children in each group were small, the study supports a causal link between bilingualism and cognitive flexibility. With regard to this causality Scott argued for a two-way relationship, maintaining that bilingualism was both the promoter of, and was promoted by, divergent thinking skills (see also 3.4.6).

Cummins (1977) found that balanced bilinguals were superior to a ‘matched’ non-balanced bilingual group on the fluency and flexibility scales of verbal divergence, and marginally on originality. The ‘matched’ monolingual group obtained similar scores to the balanced bilingual group on verbal fluency and flexibility but scored substantially higher than the non-balanced group. On originality, monolinguals scored at a similar level to the non-balanced bilinguals and substantially lower than the balanced group. That there were differences between matched groups of balanced bilinguals and non-balanced bilinguals suggests that bilingualism and superior divergent thinking skills are not simply related. From this, Cummins proposed that there might be a threshold level of linguistic competence that a bilingual child must attain in order to avoid cognitive deficits and allow the potential benefits of becoming bilingual to influence cognitive growth. This thresholds theory is discussed at length in 4.2-4.

The weight of evidence thus suggests that balanced bilinguals have superior divergent thinking skills compared with unbalanced bilinguals and monolinguals. Indeed,
Ricciardelli (1992) reviewed 24 studies on this topic and found that in 20 of these the bilinguals performed at higher levels than the monolinguals. The studies that did not support this pattern sampled less-proficient bilinguals. Having said that, care still needs to be taken in reaching a definitive conclusion, as there are invariably limitations to these studies. These include taking account of variables such as socioeconomic status, small samples, defining the level of bilingualism in the samples, the many meanings the term ‘creativity’ can invoke, and whether the potential advantages are consistent over time (Baker, 2001).

Interestingly, research in this area has found a positive relationship between bilingualism and convergent thinking as well. Kessler and Quinn (1987), for example, have argued that bilinguals exhibit more ability than monolinguals to formulate scientific hypotheses and to write them in increasingly complex syntactic constructions. Subjects for their study were grade 6 children from two intact classrooms, one with higher socioeconomic monolingual English-speaking majority children, the other with Mexican American minority children who were proficient in both Spanish and English. They found that even though the monolinguals were superior to the bilinguals on a standardized test of reading in English, the bilingual children outperformed monolinguals by generating more hypotheses (and using more complex language in so doing), and also drew more extensively on the use of metaphors. Kessler and Quinn argued that the bilinguals’ use of metaphors demonstrated a higher level of convergent thinking than in monolinguals. They also suggested a greater bilingual capacity for divergent thinking when they stated that ‘[b]ilingual children who utilized syntactically more complex language to verbalize their hypotheses were drawing on the innovative aspects of linguistic form’ (ibid: 182).

3.4.2 Metalinguistic awareness
Since the 1960s, a majority of the studies that have examined the cognitive development of bilingual children have focused upon how bilinguals analyze language, and particularly their awareness of the specific nature of the language system. This has come to be termed ‘metalinguistic awareness’. It has been defined by Cazden (1974) as ‘the ability to make language forms opaque and attend to them in and for themselves’. Thus, metalinguistic awareness involves the ability to objectify language, to focus on the form rather than the meaning of sentences (Lee, 1996). It can also be demonstrated at various different levels: phonological awareness (the understanding of sound units), word awareness, and syntactic awareness.

During middle-childhood, children develop the capacity for becoming metalinguistically aware when confronted with certain tasks, such as learning to read (see also the discussion on younger and older language learners in 2.3.3). With regard to bilingualism, it is argued that ‘the presence and use of two codes may prompt greater monitoring and inspection of each, such that metalinguistic awareness is enhanced’ (Cummins, 1987: 64). Furthermore, the enhancement of metalinguistic skills may also be related to an enhancement of higher metacognitive functioning, since cognitive control is necessary to perform metalinguistic operations (Tunmer and Myhill, 1988). These predictions have generally been borne out by the various studies that have explored the nature of this relationship.
Early studies

Werner Leopold (1949) was one of the first to note the positive relationship between bilingualism and metalinguistic awareness. In his seminal study of his two bilingual children he found that both (especially the elder, Hildegard) were able to separate sound and meaning, name and object, earlier than monolingual children. He observed that from an early age they could tell the same story in two languages and switch vocabulary meaningfully in traditional nursery rhymes. Leopold noticed that Hildegard ‘never clung to words, as monolingual children are often reported to do’ (1949: 187) and that there was ‘a noticeable looseness of the link between the phonetic word and its meaning’ (1949: 358). This ability to separate word from referent at an early stage and the awareness of the arbitrary nature of the relationship between word and meaning through the use of two languages led Leopold to conclude a positive advantage in bilingualism.

Vygotsky (1962) also identified early on the significance of metalinguistic awareness in relation to bilingualism. His research technique (which has subsequently been adopted as the methodological basis of more recent research on bilingualism) involved asking children a series of questions about the relationship between words and their referents, such as: ‘could you call a cow *ink* and ink a *cow*?’. As a result of children’s responses to these questions, Vygotsky was led to conclude that young children initially regard words as inhering in their referent objects. Most young children, for example, denied that one could call a cow *ink* and ink a *cow*, suggesting that they were unable to interchange the names of objects. The justifications used to support their denials gave further support to this view. Children argued that an animal was called a cow because it had horns (Tunmer and Myhill, 1984). Vygotsky concluded that the reason why young children were generally unable to perform this task was because ‘an interchange of names would mean an exchange of characteristic features, so inseparable is the connection between them in the child’s mind’ (cited in 1984).

Vygotsky’s concern with the development of metalinguistic and metacognitive abilities, and Leopold's claim that these abilities were enhanced by bilingualism, have formed the basis of subsequent research in exploring these connections. Much of this research, at least to date, has focused on word awareness.

Word awareness

Feldman and Shen (1971), for example, compared the performance of five-year-old US Head Start children, bilingual in Spanish and English, with English monolingual children in tasks of naming and the use of names in sentences. In the naming task children were required to display three types of labelling ability; the use of common names (e.g., call a plate *plate*), the learning of nonsense names (e.g., call a cup *wug*); and the switching of common names (e.g., call a cup *plate*). Children were also tested on their ability to use three kinds of labels from the naming task (common, switched, and nonsense labels) in simple relational sentences, such as ‘The cup is on the plate’. There was no differentiation in performance between monolinguals and bilinguals on knowledge of names and ability to acquire new names, but the bilingual children were superior in switching names and using names in sentences. As Tunmer and Myhill (1984) concluded in a discussion of the study, these results would seem to indicate that while bilingualism may not necessarily prove advantageous in all areas of language functioning, ‘it does appear to be advantageous in the more advanced language skills which require flexibility and the
separation of the referent from its label’. Cummins (1987) adds the caution, however, that the two groups in the study were not matched on IQ and other cognitive measures, and so the results must be considered tentative.

Ianco-Worrall’s (1972) often-cited study compared 30 Afrikaans-English bilingual children aged 4-9 years (who had acquired both languages simultaneously) with two comparable groups of English and Afrikaans monolingual children in South Africa. Groups were matched on IQ, age, sex, school grade and social class. Two experiments were conducted. In the first a typical question was ‘I have three words: cap, can and hat. Which is more like cap, can or hat?’ If a child chose can it suggested the choice was governed by word sound; if hat was chosen the choice was likely to have been based on word meaning. Ianco-Worrall’s results showed little difference between the monolinguals and bilinguals groups, when aged between 7-9 years of age (both responded by choosing word meaning). Differences were significant, however, with children aged between 4-6 years of age. Bilinguals tended to respond to meaning, monolinguals still to word sound. As a result, Ianco-Worrall concluded that bilinguals ‘reach a stage of semantic development, as measured by our test some 2-3 years earlier than their (monolingual) peers’ (1972: 1398).

In a second experiment, Ianco-Worrall asked the children three types of questions that were similar to those used by Vygotsky in his study (see above). Examples of the three types of questions were:

1. Why is a cow called a cow?
2. Suppose you were making up names for things, could you then call a cow dog and a dog cow?
3. Let us call a dog cow. Does this cow have horns? Does this cow give milk?

On the first and third types of questions no difference was found between bilinguals and monolinguals in either age group (4-6 and 7-9-year-olds). On the second type of question, where a yes/no type answer was all that was required, monolinguals would more often reply that names could not be interchanged. This difference was of marginal statistical significance for 4-6-year-olds, and statistically significant for 7-year-olds. Ianco-Worrall concluded that the bilinguals’ greater ability to recognize that names could be interchanged required ‘the formulated concept that names are arbitrarily assigned to things’ (1972: 1399).

Some ambiguities found within Ianco-Worrall's experimental design have been questioned. Baker (1988) suggests that on the evidence of the first experiment, bilinguals may only have a temporary, short-term gain over monolinguals rather than any long-term gain. Cummins (1987) has also argued that the fact that bilinguals agreed more often in her study to the interchangeability of names and objects is capable of another interpretation. An alternative explanation is that bilingual children responded positively because the question is asked positively and bilingual children have been seen to be more sensitive to feedback cues such as this (see also 3.4.3).

Cummins (1978a) attempted to overcome this difficulty in an experiment involving Irish-English bilingual children from Dublin. 53 bilinguals and 53 monolinguals were matched on verbal IQ, socioeconomic class, sex and age. Groups of 8-9-year-olds and 11-12-year-olds were tested. One experiment was similar to Ianco-Worrall's in that children were
asked the question (adopted from Piaget): ‘Suppose you were making up names for things, could you call the sun the moon and the moon the sun?’ The method, called the Arbitrariness of Language Task, differed from Ianco-Worrall in that the children had to give reasons to support and justify their answers. Even with this proviso the bilingual children (in both age groups) were still superior to the monolinguals on the task, although the results were somewhat attenuated.

Ben-Zeev (1977a; 1977b), in two studies involving middle-class Hebrew-English bilinguals and working-class Spanish-English bilinguals, also reported that in comparison with monolingual children matched on IQ, bilingual children were better able to treat sentence structure analytically. She argued that the greater awareness and more intensive analytical ability towards language demonstrated by bilingual children develops as a result of their attempts to keep the two languages apart. This ‘forces the child to develop particular coping strategies which in some way accelerate cognitive development’ (1977a: 1009). These coping strategies required ‘increased scanning of verbal input’, and the processing of syntactic rules ‘with special flexibility’, and were described by Ben-Zeev as ‘hypothesis testing’.

Specifically, Ben-Zeev developed a creative task to assess children’s awareness of referential arbitrariness. She found that the bilingual children consistently outperformed monolinguals on tasks involving ‘symbolic substitution’ – for example, constructing grammatically violated sentences according to the experimenter’s direction. These tasks were designed to measure the children’s awareness of language features as well as the ability to control the automatic production of correct sentences.

For example, in the Hebrew-English bilingual study with children from Israel and the USA, aged 5-8, Ben-Zeev administered a verbal transformation test, in which children were repeatedly presented with a nonsense word (e.g., flime) and asked to comment on whether the stimulus word changed. Bilingual children reported more verbal transformations at an earlier age than monolinguals. Previous research had suggested that such illusory transformations were dependent on the operation of a skilled reorganization mechanism which had developed to aid speech perception and the tendency of bilinguals towards this indicated that they had developed a more skilled speech perception mechanism to cope with the demands of interpreting two language systems (Tunmer and Myhill, 1984).

Ben-Zeev also employed a Symbol Substitution Test, similar to Ianco-Worrall’s name interchange task, which required subjects to substitute one word for another. The following is an example: ‘For this game, the way we say “I” is to say macaroni. So how do we say “I am warm?”’ (Correct answer: Macaroni am warm) (1977a, 1012). To answer correctly a child must resist the interference of word substitution and ignore both word meaning and sentence framing (e.g., avoid saying ‘I am warm’ and ‘Macaroni is warm’). In more difficult exchanges, the subjects also had to violate other grammatical rules, such as rules of concord or sub-categorization. An example of this can be seen in the requirement to substitute clean for into in the sentence ‘The doll is going clean the house’.

Ben-Zeev found that bilingual children were significantly more reliable in making these substitutions than were monolinguals. It was easier for them to ignore the meaning and deal with the formal instructions (Bialystok, 2001a). In contrast, the monolinguals were
more wedded to the familiar meanings of words than their bilingual peers. The results indicated for Ben-Zeev that bilinguals were superior in symbol substitution, not only with regard to meaning, but also with regard to the grammatical rules of sentence construction. As she concludes:

[s]ymbol substitution ... depends ... on a grasp of the basic idea that the structure of a language is different from the phonological representations and meaningful words in which it is embodied, and that it is arbitrary and subject to change, rather than immutable or in the nature of things. The experience that bilinguals have in learning two different language structures apparently fosters this kind of consciousness. (1977: 35)

These studies demonstrate, on the whole, the clear advantages of word awareness for bilinguals over monolinguals. However the results do not always favour the bilingual groups. For example, Cummins (1978) administered four types of metalinguistic tasks to bilinguals and monolinguals, dealing with various aspects of word awareness. There were performance differences between the two groups on only some of the tasks. For example, one task tested whether a child considered the meaning of a word to be stable even when the referenced object had ceased to exist, such as the continued existence of the word giraffe if there were no giraffes left in the world. This task showed a bilingual advantage, especially in older children (Bialystok, 2001b). In another task, the children were asked whether particular words had the physical properties of the objects they represented, for example, is the word book made of paper? Here there were no differences in performance between the monolinguals and the bilinguals. Cummins concluded that bilinguals had greater linguistic flexibility but not a greater reasoning ability for problems that extended beyond the domain of language.

Ben-Zeev (1977a, 1977b) also found a different pattern of result in her two studies, with the working-class Spanish-English bilinguals making significantly fewer errors of a global type, but not exhibiting the same degree of symbol substitution as the middle-class Hebrew-English bilinguals. This suggests that word awareness effects may be less powerful with working-class children, and that this may, in turn, relate to the greater likelihood that such children will find themselves in subtractive, rather than additive, bilingual contexts (see also 4.2).

In short, although many studies have reported bilingual superiority in word awareness tasks, there is no unconditional advantage for bilinguals on all tasks. The advantages tend to be confined to certain tasks, and sometimes to certain parts of tasks (Bialystok, 2001b). However, this of course does not detract from the clear advantages that bilinguals exhibit in these particular tasks.

**Syntactic awareness**

A similar pattern of (qualified) advantage for bilinguals can be demonstrated in relation to syntactic awareness. The need to make a judgment about the grammatical acceptability of a sentence is probably the prototypical metalinguistic task. As such, it is often used to measure syntactic awareness as an index of overall language proficiency.

Using such a strategy, Galambos and Hakuta (1988) compared English-speaking monolinguals and Spanish-English bilinguals for their ability to solve two tasks; first, judging and correcting syntax, and second, determining the ambiguity in sentences and paraphrasing the interpretations. This longitudinal study found consistent advantage for
the bilingual children over the monolingual children in the syntax task, and only the older bilingual children were better than the monolinguals in the ambiguity task.

A more extensive study, based on the same principles, was conducted by Galambos and Goldin-Meadow (1990). They presented Spanish and English monolinguals and Spanish-English bilinguals with a range of problems assessing syntactic awareness. The children were asked to note any errors in the sentences they were presented; they also had to correct them and explain the error. When noting and correcting their errors, the bilinguals progressed faster than the monolinguals and showed significant advantages at all ages tested. However, when explaining the errors, there were no significant advantages for the bilingual children. The authors interpreted the developmental progression as moving from content-based to a structure-based understanding of language, and that bilingual children were more advanced in all areas than monolinguals in this respect. Their conclusion emphasizes that bilingualism alters the rate of development but not its course (Bialystok, 2001b).

A different type of task is one that can alter the difficulty of attending to the grammatical form by introducing misleading information. This method was first used by de Villiers and de Villiers (1972) and was developed further by Bialystok and colleagues (see 2001). In this approach, the subjects are required to decide whether there are grammatical violations. The extent to which they can do this is an indication of their level of grammatical analysis. If the sentence also includes semantic errors, then the difficulty of this task increases further, especially for younger children.

Bialystok’s principal finding is that semantically altered information is very difficult for monolingual children to judge for grammatical acceptability, but that bilingual children are more successful in this task. Again, however, the advantage for bilinguals here is narrowly task-specific rather than a global advantage.

Gathercole (1997) used a grammaticality task to determine whether Spanish-English children could use syntactic cues to distinguish mass nouns from count nouns. She found that older, more fluent bilinguals performed like monolinguals while the younger, weaker bilinguals paid little attention to syntactic cues. This latter group was not using the information as well as the monolinguals. In another study, Gathercole and Montes (1997) found that monolinguals were stronger than bilinguals in both judging and correcting sentences, but that the performance of the bilinguals was influenced by the English input they received at home. This research thus highlights areas where bilinguals do as well as monolinguals but not better.

**Phonological awareness**

**Phonological awareness**, the understanding of the sound units that make up words, is unique among metalinguistic skills in its consequences. Many studies have linked this with progression in reading. Only a few studies, however, have examined phonological awareness in bilingual children. Rubin and Turner (1989) compared phonological awareness of English-speaking first grade children from either French-immersion or English programmes and found advantages for the English-speaking children in French-immersion. Bruck and Genesee (1995) replicated it on a larger scale with kindergarten children but found no advantage by grade one.
More recently, Bialystok, Majumder and Martin (1998) conducted a series of phonological awareness tasks in bilingual and monolingual children across the age range. The task called on the children to replace the first sound in a target word with the first sound from another word to produce a new word. For example *cat* can be converted to *mat* by substituting the first sound of *mop*. The children were told to take away the first sound from *cat* and put in the first sound from *mop*. What is the new word? Bialystok et al. found, however, that there were no differences between the monolinguals and the bilinguals in their ability to solve this problem. They concluded that there is some advantage to bilingual children in learning about the sound structure of spoken language, but it is evident on simple tasks and only for children whose two languages bear some resemblance to each other. Although reliable advantages for bilingual children can be established, they are heavily constrained by other factors.

**Summarizing the research on metalinguistic awareness**

Overall, research studies that have explored the relationship between bilingualism and metalinguistic awareness have consistently found that the following tasks produced advantages for bilingual children: counting words in sentences, symbol substitution, the sun-moon problem, using novel names in sentences, the word-referent problem (giraffe), judging grammaticality of anomalous sentences, and phoneme segmentation. The following tasks did not produce a bilingual advantage: word counts in strings, describing attributes of words, determining ambiguity, explaining grammatical errors, judging grammaticality of incorrect sentences, understanding count-mass noun distinction and phoneme substitution.

The differences evident here, according to Bialystok (2001b), relate to the primary demands imposed by each set of tasks. The former group of tasks includes misleading information, making them high in their demand for control of attention. The latter group of tasks requires detailed knowledge, making them high in their demand for analysis of representations. Bialystok concludes that the effect of bilingualism on children’s development is that it enhances their ability to attend to relevant information in the presence of misleading distractions. There is no domain description that defines this bilingual advantage, however; some tasks are easier for bilinguals and some are not.

In sum, the research here suggests that bilingual children do not have different control over a domain of knowledge than monolinguals. It *is* the case, however, that bilingual children consistently outperform monolingual children on some metalinguistic tasks. Rather than attributing this advantage to privileged access to a particular area, the benefit is traced to a specific cognitive process that develops more readily in bilingual children. This process is central to certain metalinguistic problems, and it is in solving these problems that bilingual children excel (Bialystok, 2001b).

**3.4.3 Communicative sensitivity**

Another area of cognition where bilingual children appear to be relatively advantaged is in the area of **communicative sensitivity**. What is communicative sensitivity? Bilinguals need to be aware of which language to speak in which situation. They need constantly to monitor the appropriate language in which to respond or in which to initiate a conversation. Not only do bilinguals often attempt to avoid ‘interference’ between their two languages, they also have to pick up clues and cues about when to switch languages.
The research literature suggests that this may give a bilingual increased sensitivity to the social nature and communicative functions of language.

In discussing Ianco-Worrall's research in 3.4.2, for example, it was suggested that bilingual children might be more sensitive to feedback cues. Likewise, Ben-Zeev’s (1977b) study found that bilinguals picked up hints and cues more quickly and, once given feedback, corrected their mistakes faster than monolinguals. Ben-Zeev argued that such sensitivity stemmed from constant scanning to see if the language was correct or incorrect. She also argued that there was a twofold motivation for such sensitivity: cognitive and emotional. The cognitive motivation exists in the need to keep the two languages separate since accommodation of two systems requires sensitivity to their separateness. The emotional motivation exists in the need to avoid anxiety which may be generated by loss of status or ridicule should the two languages interfere at any point. Ben-Zeev concluded by arguing that an increased attention to feedback cues had adaptive significance for bilingual children in that it helped them to understand the communication of others, made them aware of their own mistakes, and provided them with information regarding the appropriate times for switching languages.

Further evidence of communicative sensitivity among bilinguals comes from Cummins and Mulcahy (1978). On the test they administered, when children chose only one of two correct answers a prompt was given to see if the other correct answer could be elicited. Bilinguals made better use of the prompts than monolinguals, and subsequently found the second answer more often than monolinguals.

Genesee, Tucker and Lambert (1975) also devised an interesting experiment to test communicative sensitivity. With a group of 5-8-year-old students, they were asked to explain a board game to two listeners. One listener was blindfolded and the other was not. The listeners were not allowed to ask any questions after the explanation. The two who had received the information then had to play the game with a person giving the explanation. It was found that the bilingual children in the study were more sensitive to the needs of the listeners. This bilingual group gave more information to the blindfolded listener than to the sighted listener than did the children in the monolingual comparison group. The researchers concluded that the bilingual group was better able to take the role of others experiencing communication difficulties, to perceive their needs and respond appropriately to their needs.

These research findings also imply that bilingual children may be more sensitive than monolingual children in a social situation that requires careful communication. A bilingual child may be more aware of the needs of the listener. This links with sociolinguistic competence and suggests a heightened social awareness among bilinguals of verbal and non-verbal message cues and clues in communication.

3.4.4 Field dependence and independence
One other well-researched dimension of cognitive style along which people vary is field dependence–independence. Simply stated, some people tend to view in wholes, others in parts. Witkin et al (1962) found that as children grow to maturity they become more field independent. While field dependence-independence may appear as a perceptual ability, Witkin and his co-workers regarded it as a general ability to be aware of visual contexts. This, in turn, can be related to problem solving ability and ease of cognitive restructuring.
Balkan (1970) found that bilinguals were more field independent and that those who learnt their second language before the age of four tended to be more field independent than late learners (who had learnt their second language between 4-8 years). However, Genesee and Hamayan (1980) also found that those who were more field independent learnt a second language better.

A further confirmatory piece of evidence comes from English/Spanish bilinguals in the USA (Duncan and De Avila, 1979). Using the Children’s Embedded Figures Test (see Figure 4), the descending order of scores on field independence was:

1. proficient bilinguals;
2. partial bilinguals, monolinguals and limited bilinguals;
3. late second language learners.

**Figure 4: Embedded Figures Test**

![Embedded Figures Test](Adapted from Baker, 2001:154)

The authors concluded that proficient bilinguals might have advantages in cognitive clarity and in analytical functioning.

The Embedded Figures Test focuses on spatial ability. In contrast, metalinguistic awareness tests (see 3.4.2) focus on linguistic domains. On the surface, they appear to have little in common. Yet bilinguals do well on both tests compared with monolinguals. Are there any features in common between the test that explain bilinguals’ cognitive advantages? Bialystok (1992) argues that there is a commonality: selective attention that transfers across the spatial and linguistic domains. Bilingual children can reconstruct a situation (perceptual or linguistic), focus on the key parts of a problem and select the crucial parts of a solution. They can escape from perceptual seduction and overcome cues that are irrelevant. Their ‘early experience with two languages may lead them to develop more sensitive means for controlling attention to linguistic input. They are used to hearing things referred to in two different ways, and this can alert them earlier to the arbitrariness of referential forms’ (Bialystok, 1992: 510). Such selective attention may transfer across spatial, cognitive and linguistic domains. For Bialystok (1992), it is selective attention that explains bilinguals’ advantages on divergent thinking, creative thinking, metalinguistic awareness, communicative sensitivity, Piagetian tests, and on the embedded Figures Test.

### 3.4.5 Explaining the relationship between bilingualism and cognitive advantage

Cummins (1976) has suggested that there are three different ways one might explain a relationship between bilingualism and cognitive advantage. The first explanation is that bilinguals may have a wider and more varied range of experiences than monolinguals due to their operating in two languages and probably two or more cultures. Cummins believed
at the time that this was a hypothesis yet to be confirmed. This still remains the case today.

The second explanation of the cognitive advantages of bilingualism concerns a switching mechanism. Because bilingual children switch between their two languages, they may be more flexible in their thinking. Neufeld (1974) was critical of this hypothesis, suggesting that monolinguals also switch from one register to another. This second proposition may be a partial explanation only, a small component in a wider and larger whole.

The third explanation is termed the process of ‘objectification’ (Cummins and Gulutsan, 1974; Imedadze, 1960). Bilinguals may consciously and subconsciously compare and contrast their two languages. Comparing nuances of meaning, different grammatical forms, being constantly vigilant over their languages, may be an intrinsic process of being bilingual. Vygotsky (1962: 110) suggested that bilingualism enables a child ‘to see his language as one particular system among many, to view its phenomena under more general categories, and this leads to awareness of his linguistic operations’. This third explanation is backed by the research on the metalinguistic advantages of bilingualism (Diaz and Klinger, 1991). However, as Nicoladis and Genesee (1996) suggest, automatic processing rather than controlled processing is the hallmark of higher cognitive functioning. Therefore, levels of awareness and automatic processing do not fit easily together unless there is ‘subconscious awareness’ in operation. Thus, while objectification may be a component in explaining the cognitive advantages of bilingualism, it is unlikely to be a total explanation.

3.4.6 The question of cause and effect
Similar questions remains over whether bilingualism is a cause of cognitive advantage or an effect (or both). Cummins and Swain (1986) have argued that the direction of causality between bilingualism and cognitive ability could be more clearly ascertained if more longitudinal studies were conducted.11

Indeed, the few that have been undertaken have added considerable empirical weight to the research evidence that has thus far been accumulated. Hakuta and Diaz (1985), for example, in their longitudinal study of Spanish-English bilingual children, found a significant positive relationship between degree of bilingualism and nonverbal cognitive skills as measured by the Raven’s Progressive Matrices Test (a non-verbal ability test). Furthermore, when two alternative models testing for the direction of causality between bilingualism and cognitive ability were examined using the longitudinal data, ‘the model claiming degree of bilingualism to be the causal link was more consistent with the obtained data than the model claiming cognitive ability to be the causal variable’ (1985: 340).

Having said that, however, Fishman (1977) doubts whether the question of the relationship between bilingualism and cognition can ever be resolved by better-controlled experiments. His belief is that every conceivable relationship between the two can obtain. The issue is not so much the determination of whether there is a relationship between these two factors, but in which contexts which type of relationship obtains. It is here that the distinction between additive and subtractive bilingual contexts becomes so important. Hakuta (1986) also quite clearly states the inadvisability of assuming the question of the

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11 The majority of research studies on bilingualism and cognition conducted thus far have been associational in design.
relationship between bilingualism and cognition to be one of simple transference. Framing the question in this way involves two simplifying assumptions. First, that the effect of bilingualism can be reduced to a single dimension, ranging from good to bad. Second, that the choice to raise a child bilingually or not can be evaluated independently of the social circumstances in which the child’s acquisition takes place.

As discussed in 1.2, wider social factors are crucial to any discussion of bilingualism and, by extension, bilingual education. Such factors include the social and economic position of the bilingual (and his or her community or group), the prestige of the two languages, and the educational situation. Thus, the research discussed in this section must continue to be considered in this wider context. How else can we explain the disparities between the views of bilingualism in early research, from those conducted since the 1960s?

3.5 Summary

It is clear from this summary of research on bilingualism that research prior to the 1960s defined bilingualism largely from a **deficit perspective**. From this position, bilingualism was seen as being atypical, while monolingualism was regarded as the norm – this, despite the fact that there are (still) significantly more bilinguals and multilinguals in the world than monolinguals. Likewise, bilingual subjects were problematized and pathologized in these studies and explanations were sought to explain and/or ‘remedy’ their deficiencies. This amounted to a subtractive view of bilingualism.

Peal and Lambert’s (1962) study, though not without its critics, proved a watershed study in redirecting the focus of bilingual research away from this deficit perspective to one that was prepared to acknowledge the positive, or additive, dimensions of bilingualism. Research since that time, as we have shown, has broadly demonstrated this to be the case, particularly in identifying certain advantages that bilinguals have over monolinguals in a variety of cognitive and metacognitive tasks.

Part 2 will show how these advantages can be directly harnessed towards the successful educational achievement of bilingual students. This is an urgent task, since the ongoing dominance of subtractive accounts of bilingualism may no longer be evident in research, but remains prevalent among teachers, administrators, and the wider public (see 4.1). It is for this reason that many bilingual students in schools do not experience either their own bilingualism, or their overall schooling experience, as a positive one. Such negative experiences also help to explain why some minority bilingual students do not succeed in schools to the same degree as other students (see 4.2-4.5).
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

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

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).
The Thresholds model resembles a three-storied house (See Diagram 3), each floor of the house signifying a level of bilingual proficiency. At each floor there is a description of the level of linguistic ability and, associated with this, particular cognitive and linguistic consequences. In order for an individual to benefit fully from bilingual education, Cummins argues that she needs to progress beyond the second floor and, ideally, to the third.

Diagram 3: The Thresholds model

At the bottom floor the child has a low level of competence in both her two languages. At this stage, there will be negative or detrimental cognitive effects, referred to by Cummins in his early work as ‘semilingualism’ (see 4.3.1).

At the middle level will be those children who have age-appropriate competence in one of their languages (such as a monolingual person) but not in both. At this level it is likely that the second language will still be relatively weak. At this level a partially bilingual person will be little different in cognition from a monolingual child and is unlikely to have any significant positive or negative cognitive differences compared with a monolingual (Baker, 2001).

At the top level or third floor resides the well-developed bilingual, sometimes termed the ‘balanced’ or ‘proficient’ bilingual. These children will have age-appropriate competence in both languages and can cope with curriculum material in either language. As the research has shown (3.4), they are actually also likely to demonstrate certain cognitive advantages over monolinguals.

The Thresholds Theory usefully explains then why, despite the cognitive advantages associated with bilingualism, many children from minority groups continue to fail in
school. It also helps to explain why early studies into bilingualism found largely negative effects of bilingualism (see 2.3). Cummins argues that a principal reason for the findings of these early negative studies, aside from their methodological limitations, was that ‘the minority language children in these studies often failed to develop a sufficiently high level of proficiency in the school language [L2] to benefit fully from their educational experience’ (Cummins, 1984a). This low achievement is related by Cummins specifically to the subtractive bilingual environments that these children experienced, both in schools and in the wider society. Equally, the more rapid cognitive and academic progress of bilinguals reported in more recent studies, he argues, can be explained by these children attaining the upper threshold level of bilingual proficiency, that is, high skill levels in both L1 and L2. This development is much more likely, he suggests, to occur in additive bilingual contexts.

4.3 Weaknesses of the Thresholds Theory

The Thresholds Theory seems then to account for the disparate findings in bilingual research discussed in Sections 2 and 3. There are, however, a number of weaknesses to this theory that bear examination. The most discussed of these relates to Cummins original use of the term ‘semilingualism’ and the implicit notion of deficit that this term implies (Edelsky et al., 1983; MacSwan, 2000; Martin-Jones and Romaine, 1986). The model has also been criticized for its vague definitions of the levels of proficiency at each threshold level (MacSwan, 2000).

4.3.1 Semilingualism

Cummins, at the inception of this theory, endorsed the notion of ‘semilingualism’, and even though he later distanced himself from the concept because of the pejorative connotations it carries, the term remains implicit in his construction of bilingual proficiency. Endorsing the notion of semilingualism presents a number of difficulties, however, because as Romaine (1989) has argued, the term semilingualism (along with terms such as balanced bilingualism) still reflect a ‘container’ view of competence; a container which can either be ‘full’ or ‘partially full’. This perception, she suggests:

reflects the ideological bias of a linguistic theory which has been concerned primarily with the idealized competence of monolingual speakers in the speech communities of western Europe and the United States: communities which, on the whole, have a high degree of stability, autonomy and historicity, and possess highly codified standard languages and prescriptive traditions. (Romaine, 1989: 251)

The use of such terms also reveals a static conception of language and does not accommodate for the fact that there are variations in patterns of language use across social groups and often quite rapid change in the communicative repertoires of individuals. As discussed in 2.3, there may be significant shifts within the individual’s language competence, depending on setting, domain, and many other variables. Romaine argues that it is not possible, as such, to define the notion of complete acquisition or competence, which the ‘container’ view of language implies (cf. Bloomfield’s notion of ‘native-like’ competence, discussed in 2.2). Silva-Corvalan (1983) notes, for example, that if we assumed that complete acquisition included knowledge of the monolingual standard variety, then the Spanish of second- and third-generation bilinguals in California would have to be considered an incomplete variety, despite the fact that these speakers are able to communicate fluently in Spanish in all of the domains where they are expected to use the language.
A more realistic assessment of bilinguals thus needs to be based firmly on a knowledge of developmental norms for the two languages and typical patterns of interaction as well as patterns of socialization. This might avoid the tacit equation of codeswitching, or language mixing, with semilingualism, and its implications of socially motivated deficiency (see note 3), which Cummins model appears to endorse. Clearly the notion of language proficiency, then, needs to be redefined in order to allow us to look at the productive skills of bilingual children as strategic accomplishments in performance rather than as deficits in competence.

As a result of these various criticisms, Cummins has since dispensed with the term semilingualism, both for the negative connotations that the term invokes and also for the inability of the term to explain the phenomenon of having a less developed language proficiency level. As he states:

There appears to be compelling scientific and socio-political reasons to avoid using such labels and to bury the construct of ‘semilingualism’. First, as the debate clearly shows, there has been no precise linguistic or cognitive operationalization of the construct ‘semilingualism’. Thus, the term has no explanatory or predictive value but is rather a restatement of the equally ill-defined notion of ‘limited proficiency in two languages’. At a socio-political level the term has assumed pejorative connotations and may be misinterpreted as suggesting that linguistic deficits are a primary cause of bilingual students’ academic difficulties, despite denial to the contrary. (Cummins, 2000b:104)

Nonetheless, Cummins still emphasizes the need to address directly the central issue of the ongoing educational failure of many minority bilingual students in school, regardless of how we might label this phenomenon. As he argues:

The term ‘semilingualism’ was used to characterize the reality that, as a result of discriminatory schooling, [our emphasis] some bilingual students fail to attain strong academic proficiency in either their L1 or L2. Under these conditions, bilingual students in some contexts have failed to gain access in either L1 or L2 to the kinds of language registers (or proficiencies or functions) that are required to participate effectively in schooling. (Cummins, 2000b:100).

In short, the issue does not seem to revolve around the existence of individual differences in academic language knowledge among bilingual (and monolingual) populations – there clearly do appear to be ongoing differences here. The issue is rather whether it is theoretically legitimate or useful to label some of these bilingual children ‘semilingual’ and what might be an alternative explanation.

In summary, the issues in the ‘semilingualism’ debate may be less complex than suggested by the heated controversy that has surrounded the use of the term. There is general agreement that the phenomenon of unequal access to resources results in detrimental effects in the performance of bilingual children, and that this is primarily sociopolitical in its cause. Cummins is certainly explicit on this point – the result of limited educational success for many bilingual students is the result of ‘discriminatory schooling’ (2000b:100), particularly via approaches that endorse subtractive rather additive bilingualism (see also May, 2002a). If we allow that individual differences exist among both monolinguals and bilinguals in access to, and command of, different registers of language, then it follows that bilinguals in subtractive environments may have relatively limited access to academic or literate registers in both their L1 and L2, while
those in additive bilingual environments are likely to have relatively high levels of literacy in both languages.

4.3.2 Competency levels
Another criticism of the Thresholds Theory addresses the vague nature of the competency levels, or ceilings, of each threshold level. For example, what level of ability does a child need to acquire in order to progress from the first threshold level to the second? And at what level will cognitive advantages occur for the balanced bilingual? The model does not illustrate the level of proficiency a child must obtain in order to avoid any potential negative effects of bilingualism, or alternatively progress to the level where they enjoy the cognitive advantages outlined in 3.4 (Baker, 2001).

4.3.3 School success
One further criticism relates to the concept of ‘school success’. Hoffman (1991) states that the term is vague and narrowly defined. The notion of success seems to be applied in the same way for all children, majority and minority children, yet it tends to be defined in terms of traditional, middle-class values deduced from measured school tests, and reflecting majority standards. Similarly, Martin-Jones and Romaine (1986) argue that the Thresholds model does not allow for a wide range of cultural, social and political factors that can influence the achievement of minority children, such as motivation, attitudes to L2, the school, parental support, etc. These factors are said to be equally important in determining attainment (Hoffman, 1991).

4.4 Research supporting Thresholds
Irrespective of the negative feedback concerning Cummins’ Thresholds Theory in terms of terminology, and the lack of detail within it, there are some significant studies that support Cummins’ theory (see also the discussion of Ben-Zeev’s research in 3.4.2). Ricciardelli (1992; 1993), for example, conducted several studies which are consistent with the Thresholds hypothesis and illustrate the types of advantage that bilingual information processing might confer on the developing child.

In particular, Ricciardelli investigated the influence of bilingualism on children’s cognitive abilities and creativity. The first study involved 57 Italian-English bilingual and 55 English monolingual children who were aged 5-6 at the time of the study. This study found that children who were proficient in both Italian and English performed significantly better than children who were proficient in English only (the high English monolingual group) and those bilinguals who were proficient in Italian but less proficient in English, on several measures reflecting creative thinking (the Torrance Fluency and Imagination measures), metalinguistic awareness (Word Order Correction), and verbal and non-verbal abilities.

The second study was conducted in Rome with 35 Italian-English bilingual and 35 Italian monolingual 5-6-year-old children. Again, those children who were proficiently bilingual in Italian and English performed significantly better than the other groups on the Torrance Fluency and Imagination measures as well as on Word Order Correction and Word Reading. Ricciardelli concludes that these data are consistent with the Thresholds hypothesis:
Furthermore, [both studies] are consistent with Cummins’ Threshold Hypothesis … in that an overall superiority on the examined cognitive measures was found only for those children who had attained a high degree of bilingualism. (1993: 346)

Mohanty (1994) carried out seven studies between 1978 and 1987 in Orissa, India, which also support the Thresholds hypothesis. He examined large numbers of monolingual and bilingual Kond tribal children who were matched in every respect (socio-economic position, class, ethnicity etc.), except for their level of bilingualism in their own language and that of the dominant language of Orissa. These studies were groundbreaking because they corrected the socio-economic class and cultural biases in most, if not all, previous western studies. In the western studies, the monolinguals and bilinguals compared have always had some cultural and/or socio-economic differences. In Mohanty’s study, the monolingual (Oriya-speaking Konds) and bilingual (Oriya-Kui speaking Konds) had no other differences except monolingualism versus bilingualism – both groups had the same very low socio-economic status and very little, and in many cases no, formal education. This means that Mohanty could isolate the influence of bilingualism on cognition (and other issues) in a clear form where most other factors were constant – something that had not been achieved before.12

Mohanty’s studies show a clear positive relationship between bilingualism and cognitive performance, including measures of metalinguistic ability. He suggests that bilinguals’ awareness of language and their cognitive strategies are enhanced as a result of the challenging communicative environment in which their bilingual abilities have developed. He interprets the findings as supporting both the Thresholds and Interdependence hypotheses (for discussion of the Interdependence hypothesis, see 4.5).

Bialystok (1987a; 1987b; 1988) has also carried out a series of studies that suggests a positive influence of bilingualism on children’s metalinguistic awareness (as discussed in 3.4). However, the advantages are more evident for bilinguals who are more fluent in their two languages. She suggests that ‘the level of bilingualism is decisive in determining the effect it will have on development’ (1988: 567). Bialystok (1991) has interpreted this research data as indicating that bilingual children have enhanced ability in the analysis and control components of linguistic processing. She argues that processing systems developed to serve two linguistic systems are necessarily different from the same processing systems that operate in the service of only one.

Lasagabaster (1998) set out to investigate the extent to which the Thresholds hypothesis could be applied to a trilingual school situation (Basque, Spanish, English). Participants were 126 Grade 5 and 126 Grade 8 students. The Grade 5 students were in their second year of studying English and the Grade 8 students were in their third year. Students’ academic knowledge of Basque, Spanish and English was assessed together with a non-verbal ability test (Raven’s Progressive Matrices) as a control measure and a test of metalinguistic abilities as a dependent variable. Groups were formed based on abilities in the three languages and comparisons made between those ‘highly competent’ (i.e. above the median) in three languages, those highly competent in two languages, those highly competent in one language, and those below the median in all three languages.

12 Our thanks to the external reviewer, Tove Skutnabb-Kangas, for pointing out the full significance of Mohanty’s study to us. This summary is drawn from her review comments on this project.

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Lasagabaster reported that those above the median in three languages performed significantly better than all other groups, with those below the median in all three languages demonstrating less well-developed metalinguistic abilities than the other three groups. Lasagabaster concludes that ‘these findings confirm the threshold hypothesis’ (1998:131).

Dawe (1983) studied mathematic reasoning abilities in bilinguals – in particular, deductive reasoning – in order to test the Thresholds hypothesis. The study involved a sample of 53 Punjab, 50 Mirpuri, and 50 Italian bilinguals together with 167 English monolingual children. All the children were between 11 and 14 years old, had been born in Britain, and were considered by their teachers to be fluent in English.

The Thresholds hypothesis was strongly supported for the Mirpuri sample (all boys) and partially supported for the Punjabi and Italian samples. As Dawe summarizes the Mirpuri sample: ‘The overall picture which emerges is that high scores on the test of deductive reasoning … are associated with high L1 and L2 competence…. Low scores are associated with low L1 and L2 competence’ (1983: 339). Trends in the Punjabi group were similar, although less accentuated, with those strong in both languages performing best, followed by those with one language dominant and those weak in both languages. The Italian group also demonstrated strong support for the lower threshold (those weak in both languages did more poorly), though not for the upper limit, although those who did achieve at the higher levels were more likely to be literate in Italian, a trend that is consistent with the Thresholds hypothesis.

In summary while the detractors of the Thresholds Theory make valid points regarding the terminology Cummins uses and the vagueness of this construct in particular areas, current research (for example, Bialystok, 1991; Dawe, 1983; Lasagabaster, 1998; Ricciardelli, 1992, 1993; Thomas and Collier, 2002) continues to demonstrate its credibility, insofar that it shows us why some bilingual children fail in school and why others excel beyond the level of their monolingual peers.

4.5 The Developmental Interdependence Hypothesis

Cummins modified the Thresholds Theory in 1979. This change, which he termed the Developmental Interdependence hypothesis, considered more closely the relationship between a bilingual’s two languages.

The Interdependence hypothesis suggested that a child’s second language (L2) competence is partly dependent on the level of competence already achieved in the first language (L1). *The more developed the L1, the easier it will be to develop the L2. The less developed the L1, the more difficult the achievement of bilingualism will be* (Baker, 2001). As Cummins (1979b) states:

> the level of L2 competence which a bilingual child attains is partially a function of the type of competence the child has developed in L1 at the time when intensive exposure to L2 begins:...[an] initially high level of L1 development makes possible the development of similar levels of competence in L2. However, for children whose L1 skills are less well developed in certain respects, intensive exposure to L2 in the initial grades is likely to impede the continued development of L1. (Cummins, 1979b: 233)
Cummins’ theory was developed to rebut a claim by Oller (1979) that all facets of language proficiency – listening, speaking, reading and writing – were the result of one common or global dimension of language proficiency. For Cummins, though, language proficiency clearly had more than one dimension.

Crucially, Cummins found that it normally takes around 2 years for a child’s conversational ability or surface fluency in an L2 to develop, yet between 5 to 7 years before the more evolved academic skills required to cope with classroom language and curriculum content are developed fully. Hakuta, Butler and Witt (2000) found a similar pattern in their Californian study. (Oral proficiency = 3-5 years, academic proficiency = 5-8 years). These results cast significant doubt on Oller’s claim of a single dimension to language proficiency. Rather, as Cummins and others have shown, children can have highly developed conversational skills in, for example, English, yet may still perform badly in school if their academic language skills remain underdeveloped. Oller’s Global Language Proficiency would suggest that such children would be equally skilled academically if they had high conversational skills.

4.5.1 Supporting research on educational implications

If Cummins is correct, then the Interdependence principle also has significant implications for school programmes. Schools which do not draw on a bilingual child’s first language at all, as is commonly the case in English-only classrooms, will not be able to harness any development that child already has in their L1. This explains why many bilingual students fail at school. Bilingual programmes that only allow short term (1-2 years) education in the children’s minority language before they are integrated into English language classes (such as transitional bilingual programmes of the United States) are better. However, this is still insufficient time for children to develop full competence in the academic dimensions of L1 and thus to be able to transfer this competence effectively to their L2 (see Cummins, 1976; 1978a; 1979b; 1984a; 2000a; 2000b; 1980; Gonzalez and Schallert, 1999; Skutnabb-Kangas, 1976; 2000). Indeed, in light of the Interdependence hypothesis, research in bilingual education has consistently found that a minimum of six years instruction in an L1, or alternatively a target language such as an L2 heritage language (see 4.5.2 below), is required in order to safeguard bilingual children against educational failure (Thomas and Collier, 2002).

The most significant recent research into bilingual education programmes for minority children in this last respect comes from the USA (see Ramírez, et al., 1991; Thomas and Collier, 2002). Ramírez et al. (1991), for example, compared English-only programmes with early-exit (1-2 years) and late-exit (4-6 years) bilingual programmes, following 2,300 Spanish-speaking students over four years. The findings clearly found that the greatest growth in mathematics, English language skills and English reading was among students in late-exit bilingual programmes where students had been taught predominantly in Spanish. In contrast, the Ramírez study also confirmed that minority language students who receive most of their education in English rather than their first language are more likely to fall behind and drop out of school.

In the largest and most recent longitudinal study conducted to date, Thomas and Collier (2002) came to broadly the same conclusions. Thomas and Collier analyzed the education services provided for language minority students in US public schools and the resulting long-term academic achievement of these students. They did so by examining in depth five urban and rural sites from throughout the USA over five years, from 1996 to 2001.
The school bilingual programme types examined within these contexts varied widely—they included full immersion programmes in a minority language, dual-medium or two-way programmes, where both a minority and majority language (usually, Spanish and English) were used as mediums of instruction, transitional bilingual education programmes, ESL (English as a second language) programmes, and mainstream submersion (English-only) programmes.13

As with the Ramírez study, one of Thomas and Collier’s principal research findings was that the most effective programmes—‘feature rich’ programmes as they called them—resulted in achievement gains for bilingual students that were above the level of their monolingual peers in mainstream classes. This corresponds with the research on additive bilingualism and its positive cognitive effects, discussed in 3.4. Another key conclusion was that these gains, in both L1 and L2, were most evident in those programmes where the child’s L1 was a language of instruction for an extended period of time. In other words, Thomas and Collier found that the strongest predictor of student achievement in L2 was the amount of formal L1 schooling they experienced. As they state, ‘the strongest predictor of L2 student achievement is the amount of formal L1 schooling. The more L1 grade-level schooling, the higher L2 achievement’ (Thomas and Collier, 2002: 7).

In both these major longitudinal studies, length of L1 education turned out to be more influential than any other factor in predicting the educational success of bilingual students, including socioeconomic status. This finding was further corroborated in Thomas and Collier’s study by the finding that immigrants who had received 4-5 years of L1 training in their home country (arriving in the US at ages 10-12) scored considerably higher in English reading than those who had received only 1-3 years of schooling in their home country (arriving at ages 7-9). In short, these findings directly support Cummins’ argument about maximizing the development of L1 education.

These findings also serve as a stark warning about the consequences of preventing L1 development in students. For example, the schools whose children performed the least well in both studies were the ones that ignored the children’s L1 entirely, concentrating instead on submerging them in English language instruction. This result gives considerable weight to Cummins’ theory of the importance of nurturing L1 and it also casts significant doubt on the ‘time on task’ argument postulated by many people (see Cummins, 2000b) – that the earlier and the longer English instruction occurs for non-English speakers, the more likely they are to acquire academic English and succeed at school.

4.5.2 L1 versus ‘target’ language

There is one crucial caveat to be made here, however (see also the discussion of conversational and academic language proficiency in 4.6 below). It could possibly be inferred from the Interdependence hypothesis and supporting research that any second language learning context will have negative educational effects for students, including for second language learners of a minority language. This is particularly pertinent in Aotearoa/New Zealand, since the students most likely to still speak an L1 minority language at home are actually Pasifika students, and perhaps also recently migrated Asian students. In contrast, the majority of Māori students in Māori-medium programmes are second language speakers of their heritage language, with the language often not being

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13 A full discussion of the various attributes of these programmes can be found in Part 2.
spoken regularly at home. This is, in turn, a result of the earlier intergenerational loss of the te reo Māori after the Second World War, resulting in eventual language shift to English for many Māori after that time (see also note 4).

On this basis, one might assume that Māori-medium education for such students is also detrimental. However, this is not the case. There are crucial differences between the two contexts. The most important is that Māori-medium contexts foster additive bilingualism – that is, their goal is to acknowledge and promote bilingualism, and its attendant advantages. In contrast, English-only submersion programmes are invariably subtractive bilingual contexts – that is, they specifically devalue and exclude the child’s bilingualism, and thus also the potential resource such bilingualism is to learning. Relatedly, the goal of minority language immersion programmes such as Māori-medium education is proficient bilingualism, whereas the goal of English-only submersion programmes is eventual monolingualism, transferring from the first language to the second.14

Thus, even though students in both contexts may be operating in and through a second language, the contexts are not comparable. Unlike English-only programmes, bilingual education programmes are specifically concerned to foster additive bilingualism, via the interdependence of two languages – it is just that for L2 speakers at least, they begin with the minority or target language as the basis for fostering that interdependence. L2 students in minority language immersion programmes also have strong support for their L1, via its dominance in the wider society.

The benefits of minority language immersion programmes are confirmed when we consider that much of the research supporting the cognitive advantages of bilingualism and bilingual education (see 3.4) has been conducted via studies of students in French-immersion programmes, where many of the students are first language English-speakers. As Cummins himself argues, an important index of the validity of the Interdependence hypothesis is the academic achievement that characterizes minority language immersion programmes. A guiding principle of these programmes is also that, if higher levels of bilingualism are to be achieved, the language least likely to develop – most often because of wider societal pressures – is the one needing the most support.

This last point raises another important distinction between immersion and submersion language education programmes. Fostering individual bilingualism in minority language immersion contexts is often inextricably related to the wider importance of maintaining the minority language itself. Indeed, in English-dominant contexts like Aotearoa/New Zealand, unless the minority language is fostered as a medium of instruction in schools, it is not likely to continue to be spoken in the wider community over time. In other words, language shift and eventual community-wide loss of that language will almost certainly occur. This was already very nearly the case for te reo Māori, for example, in the 1970s, prior to the advent of Māori-medium education in the 1980s. Thus, there is a wider sociocultural, sociopolitical principle at stake here. Minority language immersion education is not only concerned to foster individual bilingualism, and its attendant cognitive and educational (not to mention, social) benefits, but also, through that, the wider maintenance of the language in a context where English would otherwise subsume it.

14 This is why the research literature on bilingualism and bilingual education consistently distinguishes between submersion (English-only) and immersion (minority language) educational programmes, even though the mode of delivery (in an L2) is ostensibly the same (see also Part 2 for further discussion).
One final point can be made here, by way of qualification. This point also has significant implications for Māori-medium education, as we shall see in Part 2. Because the language of instruction (Māori) is a second or target language for many children in Māori-medium education, it is crucially important to recognize the longer period of time that it takes to acquire academic proficiency in a second language (see also 6.3). In other words, one of the principal reasons why research highlights that longer-term bilingual education programmes are significantly more successful than short-term ones is because the former provide sufficient time (at least 6 years, preferably more) for students to acquire academic proficiency in the target language. When this is achieved, the cognitive and educational benefits of additive bilingualism, and the Interdependence principle, are secured, but not necessarily before.

4.6 Conversational versus academic language proficiency

The particular issue of the extended time required for second language learners to acquire academic proficiency is obviously a particularly important one, for both L2 students in an English-only environment and for those in a minority language immersion environment, such as Māori-medium education for L1 speakers of English (see May, 2002b). Given that the majority of bilingual students (including many Pasifika students) are in English-only classroom contexts, this also helps to explain why the gap in literacy achievements in English between first and second language English speakers is so great in Aotearoa/New Zealand, and why the latter tend to do so poorly in school.

Cummins work also specifically throws light on this phenomenon. The Threshold Theory and Interdependence hypothesis, along with the subsequent research supporting it, clearly identify the extended time it takes students to acquire academic proficiency in a second language. Cummins has explored the reasons for this more fully via his development of the distinction between conversational and academic language proficiency, or as he first termed it, Cognitive Academic Language Proficiency (CALP) and Basic Interpersonal Communication Skills (BICS).

Conversational and academic proficiency describe two distinct language registers that students have to master in an L2 (or in an L1, for that matter) in order to succeed academically. **Conversational competence** relates to the phonological, syntactic and lexical skills necessary to function in everyday interpersonal contexts. The requirements for conversational competence are usually cognitively undemanding and contextually supported and, as such, children are likely to acquire this kind of competence in an L2 within 1-2 years.

**Academic language proficiency**, in contrast, requires children to manipulate or reflect on the surface features of language outside immediate interpersonal contexts. These requirements are most apparent in contextually reduced, or disembedded, academic situations where higher order thinking skills are required, such as analysis, synthesis and evaluation. Moreover, Cummins argues that these skills are a necessary prerequisite for the successful acquisition of literacy skills at school because they involve the ability to use language as an instrument of thought in problem solving (see also Corson, 1995, 2000). This is why it takes longer, 5-8 years, for children to acquire academic language proficiency in an L2. This developmental lag is further compounded by the fact that
children have to master the academic language register of the L2 at the same time as having to learn new curricular information in that language.

Another way of looking at the difference between conversational and academic language proficiency, according to Cummins (2000) is:

...to note that native-speakers of any language come to school at age five or so virtually fully competent users of their language. They have acquired the core grammar of their language and many of the sociolinguistic rules for using it appropriately in familiar social contexts. Yet schools spend another 12 years... attempting to extend this basic repertoire into more specialized domains and functions of language. CALP or academic proficiency is what schools focus on in this endeavour. (Cummins, 2000: 59)

The two-dimensional model (Diagram 4) below helps to summarize these various research findings:

Diagram 4: Conversational and academic language proficiency: differences in acquisition

What are the implications and consequences of these differences for bilingual students? Diagram 5 shows the separation of conversational and academic language. Like the Iceberg model discussed in 4.1, they can be viewed from two sides. Conversational competence inheres in the skills of pronunciation, vocabulary and comprehension, which lie above the surface and are evident in conversations. Academic language proficiency lies below the surface and consists of the deeper, subtle skills of semantic meaning, analysis and creative composition (Baker, 2001).
In order for academic language proficiency to be successfully attained, Cummins (1979b) argues that the ‘common underlying proficiency’ of bilingual children (see 4.1) must be well developed in bilingual children. This underlying ability can be developed via the Interdependence principle and, depending on the context, either through the first or second (target) language, as discussed earlier.

4.6.1 Curricular implications
The distinction between conversational and academic language proficiency also has specific curricular implications. Thus, Cummins extended his model to include instructional considerations that might assist teachers in constructing programmes that cater better for the linguistic needs of second language students. The development proposes two dimensions of cognitive demand and contextual embeddedness (Baker, 2001; Cummins, 1981), as illustrated in Diagram 6 below.

The first continuum concerns the degree of contextual support available to a child for expressing or receiving meaning. At one extreme of this continuum is informal, face-to-face communication, which is completely context-embedded. In context-embedded communication the participants can actively negotiate meaning (e.g., by providing feedback that the message has not been understood), while the language is supported by a wide range of meaningful paralinguistic and situational clues (eye contact, gestures etc.). At the other end of the continuum is context-reduced communication where participants have to rely primarily, and sometimes exclusively, on purely linguistic cues. Cummins (1987) argues that classroom communication is closer to the context-reduced end of the continuum.
The second continuum concerns the amount of active cognitive involvement required in particular communicative activities. Cummins (1987) suggests that cognitive involvement can be conceptualized in terms of the amount of information that must be processed simultaneously or in close succession by the individual in order to carry out the activity. The upper part of the vertical continuum consists of communicative tasks that require little cognitive involvement because the linguistic tools required have been largely mastered and proceed automatically. At the lower end of the continuum are tasks and activities that involve linguistic resources that have not become automatized and therefore require active cognitive involvement. Many verbal activities in the classroom are cognitively demanding because children are required to do tasks which they have not yet mastered, and they have to both organize their language production more or less consciously, and come to terms with new and often difficult concepts, in so doing. Classroom instruction, then, often requires children to master the complex, purposeful and verbal learning behaviours that are situated in the 4th quadrant. Such language activities are demanding enough for L1 speakers, and even more so for L2 speakers.

Cummins’ (1981) theory suggests that second language competency in the 1st quadrant (surface fluency) develops relatively independently of first language surface fluency. In comparison, context reduced, cognitively demanding communication develops interdependently and can be promoted by either language, or by both languages, in an interactive way. Thus, the theory suggests that bilingual education will be successful when children have enough first or second language proficiency in the language of instruction to work in the context reduced, cognitively demanding situation of the classroom. Conversely, children operating at the context embedded level in the language of the classroom may fail to understand the content of the curriculum and fail to engage in the higher order cognitive processes of the classroom, such as synthesis, discussion, analysis, evaluation and interpretation.

In summary, a key implication of Cummins’ distinction here is that specific account must be taken by teachers of the greater difficulties of acquiring academic language proficiency for L2 speakers. In addition, teachers must avoid the mistaken assumption
that because a child exhibits conversational competence in their L2, they are therefore also readily able to master the requirements of classroom-based discourse.

As for the more specific implications of Cummins model for bilingual programmes, two key conclusions can be drawn. First, L1 minority language children who have been in short term transitional bilingual programmes may sound fluent in their L2 but often perform badly when they are ‘mainstreamed’ into an English-only class because their fluency is only equivalent to conversational, not academic language proficiency. This might also well apply to L2 Māori speakers who begin in Kōhanga or Kura Kaupapa but transfer to a mainstream English-language context before academic language proficiency in Māori (the target language) has been acquired.

Second, L2 children who are in minority-immersion programmes will inevitably lag behind their peers for a period of time before they reach academically comparability in their L2. However, once such students have attained academic fluency they usually catch, and sometimes pass, their peers in academic achievement, and do so in two languages rather than just one.

4.6.2 Summary

As with any theoretical construct, there are criticisms of the conversational/academic language distinction. There has been some criticism, for example, that the distinction underemphasizes the cognitive demand involved in conversational competence and overstates the significance of cognition in relation to academic language proficiency, at the expense of wider sociocultural, sociolinguistic and sociopolitical factors (see 1.2). In similar vein to the debates on semilingualism, critics also point out the potential for a deficit conception of language proficiency to be attached to those who do not attain academic language proficiency (Frederickson and Cline, 1996).

Despite these criticisms, however, the conversational/academic language distinction is extremely useful in explaining both the relative failure of many minority language children in subtractive bilingual contexts and the educational success of many of these same children in additive bilingual education contexts.

Part 2 will specifically set out to explore the necessary requirements for implementing effective additive bilingual education programmes. It will compare the efficacy of particular models of bilingual education in light of the international research literature and will ascertain, from this, indicators of good practices for Māori-medium bilingual/immersion programmes. It is also highly likely that these principles can be applied more widely – particularly to Pasifika bilingual education.
Part 2

Bilingual Education:

Indicators of Good Practice
5. **Part 2: Introduction**

5.1 **Summary of Key Findings in Part 1**

Part 1 focused on the cognitive dimensions of bilingualism and biliteracy. In so doing, it addressed the following key questions:

- Who is bilingual?
- How does one become bilingual and biliterate?
- What are the cognitive consequences of bilingualism? (Or, alternatively, how does bilingualism affect cognition?)
- What are the key theories of bilingual acquisition?

Its key findings may be summarized briefly as follows:

1. Any analysis of bilingualism must always first account for the wider social and political context in which it is situated. This includes recognizing the varying status ascribed to particular languages, most notably in the regular distinction made between so-called ‘majority’ and ‘minority’ languages, along with the reasons for this variance, and their legitimacy. This requires, in turn, an understanding of wider societal attitudes to bilingualism in particular languages, where and why these might differ, and the social and educational consequences of such views. For example, is an additive view of bilingualism adopted towards particular languages, viewing the acquisition of bilingualism in those languages as a social and educational advantage (see also 6.5)? Or is a subtractive view adopted, viewing bilingualism, or the maintenance of more than one language, as an educational and/or social impediment? Can these views differ, depending on the languages concerned? If so, why?

For example, why might bilingualism in ‘elite’ or majority languages, such as English and French be regarded by many as educationally advantageous, while bilingualism in English and a minority language such as Māori is just as often not? What is the basis of this distinction and is it valid? Or, as we have already discussed in 1.2, why is bilingualism good for the rich, but not for the poor (Cummins, 2000b)? When these questions are asked, it would seem that this distinction has more to do with the perceived differential social and political ‘value’ or status of each of the languages concerned, rather than with the benefits of bilingualism per se. It is thus a social value judgment rather than a linguistic or educational one. These wider questions of language status and value, and the legitimacy or otherwise of the reasons underlying them, have first to be acknowledged before analysis of bilingualism – and, by extension, bilingual education – in Aotearoa/New Zealand can be seriously addressed.

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15 While the distinction between ‘majority’ and ‘minority’ languages, as with majority and minority groups, tends to draw attention to numerical size, its more important reference is to differences in power, rights and privileges (see Skutnabb-Kangas, 2000; May, 2001). Consequently, we use it here to describe languages with more or less social and political power, status and prestige respectively.
2. The distinction between monolingualism and bilingualism\(^{16}\) is more a continuum than a dichotomy. This is because bilingual ability is a complex, multifaceted phenomenon that may vary widely along a range of axes, including proficiency or ability (which, in turn, can be said to include both fluency in each language and the balance between languages) and use. Such ability may also change over time and be influenced, again, by wider societal factors, such as pressure to stop speaking a particular language, and/or a (de)limited range of language domains within which one can continue to speak a particular language. The result, as we saw in Section 2, is a complex and variable picture for each bilingual speaker.

3. Early research studies on bilingualism found it to have predominantly negative cognitive and educational consequences for bilingual students. However, this research was significantly flawed, both conceptually and methodologically (see 3.2). First, it was based on an erroneous conception of how the brain stores languages (see 4.1). Second, it failed to take account of both the widely different class locations of monolingual and bilingual subjects in the comparisons made, and the significant differences between subtractive and additive bilingual educational environments.

For example, ‘elective bilinguals’, who choose to learn a language in addition to their own, and who are often socially and educationally advantaged, tend to have significantly greater educational success than ‘circumstantial bilinguals’, many of whom are from minority groups within a given society, and who are required by circumstance to learn a majority language that is different from their own (see 1.2). The reasons for this are that elective bilinguals tend also to experience an additive view of bilingualism in relation to their teaching and learning, where bilingualism in the languages in question is both valued and fostered. Circumstantial bilinguals, in contrast, are often placed in subtractive bilingual contexts. In these subtractive contexts, their bilingualism is seen as a disadvantage, something to be ‘remedied’ as soon as possible by shifting to monolingualism in the majority language. Ironically, these negative perceptions of the students’ home languages and cultures confirm rather than ameliorate educational disadvantage, with many circumstantial bilinguals experiencing limited educational success over the longer term (see also points 6 and 7, below).

It was this latter group of students who were most often the bilingual students examined by early studies of bilingualism, with no account taken of the wider social context in which they found themselves.

4. Where an additive approach to bilingualism is adopted, cognitive, social and educational advantages ensue, as later research on bilingualism (from the 1960s onwards) has consistently demonstrated. This includes greater cognitive flexibility, metalinguistic awareness, communicative sensitivity and field independence among bilinguals (see 3.4). The clear consequence of such studies is that additive bilingual approaches for all bilingual students (not just socially and educationally advantaged students) will foster the cognitive benefits of bilingualism and lead to wider educational success for bilingual students.

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\(^{16}\) While the term bilingualism is consistently used throughout this Report, it should also be taken to include multilingualism.
5. Conversely, ongoing educational difficulties experienced by bilingual students in schools, particularly those from minority groups, can be clearly attributed to the continuing influence of subtractive bilingualism. If bilingualism is still viewed by teachers, schools and/or the wider society as a disadvantage, and transition to a majority language is promoted at the expense of a bilingual student’s first language (L1), the student may not acquire a sufficient threshold necessary for the cognitive advantages of bilingualism to take hold (see 4.2-4.4; see also point 7 below). This also helps to explain the earlier negative findings of bilingual research for bilingual students in subtractive bilingual contexts.

6. Bilingual research has also consistently highlighted that the best means by which a student can acquire, and achieve academic success in a second or additional language (L2) is via the acquisition of literacy in the student’s L1. This has been discussed in the literature as the ‘developmental interdependence principle’ (see 4.5), where acquisition of literacy in one language allows for more ready acquisition of literacy, or academic language proficiency, in another.

There is, however, one crucial caveat to be made here (see 4.5.2). Only subtractive second language learning contexts, which aim to replace the bilingualism of students with eventual monolingualism in the language of instruction, are problematic in this respect. Most common here are English-submersion, or English-only programmes, still predominant of course in Aotearoa/New Zealand schools, as elsewhere. This criticism cannot be said to apply to Māori-medium education, however, even when many of the students are L2 learners of the language. This is because an additive bilingual educational approach is specifically adopted – that is, the aim of the educational programme is to use the target language, or L2 heritage language, as the medium of instruction, in order to foster and promote eventual bilingualism (see also 6.3). This is particularly important for minority languages such as te reo Māori, where the widespread pervasiveness of English in Aotearoa/New Zealand now means that unless te reo is specifically fostered and taught, it is not likely to continue over time to be a language that is widely spoken. Accordingly, additive bilingual education programmes that are conducted in the students’ L2 can also achieve bilingualism and biliteracy via the interdependence principle. The only difference from L1 additive bilingual programmes is that specific account needs to be taken of the longer time required to acquire academic language proficiency in an L2 (see also point 7 below).

7. The greater length of time required for achieving academic literacy, or academic language proficiency, in an L2 is a key consideration that needs to be addressed if additive bilingualism for all bilingual students is to be successfully fostered (see 4.5). This necessitates addressing a still common misconception that students who have conversational ability in an L2 will necessarily then immediately be able to acquire academic language proficiency in that language. In fact, the widely different language registers involved here mean that students who are learning in

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17 As with discussions of the complex nature of bilingualism itself, defining what constitutes an L1 is not as straightforward as it might at first appear (see Skutnabb-Kangas, 2000 for further discussion). However, we will follow the most widely accepted conception of an L1 – that is, the language(s) first learned in the home and/or the individual’s strongest language(s).

18 L2 will be used throughout Part 2 to describe a second or additional language.
an L2 will take 5-8\textsuperscript{19} years to acquire academic language proficiency in that language, compared with only 1-2 years to acquire conversational proficiency. The longer period of time required for achieving literacy, or academic language proficiency, in an L2 thus needs to be taken into account specifically in the education of bilingual students in order to ensure longer-term academic success in that language (Christian, 2001; Cummins, 2000a; Thomas and Collier, 2002).

Failure to do so explains the significant ‘home language gap’ that has been consistently identified in Aotearoa/New Zealand in a wide variety of national and international school-based and adult literacy surveys – that is, the gap between the literacy achievements in English of learners whose L1 is English, and those for whom it is not (see, for example, May, 2002a, 2002b; Ministry of Education, 2001; PISA, 2000; Wilkinson, 1998). It also helps to explain the significant over-representation of Māori and Pasifika learners in the lowest levels of English literacy proficiency in Aotearoa/New Zealand. This is in turn a result of the ongoing predominance of subtractive, English-only, educational approaches for such learners; approaches that continue to view their first languages and cultures as obstacles to be overcome, rather than as resources to be incorporated, fostered, and used in the teaching and learning process.\textsuperscript{20}

5.2 Key Questions for Part 2

In light of these findings, this second part of the Report explores the extensive debates in the international research literature, and the more limited debates within Aotearoa/New Zealand, as to what constitutes effective bilingual and immersion education.\textsuperscript{21} In so doing, it addresses the following key questions:

- What is (and what is not) bilingual education?
- What are the principal approaches to bilingual education and how are they similar and/or distinct from one another?
- How effective are these various approaches, relative to each other, in successfully fostering bilingualism, biliteracy, and educational success for bilingual students?
- To what extent have these various approaches to bilingual education been adopted in Aotearoa/New Zealand? To what extent are approaches that have not as yet been adopted in Aotearoa/New Zealand suitable and/or feasible?

\textsuperscript{19} This broad timeframe is generally accepted. However, more recent commentators have suggested that it might be too conservative and that in fact it might be closer to 7-10 years (Wong-Fillmore and Snow, 2000).

\textsuperscript{20} A key issue of concern that emerged from the recent adult literacy Report \textit{More than Words} (Ministry of Education 2001), for example, was the finding of the International Adult Literacy Survey (IALS), conducted in 1996-1997, that adult literacy levels in English are consistently lower overall for both Māori and Pasifika adults when compared to the New Zealand population as a whole. While adult literacy levels across the population were comparable with other developed countries, 70% of Māori and 75% of Pasifika adults failed to meet minimum levels in English literacy (level 3). The majority of Pasifika adults in this category were also L2 speakers of English. These patterns of relative disadvantage in English literacy for Māori and Pasifika learners, particularly for those whose L2 is English, are also replicated at school level analyses of literacy acquisition, such as IEA, PISA and PIRLS.

\textsuperscript{21} In Aotearoa/New Zealand, bilingual and immersion education have usually been seen as quite distinct from one another. However, as will soon become clear, the international research on bilingual education includes immersion education as just \textit{one} approach to bilingual education (see 6.3 for further discussion).
• What indicators of good practice can be extrapolated from the research literature on bilingual education and how might these be applied in the Aotearoa/New Zealand context?

• What recommendations might ensue for bilingual/immersion education in Aotearoa/New Zealand, particularly, but not exclusively for, Māori-medium education?
6. Defining Bilingual Education

6.1 The problem of definition

Part 1 explored the enormous difficulties attendant upon defining bilingualism, given its complex, multifaceted, variable, and often highly individualized nature (see especially Section 2). Much the same level of difficulty is experienced when attempting to define the phenomenon known loosely as ‘bilingual education’.

We say ‘loosely’ because one of the principal difficulties that one almost immediately encounters in the extensive research and policy literature on bilingual education is the widely different understandings of what such an education actually constitutes. At one end of the continuum are those who would classify as bilingual any educational approach adopted for, or directed at bilingual students, irrespective of their educational aims (fostering bilingualism or monolingualism) or the role (if any) of L1 and L2 as languages of instruction. In other words, simply the presence of bilingual students in the classroom is deemed sufficient to classify a programme as bilingual (see, for example, K. Baker and de Kanter, 1981; Porter, 1990). At the other end of the continuum are those who distinguish clearly between ‘weak’ and ‘strong’ forms of bilingual education (e.g., Baker, 2001), or non-bilingual and bilingual programmes (e.g., Skutnabb-Kangas, 1981, 2001). It is the last approach that we adopt in our own analysis (see 6.4).

Educational approaches to bilingual education also vary widely in relation to how effectively they foster or promote bilingualism, biliteracy, and academic success for bilingual students (see Section 7 for an extended discussion). The wide variety of these educational approaches further complicates any attempts to ascertain the features necessary for successful bilingual education. However, we will argue that certain generic principles of good practice can be extrapolated from the wider research and policy literature (see also Skutnabb-Kangas and García, 1995; Lindholm-Leary, 2001). This extrapolation can be made on the basis of identifying those features that are the most successful and/or effective at promoting bilingualism and biliteracy, over a range of bilingual education programmes, as well as highlighting those features which are less successful and/or relatively ineffective. Accordingly, and despite the complexities involved, we can broadly determine what constitutes effective approaches to bilingual education and the conditions necessary for achieving them.

6.2 The problem of analysis

Before pursuing these definitional debates further, however, it is first necessary to highlight the potential implications of the widely different understandings of bilingual education adopted in the literature, especially in relation to how one might proceed to assess fairly and accurately the effectiveness of such programmes. This is crucial because the veracity of the research evidence gathered will, in turn, determine how informed subsequent educational policy and practice is likely to be on bilingual education. As noted in 1.3, the degree to which such policy and practice is accurately informed by research remains highly limited, in Aotearoa/New Zealand as elsewhere.

Even where research is drawn upon as a basis for policy and practice it needs to be carefully examined and evaluated. For example, the recent dismantling of many bilingual education programmes in the USA, via specific state-mandated restrictions such as
California’s Proposition 227, enacted in 1998,\(^{22}\) has largely been based on a highly effective anti-bilingual education campaign that promoted a combination of popular misunderstandings about bilingualism (see 4.1) and highly selective, often directly misleading, ‘research evidence’ to support its (erroneous) claims.\(^{23}\) The latter can be most clearly seen in the effective political mobilization by bilingual education opponents of two deeply flawed US government sponsored research studies which cast (some) doubt on the effectiveness of bilingual education.

The first of these, the American Institutes for Research’s (AIR) evaluation of bilingual education programmes, was commissioned in the 1970s by the United States Office of Education (Danoff et al., 1978). It provided an overview of US federally funded bilingual programmes operating at the time and found that such programmes had no significant impact on educational achievement in English, although they did enhance native-like proficiency. It furthermore suggested that pupils were being kept in bilingual programmes longer than necessary, thus contributing to the segregation of such students from ‘mainstream’ classes (Moran, 1990).

Despite concerns about its methodology (see below), the conclusions of the AIR study were seemingly replicated by a second piece of US federally commissioned research by Baker and de Kanter (1981, 1983; see also Rossell and Baker, 1996). They reviewed the literature and likewise concluded that bilingual education was not advancing the English language skills and academic achievements of minority language students, predominantly Spanish-speaking L1 students. In short, Baker and de Kanter argued that students in bilingual programmes demonstrated no clear educational advantages over those in English-only programmes.

Given the increasingly sceptical political climate of the time, this research generated enormous publicity and exerted even more influence on subsequent federal US policy. However, as Crawford (1989) observes, while the Baker and de Kanter (1983) report is easily the most quoted US federal pronouncement on bilingual education, it is probably the most criticized as well. As with its predecessor, much of this criticism had to do with the methodology that was employed. For example, as with the AIR study, Baker and de Kanter specifically rejected the use of data gathered through students’ first languages. They also failed to account for the fact that two thirds of the comparison group in English-only education programmes had previously been in bilingual programmes where, presumably, they had benefited from first language instruction (Crawford, 1992).

Moreover, neither report distinguished between the wide variety of educational approaches to bilingual education, particularly in relation to the degree to which the first language (L1) was used as the medium of instruction, and whether the programmes were based on an additive or subtractive bilingual approach. The first is a crucial omission since the least effective bilingual programmes are those that are bilingual in name only, with minimal presence and use of the L1 in the classroom, while the most effective

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\(^{22}\) Proposition 227 – entitled, ‘The English Language Education for Children in Public Schools Initiative’ – characterized California’s previous record on educating immigrant children (aka bilingual education) as a failure. In its place, it required that all children for whom English is not a first language be educated in ‘sheltered’ English-only programmes (see 7.2.2), for one year only, after which they would be transferred into mainstream English language only classes. Limited exceptions to this model are allowed, but only by parental request, and on being granted written waivers (see Dicker, 2000). Similar measures have subsequently been widely adopted in other US states.

\(^{23}\) See May (2001), (2002a, 2002b); see also Baker (2001); Crawford (2000) and Krashen (1999) for further discussions of these claims.
programmes are those where the presence and instructional use of L1 in the classroom is prominent. Likewise, additive bilingual educational approaches (which also tend to have significantly higher instructional time and use in L1) are considerably more effective than subtractive approaches, as will be made clear in the further discussion of such programmes in Section 6.4. By simply aggregating all results, these reports thus singularly failed to differentiate meaningfully between different bilingual education programmes. We can see this, for example, in the related failure of both reports to differentiate between early- and late-exit bilingual programmes in their analysis, the former being largely subtractive, the latter largely additive. Consequently, the somewhat lesser educational effectiveness of early-exit bilingual programmes, which constituted the majority of the programmes under review, inevitably subsumed the better educational results of the late exit programmes (Cummins, 1996). These two particular programme approaches, and the differences between them, will be fully explored in 6.4.2.

Overall, the inadequacy of Baker and de Kanter’s findings has been confirmed by Willig’s (1985, 1987) subsequent meta-analyses of their data. Willig controlled for 183 variables that they had failed to take into account. She found, as a result, small to moderate differences in favour of bilingual education, even when these were predominately early-exit programmes. Willig’s conclusions are also replicated in three subsequent major longitudinal bilingual education research studies in the US, those of Ramírez et al. (1991), and Thomas and Collier (1997, 2002). By specifically differentiating among the widely different approaches to bilingual education, and controlling for their variable effectiveness, the findings of each of these major studies clearly and consistently support the efficacy of bilingual education in additive bilingual contexts.

For example, as discussed previously in 4.5.1, Ramírez et al. (1991) compared English-only programmes with early-exit (1-2 years) and late-exit (4-6 years) bilingual programmes, following 2,300 Spanish-speaking students over four years. Their findings clearly demonstrated that the greatest growth in mathematics, English language skills and English reading was among students in late-exit bilingual programmes where students had been taught predominantly in Spanish.

In contrast, the Ramírez study also confirmed that minority language students who receive most of their education in English rather than their first language are more likely to fall behind and drop out of school. In fact, it is important to note here that the English-only programmes used for comparison in the Ramírez study were not typical to the extent that while the teachers taught in English, they nonetheless understood Spanish. This suggests that in the far more common situation where the teacher does not understand the students’ L1, the trends described here are likely to be further accentuated. In short, English-only, or English-submersion, programmes are widely attested as the least effective educationally for minority language students (see 2.3.1).

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24 As their names suggest, early exit programmes begin by teaching in the minority language but aim specifically to transfer students to the majority language as soon as possible. They are accordingly most often forms of ‘transitional bilingual education’. Late exit programmes maintain education in the minority language either throughout schooling, or at least for significantly longer periods. Although a small proportion of these programmes are also transitional in their approach, the majority aim to maintain the L1 and are thus also described as ‘maintenance’ bilingual education. The latter approach ensures that first language literacy skills are well established, facilitating and enhancing, in turn, first-to-second language transfer (see 6.6 for further discussion of these programmes).
The attributes or features necessary for optimizing the effectiveness of bilingual education, as identified in the international research literature, will be discussed and analyzed in due course. The point that we want to make here is simply that, while the Ramirez and Thomas and Collier research studies are widely attested as being far more robust and reliable than either the AIR or Baker and de Kanter studies, they have nonetheless still generated far less interest and had far less impact on subsequent federal US policy than their two predecessors (see Krashen, 1999). As Ricento observes of this, in spite of an impressive amount of both qualitative and quantitative research now available on the merits of bilingual education, ‘the public debate (to the extent that there is one) [in the USA] tends to focus on perceptions and not on facts’ (1996:142).

This part the Report specifically aims to counter similarly widespread (mis)perceptions in Aotearoa/New Zealand about bilingual/immersion education. It does so by providing exactly the kind of robust research evidence required for the ongoing development of informed educational policy, and the further promotion and development of good bilingual/immersion education practices, particularly, but not exclusively for Māori-medium education.

However, the US example highlights, once again, the significance of the wider social and political context and, particularly, the ongoing unwillingness of many educational policy makers to dispense with still widely held, or popular misunderstandings about bilingualism and bilingual education. Likewise, there remains a continuing disjuncture – in Aotearoa/New Zealand as elsewhere – between the recognition of the academic and intellectual advantages of ‘elite bilingualism’ (for example, in English and French) on the one hand, alongside the contradictory disavowal of the benefits of ‘minority bilingualism’ (for example, Māori and English) on the other (see also 1.2).

As Part 1 makes irrefutably clear, the significant benefits of additive bilingualism apply irrespective of the particular languages being taught. On this basis, the further development of bilingual/immersion education in Aotearoa/New Zealand – particularly for Māori-medium, but also for other languages such as Pasifika or Asian languages – must be within an additive bilingual education context if it is to result in the achievement and/or maintenance of bilingualism and biliteracy, as well as wider educational success, for bilingual students.

6.3 Key characteristics of bilingual education

In Aotearoa/New Zealand, bilingual education and immersion education have tended to be regarded as quite distinct from one another (with the former usually being viewed less favourably than the latter). However, the international research literature consistently identifies immersion education as one form of bilingual education. We can see why this is the case if we take the following classic definition of bilingual education, posited by Andersson and Boyer (1970):

Bilingual education is instruction in two languages and the use of those two languages as mediums of instruction for any part or, or all, of the school curriculum. (1970: 12; their emphasis in the first instance, ours in the second)

Put simply, bilingual education involves instruction in two languages (see also Baker and Prys Jones, 1998; Cummins, 2003; Freeman, 1998; Hamers and Blanc, 2000; Holmes, 1984; Skutnabb-Kangas, 1981). This immediately excludes programmes that include
bilingual students but do not involve bilingual instruction, most notably English-only submersion programmes. It also excludes programmes where a second language (L2) is taught as a subject only. English as a second language (ESL) classes are examples of this, as are foreign language classes, both of which are common in Aotearoa/New Zealand schools. Along with English-only submersion programmes, they can also clearly be described as non-bilingual programmes (see 6.6).

For a programme to be deemed to be bilingual, the key is that both languages must be used as media of instruction and thus to deliver curriculum content. As Baker and Prys-Jones (1998: 466) conclude: ‘If there is a useful demarcation, then bilingual education may be said to start when more than one language is used to teach content (e.g. Science, Mathematics, Social Sciences, or Humanities) rather than just being taught as a subject by itself’. On this basis, immersion models that teach predominantly through a minority language, such as French-immersion or Māori immersion programmes, are also clearly bilingual programmes, since some curricular instruction in the majority language (English, in both cases) almost always occurs at some point prior to the end of the programme, even in those programmes with very high levels of immersion in the minority language. There are specific issues here with respect to ensuring that academic language proficiency in both languages occurs – that is, the successful achievement of biliteracy – but these concerns will be addressed more fully in Section 9 (see also below).

An additional key point addressed by many commentators in defining bilingual education relates to the goals and outcomes of any given programme. In short, does the programme in question aim to achieve, foster and/or maintain longer-term student bilingualism and biliteracy (additive bilingualism), or does it aim eventually to shift students from bilingualism to monolingualism (subtractive bilingualism)?25 Only additive bilingual programmes can be regarded as strong forms of bilingual education. As we shall see in Section 7, they are also clearly the most effective programmes in achieving bilingualism and biliteracy.

Additive bilingual education approaches include those that teach in students’ L1, if this language is different from the majority language (as, for example, with L1 Spanish-speakers in the US), in order to promote eventual bilingualism and biliteracy. This approach is based, in turn, on the developmental interdependence principle, where acquiring literacy in one’s L1 is seen to provide the strongest basis for successfully transferring these literacy skills to an L2 such as English (see 4.6). In the Aotearoa/New Zealand context, such an approach is most congruent with Pasifika bilingual education, since many Pasifika families still speak a Pasifika language in the home and/or in community contexts.26 By implication, additive bilingual education would also include programmes that aim to foster bilingualism but which have a mix of both L1 and L2 speakers, as in Two-way bilingual education in the US. Again, this model could potentially apply to Pasifika language education programmes in Aotearoa/New Zealand (see 7.2.6 for further discussion).

25 For definitions of additive and subtractive bilingualism, see 1.2; for an extended discussion, see 6.5.
26 The degree to which Pasifika languages remain spoken in specific Pasifika communities varies widely, however. For example, Samoan remains widely spoken as a language of the family and the church as, to a lesser extent, does Tongan; indeed, of the over 100,000 speakers of Pasifika languages identified in the 2001 Census, 80,000 speak Samoan. Other Pasifika communities fare far less well – the Niuean and Cook Islands Māori communities, for example, are currently in the process of extensive language shift to English (May, 2002c).
Additive bilingual education also includes those programmes that teach in a minority or target language that is an L2 for many students – as is the case predominantly in Māori-medium education. This is because the specific aim of such programmes is to maintain the target language (thus ensuring bilingualism and biliteracy) in the face of a majority language that would otherwise swamp it – hence, the need to teach through the medium of the target language to ‘ring fence’ the language. Again, the interdependence principle underpinning the successful achievement of bilingualism and biliteracy can be said to apply here. However, instruction in a minority language that is an L2 for many students – such as te reo Māori – requires recognition that attaining academic language proficiency in that language may take longer for such students, given the second language-learning delay discussed earlier (see 4.6; 5.1). An important implication of this caveat is that instruction in the target language (e.g., te reo Māori) needs to be for at least 6 years for this transition to be successfully achieved.

Given this discussion, Janet Holmes’ early definition of bilingual education in the Aotearoa/New Zealand context can still be said to apply today:

> A bilingual education programme is one intended to promote bilingualism either by the predominant use of a minority group language [that would not otherwise be maintained] or by the use of two languages as mediums of instruction in school. (Holmes, 1984:1)

### 6.4 Key axes of bilingual education

Another way that we can approach the task of defining bilingual education is by identifying a number of key axes along which various bilingual programmes may be situated. These axes are inevitably somewhat arbitrary, and will not be able to account for all variations, but they do provide us with a useful heuristic by which to examine bilingual education in more detail. There are three axes, or lines of demarcation, that we have determined as most useful here, and which are outlined in Diagram 7 below:

1. **Philosophy** (view or understanding of bilingualism)
2. **Model** (described in terms of educational aims)
3. **Programme** (described in terms of context-specific characteristics)

Before proceeding to examine the specifics of this diagram in more detail, it is worth first highlighting its broad parameters. These are discussed in the following description box:
Description of Diagram 7

The diagram below outlines three key axes in bilingual education, along with their often-complex interactions, in descending order of specificity.

**Philosophy:** In any bilingual programme, there will be a broad philosophy of bilingualism underpinning it. This philosophy will either be **additive** or **subtractive**, being premised either on the value of adding another language to the student’s existing language repertoire or, conversely, of losing or replacing one language with another.

**Models:** At the next level, there are three models that are commonly referred to in the research literature by their aims (**transitional**, **maintenance** and **enrichment**). A transitional model aims to foster language shift from a minority language to a majority one, and is thus broadly concerned with the cultural and linguistic assimilation of minority language speakers. A maintenance model aims to maintain an L1 minority language and is broadly concerned with strengthening the cultural and linguistic identity and the language rights of these minority language speakers. An enrichment model aims for language development or extension, usually via instruction in a minority language that is an L2 for students, and is thus more broadly concerned with fostering cultural pluralism and social autonomy (Hornberger, 1991).27 Again, all bilingual programmes will fit broadly into one of these models, according to what they are attempting to do, although not always neatly. Thus, heritage language programmes, of which Māori-medium education can be said to be one example, fall somewhere in between the maintenance and enrichment models for reasons that will be discussed more fully below.

**Programmes:** At the next level of specificity lie particular bilingual programmes types. These can be differentiated by a wide range of context-specific factors to do with curriculum, pedagogy, language(s) of instruction, and student population, among many others. These factors will be discussed in more detail in Section 3 but do provide us with a sufficient basis to distinguish between those programmes that can be said to be bilingual and those that are not (see also 6.3).

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27 Another means by which to describe these broadly differing aims is via Ruiz’s (1984) well known typology of orientations to language policy (within which we can situate bilingual education): ‘language as a problem’ (transitional); ‘language as a right’ (maintenance); ‘language as a resource’ (enrichment); see May, 2001: Ch. 5.
6.5 Philosophy: additive or subtractive bilingualism

Given that the additive/subtractive bilingual distinction has already been extensively discussed in Part 1, as well as in the preceding sections of this part of the Report, we will not belabour the distinction unduly here. That said, its significance to the efficacy of bilingual education is such that it does warrant some recapitulation.

First postulated by Lambert in Canada in 1974, the additive-subtractive distinction was developed in an attempt to unravel an apparent conundrum at that time, although it is a conundrum that still remains highly pertinent today (see 1.2). On the one hand, there were clear cognitive and educational advantages being demonstrated for English-speaking students from dominant social groups who received their schooling through the medium of French as their L2 in French-immersion schooling in Canada. On the other hand, there were equally clear cognitive and educational disadvantages being simultaneously experienced by students from ethnolinguistic minorities schooled through English as their L2. How could this be explained?
Lambert argued that the former constituted an example of additive bilingualism, aided in turn by the fact that these students were ‘elective bilinguals’, or bilingual by choice. In the additive scenario the two languages are both highly valued by the school and the wider community, as is bilingualism in these languages, even though the target language (French) remains a minority language in the wider social (Canadian) context. In contrast, the latter constituted an example of ‘circumstantial bilinguals’ in a context of subtractive bilingualism (see 1.2; see also 5.1).

In a subtractive bilingual context, the bilingual students’ L1 has low status and is not valued by the school or the wider community, nor is bilingualism in this particular combination of languages seen as desirable or useful. Consequently, the educational aim is to ‘shift’ the bilingual students to the L2 as quickly as possible. The result is actually a significantly lower likelihood of the student becoming bilingual and, in most cases, the eventual loss of the student’s first language. Ironically, a subtractive bilingual context also exhibits the lowest rates of educational success in achieving literacy in L2 for bilingual students, not least because of the attendant erosion of students’ cultural identity and self esteem and the difficulties inherent in acquiring academic language proficiency in an L2 (see Skutnabb-Kangas, 2000; May, 2001: chapter 5; 2002a, 2002b, 2002c, 2002d; see also below).

It was this consistent pattern of low success in bilingual ability and related educational achievement, experienced by those in subtractive bilingual contexts, that was initially highlighted, though not adequately explained, by early bilingual education research (see 3.1). It consequently led Lambert and fellow researcher Robert Gardiner to argue that successful bilingual education could not be achieved by attending only to classroom factors. As Lambert asserted, external societal factors are, in fact, often more likely to dictate individual programme success (or otherwise) in fostering bilingualism:

> Negative, prejudiced attitudes and stereotypes about the other ethnolinguistic group, quite independent of language learning abilities or verbal intelligence, can upset and disturb the motivation needed to learn the other group’s language, just as open, inquisitive and friendly attitudes can enhance and enliven the language learning process. (Lambert, 1980: 416)

Conversely, as Jim Cummins has observed:

> Widespread school failure does not occur in minority groups that are positively oriented to their own and the dominant [language and] culture, that do not perceive themselves as inferior to the dominant group, and that are not alienated from their own cultural [and linguistic] values (Cummins, 1986: 22).

The Canadian context demonstrated these differences starkly. English-speaking students could (and did) learn French without fear of ethnic or linguistic erosion and could also profit immensely from their educational experience, including cognitively, socially, educationally and economically. The learning of a socially acceptable or valued language meant that the students’ skills developed further and added to their home-English language base. For the parents of these students, the learning of French also in no way portended the replacement of their L1, as it would for minority groups in the same country who were pressured to develop high skills in English at the expense of their home languages (Lambert, 1967, 1984). A similar pattern of educational and social expansion and opportunity can be found with respect to Welsh-medium education in Wales, where
many of the students are likewise English-speaking L1 students from middle-class homes (see May, 2000, 2001: ch. 7).

In contrast, if we take the case of new immigrants to a host society as an example, we can see clearly what negative effects might ensue in subtractive bilingual contexts. An immigrant student finds him/herself in an educational environment where the only language spoken is one that they do not yet know, and their home language or L1 holds no advantage for them because it is largely (or completely) ignored in the teaching and learning process. In order to learn English, these students thus invariably ‘drop’ their home language(s) (Wong-Fillmore, 1991). And they may do this willingly because their primary aim will be to fit into their new environment. But the cost is high. Given the differences involved in acquiring conversational and academic language proficiency in an L2 (see 4.6), many students struggle to acquire academic language proficiency successfully, not least because they are having to learn new academic content at the same time as having to acquire the language of instruction itself. These demands help to explain, for example, why Pasifika students and adults in Aotearoa/New Zealand continue to be over-represented in the lowest levels of English literacy acquisition.

What this highlights, in turn, is that subtractive bilingualism is not a natural phenomenon. Rather, it occurs in situations where there are several cultures sharing the same borders, in which one, usually the larger group, dominates the others (usually the minorities), in their society’s infrastructure. Subtractive bilingualism is thus associated most commonly with groups who have been colonized (such as Māori) or those who have migrated to a new country and whose culture is not reflected in the new host country. In contrast, additive bilingualism is generally associated with the acquisition and learning of ‘elite’, national and/or international languages, which are seen as useful for enhancing future opportunities (de Mejia, 2002), although, as will become clear, additive bilingualism need not be limited to bilingualism in such languages only.

Subtractive bilingualism is also apparent in society at many levels, from the national level reflected in the legislation and the frameworks of our institutions, to the level of the individual and their personal perceptions. Teachers and schools also have significant influence on the ways in which students’ bilingualism is perceived. The negative influence of a teacher’s attitude towards a student’s L1, for example, can also be transferred to and/or internalized by the students themselves. As Lambert states, ‘these biases of the teacher are apparently picked up by other pupils in the class’ (1980: 419).

The ongoing cycle of negative attitudes towards a minority language, and the internalisation of those attitudes by the speakers themselves, leads to eventual language shift and loss. Along the way, the academic success of minority language students, and their long-term social and economic trajectories, are also severely compromised and/or delimited.

Schools may also inadvertently be nurturing an environment of subtractive bilingualism in the mechanisms and structures they implement. For instance, in the Aotearoa/New Zealand context, there are an increasing number of mainstream schools that have established bilingual units within them. While these units may attempt to create positive additive bilingual environments, the reality is often that the wider school staff, rules and procedures continue to reflect a negative view of bilingualism. This can therefore reverse, or at least undermine, the attempts of individual teachers to create positive bilingual classroom environments. In these cases, measures need to be taken to improve the status
of the language(s) and culture(s) of the minority student group(s) within the school in order to equalize the statuses of the languages and cultures concerned (Cloud, Genesee, and Hamayan, 2000). These measures will be discussed more fully in Section 9.

6.6 Bilingual models

With this broad distinction between additive and subtractive bilingualism clearly outlined, the next level of classification of bilingual programmes can now be made in terms of the specific linguistic and/or educational aims of particular bilingual education models. According to Freeman (1998:3), models are defined in terms of ‘their language-planning goals and ideological orientations toward linguistic and cultural diversity in society’. They can be understood as broad categories that help us to understand on a very general level what bilingual education means, although as already indicated (see 6.4), there is inevitably a degree of arbitrariness in distinguishing among them.

There is already a welter of different classifications of bilingual education in the research literature. Many of these take different points of reference in demarcating among bilingual education models and programmes and are therefore not directly comparable (see, for example, Hornberger, 1991; Skutnabb-Kangas, 2000; Baker, 2001). That said, there are three broad models of bilingualism that are consistently included in these various typologies. These are transitional models, maintenance models and enrichment models of bilingual education – although, as Hornberger (1991) states, enrichment models are also often elided with maintenance models (see 6.6.2-6.6.3). In addition to these three broad models, we will discuss where heritage bilingual education, which includes Māori-medium education, is situated (see 6.6.4).

6.6.1 Transitional models

A transitional model of bilingual education uses the L1 of minority language students in the early stages of schooling but aim to shift students away from the use of their L1 as quickly as possible towards the greater use of the dominant language (English in the context with which we are concerned), in order to cope academically in ‘mainstream’ or general education (Freeman 1998; de Mejia, 2002; Otheguy and Otto, 1980). In other words, the L1 is used only to the extent that it facilitates the transition of the minority language speaker to the majority language (L2). Accordingly, most transitional programmes are also ‘early-exit’ programmes, where the L1 is used for only 1-2 years, before being replaced by the L2 (see also note 24).

Transitional bilingual education (TBE) acknowledges the significance of the interdependence of languages, along with the benefits of using L1 as a bridge to the acquisition of L2. Despite this, however, TBE also clearly holds to a subtractive view of individual and societal bilingualism. In assuming that the (minority) L1 will eventually be replaced by a (majority) L2, bilingualism is not in itself regarded as necessarily beneficial, either to the individual or to society as a whole. This in turn suggests that the eventual atrophy of minority languages, or the aim of moving eventually from bilingualism to monolingualism in the majority language, remains a central objective of transitional bilingualism programmes.

Examples of this type of transitional bilingual approach in Aotearoa/New Zealand were the early Māori bilingual programmes of the 1970s, which were established in rural Māori-speaking areas such as Ruatoki in the Bay of Plenty. While these programmes
incorporated Māori language and culture dimensions, the main aim was to shift the students towards greater use of English, rather than the retention of Māori itself (Benton, 1981).

Apart from this, transitional bilingual programmes have seldom been implemented in Aotearoa/New Zealand, except at the localized school level. This is in marked contrast to the USA, for example, where transitional programmes were developed widely for Spanish (L1) speakers from the 1970s onwards. The principal reason for their lack of implementation in Aotearoa/New Zealand has been a long-standing (and ongoing) preference for English-only or English-submersion educational approaches for ethnosociolinguistic minority students in general education (see 7.2.1), supplemented with ESL withdrawal support (see 7.2.2). This has been reinforced by the low densities of ethnosociolinguistic minority groups within Aotearoa/New Zealand, at least until recently. Insufficient numbers, and the perceived costs of developing bilingual education programmes and their attendant resources, have been used as arguments for not developing transitional bilingual programmes, although recent draft plans for Pasifika bilingual education did briefly consider doing so.28

6.6.2 Maintenance models

A maintenance approach to bilingual education, on the other hand, differs fundamentally from a transitional approach because it aims to maintain the minority language of the student, strengthen the student’s sense of cultural and linguistic identity, and affirm their individual and collective ethnosociolinguistic rights. There are many types of bilingual programme that can be said to fit into this model and these will be discussed more fully in Section 7. However, the typical participant in a maintenance bilingual programme will be a national minority group member (e.g., Welsh in Britain, Catalan in Spain, French Canadian in Canada) whose L1 is already developed to an age-appropriate level (although they do not need to be literate yet in the language). The language of instruction of the programme will either be predominantly in the L1 or, if both L1 and L2 are used as mediums of instruction, at least 50 per cent in the L1 (see Sections 7 and 9 for further discussion of minimum levels of instruction in the language). This is because the aim of such programmes, as their designation suggests, is to maintain the L1 for a sufficient amount of time so that academic language proficiency in the L1 is achieved. This is turn facilitates the acquisition of literacy in an L2, on the basis of the developmental interdependence principle (see 4.6). Consequently, the most common programmes in a maintenance bilingual model are late-exit programmes – that is the use of L1 as an instructional language continues for at least 4 years.29

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28 At the time of writing (December 2003), these plans have been withdrawn, pending further consideration and development, after criticism of an earlier draft that had advocated transitional bilingual programmes for Pasifika students. While any form of bilingual education is likely to be more beneficial to Pasifika students than English-submersion programmes or ESL withdrawal approaches, as Section 7 will make clear, academic reference group members nonetheless expressed consistent concern to the Ministry of Education about the relative ineffectiveness of transitional bilingual programmes when compared with maintenance bilingual approaches. (See Section 7 for an extended discussion of all these approaches and their relative effectiveness; see also below).

29 As noted earlier (see note 24), not all late-exit programmes are maintenance bilingual programmes, there are some late-exit transitional programmes as well. However, the majority of transitional education programmes are early-exit, and the majority of maintenance bilingual programmes are either late-exit, or non-exit (i.e., the whole of schooling is conducted via the bilingual programme – this is particularly evident in the European context).
6.6.3 Enrichment models
Closely related to maintenance bilingual programmes are enrichment programmes, a term first coined by Fishman (1976). If the former are geared towards maintaining the L1 of minority language students, the latter are generally (but not exclusively) associated with teaching majority language students (such as L1 English speakers) through a minority target language. French immersion in Canada, where many of the students come from middle-class L1 English-speaking homes, is perhaps the most often cited example of an enrichment bilingual programme here. Welsh-medium schools, which also include many middle-class L1 English speakers, are another example (see May, 2000). Elite bilingual programmes such as the European Schools movement are also widely regarded as enrichment programmes (Skutnabb-Kangas, 1981; Valdes and Figueroa, 1994).

As with maintenance programmes, the emphasis in enrichment programmes is not just on achieving bilingualism and biliteracy for individual students but also on the ongoing maintenance of the minority language(s) in the wider community. As Hornberger argues, the enrichment model ‘encompasses all those bilingual education programme types which aim toward not only maintenance but development and extension of the minority languages, cultural pluralism, and an integrated national society based on autonomy of cultural groups’ (Hornberger, 1991: 222). Linking the individual and the social directly in this way emphasises that maintaining a minority language is not only an individual right of its (minority) speakers but also a potential resource for all speakers (cf. Ruiz’s typology discussed in note 27). Accordingly, Hornberger (1991) argues that this type of programme has the greatest potential to educate students successfully in bilingual programmes, given its strong additive bilingual basis. It is also the programme most likely to reduce the educational and wider social and linguistic inequalities experienced by minority language speakers.

6.6.4 Heritage models
This broad L1/L2 distinction between maintenance and enrichment approaches is a useful one, or at least a useful form of shorthand, in the literature. However, it does not necessarily help us to identify clearly where a heritage language model of bilingual education might fit in. This model is most commonly associated with indigenous language revitalization efforts, and thus Māori-medium education, along with a wide range of other indigenous language education initiatives, is seen as part of this broad approach (see Hinton and Hale, 2001; May, 1999, 2003b for further discussion). Some of these indigenous language programmes are aimed at students who still speak the indigenous language as an L1 (e.g., Navajo; Hualapai in the USA; Inuit in Nunavut, Canada; Sámi in Finnmark, Norway) and may therefore be regarded as L1 maintenance bilingual programmes. But many also cater for students with a mix of L1/L2 speakers of the language (Māori, Hawaiian), and some have only L2 speakers (or, rather, learners) of the language (the Master/Apprentice program developed for the now largely moribund indigenous languages of California) and are therefore closer to the enrichment end of the continuum.

And yet, where heritage language programmes are discussed in the research literature, they tend to be described simply as an example of maintenance bilingualism, with the allied presumption that the majority of their students are L1 speakers of the indigenous language (see, for example, Baker, 2001). Given the clear continuum between maintenance and enrichment models, this description can be defended. Indigenous language programmes are, after all, most often based on additive bilingualism, with
instruction in the indigenous language a central feature of these programmes. Moreover, there clearly are heritage language programmes that still comprise a majority of L1 speakers. However, even in indigenous language programmes that have traditionally drawn primarily from L1 speakers, more L2 speakers are increasingly present. For example McCarty (2003) notes that in the Navajo heritage language programme at Rough Rock in Arizona – one of the strongest and longest established in the USA – only 50% of Navajo now speak their own language and their numbers are declining each year.

The increasing presence of L2 speakers in heritage or indigenous language programmes is the ongoing consequence of already well-established processes of language shift or loss for such languages. These changing language patterns for indigenous language speakers have much to do, in turn, with the rapidly increasing influence of English as a global language, allied with the long history of subtractive bilingualism discussed earlier (see Skutnabb-Kangas, 2000; May, 2001). They certainly make the maintenance of indigenous languages considerably more difficult. Given this, it is crucial that both the international and national research literature begin to address more clearly the specific consequences of the increase in L2 speakers in many heritage language programmes.

In particular, we need to distinguish, and if necessary differentiate between, the specific language and learning needs of L1 and L2 speakers or learners of the target minority language within these programmes. This can be accomplished in ways that will further enhance the developmental and educational outcomes of all the students involved, but only if these issues are directly addressed. At present, the increasing presence of L2 speakers continues to be either ignored, or subsumed within the L1 group, even though their educational circumstances and learning needs may differ. Baker’s (2001) typology of heritage language education, for example (see 7.1), does not distinguish between these groups or their different needs and this is typical of the literature more generally. Much the same can be said for the research literature – at least until recently – on Māori-medium education (see Section 8).

Bearing these specific concerns in mind, and also acknowledging the continuum or overlap between maintenance and enrichment models of bilingual education, we can tentatively conclude the following about their presence in Aotearoa/New Zealand.

L1 maintenance models of bilingual education remain uncommon. Some of the Pasifika bilingual programmes, particularly in Auckland, will include students already fluent in their L1 to age-appropriate levels, particularly, but not exclusively, if they are Samoan or Tongan speakers. Richmond Road Primary School, Clover Park Middle School, and Finlayson Park in Manurewa, all of which have Pasifika bilingual units within them, are potential examples here. However, the vast majority of bilingual programmes in Aotearoa/New Zealand, including Pasifika programmes, are likely to have, at the very least, a mix of L1 and L2 students within them, and in the case of Māori-medium programmes a predominance of L2 Māori speakers. This accords more closely with the enrichment end of the continuum. That is, many of the students involved in these programmes will either be:

- L1 speakers in need of further support and/or extension in the L1 or, more likely,
- L2 speakers of the target language (or L1 English speakers)
As such, the vast majority of these bilingual/immersion programmes will be focusing (and will need to focus) primarily on developing the L2 target minority language skills of these students, rather than maintaining an already existing age-appropriate language base in the L1.

6.6.5 Limitations of these models

The typology of transitional, maintenance, and enrichment bilingual models has been discussed here because it is so widely discussed and accepted in the research literature. However, as the preceding discussion on heritage language programmes makes clear, like any typology, it also has clear limitations. Paraphrasing Hornberger (1991), we can highlight the following broad areas of concern with respect to this:

1. The terms maintenance, transition and enrichment clearly mean different things to different people. For example, maintenance in some contexts means oral maintenance yet full bilingual maintenance in others; in other contexts, particularly within heritage language programmes, the distinction between maintenance and enrichment is often unclear.

2. This is because it is difficult to find common ground by which to clearly classify the many typologies that exist under any one of these 3 models. Many of the typologies fail to distinguish between the goals/aims and the structural and contextual features of particular bilingual programmes. For instance, a maintenance programme may not necessarily foster successful language development if there is no opportunity to use the language outside the school. Nor do maintenance goals necessarily ensure a maintenance programme structure. Consequently, where a particular programme is situated in relation to broader models of bilingual education is a) inevitably somewhat arbitrary and b) dependent on a detailed understanding of its particular contextual features (see Section 7).

3. To complicate matters even further, the terms ‘transitional’ and ‘maintenance’ refer not only to model types but also specific programme types (see Diagram 7; see also Section 7). In contrast, some bilingual programmes (e.g., Two-way and immersion programmes) tend to refer only to programme type. This again makes the wider classification of such programmes more difficult.
7. Bilingual Education Programmes

In the last section, models of bilingual education were defined in terms of their language-planning goals and ideological orientations toward linguistic and cultural diversity in society. In this section, particular bilingual programme types are discussed in more specific detail. In light of the limitations just outlined in 6.6.5, these programmes are defined in terms of specific contextual and structural characteristics that are illustrated in the school context.

7.1 Typologies of bilingual programmes

According to Hornberger (1991), bilingual programmes are more concrete categorizations than models, and can be differentiated from one another by an analysis of specific contextual and structural characteristics. By contextual characteristics, Hornberger means the nature of the students and teachers, and by structural characteristics, she means the location of the bilingual programme in the school (Freeman, 1998). According to Cummins (2003), programme typologies also serve usefully to highlight specific issues that need addressing in the planning and implementation of programmes.

However, as with the previous discussion of bilingual models, any typology of bilingual programmes is likely to be arbitrary, and one typology may well differ, even markedly, from another, depending on the particular criteria applied. This is again reflected in the significant number of different types of typologies that have been generated in the research literature, depending on the combination of a wide variety of features – programme goals, status of the student group (e.g. dominant/subordinated, majority/minority, etc), proportion of instructional time through each language, and the sociolinguistic and sociopolitical situation in the immediate community and wider society.

It is not possible, nor is it particularly useful, to explore all of these numerous typologies in any detail, given the complexities involved. For the sake of clarity, this Report will only focus on several of the most relevant classifications, including those by Skutnabb-Kangas (2000) Baker (2001), and Cummins (2003). McCaffery also provides a useful overview of bilingual programmes with specific reference to the Aotearoa/New Zealand context (see Appendix).

Baker’s (2001) typology (see Figure 5 below) recognizes that, regardless of the number of categories, there will be multiple shades of programmes that do not fit completely, or easily, into his overall framework. He nevertheless portrays 10 programme types and divides them into two categories, either weak forms or strong forms of bilingualism. ‘Weak forms’ simply contain bilingual students, and their educational aim is to produce monolingualism or limited bilingualism rather than full bilingualism. In contrast, ‘strong forms’ produce students who are proficient in two languages and are biliterate as well (Baker and Prys Jones, 1998).
Figure 5:  Baker’s typology of bilingual education programmes

<table>
<thead>
<tr>
<th>WEAK FORMS OF EDUCATION FOR BILINGUALISM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Program</strong></td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>SUBMERSION (Structured Immersion)</td>
</tr>
<tr>
<td>SUBMERSION with Withdrawal Classes / Sheltered English</td>
</tr>
<tr>
<td>SEGREGATIONIST</td>
</tr>
<tr>
<td>TRANSITIONAL</td>
</tr>
<tr>
<td>MAINSTREAM with Foreign Language Teaching</td>
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<tr>
<td>SEPARATIST</td>
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</tbody>
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<table>
<thead>
<tr>
<th>STRONG FORMS OF EDUCATION FOR BILINGUALISM AND BILITERACY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Program</strong></td>
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<tr>
<td>---------------------</td>
</tr>
<tr>
<td>IMMERSION</td>
</tr>
<tr>
<td>MAINTENANCE/HERITAGE LANGUAGE</td>
</tr>
<tr>
<td>TWO-WAY/DUAL LANGUAGE</td>
</tr>
<tr>
<td>MAINSTREAM BILINGUAL</td>
</tr>
</tbody>
</table>

Notes: (1) L2 = Second Language; L1 = First Language; FL = Foreign Language. (2) Formulation of this table owes much to discussions with Professor Ofelia García. This typology is extended to 14 types of bilingual education in García (1997, p. 410).

Source: Baker (2001:194)
While this typology is detailed and helpful in classifying programmes, it does not adequately describe the Aotearoa/New Zealand context in respect to Māori-medium education. For reasons that have already been highlighted in the discussion of heritage language programmes, Māori-medium programmes fit somewhere between the French Immersion programmes of Canada and the language maintenance programmes of minority groups such as L1 Spanish speakers in the US. The commonality with Canada is in the fact that they both teach through the medium of the students’ L2. The commonality with maintenance programmes is that they are additive bilingual programmes for minority language speakers whose language(s) are marginalized in the wider societal context.

Skutnabb-Kangas (2000) also uses Baker’s ‘weak form – strong form’ typology. However, she adds a third category of ‘non-forms’ of bilingualism. Skutnabb-Kangas defines these non-forms of bilingual education as those which lead to virtual monolingualism and thus includes within them foreign language teaching and English-only or English-submersion, among others. Weak forms, for her, include those that lead to a strong dominance in one language, such as transitional bilingual programmes. Strong forms are those that lead to high levels of bilingualism, as in maintenance and enrichment programmes.

Skutnabb-Kangas’s justification for including non-forms of bilingual education is one that we fully endorse. It is clear, at least to us, that programmes that simply include bilingual students, but which make no effort to acknowledge their L1, let alone foster bilingualism, are not bilingual programmes. Calling them ‘weak’ forms of bilingual education simply obscures, rather than clarifies this fact. Interestingly enough, Baker’s earlier typology (Baker 1993) includes the three categories that Skutnabb-Kangas proposes. We can only surmise why Baker has subsequently dropped this third category. Perhaps the groupings are less important for him than the programme characteristics, such as the type of student, the language of the classroom, the language outcomes and the societal outcomes (see also Skutnabb-Kangas, 1981).

Baker (2001) discusses three limitations of bilingual education classification that may shed some light into his thinking here:

1. Models suggest static systems whereas bilingual schools constantly evolve
2. There are wide and numerous variations within each model
3. Models rarely address the classroom process
4. Models do not discuss the effectiveness of bilingual education

Cummins’ (2003) typology distinguishes five broad types of bilingual programme based on the sociolinguistic characteristics of the language used in the programme and the population groups the programme is intended to serve. Four of these programme types are intended primarily for minority or subordinated group students while the fifth is intended for majority or dominant group students. This typology is simple and helpful. However, it does not provide the same detail as Baker (2001).

In Cummins’ model:

**Type I programmes** involve the use of indigenous languages as mediums of instruction. Examples are the various Native American and English bilingual/immersion programmes in the United States (e.g. McCarty, 1997) and Māori bilingual/immersion programmes in
Aotearoa/New Zealand (Bishop and Glynn, 1999). The indigenous group has usually been conquered or colonized at some time in the past and the bilingual programmes are often aimed at revival or revitalization of languages that have become endangered.

**Type II programmes** involve the use of a national language together with a majority or more dominant language. The languages involved usually have long-term status in the society and often some degree of official recognition. In some cases, the national language may be the majority language of the society and is combined in the bilingual programme with a language of wider communication (e.g. the language of a former colonial power). Examples include programmes that use various African languages together with English in South Africa, Gaelic in Ireland and Scotland, and Welsh in Wales, as well as Basque and Catalan in Spain.

**Type III programmes** involve immigrant languages that are the languages of relatively recent immigrants to a host country. Many of the bilingual programmes in countries such as the United States, the Netherlands, and Australia fall into this category. Most of these are transitional programmes designed to facilitate students’ academic progress.

**Type IV programmes** serve students who are deaf or hard of hearing.30

**Type V programmes** are intended for dominant or majority group students. French immersion programmes in Canada and dual or Two-Way language programmes in the USA are examples of Type V. Two-way or dual language programmes in the US also fall into the categories of Type II or type III since they serve linguistic minority students together with English L1 students, with the goal of promoting bilingualism and biliteracy for both groups. (Dual language programmes will be discussed more fully in 7.2.6).

Finally, McCaffery’s model (see Appendix 1) is another rendition of Baker (2001) in that it distinguishes between weak and strong forms of bilingual education. This typology is useful because it is designed to explain various programmes in relation to Aotearoa/New Zealand and also lists examples of such programmes here. It still, however, does not distinguish between bilingual forms and non-bilingual forms as Skutnabb-Kangas (2000) does.

### 7.2 Particular programme approaches to educating bilingual students

Six approaches will now be examined in terms of whether they are in fact bilingual approaches, their characteristics, advantages and disadvantages and their place in the Aotearoa/New Zealand context.

#### 7.2.1 Submersion

**Submersion** programmes are the most common method in the world for educating minority language (L1) groups (Skutnabb-Kangas, 2000). They take minority L1 students and place them in a typical general or ‘mainstream’ classroom in which only the majority language (L2) is spoken. These programmes are also known as ‘sink or swim’ because

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30 In Aotearoa/New Zealand, New Zealand Sign language is the language used by most deaf New Zealanders. At the time of the last census (2001), 27,000 identified as users of New Zealand Sign Language (May, 2002a). Waite (1992) includes sign language in his discussion of Aotearoa/New Zealand language policy; sign languages are also an important part of wider discussions of bilingualism. However, because of the primary focus of this Report on Māori-medium education, it will not be explored further here.
the students are thrown in at the deep-end and left to swim – or, more often, sink – with little, or no, planning and support in respect to their needs (García, 1991). The misplaced principle that is followed in these schools is that the earlier the exposure and the longer the exposure to the majority language, the quicker they will learn the language of the majority group. This premise has been described in the literature as the ‘time on task’ principle; the more time spent in the L2, the more likely the student will acquire the L2. Conversely, students’ L1 is seen as an obstacle, and/or as potentially interfering with this focus on the L2.

These programmes are often perceived by policy makers to be ‘cost-effective’. The mainstream programme these students enter already exists and it ostensibly requires few additional resource materials or special conditions. There is no apparent need for any special teacher qualifications or training either. However, there are a number of fundamental problems with this popular analysis. First, the perceived costs of establishing bilingual programmes are regularly overstated (see Grin and Vaillancourt, 2000 for an economic analysis). Second, given the highly ineffective nature of submersion approaches in teaching bilingual students (see below), there are invariably significant additional resource costs involved (special tuition; ‘remedial’ programmes; management and behaviour programmes). Third, when one distinguishes between short- and long-term costs the economic analysis is further – indeed, fatally – undermined. The long-term costs of consistent educational underachievement for bilingual students, and the wider social and economic impact invariably associated with it (unemployment; poverty; social problems etc), are so significant as to warrant a fundamental reappraisal of submersion approaches to bilingual students. In Aotearoa/New Zealand, the disproportionate representation of Pasifika and Māori in the lowest levels of English literacy, in both school-based and adult literacy analyses, suggests as much (see note 20). Finally, the idea that teachers do not need additional training in teaching bilingual students – even within mainstream contexts – is extremely problematic. It is precisely because teachers have not had sufficient specialized training in second language acquisition and bilingualism that the teaching of bilingual students has proven to be so ineffective in mainstream contexts (see below; see also Section 9).

On this basis, describing submersion programmes even as a ‘weak’ bilingual approach is extremely dubious. As Holmes (1981) states, the submersion of minority group students in the majority group language (English in our context) does not constitute bilingual education since this involves no effort to support or maintain the student’s L1 or mother tongue. These programmes are in fact clearly subtractive. That is, they will result in the loss of the student’s L1. They do not aim to encourage the use of two languages, and instead aim to move the student away from their L1 or home language. Over a short period of time the L1 will gradually be used in fewer and fewer interactions and proficiency will steadily decrease. Furthermore, the ‘time-on-task’ principle, by which it is assumed that giving early, sustained, and long-term exposure to the L2 will enhance its acquisition, has consistently been contradicted by research on bilingualism which demonstrates that subtractive environments have a greater and more consistent negative effect on bilingual students overall (Cummins, 2000b; Hamers and Blanc, 2000; see Part 1).

More specifically, these programmes have been consistently criticized for the following reasons. First, the language minority students spend the first part of their education understanding very little of what is being said by the teacher. Because the teachers are
unlikely to have been trained in ESL methodology, they are also unlikely to have any expertise in modifying instruction to accommodate such students. Second, because of the exclusion of the students’ language and culture from the classroom, the submersion programme becomes a tool of cultural and linguistic assimilation. Third, alongside the problems of language, there will also likely be problems of social and emotional adjustment for the students involved in this type of programme, and a high possibility of failure in the school system as their language is deprecated and identity discounted.

As has already been discussed, a number of major longitudinal research studies have been carried out in the USA that evaluate the achievement of minority students (particularly, L1 Spanish-speaking students) in these programmes. Ramírez et. al.’s (1991), 4-year longitudinal study of 2,352 Latino elementary school students was described in 4.4.1 and 6.2. Ramirez et al. found that minority language L1 Spanish-speaking students in the US who were in submersion programmes progressed at about the same rate as students in the general population. However, the gap between their performance and that of the general population remained the same. In other words, submersion approaches led to some individual educational improvement, but did nothing to improve bilingual students’ overall poorer performance in relation to their majority peers.31

A second major 5-year longitudinal study by Thomas and Collier (2002), also described in 4.5.1, involved over 210,000 students and found much the same pattern of results. In terms of English achievement results, English language learners (ELL) in English submersion classes, because their parents refused bilingual/ESL services, showed large decreases in reading and mathematics achievement (in English) by Grade 5, equivalent to almost 3/4 of a standard deviation, when compared with students who received bilingual/ESL services. The largest number of students who dropped out of school early came from this group, and those remaining in school finished 11th grade at the 25th NCE (12 percentile) on the standardized reading test.32

Such was the disadvantage in terms of achievement potential that Thomas and Collier warn that:

Parents who refuse bilingual/ESL services for their children should be informed that their children’s long-term academic achievement will probably be much lower as a result, and they should be strongly counseled against refusing bilingual/ESL services when their child is eligible. (2002: 333)

Submersion programmes have sometimes been mistaken as being synonymous with Canadian immersion programmes (see 7.2.4), because both apparently involve ‘immersing’ the students in their L2 for a considerable part of the day. Baker and de Kanter (1981), whose research was discussed in 6.2, attempt to make exactly this link in order to support their advocacy of English-submersion programmes.

However, as has already been highlighted, this perception is simply mistaken. French-immersion programmes (and Māori-immersion programmes, for that matter) are additive bilingual programmes, with the specific educational goal of achieving bilingualism and

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31 The ongoing home language gap in Aotearoa/New Zealand between first and second language speakers of English – the largest in the OECD – suggests strongly that the same analysis would apply here (see May, 2002a).
32 Thomas and Collier employed standardized US measures of student performance in normal curve equivalents (NCE – equal-interval percentiles) in their evaluation of educational outcomes.
bilingualism for their students. Specific account does have to be taken in these programmes of the longer period required to achieve academic language proficiency in an L2. But, crucially, their additive bilingual approach allows for the development of a sufficient threshold of bilingualism in students to access the cognitive and educational advantages of bilingualism (see 3.4 and 4.2) and to achieve biliteracy in both languages, via the interdependence principle (see also 4.5.2).

As such, they are fundamentally different from submersion programmes that clearly hold to a subtractive view of bilingualism and have monolingualism in the majority language as their educational aim. Consequently, submersion programmes do not draw on the bilingualism of their students in any significant way. As Crawford (1999) observes of the differences between Canadian immersion and ‘structured immersion’ programmes, a variation of submersion that will be discussed more in 7.2.2 below:

Canadian immersion not only promotes fluent bilingualism, but also uses second-language acquisition to strengthen skills in the first language. By contrast, structured immersion treats children’s native-language ability as a handicap to be overcome. It interrupts students’ linguistic development before they reach ‘a minimum threshold of cognitive-academic skills’, making it unlikely that they will ever attain full proficiency in English (Crawford, 1999:144).

In the Aotearoa/New Zealand context, of course, it was Māori who were historically most subject to English-submersion approaches to schooling. Currently, given the resultant loss of te reo Māori among many Māori, it is immigrant students who are most subject to these approaches. This includes recent Asian immigrants and many Pasifika students. The Aotearoa/New Zealand government provides a small fund for each student for the first three years that they attend school. This consists of $500 per student per year for general ESOL (English for Speakers of Other Languages) students. Quota and Family Reunification Refugees and Asylum Seeker students are entitled to funding at the refugee rate ($1,750 per year for Year 9-13 students, and $1,100 per year for Years 1-8 students) for 2 years and then at the standard ESOL rate for 3 years (Ministry of Education, 2003). As the recent major Ministry of Education review on ESOL provision in Aotearoa/New Zealand concluded, schools consistently see this as inadequate for catering for the needs of these students. Consequently, most schools draw on other budgets to meet the language needs of these students (Franken and McComish, 2003).

As Franken and McComish (2003:100) proceed to observe, 60% of the schools in their study opted to use these funds for ESL (English Second Language) withdrawal of their students for English lessons (see 7.2.2). Only 5% of primary schools provided solely in-class support for these students, leaving at least 35% of schools that do not implement any specific programmes for their ESOL students. This limited support in Aotearoa/New Zealand schools for ESOL students is particularly worrying.

7.2.2 ESL withdrawal and sheltered instruction

Two closely related programmes to submersion are ‘ESL withdrawal’ and ‘Sheltered Instruction’.

In ESL Withdrawal, or ESL pullout classes as they are also called, students are ‘pulled out’ of their normal classes in order to receive specialist English as a second language lessons at various times throughout the school week. Even though this specific support is given to ease the transition of L1 minority students, the research literature indicates that,
over time, ESL pullout programmes remain relatively ineffective. This is because, like submersion programmes, they are still assimilationist in intent and continue to hold to a subtractive form of bilingualism, with no accommodation, or use, of the students’ L1 being made.

ESL pullout programmes tend to operate in isolated rather than communicatively rich language environments, with little emphasis on active and experiential language learning, and of language learning in authentic and meaningful contexts – exactly the types of language skills L1 minority students need to acquire academic proficiency in an L2 such as English. By pulling out students for individual or small group instruction, they also avoid or overlook the greatest language resource they could draw upon – the language-rich classroom environment. Finally, most teachers do not know the students’ L1, and are thus not able to access that language as a resource for learning, building on the metalinguistics knowledge of the students (see 3.4). This combination might therefore help to explain why L1 minority students in such programmes still tend to fall behind in content areas as they struggle to learn English, while the gap between their literacy achievements in English, and those of their L1 English speaking peers, continues to increase.

A further limitation in the Aotearoa/New Zealand context is that students in this model tend to receive highly variable amounts of ESL teaching time – as little as twenty minutes ESL teaching for some in any given week, as much as several hours or more for others. This is, in part, because timetabling is flexible in Aotearoa/New Zealand primary schools but it may also reflect lack of planning in these schools. 68 schools in Franken and McComish’s study reported an ‘invariable session time’ for all students, and 26 schools reported they varied times according to different groups of students. The range of time for 94 schools was from 15 minutes to two hours at any one session (Franken and McComish, 2003:100-101).

Given the limitations inherent in this approach, it is of considerable concern that, as Franken and McComish make clear, ESL pullout remains by far the most common programme approach for ESOL students in Aotearoa/New Zealand schools. In marked contrast, the UK has increasingly moved away in recent years from ESL pullout, to a programme approach that includes the use of bilingual teaching assistants within mainstream classrooms. This allows for the use of the students’ L1 as a source for learning and as bridge to English in the teaching and learning process, as well as providing wider social and cultural support for L1 students, albeit still in a clearly delimited way (Bourne, 2001; May, 2002d).

A related programme type is the Sheltered English model, which is more broadly known as ‘structured immersion’ (SI). Structured immersion is increasingly popular in the USA as an alternative to bilingual education, although it is more of an organizational arrangement than an approach as such (Franken and McComish, 2003). In Sheltered English, ESL and content area classes are combined, and taught either by an ESL-trained subject area teacher or by a team. These classes are designed to deliver content area instruction in a form more accessible than the mainstream English-only classes. They may use additional material, bilingual aides, adapted texts, and so on, to help students of diverse language backgrounds acquire the content as well as the language (Roberts, 1995).
As Genesee (1999) observes, from his own research on these programmes, their principal advantage is that language acquisition can be enhanced by meaningful use of, and interaction in, the L2:

The English level used in sheltered classes is continually modulated or negotiated by the teacher and students, and content is made comprehensible through the use of modeling, demonstrations, graphic organizers, adapted texts and visual aides, among other techniques. SI recognizes that language processes (i.e. listening, speaking, reading and writing) develop interdependently; thus SI lessons are organized around activities that integrate those skills. (Genesee, 1999: 5)

Sheltered programmes, or classes, still have assimilation as their principal aim, however. And, as with ESL pullout programmes, the withdrawal of students from mainstream classes remains a significant problem. Consequently, students can quickly fall behind in other curriculum subjects. There is also the added problem of these ‘sheltered’ classes being viewed potentially as remedial, by both teachers and by peers (Baker, 2001).

According to Franken and McComish (2003), some New Zealand secondary schools have developed special curriculum area classes for ESOL students, with bilingual staff, or staff who have expertise in second language teaching as well as in the curriculum area. These teachers tend to use a number of the features associated with Sheltered Immersion.

In relation to academic achievement, Thomas and Collier’s (2002) research of ESL programmes found that the highest quality ESL programmes close about half of the total achievement gap between L1 minority students in these programmes and their English-speaking peers. Furthermore, when ESL content classes were provided for 2-3 years and followed by a return to English mainstream classes, these students reached the 23rd percentile (median score) by the 11th grade (the end of their high school years).

Students who received at least 4 to 5 years of grade level L1 schooling in their own country before they emigrated to the US also reached the 23rd percentile by the 11th grade when schooled in an ESL Content programme, followed by the mainstream. As Thomas and Collier observe, this is because these students begin at their age-appropriate grade level when they arrive, but it takes them several years to acquire enough English to do the appropriate grade-work, which is equivalent to interrupting their schooling for 1 or 2 years. Then they have to make more gains than the average native-English speaker makes every year for several years in a row to eventually catch up to their equivalent grade level, a very difficult task to accomplish within the remaining years of secondary schooling (Thomas and Collier, 2002).

### 7.2.3 Transitional bilingual education

In transitional bilingual education (TBE), as has already been discussed in 6.6.1, the minority language students are initially taught through their L1 or home language until they are considered proficient enough in the majority language to cope in general or mainstream English-language education (Garcia, 1991). They are then moved to an English-medium class. The transition to an English language class occurs either after 1-3 years (early-exit) – by far the most common TBE – or, far more rarely, after 4-6 years (late-exit).
TBE programmes do encompass, therefore, a recognition of the importance and usefulness of using an L1 as a bridge to the acquisition of an L2. The teachers of transitional programmes, as one would expect, also need to be bilingual in order to assist the students in their L1, although the actually language proficiency of such teachers in the L1 may vary widely. Accordingly TBE can be considered a bilingual programme – unlike submersion, or ESL and its variants – by virtue of its implementation of the student’s L1 in the programme and by the use of bilingual teachers.

However, there remain a number of identified problems with such programmes. First, the long term aim of these programmes is still predicated on a subtractive view of bilingualism, even if they do allow an initial period of learning through their L1 to help with the transition to English (Lessow-Hurley, 2000). Additional limitations identified by Lessow-Hurley (2000:13) include:

1. They are compensatory and do not involve the monolingual English speaking community
2. Exit assessments may measure students’ ‘face-to-face’ language skills and fail to consider the specialized language skills needed for academic success
3. It is unrealistic to expect all students to master a second language academically in a 2-3 year period

Lessow-Hurley’s last two points require more explanation, given that they refer to the significant distinction between conversational and academic language proficiency in an L2 discussed in 4.6. The problem with early-exit transitional programmes is that the students in two to three years will have developed conversational ability in an L2, perhaps even fluent conversational ability, but will not have had enough time or opportunity to develop the academic language ability required of schooling, certainly not to a comparable degree to their L1 English-speaking peers. Therefore ‘face-to-face’ assessments of a student’s conversational ability at the end of an early-exit TBE may significantly overstate the student’s academic readiness in L2.

The late-exit transitional programmes do go considerably further in addressing the needs of minority language speakers. With up to six years of bilingual instruction, the students are far more likely to have developed academic-level language skills. Therefore, while late-exit transitional programmes are not the optimum bilingual programmes, given that they remain predicated on the notion of subtractive bilingualism, they at least go part way to acknowledging both the significant L1 resources of students, and their significant L2 language needs. Consequently, late-exit TBE programmes have been found to be significantly more beneficial for L1 minority students than submersion or early exit TBE programmes in relation to L1 language maintenance, learning English as an L2, and longer-term academic success.

Thomas and Collier (2002) support this contention. They advise that students without any English proficiency should not be placed in short-term programmes of 1-3 years. A minimum of 6 years, they argue, is required for successful development of L2. This point is consistent with the wider research also (see Baker, 2001, Cummins, 2000b) and is also supported by evidence of academic outcomes.
In the Thomas and Collier study (2002), students in 50-50 Transitional programmes – that is, 50% English and 50% target language per week – reached the 45th percentile by the end of 11th grade. The students of 90-10 Transitional programmes (where 90% of instruction is in the L1 to begin with, gradually increasing English instruction, until by grade 5, all instruction is in L2) reached the 32nd percentile by the end of grade 5.

In the Ramírez (1992) study discussed earlier, the same pattern of higher achievement in late-exit programmes can be seen to an even greater extent. The late-exit students in two sites that continued to emphasize primary language instruction throughout the elementary (primary) school (approximately 40% of instructional time) were catching up academically to students in early-exit and immersion programmes and proportionally, a significant trend given that more of their families came from the lowest income levels than was the case for students in the other two programmes. Differences were also observed among the late-exit sites with respect to mathematics, English language and English reading. Students in the two late-exit sites that continued L1 instruction through to grade 6 made significantly better academic progress than those who were transferred early into all-English instruction. Ramírez concludes that:

Students who were provided with a substantial and consistent primary language development programme learned mathematics, English language, and English reading skills as fast or faster than the norming population in this study. As their growth in these academic skills is atypical of disadvantaged youth, it provides support for the efficacy of primary language development facilitating the acquisition of English language skills. (1992: 38-3)

7.2.4 Immersion programmes

Immersion education is an enrichment bilingual education model that is most commonly associated with language majority students who are learning through their L2 rather than their L1 (Hamers and Blanc, 2000; Skutnabb-Kangas, 2000; see also 6.6.2-6.63). The programmes are additive in their goals. They aim to enable the students to attain functional bilingualism and biliteracy in the particular languages concerned by the time they finish high school (Hamers and Blanc, 2000).

According to Swain and Johnson (1997) there are seven core features of a prototypical immersion programme:

1. The L2 is a medium of instruction
2. The immersion curriculum parallels the local L1 curriculum
3. Overt support exists for the L1
4. The programme aims for additive bilingualism
5. Exposure to the L2 is largely confined to the classroom
6. Students enter with similar (and limited) levels of L2 proficiency
7. The teachers are bilingual
8. The classroom culture is that of the local L1 community

Immersion programmes originated in Canada when two researchers (Wallace Lambert and Wilder Penfield) from McGill University were pressed by the local Protestant school board to try a new approach to the teaching of French. In 1965 the board agreed to an experiment in French immersion.
The programme’s stated goals were (see Crawford, 1999:140):

1. To provide the participating students with functional competence in both written and spoken aspects of French
2. To promote and maintain normal levels of English language development
3. To ensure achievement in academic subjects commensurate with students’ academic ability and grade level
4. To instil in the students an understanding and appreciation of French Canadians, their language, and culture without detracting in any way from the students’ identity with and appreciation for English-Canadian culture.

The initial class of 26 L1 English-speaking kindergarteners (equivalent to new Entrants/Year 0 in Aotearoa/New Zealand) entered a school programme conducted entirely in French. In this early total immersion model, students first learned to read in their L2. One period of English language arts was introduced in the 2nd grade. Gradually the proportion of English was increased in other subjects until it reached about 60 percent by the end of elementary (primary) school.

The immersion students were not mixed with native French speakers, so that instruction could be conducted initially in a simplified version of the second language. Although the teachers were fluent bilinguals, at the outset they spoke to the students in French only. Recognizing that speech production lags comprehension in a second language – a phenomenon that results in a “silent period” of up to six months – the programme’s designers allowed students to use English to ask questions in class until the end of the 1st grade. The curriculum thus placed an emphasis on teaching the second language incidentally, without making students conscious of their performance. The expectation, was that students would be motivated to learn French if instruction fostered ‘a desire in the student to … learn the language to engage in meaningful and interesting communication’ (Crawford, 1999:141).

Judged against the standard of traditional foreign-language classes, immersion was a nearly unqualified success in teaching French. By the end of elementary school, students achieved native-like levels in the receptive aspects of the language, in their listening skills and their reading skills. Their speaking and writing skills were less developed, probably because they had limited interactions with francophone peers. Nevertheless, the immersion students became quite fluent and quite comfortable in speaking French, for the most part. Academically also, the students attained well in their curriculum subjects (Crawford, 1999).

Variable features that differentiate immersion programmes from each other (see Johnson and Swain, 1997):

1. Level within the educational system at which immersion is introduced. Early-immersion refers to the students’ first contact with immersion at the beginning of their formal education; mid-immersion, at grade 4 or 5; late-immersion, at grade 6 or 7.

2. Extent of immersion. Immersion programmes may be ‘full’ with no L1 in the curriculum for a year or more, or ‘partial’ with as little as, or less than 50%, of content subjects taught through the L2 (see Section 9 for further discussion).
3. The ratio of L1 to L2 at different stages within the immersion program. Some immersion programmes begin by maximizing exposure to the L2 and then progressively increasing the proportion of the curriculum taught through the L1. At all times, however, strict separation of languages of instruction is maintained – this is a crucial feature of immersion programmes, ensuring that the L2 is not subsumed by the L1. Separation of instruction is also central to the successful promotion of academic language proficiency in each language.

4. Continuity across levels within education systems. Some education systems provide continuity in the immersion programme for students moving from one level to another, for example, from elementary to secondary levels.

5. Bridging support. Immersion programmes vary in the support they provide for students moving from L1 to L2 medium instruction. This support may involve a curriculum specifically designed to meet the initial limitations of the immersion students’ L2 proficiency, or bridging materials designed to raise the level of the L2 students’ proficiency rapidly to the level required to follow the standard L1 curriculum through the L2.

6. Resources. Maintaining two languages demands more resources than maintaining one language (e.g., bilingual curricular and assessment resources). There are also demands on providing additional teacher training, and staff-development programmes for teachers. These need to be mounted, and specific materials developed to ensure success, because, without such, the programmes risk failure (see Sections 8 and 9 for discussion of this in the Aotearoa/New Zealand context).

7. Commitment. The commitment of those involved is a prerequisite for success in any educational context, but immersion programmes appear to make particularly heavy demands. Given that it takes more time and effort from teachers and students alike to work through the students’ L2, and given that immersion may demand resources over and above what the community already supports, the level of commitment required is not just high, it involves all concerned – parents, teachers, students, teacher educators and policymakers.

8. Attitude toward the culture of the target language. Attitudes toward the native-speaker culture of the immersion language vary widely from one context and educational programme to another. On the one hand, from a language revitalization perspective, the culture and the language are inseparable. The language is to be acquired so that the culture will survive, thrive, and develop. The cultural commitment of the parents and students involved in such ‘revival immersion’ is not lessened by the fact that the target language is an L2 since strong cultural, emotional, and political ties make the language and culture part of these groups’ identities.33

9. Status of the L2. In the prototypical immersion context, equal, though not necessarily the same, advantages would derive from either choice of medium of instruction, L1 or L2. In practice, the balance is always likely to favour the L2, given the dominance of the students’ L1 in the wider society. Even with the introduction of the L1 into the

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33 This is also clearly the case for Māori-medium education.
classroom as schooling progresses, strict separation of languages of instruction continues to ring fence the L2 minority language.

10. **What counts as success in an immersion programme.** In some contexts, at least initially, the fact that an immersion programme has been established at all may count as success. An immersion programme established to promote language revival is itself evidence that the rights and cultural identity of a particular minority group have been recognized and accepted, or at least tolerated, by the education system and the state.

**Evaluation of immersion programmes**

There have been numerous evaluations of Canadian French-immersion programmes since the 1970s. Some of the most important are those by Genesee (1984) and Swain and Lapkin (1982). In these studies, the achievements of French-immersion students were compared with those of monolingual English-speaking students in traditional English-only programmes, and those of French-speaking students in French schools. The results of the assessments have also been shown to be stable across Canada:

1. Students’ L1 competence is initially not on a par with students with the same L1 in general or mainstream programmes, *but as soon as instruction in L1 starts, they catch up*, and are usually at the latest in grade 5 at the national norm level in their L1 – or higher. By this time, their school achievement is on a par with non-immersion students and is often actually higher (Skutnabb-Kangas, 2000).

2. At the same time, *the competence in their L2 often reaches to near native level in listening and reading comprehension*. In productive L2 skills, speaking and especially writing, the immersion students usually make more mistakes, are not as fluent as native speakers, and generally lag behind. Despite this, their productive L2 is at a much higher level than anything reached by good foreign language teaching (Hamers and Blanc, 2000; Skutnabb-Kangas, 2000).

3. *Academic achievement of total immersion students is as high as students taught in mainstream English medium schools* on tests of mathematics and science, despite the fact that they receive their instruction in French (Hamers and Blanc, 2000).

4. Some studies (e.g. Barik and Swain, 1978) show that *immersion may lead to cognitive enhancement* with IQ measures seeming to increase more over the years for immersion students than for students in traditional English programmes. This may well relate to the cognitive and educational advantages of additive bilingualism, discussed at length in Part 1.

However, one of the recognized weaknesses of Canadian French-immersion programmes is that the students in these programmes may have little exposure to the French language beyond the school (Skutnabb-Kangas, 2000). Many of the French immersion programmes are, in fact, situated within English mainstream schools, with few, if any, other French-speaking teachers present. Also, aside from Québec, where French is widely spoken, the remainder of Canada remains English-dominant. The pervasive presence of a majority language beyond the school is a difficulty that all minority language programmes face, however. The same concerns have been raised about Welsh-medium education, for example, and in Aotearoa/New Zealand (May, 2001).
Immersion in Aotearoa/New Zealand
In Aotearoa/New Zealand, the terms ‘Total Immersion’ or ‘Māori Total Immersion’ have long been a commonly used label for bilingual programmes involving Māori students (see also Section 8). Keegan (1996) for instance, in his review of the literature on immersion education, cites Baker’s (1993) description of Māori immersion education as being a type of Maintenance or Heritage bilingual education programme which forms part of the wider immersion education group. Māori Immersion, however, differs from French immersion because it involves minority not majority students.

As discussed in 6.6.4, there is some difference of opinion as to whether immersion programmes are solely programmes for language majority students. Taylor (1992) states that the immersion model is used successfully with English speakers learning French, as well as growing numbers of minority language students. On the other hand by far the most widely accepted notion (see Baker, 2001; Skutnabb-Kangas, 2000; Crawford, 1999; Cummins, 2003) is that immersion is restricted to majority students.

There are several common features between Māori immersion programmes and French immersion programmes. The main feature is that the students’ L2 is the medium of instruction, not their L1. Most of the additive bilingual programmes for minority groups teach through the medium of the students’ L1, or stronger language. French immersion and Māori immersion programmes therefore must contend with the added demands of teaching through the medium of the students’ weaker language, making sure to spend sufficient time to allow students to acquire academic language proficiency in that language. Different rates of learning in the early part of the programme will likely result for individual students, and there may be a need to implement different teaching methods in teaching the academic content of the curriculum.

Where French immersion and Māori immersion programmes most differ is in the status attributed to the respective languages. French may be a minority language within Canada where, Québec aside, English continues to dominate, but it has the advantage of also being perceived as an international language. Te reo Māori, on the other hand, is an indigenous minority language that does not enjoy the same degree of positive status in Aotearoa/New Zealand. Despite the significant advances made on its behalf in recent years, bilingualism in Māori and English is still viewed as subtractive by many – perhaps still, the majority – of the wider Aotearoa/New Zealand community. Given this, the ability to extend Māori-medium education further, particular via the extension of Māori-medium teaching into mainstream contexts, is made more difficult. The intergenerational loss of the language that has already occurred for Māori also means that there are comparatively far fewer teachers involved in Māori-immersion programmes who are L1 and/or fluent speakers of the language than in French-immersion contexts. Concerns about the ongoing decline of fluent Māori speakers in the wider community also make this issue more pressing. Accordingly, we must be careful in evaluating bilingual programmes, as every context has its own unique characteristics that do not necessarily apply to other contexts.

7.2.5 Developmental maintenance and heritage language bilingual education
Developmental maintenance models are programmes in which minority students are taught through the medium of two languages, a heritage language and a majority language. The students are usually from language minority homes, although not in all cases.
There are many varieties of heritage programmes. However, the majority will usually use the heritage language as the medium of instruction for between 50-90% of the time. The structures tend to overlap with the structures of the Two-way/Dual language programmes discussed in 7.2.6 below. For example, the programme may begin as a 90:10 programme in the early years (with 90% in the heritage language) and change gradually to a 50:50 programme by year 4 of the student’s schooling. The goal of these programmes is full bilingualism, biculturalism and biliteracy. In other words, the learning of the majority language is not pursued at the expense of the heritage language. Examples include Māori in New Zealand, Navajo and Spanish in the United States, Welsh in Wales and Catalan in Spain (Baker, 2001).

Evaluations of these programmes have primarily been carried out with L1 Spanish speakers in Spanish/English bilingual programmes in the USA. Thomas and Collier’s (2002) evaluation study was of this kind, but with the additional inclusion of a French-English programme on the North East border of USA and Canada at Maine. This case was interesting because the two languages of instruction of the Maine community were both ostensibly prestigious languages. However, the community feeling about French reflected a subtractive environment for the students learning French and thus resulted in the kinds of negative connotations that other minority groups experience when learning so-called ‘low status’ languages.

The evaluations of these heritage programmes (referred to in Thomas and Collier as Enrichment One-way programmes as opposed to Two-way programmes) were the most significant of the study. The authors state that, together with two-way programmes:

Enrichment 90-10 and 50-50 one-way… programmes… are the only programs we have found to date that assist students to fully reach the 50th percentile in both L1 and L2 in all subjects and to maintain that level of high achievement, or reach even higher levels through the end of schooling. The fewest dropouts come from these programs. (Thomas and Collier, 2002: 7)

The results for English language acquisition are as follows:

1. 50-50 heritage bilingual education students who were former English language learners (ELL) reached 72nd percentile after 4 years of bilingual schooling in two high-achieving school districts, outperforming their comparison ELL group schooled all in English. By 7th grade, these bilingually schooled former ELLs were still above grade level at the 61st percentile.

2. 90-10 heritage bilingual education students who were former ELLs reached the 41st NCE (34th percentile) by the end of 5th grade.

3. In additional Spanish language evaluations of 90-10 classes, native-Spanish speakers reached the 56th to 63rd NCE for Grades 1-4, and in Grade 5 they outperformed the transitional bilingual comparison group.

Indigenous language programmes
The development of indigenous education programmes worldwide, many of them community-based or ‘bottom up’ initiatives (Hornberger, 1997), has been a major development of the last 20 years. Evaluations of these programmes are also now becoming more readily available in the academic literature (see, for example, McCarty &
It is beyond the scope of this Report to explore these evaluations in any detail. However, two Navajo language programmes at Rock Point and Fort Defiance in Arizona provide us with useful representative examples of both the successes and challenges facing such programmes.

**Rock Point** in Arizona began in the 1960s when an ESL programme framework was used to teach limited Navajo literacy. The programme was organized in a way that academic language activities alternated among classroom centres, where teachers were assigned teaching time and space in either Navajo or English (Francis and Reyhner, 2002). Initial data from Rock Point demonstrated that monolingual Navajo-speaking children who learned to read first in Navajo outperformed comparable Navajo students in English-only programs. They also surpassed their own previous annual growth rates and those of comparison-group students in Bureau of Indian Affairs (BIA) schools (Rosier and Farella, 1976; McCarty 2003). As a result, Holm and Holm (1995) reported that standardized test results had shifted the relative standing of Rock Point elementary students from the lowest scoring BIA school in the lowest scoring BIA agency to a position broadly comparable with other area schools. Moreover, the margin of advantage for its students increased with each grade level. Interestingly enough, the change had occurred alongside the transformation of the teaching staff from a predominantly non-indigenous to a predominantly indigenous one. As McCarty (2003) summarizes it:

In a 25-year retrospective analysis of the Rock Point program, program cofounders Agnes Holm and Wayne Holm … describe the ‘four-fold empowerment’ engendered through bilingual education there: of the Navajo school board, who ‘came to acquire increasing credibility with parents, staff, and students;’ of the Navajo staff, whose vision and competence were recognized by outside observers as well as community members; of parents, who for the first time played active roles in their children’s schooling; and of students, who ‘came to value their Navajo-ness and to see themselves as capable of succeeding because of, not despite that Navajo-ness’ (McCarty, 2003:151; see also Holm and Holm, 1995).

**Fort Defiance Elementary School** is a Navajo immersion programme in Arizona that first began teaching as a Navajo immersion school in 1986. It is significantly different from Rock Point because when the Fort Defiance immersion program began in 1986, less than a tenth of the school’s five-year-olds were ‘reasonably competent’ Navajo speakers (Holm and Holm, 1995: 148; see also Francis and Reyhner, 2002). Only a third were judged to possess passive knowledge of Navajo (Arviso and Holm, 2001). At the same time, ‘a relatively high proportion of the English monolinguals had to be considered “limited English proficient”’ (Holm and Holm, 1995: 148). That is, students possessed conversational English proficiency, but were less proficient in more decontextualized uses of English (Arviso and Holm, 2001: 205). As McCarty observes, in this context, neither conventional maintenance nor transitional bilingual programs were appropriate. Indeed, according to the program cofounders, ‘something more like the Maori immersion programs might be the only type of program with some chance of success’ (Arviso and Holm, 2001: 205).

As McCarty (2003:155) summarizes it, the initial curriculum was kept simple: developmental Navajo, reading and writing first in Navajo, the English and maths in both

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34 The following summary is drawn primarily from McCarty (2003).
languages, with other subjects included as content for speaking or writing (Holm and Holm, 1995: 149-150). There was a particular emphasis on language and critical thinking, and on process writing and cooperative learning. In the lower grades, all communication occurred in Navajo. By the second and third grades, the programme included a half-day in Navajo and a half-day in English. Fourth graders received at least one hour each day of Navajo instruction. In addition, programme leaders insisted that an adult caretaker or relative ‘spend some time talking with the child in Navajo each evening after school’ (Arviso and Holm, 2001: 210).

Assessments taken in 1990 demonstrated that comparisons between Navajo immersion and monolingual English programmes revealed similar results to those of the Canadian and US research findings. That is, by third grade Navajo students performed as well as their monolingual English-speaking peers. The results were as follows:

In writing, both the 3rd and 4th grade immersion students outperformed the monolingual English students. In mathematics, the grade 4 immersion students outperformed the non-immersion students.

In standardized reading tests the immersion students scored lower than the non-immersion students. However, the gap seemed to be closing between the groups (That is, having started reading in English in grade 2, they had been behind their monolingual peers but were closer at each succeeding grade).

The immersion students scored almost 10 percentage points higher in mathematics.

Since this evaluation there have been many changes in the programme, including a predominantly new staff and a new principal. One significant change was the splitting of the school into two, in areas one mile apart. The immersion programme now runs between the two campuses with a leader who oversees both programmes and also teaches in a classroom. In 1999, Arizona implemented state-wide accountability testing. In 2000, Fort Defiance students from grades 3, 5, 8 and 10 were tested in reading, writing and mathematics – all in English. They scored poorly. These poor results and an uncertain state political environment threaten future bilingual programmes at this site. The programme remains in danger, particularly as Proposition 203, the Arizona equivalent measure of the Californian Proposition 227, will effectively outlaw bilingual education for Navajo and Spanish students without high English proficiency (Arviso and Holm, 2001).

A warning must be given in respect to these negative results, however. They occurred in a wider environment that is highly negative towards Navajo/English bilingualism, and they also occurred after a change of principal to one who does not share the same expertise in the field of bilingualism or the culture of the people who are being taught. This Report thus demonstrates how important the role of the principal and leaders of schools are in successful bilingual programmes (see May, 1994, 1995; see also Section 9), which it seems the Fort Defiance programme has not had in more recent years.

Also, the use of standardized English tests, particularly in the first three years of schooling are not appropriate in bilingual contexts, bearing in mind that much of the early part of a student’s bilingual education will be in the target minority language, not English.
As such, one would expect younger students to perform worse than their mainstream peers initially. Genesee (1987) found this to be the case in Canadian immersion programmes when students were examined in the first 2-3 years and Cummins (2000b) has also extensively discussed the limitations of testing students in this way. What is required, instead, are age-appropriate assessment in the target or heritage language, so as to accurately and fairly measure literacy attainment in that language. This suggests, in turn, that in the Aotearoa/New Zealand context, high priority should be given to the (further) development of these assessment resources in Māori (see also Sections 8 and 9).

7.2.6 Two-way immersion (dual language)

Two-way immersion programmes, also known as dual medium bilingual immersion or two-way bilingual, are similar in structure to immersion programmes, but differ from these and other varieties in terms of one factor, student composition. Unlike other forms of immersion, Two-way programmes include native speakers as well as non-native speakers of the target or heritage language in the same classroom, wherever possible, in roughly equal proportion. These programmes thus specifically integrate English L1 students and target-language L1 students with the goals of developing the bilingual and biliterate skills of both groups (Lindholm-Leary, 2001). Therefore, the L1 English-speaking students will learn both the target language and English, and the L1 minority language students will learn English and their native language, in the same classroom. This type of programme is increasingly popular in the United States where, since its birth in the 1960s, numbers have grown to more than 250 schools, mostly targeting Spanish language speakers (92%).

There are two main types of Two-way programmes, **90:10 and 50:50 models**. These figures represent the proportion of time that each language is used in instruction. The 90:10 model will begin first grade with 90% of the day devoted to instructing in the target minority language, while 10% will be instructed in English, usually oral English. As the students progress through the grades the language proportions will change each year (for instance grade two may change to 80:20), until the languages are evenly balanced at 50% target language and 50% English. This is likely to have occurred by year four. In the 50:50 model the students receive half of their instruction in English and the other half in the target language throughout the primary school years. Students learn to read first in their L1 and then add on the target language (Lindholm-Leary, 2001).

The decision regarding which type of Two-way programme is implemented depends on a number of factors that must be weighed by the school and community. These factors include the linguistic needs of the students, the status of the target language in the community, the community expectations for the level of proficiency which should be attained, the availability of trained personnel, and other school needs (Lindholm-Leary, 2001).

Two-way programmes are different from other forms of bilingual programmes for a number of reasons. First, as stated earlier, these programmes integrate a balanced number of language-minority students in an environment that values the language and culture of the minority group student and treats all students equitably. Second, English never replaces the target language. Rather, students are expected to learn to communicate and carry out complex academic learning in both languages. Third, teachers are trained to treat all students equitably and to have high academic expectations for all students, and
they are expected to communicate this expectation consistently to the students (Lindholm-Leary, 2001).

One of the advantages of Two-way programmes over other types of bilingual programme is that the teacher is not the only native speaker of the target or heritage language in the classroom. In most bilingual programmes exposure to native speakers of the students’ L2 is limited. However, in Two-way programmes all students have multiple opportunities to communicate with native speakers because half the room will be native speakers of either the target language or English. According to Lessow-Hurley (2000), this enhances their chances of developing native-like proficiency in their new language. Second, beyond the language advantages a student experiences, there are cultural advantages also. By having a rich make-up of students in the same class, they also learn to appreciate and respect one another’s languages and cultures (Lindholm-Leary, 1994).

According to Thomas and Collier (1997) the following factors are present in successful Two-way immersion programmes:

1. Students participate for at least six years
2. The ratio of speakers of each language is balanced
3. Languages are carefully separated in instruction
4. The minority language is emphasized in earlier grades
5. Instruction is excellent and emphasizes core academics
6. Parents have strong, positive relationships with the school

In Two-way immersion, schools allocate and/or demarcate languages for instructional purposes in a variety of ways. Some allocate languages into content areas, some allocate languages to people, some allocate languages to the time of the day or week, and some use a combination of these approaches (Freeman, 1998; see also Section 9).

Another variation concerns the degree of student integration. In some programmes, students from the two language backgrounds are integrated for all of the time. In other programmes the students are integrated for the majority of the content instruction, but segregated to receive additional language instruction in their second language. Other programmes segregate for the majority of the time and then integrate students for a small portion of each day and or week for dual-language instruction.

The effectiveness of Two-way programmes in the US was evaluated by Lindholm-Leary (2001). With wide ranging and well-documented data from 18 schools, she analyzed teacher attitudes and characteristics, teacher talk, parental involvement and satisfaction, as well as outcomes (using 4854 students) in different programmes, including English-only, transitional bilingual, the 90:10 Two-way, and the 50:50 Two-way programmes. The measured outcomes included Spanish and English language proficiency, academic achievement and attitudes of students. She found:

The students who had 10% or 20% of their instruction in English (i.e. in 90:10 Two-way bilingual programmes) scored as well on English proficiency as those in English-Only programmes, and as well as those in 50:50 Two-way programmes, by the end of these programmes.
Spanish proficiency was higher in 90:10 than 50:50 programmes. *Students developed higher levels of bilingual proficiency in the 90:10 programmes than the 50:50 programme.*

For Spanish speaking students, there was no difference in achievement found between the 90:10 and the 50:50 programme. However, Two-way students out-performed transitional students in English by grade 6.

Students of Two-way programmes were performing 10 points higher on the Californian norms for English-speaking students educated only in English at the same grade level.

Two-way programme students had very positive attitudes towards their programmes, teachers, environment.

Lindholm-Leary (2001) concludes that the Two-Way programmes are effective in promoting high levels of language proficiency, academic achievement and positive attitudes to learning in students.

Thomas and Collier's (2002) long-term study, discussed throughout this Report, also evaluated Two-way programmes in four US states. Their results found that:

In a 50-50 Two-way bilingual immersion programme in a high-poverty, high-mobility school, 58 percent of students met or exceeded Oregon state standards in English reading by the end of 3rd and 5th grades.

In the 90-10 Two-way bilingual immersion schools, students performed above grade level in English in Grades 1-5, completing 5th grade at the 51st percentile, significantly outperforming their comparison groups in 90-10 transitional bilingual education and 90-10 development bilingual education.

In terms of Spanish achievement results:

In 50-50 Two-way bilingual immersion, Spanish-speaking immigrants after 1-2 years of US schooling, achieved at a median of the 71st percentile in Grades 3-6. These immigrants arrived on or above grade level and maintained above grade level performance in Spanish in the succeeding two years.

In 90-10 Two-way bilingual immersion classes, native-Spanish speakers reached the 64th to 76th percentile for Grades 1-4, and in Grade 5 they outperformed the Transition bilingual students and developmental maintenance bilingual comparison groups. They achieved the 70th percentile.

The performance of the native English-speaking groups also showed positive results:
Native-English speakers in two-way bilingual immersion programmes maintained their English, added a second language to their knowledge base, and achieved well above the 50th percentile in all subject areas on norm-referenced tests in English. These bilingually schooled students equalled or outperformed their comparison groups being schooled monolingually, on all measures.

While this type of programme is common in the United States, in Aotearoa/New Zealand there is only one programme that can be described as a Two-way programme. Richmond Road Primary School in Auckland implements a Two-way French and English programme. Here they have two classes (Juniors; years 0-3 and seniors; years 4-6). They divide their language of instruction in terms of time zones. From Monday to Wednesday, French is the medium of instruction and on Thursday and Friday they switch to English (Richmond Road School, 2001; McCaffery, 2003).

The potential for the development of other Two-way programmes in Aotearoa/New Zealand is considerable, however. With the large population of Pasifika people who have migrated to New Zealand since the 1960s, and the ongoing migration of Pasifika peoples to Aotearoa/New Zealand, students who still speak a Pasifika language as an L1 could be integrated with 2nd and 3rd generation New Zealand-born Pasifika students who are now L1 speakers of English. The results of Two-way programmes in the US strongly suggest that both groups of students would benefit significantly, particularly given the ongoing overrepresentation of Pasifika students in the lowest quartiles of English literacy performance, even for those who are L1 English speakers. Chinese speaking communities would also be particularly well placed for the development of such programmes.

7.3 Comparison of programme approaches in light of key research indicators

Having discussed each of the principal programme types in some depth, a comparison of their relative effectiveness will now be made. The most important facet of a bilingual programme is its ability to educate the students to an extent where they can reach grade age norms in both languages and a comparable academic performance as their mainstream peers by the end of the programme.

In terms of the effectiveness of the programmes at producing these results, the following graph (see Figure 6 below) from Thomas and Collier’s (1997) research, illustrates the relative performances of students from these various programmes over time.
Figure 6: Relative effectiveness of educational programmes for bilingual students over time

Program 1: Two-way developmental bilingual education (BE)
Program 2: Late-exit bilingual education + ESL taught through academic content
Program 3: Early-exit bilingual education + ESL taught through academic content
Program 4: Early-exit bilingual education + ESL taught traditionally
Program 5: ESL pullout - taught traditionally

* ESL through the curriculum/LAC language across the curriculum

Source: Thomas and Collier (1997)

It is clear from Thomas and Collier’s extensive analysis that, while non-bilingual programmes such as ESL Pullout (Programme 5) appear to do better initially, over time these programmes are the least effective for bilingual students. Early exit transitional programmes (Programmes 3 and 4) are also relatively ineffective. Only two programmes achieve results above the grade age norms at the end of ten years of bilingual instruction: Two-way programmes and late-exit bilingual programmes with content ESL instruction (Programmes 1 and 2).
Apart from the programmes’ relative performance, there are a number of other factors, discussed throughout both Parts of this Report, which have been identified in the research literature as integral to effective bilingual programmes. They include whether the programme:

1. Concurs with the elements considered essential in bilingual programmes, that is, it instructs in two languages, and/or has the target minority language as the medium of instruction for curriculum subjects.

2. Is additive in its philosophy of and approach to bilingualism.

3. Is a maintenance or enrichment programme, designed to maintain and, where necessary, develop further the target language of the students.

4. Has teachers fluent in both languages.

5. Has a duration of at least four years target language instruction before the majority language is given equal status, to allow the students to achieve a sufficient level or bilingualism, or bilingual threshold, for the cognitive and educational advantages of bilingualism to apply (see 4.5 for discussion of Cummins’ Threshold theory).

6. Is at least 50% immersion in the target language, to allow greater exposure to the target language and thus a greater opportunity of becoming fluent in the target language.

7. Introduces the target language early in the primary schooling rather than later.

8. Ensures that the child’s strongest language is well enough developed before embarking on instruction in the other language, in which case, the programme would therefore be accounting for the principles of Cummins’ Interdependence Theory (see 4.6).

In sum, valid and attested research on bilingual education consistently highlights therefore that the non-bilingual programmes – English submersion, Sheltered English, and ESL Pull-out – are the least effective programmes for bilingual students. They are not considered to be authentic bilingual programmes under the criteria discussed in Section 5 because they do not teach the target language as the medium of instruction, nor are they additive. They are subtractive programmes that aim to assimilate the students into the majority language and culture without consideration of either their cultural or linguistic needs, or any recourse to, or use of, the range of linguistic competencies that these students already have in their L1.

Transitional programmes, whilst assimilationist in their goal, still have some potential as bilingual programmes, provided the duration of instruction in the students’ L1 is longer than three years, in order to allow for the students’ L2 ability to move beyond basic conversational competence in the L2 to academic language proficiency, or academic literacy in the L2. If these programmes focused upon long-term L1 instruction, they would meet most of the criteria considered important in bilingual educational programmes, and the students’ linguistic and academic performance should be above the grade norms of their monolingual English peers. If, alternatively, the transitional
programme is early exit (1-3 years) instead of late exit (4-6 years), the educational achievement implications will be negative overall for the students enrolled in the programme.

Immersion programmes (based on the Canadian French-immersion model), are not included in the Thomas and Collier graph above because they are programmes designed for majority rather than minority students. These programmes, however, also clearly fulfil the requirements for being effective bilingual programmes insofar as they are additive, enrichment programmes, and that target language instruction occurs for a period of more than four years. While there are some immersion programmes that are implemented during the middle school years and some during the later school years (i.e. high school), each school decides this feature, based on the additive aim of their programme, i.e. whether the students will become bilingual or not as a consequence of the programme.

Heritage Programmes, which include Māori-medium programmes at levels of immersion at 50% or above (see Section 9), also satisfy the criteria for successful bilingual programmes in much the same way as Canadian French-immersion programmes.\(^{35}\) In the Thomas and Collier graph, these programmes would be equivalent broadly to Programme 2, indicating that students in such programmes can reach age norm levels in achievement as their mainstream monolingual peers, with the added advantage that higher levels of immersion in the target language also consistently achieve the highest levels of fluency in the target language (see 2.6.2-2.6.3).

Two–way or dual-medium programmes are the best performing programme academically, according to Thomas and Collier. These programmes also satisfy the criteria for a successful bilingual programme in terms of being additive/enrichment programmes, at least 50% of the time is used to instruct in one of the target languages, and they ensure that students develop academic language proficiency in the target language. The added benefits of these programmes are their ability to provide students with greater exposure to native speakers of the target languages (as both language groups are working within the same classroom context), along with greater cultural intermixing.

\(^{35}\) As previously discussed, the principal differences between Māori and French immersion programmes are in the constituency of students (minority versus majority) and the related status of the languages concerned. The timing of the introduction of the target language may also differ from Canadian models, in that early instruction in te reo Māori is preferable to mid or late levels of immersion if the aim is to achieve high fluency levels in the language, given the dominance of English outside the school or classroom.
8. Research on Aotearoa/New Zealand Bilingual Programmes

Māori-medium education is given regular and significant prominence in the international research literature on bilingual/immersion education, and is most often noted for its success in addressing the loss of te reo Māori (see Baker and Pry-Jones, 1998; see also, May, 1999; 2001: ch. 8). Given this, it is surprising how little information is still available on the effectiveness of particular bilingual/immersion school programmes in Aotearoa/New Zealand, and more specific issues of bilingual/immersion pedagogy and practice. Keegan (1996) makes this observation in his brief review of immersion education, and the same can still be said today. Indeed, Rau (2003:2) echoes Keegan’s observation directly when she comments that ‘to date, there is little comprehensive information available to describe the achievement of students being instructed in the Māori language, especially in their formative years’ (see also, Berryman, et al., 2002).

More extensive research and assessment of bilingual/immersion programmes is thus urgently needed. Such research might assess effectiveness and student achievement, but it might also examine existing pedagogy and practice – highlighting good practices, but also where pedagogy and practice can be further improved and/or extended, in light of the wider research indicators (see Section 9).

Without such research information, it is very difficult to build upon the existing strengths of bilingual/immersion programmes in Aotearoa/New Zealand. Further research – particularly, case-study and ethnographic research – into existing school-based models of good practice could also allow for a broader consistency of approach within and among individual school programmes (see Section 9). The still localized and often ad hoc implementation of bilingual/immersion programmes at the school-level, particularly in relation to the development of bilingual units within general or ‘mainstream’ schools, does not currently allow for this.

8.1 Research to date: Māori-medium education

Nonetheless, the beginnings of a consistent research basis can now be seen and this section will discuss the most recent relevant research to date from both Māori and Pasifika contexts. The areas encompassed by this research include evaluations of Māori-medium programmes and the learning of the students who are involved in the programmes, teacher effectiveness in such programmes, assessment processes and tools in Māori-medium contexts, and research pertaining to bilingual education in the Pasifika community.


One of the earliest evaluations of Māori bilingual/immersion programmes in Aotearoa/New Zealand was a doctoral study conducted by Jacques (1991) into the effectiveness of six South Island bilingual classroom-based programmes within mainstream primary schools. This study identified both the strengths and weaknesses of these particular programmes, within the educational context of home, school and community. It focused on:

36 There is, however, an increasing body of research available now on language learning processes in Kōhanga (see Skerrett-White, 2003 for a recent overview and analysis).
1. Identifying the rationales for the establishment of the Māori bilingual units
2. Identifying structures in place within the school to promote the programmes
3. Describing the operations of bilingual classrooms including: availability of resources; teacher training and teaching practices; the roles and functions of the kaiarahi reo (language teaching assistants); and the incorporation of Māori language and culture into the curriculum
4. Assessing the outcomes of the bilingual programmes, including: the students’ affective development and development of English language skills; the retention of Māori language skills acquired at Kōhanga Reo; and the impact of the programmes on the school and wider community
5. Making recommendations for future programme development

The research methodology consisted of quantitative and qualitative methods involving documentary evidence, interviews, classroom observations and surveys over an 18-month period from 1989 to 1990. The research participants included staff members, families, staff from kōhanga reo, and marae whānau.

Jacques found that the programmes were very successful in terms of: the promotion of the students’ self-esteem, self confidence and cultural identity; the provision of culturally sensitive and safe environments; the inclusion of families; and the development of the students’ English language abilities. There were a number of factors, however, which militated against the promotion of te reo Māori and cultural maintenance goals. These included the following:

1. The ongoing dominance of English as the language of instruction
2. The inadequacy of preservice and inservice training for associate teachers and kaiarahi reo with respect to teaching in bilingual contexts
3. The lack of adequate Māori language teaching resources for use in instruction
4. The lack of clear programme rationales
5. The lack of a clearly defined client-group (a wide range of students with differing fluency in te reo Māori were grouped together in classes)
6. Few effective support services
7. An absence of provision for the continuation of bilingual programming beyond primary school level
8. Absence of local planning/advisory groups to assist in the steering of the programmes
9. Resistance among some staff and community to the programmes
10. Little promotion of kaupapa Māori practices in the wider school structures
11. A widespread feeling among whānau whose children went to Kōhanga reo that their needs would be better met in a separate Māori language school, such as a kura, than in a bilingual unit within a mainstream school.

Māori language proficiency was not measured in the study. There were several reasons for this, one being that there were no measures at that time devised to assess the language and another being that the researcher was not herself a fluent speaker of Māori. Instead, an impressionistic assessment was made of the students’ fluency in Māori. The lack of data in such an important area and the researcher’s inability to speak te reo Māori is thus a fundamental weakness of this research. This same feature – failing to assess adequately the students’ knowledge of te reo Māori – is also a weakness of the Educational Review Office (ERO) evaluation of Kura Kaupapa Māori discussed below (see Education Review Office, 2002) and points to a wider concern about the ongoing inability of Aotearoa/New Zealand research, and researchers, to address such an important consideration.

Nevertheless, in terms of what evidence Jacques does present regarding fluency in te reo Māori, she reports that the students displayed their use of te reo on only a limited number of occasions, such as when reciting karakia and during mihi, and when they took part in Māori language musical activities. One can extrapolate from this that te reo Māori use was thus limited to organizational, rather than instructional language contexts. Likewise, in terms of listening comprehension, she observes that the students ‘seemed to comprehend the Māori language speech of teachers and kaiarahi reo, and would for example, sit down, or go outside when asked, [but] they showed little age appropriate proficiency in either oral or literacy-related tasks’ (p296; our emphasis).37

In terms of the students’ English language skills, Jacques’ research utilized the Progressive Achievement Test (PAT) to measure the students’ reading comprehension, reading vocabulary and listening comprehension across two of the schools in the research study. 239 Year 4-6 students were tested in all. Of these, one quarter of the students were enrolled in a bilingual class (using around 10% of te reo Māori, the target language) and the remainder were enrolled in mainstream English-only classes. The results indicated that although eight of the comparisons employed favoured the bilingual students, there was no significant difference between these students and those in English-medium. However, Jacques does point out that being enrolled in a bilingual class was clearly not a disadvantage for these students in their English language acquisition when compared with those in mainstream English-medium classes.

In her conclusions, Jacques provides an important caveat regarding the results. Although the evidence from her results ostensibly matches those found in studies of many overseas bilingual programmes, all the bilingual programmes that she examined had a significantly lower ratio than the 50% ratio target language instruction – the minimum ratio considered to be characteristic of authentic bilingual programmes in the wider research literature (see also Section 9). Consequently, the data gathered cannot be directly compared with such programmes. It is also highly likely that the comparable performance of bilingual students in English language skills was the result of other factors – such as cultural support – rather than linguistic factors.

37. In light of her previous observations, Jacques’ assessment here is highly likely to have been accurate. However, given the researcher’s own lack of fluency in te reo Māori, and the related lack of an accurate and appropriate Māori language assessment measure, some caution still needs to attend this conclusion.
8.1.2. Keegan (1996)

The paucity of adequate research on educational outcomes in Māori-medium education is also reflected in Keegan’s (1996) brief review of immersion education programmes. Keegan discusses the issues involved in bilingual education, overseas literature from countries that implement immersion programmes, and the benefits of bilingualism. In discussing Aotearoa/New Zealand research evidence, however, he points out that most of the studies available at that time were simply descriptive in nature – in terms of teaching and learning processes, language development, community support and involvement, etc – rather than evaluative. A lack of adequate and appropriate language assessment tools in te reo Māori (see also below) was also acknowledged as a contributory factor to this.

Consequently, only two New Zealand studies which provide empirical data and clear evidence of the benefits of immersion education are discussed by Keegan; a study by Carkeek, Davies, and Irwin (1994) and a Report from the Ministry of Women’s Affairs (1993). Carkeek, Davies and Irwin (1994) compared the classroom behaviour of seven schools and found that Māori girls were most active in immersion classrooms, and more confident in taking teaching and leadership roles. The Ministry of Women’s Affairs Report (1993) studied the career aspirations of Māori girls in four secondary schools. It found that these students were more likely to seek vocational advice from Māori teachers and that some of these students had been educated in a bilingual unit. However, issues of language achievement, or bilingual teaching and learning practices, were not directly addressed in either report.38

8.1.3. Hollings et al. (1992)

Significant research by Hollings, Jeffries, and McArdell (1992) has addressed these issues directly, however, particularly with respect to assessment. In their study of 47 Māori-medium programmes, and via questionnaires and cluster interviews with 73 teachers in these programmes, they focused upon:

1. Māori language assessment
2. Variables affecting Māori language
3. Teachers’ knowledge of assessment
4. How assessment procedures are used in other situations (total immersion)

Results from the questionnaire found that teachers were using a wide variety of methods to assess Māori language development – generally, methods commonly found in mainstream schools, such as running records and six year net. However, incidental observation was the method most often used because of a lack of appropriate benchmarked assessment tools for te reo Māori. The majority of teachers also felt that the available assessment procedures were not satisfactory.

Results from cluster meetings found that, while various forms of language assessment were regularly implemented in these programmes, few teachers demonstrated a sufficient understanding of their efficacy for L2 learners, or their appropriateness to L2 contexts – a crucial omission, given that Māori is an L2 for most students in these programmes. It was also found that there was not much coordination in the recording of assessment. In fact,

38 Interestingly, Keegan does not refer to Reedy’s (1992) initial evaluation of the six pilot Kura Kaupapa Māori. However, this may be because Reedy’s Report provides little beyond observational, and often simply speculative, comment on the pedagogy and practice of the kura programmes.
many teachers indicated that they based their decisions on a ‘feeling’ about the students’ progress as they worked with them.

On the basis of these findings, Hollings et al. concluded that while most classroom assessment was at that stage still largely anecdotal and intuitive, this was primarily because of a lack of appropriate language assessment resources and related training in them. Certainly, teachers in the programmes were anxious to get further guidance about assessment practices. Accordingly, the study’s principal recommendation was to improve the resource materials base in Māori language for schools, including Māori versions of the major language and literacy assessment tools available to mainstream English-medium schools. Following from this, better coordination and sharing of information about language assessment among teachers in Māori-medium contexts should occur.

The 1990s saw the subsequent development of key Māori language assessment tools for junior primary levels – particularly Ngā Kete Kōrero and Aromatawai Urunga-ā-Kura. However, a more recent unpublished ERO Report of literacy practices in Kura Kaupapa Māori (Education Review Office, 2000) highlighted ongoing issues of concerns about language assessment, as well as raising wider concerns about the development of academic literacy in te reo Māori. With respect to curriculum management and planning, for example, the Report concludes that there was not always sufficient evidence of planning to guide teachers with programme implementation, particularly in written and oral language in te reo Māori. Oral language programmes, for example, were not always well planned and tended to occur only incidentally. Those teachers who did plan for the teaching of reading, writing and oral language in te reo Māori tended to plan only basic sessions of instruction referenced to the curriculum documents.

Feedback from the teachers in these programmes also consistently highlighted the following ongoing concerns:

1. The inadequacy of current preservice and inservice teacher training in literacy development in Māori-medium contexts, particularly biliteracy development, and second language acquisition more broadly.

2. Neither the Māori nor the English curriculum documents were seen as adequately supporting the teaching of reading, writing and oral language in Māori immersion settings.

3. An ongoing lack of sufficient Māori language benchmark assessment resources, particularly at more senior primary levels, and a related lack of training in their use. Those assessments that were available – particularly, Ngā Kete Kōrero and Aromatawai Urunga-ā-Kura – were valued highly, however.

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39 Ngā Kete Kōrero is a Māori language method of organising reading materials into various levels of reading difficulty that was developed in the mid-1990s, although this does not currently extend beyond beginning and early reading texts. Aromatawai-Urunga-A-Kura (AKA) is a standardized assessment tool to assess literacy and numeracy at school entry in te reo Māori and has been available since 1997. However, as Bishop, Berryman and Richardson (2001; see 8.1.5 below) have since found, it is still not widely used by Māori-medium teachers.
4. An ongoing lack of adequate and appropriate teaching and learning resources.

A more recent summary of this Report’s findings was published in 2002. The information from this Report also incorporated the findings of the most recent reviews of 52 Kura Kaupapa Māori with immersion levels in te reo Māori above 80% (Education Review Office, 2002). As with its predecessor, the 2002 ERO Report continues to highlight the significant constraints experienced by kura in terms of teaching, evaluating, programmes, planning and management. Surprisingly, however, the Report does not focus specifically on the quality of Māori language instruction or on the extent to which students were achieving fluency in te reo Māori. Only 16 of the 52 Kura Kaupapa Māori that were reviewed received specific comment regarding their te reo Māori programmes, of which ERO found that 12 had demonstrated good quality language programmes.

The Report did comment on the instructional methods teachers used to teach te reo Māori and found that at 23 kura the methods were appropriate and likely to lead to competency in both te reo Māori and English, while at seven kura the teaching methods were less appropriate. However, the basis of this assessment is not stated, nor does the Report indicate the types of language competencies the reviewers focused upon – oral fluency, reading comprehension, etc. Given the centrality of bilingualism and biliteracy to the educational aims and practices of these Māori-medium schools, the analysis and findings of this ERO Report are disappointingly light on these crucial details.

There were a high number of other areas of instruction, assessment and governance that ERO deemed to be of concern in around 50% of the Kura kaupapa Māori studied. These areas included curriculum planning, curriculum delivery, student assessment, meeting individual needs, learning environments, and administration and governance, the supply of staff and personnel, and teaching resources. The last two are largely beyond the control of the school, however, and are long-standing concerns in Aotearoa/New Zealand.

The Report identified the greatest strengths of the kura programmes as the use of cooperative learning techniques in instruction, effective learning environments, safe environments and relationships with the community. There are, however, some ambiguities in these areas as well. For example, the Report (Education Review Office, 2002: 6-7) finds that most kura have a good focus on providing an effective learning environment (62%). This statement does not match the statistics stated elsewhere in the Report, however. In fact, earlier in the Report, only 54% of kura were said to have adequate systems for identifying learning needs, 56% lacked effective mechanisms for assessing the progress and needs of the students, and curriculum delivery was effective in only 48% of the schools.

The available evidence from this ERO Report would thus suggest some ongoing concerns about the further development of effective learning environments in Māori-medium contexts. That said, the specific experience and/or expertise of the reviewers in bilingual, second language and/or Māori-medium education, or the specific criteria underlying their assessments of the bilingual programmes, are never made clear. Thus, the validity and reliability of their conclusions cannot be accurately gauged.

8.1.5. Bishop et al. (2001)
Bishop, Richardson, Tiakiwai and Berryman (2001) conducted a research project entitled Te Toi Huarewa that sought to identify effective teaching and learning strategies,
effective teaching and learning materials, and the ways in which teachers assess and monitor the effectiveness of their teaching in Māori-medium reading and writing programmes for year 1-5 students. The study focused, in particular, on effective teachers and employed the following methodology:

The gathering of background information about the school in which the teacher operated

Tasks involving the sorting of a selection of literacy resources into categories, asking for information about teacher planning, looking for evidence of available technological aids and asking teachers about their personal philosophy and strategies

Observation of teaching practice and a Stimulated Recall Interview Schedule

General observations

Interviews regarding teacher perceptions of teaching and learning.

This research found that effective teachers in Māori-medium contexts create culturally appropriate and responsive contexts for learning by:

1. **Creating caring relationships**
   - Teachers respect and care for students and their whānau
   - Students care and respect one another
   - Whānau principles guide practices

2. **Creating structured, positive and cooperative environments**
   - Excellent classroom management and routines
   - Non-confrontational behaviour management
   - Mutually responsive relationships with whānau
   - Parents helping with literacy tasks at home and school

3. **Using, recognizing, and building on prior learning and experiences which promotes the tino rangatiratanga of the students**
   - Matching learning strategies and materials to students’ prior knowledge and experiences
   - Matching strategies and materials to abilities

4. **Using feedback**
   - Positively reinforcing behaviour and academic achievement
   - Students encouraged to self-evaluate
   - Formative assessment is used to indicate direction of future teaching practice

5. **Using power-sharing practices**
Ako (reciprocal teaching and learning) used in classrooms
Whānau contact with school promoted/parents help at school and at home

As with other commentators, Bishop et al. observe that Māori-medium education is still in its infancy and that knowledge about the most effective resources and strategies to be implemented in this setting are still being developed. However, they conclude that there clearly are Māori-medium teachers who demonstrate effective teaching and learning strategies for improving reading and writing strategies of their students. These teachers are making good use of the number of resources available, are increasing their own and other teachers’ understanding and expertise in the range of strategies that are available to them, and could well be used to help others improve their practice. These teachers were also found in a range of Māori-medium settings, including both Kura Kaupapa Māori and Māori-medium bilingual units in mainstream schools, and throughout the country (Bishop, Berryman, and Richardson, 2001). This strongly positive research thus contrasts, at least to some extent, with the other research studies discussed thus far, particularly Hollings et al. (1992). However, this is also likely a product of its particular focus on effective teachers, rather than the more general evaluative focus of the other studies.

8.1.6 National Education Monitoring Project
The National Education Monitoring Project (NEMP) has the task of assessing and reporting on the achievement of Aotearoa/New Zealand primary school students in all the subjects of the school curriculum. The main purpose is to provide detailed information about what students can do. Two recent Reports have focused on the comparative achievements of Year 8 Māori students involved in Māori-medium education (at 80% or above immersion) or within general (English-medium) education.

In 2000, NEMP focused on assessing speaking and reading skills (National Educational Assessment Research Unit, 2001), with twelve reading and speaking tasks being administered to these students. The tasks included reading comprehension, retelling a sequence that was viewed, completing a story, and presenting an advertisement. Two tasks required all students to read Māori words or texts, although the task instructions were given in English for the Māori students in general education settings. The remaining ten tasks were presented in Māori or English for the Māori-medium and English-medium students respectively. Administration of the tasks was either by videotape (nine tasks), one-to-one interview (one tasks) or station format (students work independently recording responses on paper; two tasks).

The results found that in three tasks the Māori-medium students performed at significantly higher levels than their English-medium peers. As one might expect, these included the two tasks that required all students to read Māori words or texts (pronouncing Māori words; oral reading in Māori). In five tasks, Māori students in both settings performed equally well (including, presenting a news report; retelling a story from a picture book; completing a story). In four tasks, Māori students in general English-medium settings performed significantly higher (including, reading comprehension and retelling a video story). The same Report also included research on Music skills and Technology skills for these students. From the total findings, the Report concludes that in 55% of the tasks, both groups performed similarly. In 14% of tasks, the Māori immersion students performed better, and in 31% of the tasks the general English-medium students performed better (National Educational Assessment Research Unit, 2001).
An earlier NEMP Report on science, art, graphs, tables and maps skills (National Educational Assessment Research Unit, 2000) also found a broad comparability between Māori students in Māori-medium and English-medium settings, with both groups performing similarly in 70% of the tasks. In the remaining tasks the English-medium students performed moderately better than the students in the Māori-medium programmes (National Educational Assessment Research Unit, 2000). While in this case the results were broadly similar, one clear advantage for the Māori-medium students was that they were able to perform as well as their English-medium peers, plus do so in their L2.

However, the 2001 Report also specifically warns about generalizing from these results, for several reasons:

1. The development and selection of some tasks may have advantaged the English-medium students, as mainstream teachers and researchers developed the majority of tasks.

2. The earlier assessments were translations of English texts with which the Māori-medium students may not have been familiar, and which may have also included unfamiliar dialectal vocabulary.

3. The activities in the Māori texts were often more complex than the English versions.

4. The sample of immersion students unexpectedly lowered by 16 with the withdrawal of two classes.

5. The students in the 1999 sample did not necessarily have stable Māori proficiency, as their te reo Māori abilities were not screened beforehand. Some may also have had only one or two years experience in Māori-medium contexts, thus also potentially disadvantaging them with respect to the assessment of grade appropriate material in te reo Māori (see the earlier discussions on the second language learning delay). In order to redress this, the second sample in 2000 included only those students with at least 5 years in Māori-medium education.

6. There are significant educational issues regarding the comparability of the English-medium and Māori-medium groups, given that Māori-medium education lacks resources and qualified teachers, something that Māori students in general English-medium schools would not experience. Rau (2003), Durie (2001) and Rau et al., (2001) also specifically warn against the practice of comparing Māori with non-Māori and the use of non-Māori benchmarks to gauge Māori progress (see also below).

Finally, although it was not stated in the research, we do not know whether the groups were matched for socioeconomic status. This could also distort the results.

8.1.7 Rau (2003)
Rau (2003) has examined and compared the Māori-literacy skills of groups of students involved in Māori-medium programmes with over 80% immersion over two periods, 1995 and 2002-2003. The purposes of this assessment were to observe the literacy achievement of students in te reo Māori after at least one year of instruction in a high
immersion context, to identify those experiencing difficulty, and to provide information about the classroom programmes. This, according to Rau, is important because no other standardized assessments currently exist in Māori that provide such comprehensive literacy information for students in the first three years of schooling.

Rau used a set of Māori-developed literacy assessments including those which tested letter identification (Te Taūtu), concepts about print (Ngā Tikanga o Te Tuhi Kōrero), word recognition (Te Whakamātātauau kupu), writing vocabulary (Te Tuhi Kupu), hearing and recording the sounds in words (Whakarongo, Tuhia, Ngā Tangi o Roto I ngā Kupu) and text reading (Te Pānui Pukapuka). The participants were 97 students aged 6.0 to 7.0 years (the 1995 group), and 100 students aged 6.0 to 7.0 years (the 2002-2003 group) who came from four districts as shown in Table 3 below.

Table 3: Number and location of schools where students contributed results from testing using He Mātaī Mātātupu to a national data base

<table>
<thead>
<tr>
<th>No. of participating students</th>
<th>1995</th>
<th>2002-2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Auckland</td>
<td></td>
<td>16 Auckland</td>
</tr>
<tr>
<td>50 Waikato</td>
<td></td>
<td>28 Waikato/Bay of Plenty</td>
</tr>
<tr>
<td>28 East Coast</td>
<td></td>
<td>32 East Coast/Hawkes Bay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>24 Wellington/Southland</td>
</tr>
</tbody>
</table>

The results were as follows:

1. Students in the 2002/3 age band consistently scored better than students in 1995 across five of the six tasks.
2. Students in the older age bands consistently scored higher than the younger age band on all tasks for both the 1995 sample and the 2002/3 sample.
3. Overall, there was little difference between the performance of boys and the performance of girls for both the 1995 and 2002/3 samples.

Rau argues that the different findings evident in 1995 and 2003 are attributable to a range of factors, including increased support for, and resourcing of Māori-medium programmes, particularly since 1998. In particular, such resourcing has included:

1. The development and promulgation of Ngā Kete Kōrero. This framework has provided much needed organization of junior reading material in te reo Māori into increasing levels of difficulty, comparable to those in English-medium. Teachers potentially are able to make better matches between reading material and learner need/ability as a result.
2. The increased quantity and improved quality of reading instructional material available in te reo Māori (although more is needed).
3. The increased recognition and development of epistemology and pedagogy for Māori-medium contexts.
4. The increased provision of Māori-medium-specific professional development in literacy for teachers, particularly via the funding of the specialist resource teachers of literacy, Māori (Ngā Taumatua) programme in 2002 by the Ministry of Education. This development would appear to be crucial and is an important start (albeit a belated one) to addressing the consistent need identified by teachers in Māori-medium programmes for such professional development.

5. The ongoing commitment and dedication of Māori-medium teachers who continue to strive toward improving curriculum delivery and raising Māori achievement in the face of extreme demands, often overwhelming expectations, and limited resources.

However, Rau also points out that the results may have been better still had it not been for a number of factors which have made the tasks of the Māori-medium teacher even more difficult. These include, in particular:

1. the high number of ‘linguistically challenging’ curriculum documents in Māori that have been developed within a relatively short period

2. the high mobility of teachers

3. an increased demand for Māori-medium teachers due to a rapid increase in the number of schools offering Māori-medium programmes

4. increasing demands for professional development in Māori-medium-specific literacy, which drains teacher supply, and

5. the still piecemeal nature of teacher professional development provision.

In another recent research study, also pertaining to student achievement and assessment in Māori-medium education, Berryman, Walker, Reweti, O’Brien and McDonald (2002) outline the development of a language assessment resource called Kia Puta Ai Te Reo. The study also discusses some preliminary findings from some Māori-medium programme trials of the resource.

Kia Puta Ai Te Reo consists of a combination of four programmes and assessment tools that are designed to assist students with different levels of language ability to improve their te reo skills in Māori-medium education settings.

The programmes are:

_Tukuna kia Rere_: For students who need to strengthen and enrich their Māori language base. It is based on an English oral language programme called the ‘One Hand Approach’, developed by Annette Stock, and helps students build and link language by using a hierarchical model of word and meaning associations.

_Hopungia_: For students who have learned to communicate in English but who need to develop Māori language skills in order to succeed in Māori language
learning contexts. Hopungia consists of a range of interactive activities such as barrier games and collaborative stories, which are designed to broaden student understandings of Māori language and fluency.

*Mihi and Tata:* These two programmes are designed to assist students who experience communication difficulties. Mihi is a programme designed to help parents of students with hearing difficulties. Tata works at developing vocabulary and the development of letter sound knowledge associated with the initial sounds of words.

Table 4 below highlights the levels of the students’ language ability in te reo Māori and the corresponding programmes that are designated to match that language ability level.

**Table 4: Kia Puta Ai Te Reo resources and corresponding language ability**

<table>
<thead>
<tr>
<th>Level</th>
<th>Language ability of student</th>
<th>Corresponding programmes</th>
</tr>
</thead>
</table>
| Level 4 | Preschoolers who communicated in mainly poor English or Māori structures and vocabulary | Tata  
|         |                                                                        | Mihi                               |
| Level 3 | Preschoolers who communicated only in English                         | Hopungia                           |
| Level 2 | Preschoolers who communicated mainly in English but with some Māori    | Tukuna kia rere                    |
| Level 1 | Preschoolers who communicated mainly in Māori                         | Standard Māori-medium school assessments |

Each type of programme caters for the needs of each particular group of students. Given their greater level of linguistic proficiency, however, Group One students use the standard Māori-medium assessments, such as Aromatawai Urunga-ā-Kura, which are designed to ensure their ongoing extension in te reo Māori.

The preliminary results of the use of these programmes in the classroom are also now available. The Tata programme (testing the naming of objects and the initial sounds of selected vocabulary) has been successfully trialled in three sites. At each site there were increases in student performance over the period for both tests. The Hopungia programme has been trialled successfully at two sites, one a kura kaupapa Māori and the other a mainstream school (wishing to increase its Māori component to 50% immersion). In terms of these results, the authors state:

> the Hopungia programme was enjoyed by students and able to be implemented by tutors working within the classroom setting. Further, the Hopungia programme was able to increase individual oral language opportunities and improved student performance at each of these quite diverse sites. (Berryman et al., 2002:14)

The Tukuna kia Rere programme is still being trialled. However, the authors conclude that the overall implementation of Kia Puta ai te Reo appears highly promising and argue...
that it is one means of overcoming the past and present practices of Māori having to implement assessment tools which have been developed by non-Māori, and without Māori ways of knowing and understanding being an integral part of it. Therefore, this set of programmes marks a change from this pattern, as it was developed with te reo Māori me ōna tikanga (Māori language and culture) as the central resource, ‘from within the context of equitable power-sharing …and from the child’s own culture’ (Berryman et al., 2002).

Berryman and Glynn (2003) have also conducted a small-scale intervention study in one community primary school where Māori-medium students were experiencing difficulties in their English language skills after transferring to the local English-medium high school. In addressing this concern, Berryman and Glynn asked the following key questions which, for reasons that will discussed further in Section 9, bear further and closer examination in the Aotearoa/New Zealand context:

1. What impact does transition to English have on the lives of the students and their whānau?
2. Are current transition practices to mainstream English-medium effective, or even adequate?
3. How have students benefited from these types of practices?
4. How can we do better? (Berryman and Glynn, 2003:10)

Berryman and Glynn observed that, to date, most teachers in Māori-medium contexts have implemented one of three options when attempting to prepare their students for secondary school. They would typically either:

1. Do nothing to interfere with the ongoing Māori-medium education and wait until the student enters the English-medium context before dealing with any issues that might arise following transition
2. Teach English transition once students reach a specific age group, or
3. Teach English transition to all students within a specific class.

None of these options above, Berryman and Glynn argue, is optimal, as they do not take into consideration the identified level of language proficiency of the individual student. All the options assume, they say, that the students share the ‘same level of preparedness’ (Berryman and Glynn, 2003: 9-10). One might also add here that current approaches to transition to English-medium contexts do not appear to address systemically the specific requirements attendant upon the development of academic language proficiency in English (see also Section 9).

To address these concerns, Berryman and Glynn (2003) developed and implemented a 10-week reading and writing transition programme in English for the students in this Māori-medium setting, in Term 4 of their final year, immediately prior to transferring to high school. Despite the relatively short time frame, the results appear to have been highly successful, with the preparedness of the students for academic instruction in English markedly increasing. Subsequently, this programme time has been extended, to further build on its effectiveness.
8.2 Pasifika research

If research on Māori-medium school-based contexts has been relatively limited, research on Pasifika education, and Pasifika bilingual education in particular, is even more so. As Coxon, Anae, Mara, Wendt-Samu and Finau (2002) state:

…research studies into Pacific education issues at primary school are not as numerous or easy to categorize as would be expected. The studies show isolated topics and interests, without any real focus except in regard to parent-school-community relationships. (Coxon et al., 2002: 51)

A further difficulty mentioned by these authors is in locating studies that deal with Pacific students as a specific group rather than alongside, or elided with Māori. At present, the majority of studies still conflate Pasifika and Māori research, most often via the use of the term ‘Polynesian’.

8.2.1 General education

There are a number of recent studies that focus on general aspects of Pasifika education. Rogers (1997), for example, interviewed Māori and Samoan teachers regarding factors of effective teaching practice in the schools in which they taught. Rogers then compared these responses with those of principals, parents and educationalists (from outside the schools). While there was some concurrence of responses, a key point of difference was the dissatisfaction of educationalists with the lack of a holistic approach to Pasifika education, and a lack of inclusion of Māori and Samoan language in the schools. The principals, teachers and parents had not raised this issue.

Dickie’s (1998) research into Samoan students’ primary school performance makes recommendations which coincide with Rogers (1997), in particular, that more opportunities to learn the Samoan language and more cooperative learning are needed in schools which teach Samoan students. Nelisi (1999) also recommends the greater inclusion of Pacific indigenous knowledges in Aotearoa/New Zealand classrooms in the form of reading materials.

8.2.2 Language and literacy research

Where research on Pasifika students has focused on literacy, the principal objective has been to improve the acquisition of English literacy skills in English-medium education contexts. The significant studies that have emerged in recent years from the SEMO project are clear examples of this. For example, the first SEMO evaluation (Timperley, Robinson, and Bullard, 1999) analyzed 26 primary and middle schools in South Auckland with respect to student achievement data in reading, writing and spelling (in English). In similar vein to Hollings et al. (1992), the researchers found that while there was ‘considerable data collection activity in schools’ (Timperley et al., 1999: ii), this was not always used to ‘inform programme review and revision’. This often ad hoc approach to setting collective achievement targets and standards made it difficult for schools to accurately measure the progress and success of their students, many of whom were Pasifika. As a result, the study recommended further professional development in the areas of interpreting and using literacy-related data.

Subsequent SEMO evaluation studies have focused on how schools can work more closely with their communities to improve (English) literacy skills, as well as exploring case studies approaches to school-based professional development (see, for example,
Symes, et al., 2001; McNaughton, 2002). Again, however, the role of first languages for Pasifika students in the acquisition of English literacy is not directly addressed. Smaller scale studies on reading practices among Pasifika students, such as those by Townsend and Townsend (1990) and Lumelume and Todd (1996), also do not address L1 issues.

There are only a few studies in Pasifika education research that do address bilingualism and/or bilingual education directly. Hampton (1992), for example, studied how bilingualism relates to the development of reading. She analyzed the school records of Samoan students, using miscue analysis, retelling of stories, and cloze procedures, to explore the relationship between language skills and learning to read. Hampton found that the key to Samoan students’ success in reading in English is being able to read in their L1 at home – a conclusion that, once again, supports the developmental interdependence principle (see 4.6).

May’s (1994) ethnographic study of Richmond Road School in Auckland explores issues of significant school reform with respect to both Māori and Pasifika students, with a particular focus on the additive bilingual approach adopted by the school (see also May, 1995). This included the establishment of the bilingual units in the school in (at that time) Māori, Samoan and Cook Islands Māori – the first urban mainstream school in Aotearoa/New Zealand to do so. May’s analysis of the subsequent English literacy achievements of students from Richmond Road School (1994: ch. 8) demonstrated that, as a result of the school’s additive bilingual approach, nearly all students left the school at the end of Grade 6 (11 years) with reading levels in English at aged 14 plus. This was a remarkable achievement, given that the majority of these students on entering Richmond Road were, on average, two years behind national norms for English literacy, in line with the ongoing relative disadvantages experienced by Māori and Pasifika students nationally (see 5.1; see also the discussion of Wilkinson, 1998 below).

More recent research by McCaffery and Tuafuti (1998) has also explored the development of Pasifika bilingual education at localized school level in South Auckland, with a particular focus on Finlayson Park in Manurewa. Results from an ongoing school-based study of Finlayson Park reveal significant improvement in the achievement of students involved in the school’s Samoan bilingual unit (see McCaffery et al., 2003).

Finally, Wilkinson’s (1998) wider analysis of Aotearoa/New Zealand students’ English literacy achievements, as measured by IEA evaluations at both 9 and 14 years of age, does not address bilingualism directly. However, it does clearly highlight significant concerns about the English literacy performance of L2 speakers. In particular, the ‘home language gap’ – that is, the gap between the literacy achievements of students whose home (or first) language corresponds with that of the school and those students for whom it does not – is the largest of any OECD country at both 9 and 14 years. In fact, these IEA evaluations, and other more recent evaluations such as PISA and PIRLS, have consistently highlighted for some time now that Aotearoa/New Zealand has the poorest performance across the OECD in the successful acquisition of English language literacy for those students who do not speak it as an L1. Pasifika students are disproportionately represented in this latter group, and are also predominantly in English submersion education contexts – identified consistently in the research literature as the least effective educational contexts for minority bilingual students. The obvious implication is that the further development of additive bilingual education approaches be urgently considered for such students, ideally as part of a wider, holistic approach to the education of Pasifika
students in Aotearoa/New Zealand. Such developments should also be congruent with, and build upon already existing good practices in Māori-medium education. Indeed, this is already beginning to occur, although predominantly still only at the preschool level, where Pasifika immersion units have been modelled on Kōhanga Reo. As highlighted in 7.2.6, the development of Two-way bilingual programmes for Pasifika in schools is another possibility that should be seriously considered.

40 For example, there were 177 such language nests in 1993, catering for 3877 children (Bishop and Glynn, 1999).
9. **Indicators of Good Practice**

Part 2 has thus far examined the underlying principles of effective bilingual programmes, the specific characteristics of effective bilingual programmes, and key programme-specific issues that have been identified in the Aotearoa/New Zealand research on bilingual/immersion education. On this basis, this final section will extrapolate key indicators of good practice that have been consistently identified as being effective across a range of different bilingual programmes, and which accord with sound and attested research conclusions on bilingual education. These indicators of good practice will also be discussed in relation to their potential implications for the further development of bilingual/immersion education in Aotearoa/New Zealand – particularly, but not exclusively, for Māori-medium education.

This approach to bilingual/immersion education is described by Cummins (2000b) as one of **Research-Policy-Practice**. Such an approach requires *first* highlighting key theoretical principles or hypotheses in the research literature that have been identified as contributing to effective bilingual/immersion policy and practice and *then* judging or measuring these principles in relation to their congruence with available empirical research data. The process of linking research-based theory and evidence to policy and practice thus provides us with an extremely ‘robust’ basis for ascertaining effective policy implementation for bilingual/immersion education, while also accounting for and/or directly addressing the diversity of approaches, programmes and contextual factors in bilingual/immersion education. In other words, for a theoretical principle or hypothesis to be robust it has to accord with *all* available research data, or at least be able to account for inconsistencies in the research data – for example, through poor implementation of an otherwise positively attested bilingual education programme. Consequently, such an approach provides an extremely strong basis for effectively ascertaining generalizable indicators of good policy and practice that can then be applied specifically to bilingual/immersion education in Aotearoa/New Zealand.

Extrapolating indicators of good practice on the basis of this Research-Policy-Practice approach will also provide the best means of developing wider *informed* educational policy for bilingual/immersion education in Aotearoa/New Zealand. Given the complexities of the field, the still widely held misconceptions about both bilingualism and bilingual education, and the relative infancy of bilingual/immersion school-based programmes in Aotearoa/New Zealand, the need for robust research-led indicators in this respect is made even more pressing. The wider position(ing) of ethnolinguistic minorities within English-dominant contexts such as Aotearoa/New Zealand, along with their associated relative disadvantage, highlights the further need for these indicators to account for not only classroom-based indicators, but also the ongoing influence of the wider social and political context. As Cummins (2000b) states:
Theory addresses educational practice not only in the narrow sense of what happens in the classroom but also in terms of how classroom interaction is influenced by societal discourses that surround educational practices. Theory can challenge inappropriate or coercive policies, practices and associated discourses by pointing both to inconsistencies with empirical data and also to internal logical contradictions within these discourses. It can propose alternative understandings of phenomena and chart directions for change. (Cummins, 2000b:3)

9.1 Programme approach

The international research literature on bilingual/immersion is unequivocal about the following key issues with respect to programme approach:

1. Additive bilingual programmes are the most effective bilingual education programmes, in terms of fostering bilingualism, biliteracy and student achievement. This is because such programmes provide for the development of a sufficient bilingual threshold in students for the cognitive and educational advantages associated with bilingualism to ensue. The interdependence principle also allows for the successful transfer of literacy skills in one language to another, thus also achieving biliteracy.

2. Maintenance and enrichment bilingual programmes, most often associated with L1 minority and L2 majority students respectively, are the most effective programme models – with students being able to achieve age-appropriate academic bilingualism and biliteracy by the end of schooling.

3. Longer-term bilingual programmes are significantly more effective than shorter term programmes because they allow for the second language learning delay that attends the acquisition of academic language proficiency in an L2.

4. Total immersion is not a prerequisite for the achievement of high-level fluency in the target language, but higher levels of immersion do tend to result in higher levels of fluency among students. If increasing the number of fluent speakers in a language that is currently endangered is particularly important (as is the case with te reo Māori), higher levels of immersion will be most effective in achieving this.41

5. Transitional bilingual education (TBE) does draw upon the linguistic resources of minority language (L1) students but its subtractive bilingual philosophy – aiming to shift the students from their L1 to an L2 – makes TBE less effective educationally than maintenance or enrichment programmes. However, longer-term TBE programmes (4-6 years) are more effective than shorter programmes (1-3 years) because they allow sufficient time to account for the 2nd language learning delay.

6. The least effective educational approaches for language minority students are English submersion approaches and their variants, including ESL pullout approaches. These are ineffective in two principal ways: they undermine and eventually atrophy students’ bilingualism, thus precluding such students from the

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41 See also the discussion of the age factor in relation to fluency in 2.3.3.
cognitive and educational advantages associated with bilingualism; they consistently result in the lowest educational outcomes for minority language students.

Implications for Aotearoa/New Zealand

Given that Māori-medium education is identified as an additive heritage (or enrichment) model of bilingual education, its development must be further encouraged and resourced, in line with more specific pedagogical indicators of good practice, discussed below.

There is an urgent need to address the possibilities of further development in Pasifika maintenance bilingual education, particularly in relation to Two-way bilingual programmes. There are some highly successful documented examples of additive bilingual programmes already operating in mainstream Aotearoa/New Zealand schools (e.g., Richmond Road; Clover Park; Finlayson Park). These schools have been recognized internationally (Richmond Road is referred to widely in the international research literature as an exemplary multilingual school) and nationally (Clover Park was placed 2nd in the 2003 national competition for best school; Mountain View, which won the competition, also has bilingual units). However, these outstanding examples of good school-based practice in bilingual education remain highly localized and predominantly community- and school-driven, with little impact upon, or reference to national education policy.

Indeed, there is still little formal support, recognition or resourcing from central education agencies for Pasifika bilingual education as a whole and, relatedly, an ongoing lack of an informed national strategy on Pasifika bilingual education. Moreover, urgent movement on maintenance bilingual programmes for Pasifika students is clearly warranted in light of the long-standing, consistent and ongoing poor educational outcomes for Pasifika L1 students, the majority of whom are in English–submersion classroom contexts. One strategy here would be to target, for teacher recruitment, Pasifika adults who speak a Pasifika language as an L1 (Tuioti, 2002). Another would be to provide specific inservice training support in bilingual education and second language development, teaching and learning for current Pasifika L1-speaking teachers (see also 9.2).

ESOL support for Pasifika students should also continue, not least because in 2001, 17% (about 9,700) of all Pasifika students received such support. However, the limited efficacy of ESL withdrawal or pullout programmes, at least as a default option in schools, suggests that consideration should be given to moving towards a more integrated ESOL strategy, such as that adopted recently in the UK. The UK approach combines specialized ESOL support alongside the extensive use of bilingual teaching assistants in mainstream classes, thus providing access to the benefits of students’ L1 in the teaching and learning process (see Bourne, 2001; May, 2002d), although even this approach is still significantly less effective than additive bilingual education programmes.
9.2 Language

A key feature of any bilingual programme is the relationship between the students’ language(s) and those of the programme. In particular, is the language of instruction the students’ L1 or L2? Do all the students have the same language base (L1 or L2), or is the student language base mixed (a combination of both L1 and L2 speakers)? When these questions are asked, it immediately becomes apparent that most students currently in Māori-medium education can be designated as L1 speakers of English and L2 speakers of Māori. This student language base most closely accords then with enrichment bilingual/immersion programmes such as French immersion in Canada (although the wider social context in relation to language status and use differ).

Specific pedagogical issues that arise in relation to teaching a minority L2 language include the following:

1. The target (L2) language must be used extensively as the language of instruction (that is teaching curriculum content through the language). Its use as simply an organizational language is not sufficient for the cognitive and educational advantages of bilingualism to ensue (although the use of language for organizational purposes may contribute to the development of cultural knowledge).

2. Teachers must be fluent speakers, readers and writers in both languages. This is a sine qua non of bilingual programmes around the world. If teachers are not fluent in both languages, they will not be able to teach students the academic language proficiencies required for long-term academic success.42

3. While teacher fluency is a crucial condition for the success of bilingual/immersion education, it is not, in itself, a sufficient condition. Teaching a minority target language as an L2 also requires an understanding of issues concerning second language acquisition. In particular, teachers need to recognize, and teach to, the 2nd language learning delay inevitably experienced by L2 learners in the acquisition of academic language proficiency in that language (as opposed to conversational language proficiency which is more quickly acquired). In this way, teachers will be able to build more specifically upon the metalinguistic advantages associated with additive bilingualism. This, in turn, requires specialist training in second language acquisition and learning.

4. There is also a need to teach the academic language characteristics of the L1 in order to ensure that the literacy skills acquired in the target language are able to be fully transferable.

5. Separating languages of instruction with respect to particular learning/instructional episodes is consistently deemed to be more effective than intermixing them (Dulay and Burt, 1978). Language mixing is not harmful – codeswitching is, after all, a key feature of bilingual language use. However, it does appear that strict separation of languages, or sustained periods of monolingual instruction, is the most effective pedagogical means of promoting bilingual language development. This is because separating languages of

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42 Of course, 2nd language speakers of a language can also be fluent speakers and able to teach the higher cognitive/linguistic skills required of academic language proficiency.
instruction allows for the establishment of language boundaries, and this in turn facilitates language learning and the development of metalinguistic awareness in students (Cloud et al., 2000; Baker, 2001; Lindholm-Leary, 2001; see also 3.4.2).

Implications for Aotearoa/New Zealand
While the expansion of Māori-medium programmes, particularly within mainstream school contexts, has been significant in recent years, there is a high likelihood that many of these programmes are not teaching sufficiently through te reo Māori as the target language (see also the discussion of immersion levels in 9.3 below). The degree to which te reo Māori is a significant instructional language in many of these contexts remains open to serious question, certainly in those with lower levels of immersion. This is of particular concern, given that instructional content in the target language is central to additive bilingualism and the cognitive and educational advantages of bilingualism. Jacques (1991) research is indicative of these concerns here, particularly with respect to low-level immersion bilingual units in mainstream Aotearoa/New Zealand schools.

While L2 speakers can also be fluent speakers, the L2 language background of many of the teachers in these programmes, along with their students, is also of considerable concern, since language fluency is a central prerequisite for successful bilingual programmes. Good models of the language are essential, particularly when the target language is an L2 for students, if students are to have modelled to them cognitively stimulating instruction (Lindholm-Leary, 2001).

Pasifika bilingual education is actually potentially far better placed here, given that many Pasifika students and adults still speak a Pasifika language as L1. However, the language shift and loss already experienced by Māori makes the Māori-medium context considerably more challenging. Given the significant and ongoing dearth of fluent Māori-speaking teachers/kaiako, serious and urgent consideration needs to be given to developing preservice and inservice programmes that combine the specific development of Māori language proficiency with the specific requirements of teaching in bilingual/immersion contexts (see also below).

Consistent use of other fluent speakers in the classroom should also be encouraged wherever possible, perhaps via the reinstatement of kaiarahi reo (language assistants). This team teaching approach is widely evident in good models of bilingual education (Cloud et al., 2000; Lindholm-Leary, 2001), as well as in English second language education (Bourne, 2001). It would also be particularly useful where the teacher’s language fluency is in need of further development, allowing the teacher, as well as the students, access to fluent models of te reo Māori. Again, however, it would be important to ensure that Māori was consistently used as an instructional language in the classroom. Such an approach would also clearly require a commitment to significant additional funding.

The 2nd language learning delay with respect to the acquisition of academic language proficiency in an L2, allied with wider indicators of the most effective programme types, indicates unequivocally that students need to remain in bilingual/immersion programmes for a minimum of 6 years, ideally 8 years. Shorter programmes do not allow for the full development of literacy in the target language – particularly when it is an L2, as it will be for the majority of Māori-medium students – and should thus be actively discouraged.
The particular concern that this raises for Aotearoa/New Zealand relates to the misplaced assumption among many parents and whānau that 2-3 years of Kōhanga, where some conversational Māori has been acquired, is ‘sufficient’, and that students’ English language learning needs are then best served by transferring to English-medium contexts. Similarly, many parents of kura students withdraw their children after only 1-2 years for, one suspects, much the same reason – the (misplaced) assumption that ‘too much’ Māori may undermine English language proficiency.\textsuperscript{43}

Parental decisions such as these not only waste the already overstretched resources of kura, which have invested considerable time educating these children, but are, ironically, the least effective means of achieving parental aims. The students concerned will almost certainly have had insufficient time in Māori-medium contexts to have acquired literacy in te reo Māori to age appropriate level, given that the second language learning delay inevitably sees such students at lower than equivalent grade level in the L2 in the initial years of instruction, before then beginning to catch up. This feature was apparent in the results from bilingual programmes discussed in Section 7 and is also now recognized by the NEMP studies discussed in Section 8.

As such, these students will (possibly) have conversational competence in te reo Māori, but not academic language proficiency in it. The students will also therefore not be at a sufficient bilingual threshold to be able to transfer literacy skills effectively from one language to the other, the principal advantage of additive bilingual education. As Baker (2001: 210) asserts, ‘classroom teaching transfers relatively easily between languages [but only] when such languages are sufficiently developed to cope with concepts, content and curriculum materials’.

In short, students who arrive in English-medium school contexts without a sufficient literacy basis in te reo Māori are highly likely to struggle with academic English and learning more generally. They will be having to start again in a new language-learning context and, given their prior involvement in Māori-medium education, will also be behind their chronologically aged peers in relation to age-related learning activities in English. English-medium schools may, in turn, view these students and their Māori-medium experience from a deficit perspective, a pattern that Flores, Cousin and Diaz (1991) have identified in the US context, further contributing to the potential difficulties experienced by such students in English-medium contexts. \textit{Consequently, exiting Māori-medium education too early is likely to contribute to and/or confirm eventual educational failure for Māori students, rather than ameliorate it.}

A similar, but more easily managed consideration has to do with the transition to English-medium secondary education for Māori-medium students. Again, this relates to the issue of academic language proficiency – albeit, this time in English. The early predominant view of many Kura Kaupapa Māori was that total immersion in Māori could be pursued because many of the students were L1 English speakers anyway, because of the pervasiveness of English elsewhere, and because of the related assumption that students would ‘naturally’ acquire the English necessary for instruction in English-medium

\textsuperscript{43} These trends are supported by Ministry of Education data. In 2000, for example, over 30% of Māori children were enrolled in Kōhanga Reo at Level 1 immersion (81-100%), but only 7.5% of Māori children subsequently moved on to the same level of Māori immersion education at the primary school level. Out of the remaining three levels of Māori medium education, 3.5% were involved in Level 2 (50-80% immersion) and 3.7% in Level 3 (30-50% immersion) (Ministry of Education, 2002).
instruction. These views were also influenced at the time by the predominance in second language teaching circles of natural approaches to language learning. Terrell’s Natural Approach (see Richards and Rodgers, 1986), for example, espoused language programmes that imitated as closely as possible the process of learning the first language as the best means of achieving bilingualism (Lindholm-Leary, 2001).

However, as this Report makes clear throughout, academic language proficiency in any language, even one’s L1, never automatically occurs. The particular and additional complexities of classroom-based academic discourse – including its more decontextualized nature, its more complex grammar, and its subject specific vocabulary (see Cummins, 2000a, 2000b; May, 2002b) – have to be specifically taught.

The recent research by Berryman and Glynn (2003) is therefore extremely important in this regard. It highlights that students who move from a primary school Māori-medium context to a secondary school English-medium context, without any formal instruction in academic English, may also experience issues of transition to a different language context, and may be similarly constructed in deficit terms by their new schools. However, unlike those who leave Māori-medium contexts too early, these students have the considerable advantage of being able to transfer the literacy skills acquired in te reo Māori to the task of learning academic English. And, as Berryman and Glynn demonstrate, this process can also be managed relatively straightforwardly.

However, it does require Māori-medium contexts to directly address academic English at some point prior to the end of their programme, something that many kura remain reluctant to do. It is this ongoing pattern of resistance to the teaching of English in full-immersion Māori-medium contexts that has led Cummins, a prominent long-standing academic advocate of, and international authority in, bilingual education to observe specifically of Māori-medium education:

> The rationale is that the minority language (Maori) needs maximum reinforcement and transfer of academic skills to English will happen ‘automatically’ without formal instruction. Although there may be instances where this does happen, in my view, this assumption is seriously flawed. ‘Automatic’ transfer of academic skills across languages will not happen unless students are given opportunities to read and write extensively in English in addition to the minority language. (Cummins 2000b:194)

Cummins emphasizes the importance of formal explicit instruction in order to teach specific aspects of academic registers in both languages and the utilization of both languages to promote students’ awareness of language and how it works (e.g. focusing on similarities and differences between the two languages). He proceeds to argue that if one of the two languages is ignored instructionally, with the expectation that it will ‘take care of itself’, students may experience significant gaps in their knowledge of, and access to, academic registers in that language, particularly in areas related to writing. Furthermore, if one language is completely excluded, students are given much less opportunity and encouragement to engage in the ‘incipient contrastive linguistics’ that Lambert and Tucker (1972) reported was such a successful feature of French immersion programmes. This kind of enriching metalinguistic activity is much more likely to occur and exert positive effects if it is actively promoted by instruction.
There is far less consensus in the wider research literature, however, on the best timing for, and method of, such instruction in English – although usually bilingual/immersion programmes have introduced instruction in both languages by Year 4 (Baker, 2001). This level of variation is also reflected in the wide variety of approaches currently adopted by Māori-medium programmes to the introduction of English instruction. Some Māori-medium programmes, for instance, begin English language instruction in the third year of the student’s education for one or two hours each week, while others may leave English until year 7 and 8, as was the case with Berryman and Glynn’s intervention study.

Similarly, as we have seen, the wider research literature recommends that a key principle of effective teaching in bilingual/immersion programmes is to separate languages of instruction with respect to particular learning episodes (Cloud et al., 2000; Baker, 2001; Lindholm-Leary, 2001). However, how this separation is achieved may vary widely. Bilingual programmes may use different languages on alternate days, use one language in the morning, another in the afternoon, alternate languages by subject (ensuring, where possible, that language use does not become subject-specific; i.e. that both languages are used in all curricular areas) and/or demarcate language use by space (English may be spoken only in some rooms, for example).

All these strategies are currently used, to varying degrees, by Māori-medium programmes. This suggests that, with the provisos that some formal English language instruction should occur before the end of the programme, and this instruction should directly address academic English language literacy skills, Māori-medium programmes may continue to develop and manage the teaching of English language instruction as they best see fit. Managing such instruction, via methods of separation deemed most appropriate in particular Māori-medium contexts, should also alleviate concerns about the potential encroachment of English into other language and/or school domains.

In addition, how effectively teachers understand and address the complex issues that attend teaching in an L2 as an instructional language, and the teaching of academic literacy in both an L1 and L2, is pivotal to the success or otherwise of bilingual/immersion programmes. Specifically, teaching in a bilingual programme requires specialist training in immersion pedagogy, curriculum, materials and resources, and L2 or target language assessment. This must include preservice and ongoing inservice in:

1. Bilingual theory and research
2. The bilingual programme model the school uses
3. Second language acquisition and development
4. Instructional strategies in second language development
5. Multicultural and educational equity training
6. Cooperative learning strategies
7. (See Cloud et al., 2000; Day and Shapson, 1996; Met and Lorenz, 1997; Skutnabb-Kangas and Garcia, 1995 for further discussion).

44 The need for educational equity training relates to the importance of teachers understanding the wider social context, and the attendant inequalities often experienced by ethnolinguistic groups, as discussed throughout this Report (Weinstein, Marshall, Sharp, and Botkin, 1987).
Not only do teachers need to be skilled practitioners, an important element is also their ability to reflect critically upon their instruction and the curriculum. According to Cloud, et al. (2000), effective instruction occurs when teaching is modified in response to the results of formal and informal assessment of student progress, to feedback from students during activities, and to teachers’ observations of the appropriateness of curriculum materials and activities. In order to be able to do this competently, particularly in an L2 minority language context, teachers must have a repertoire of appropriate and effective assessment techniques that they are able to use to obtain regular feedback about the effectiveness of their teaching and the learning of the students. Current research in Aotearoa/New Zealand – particularly Hollings et al. (1992) and ERO (2002) – suggest that this repertoire among Māori-medium teachers is still in need of further support and development.

Teachers must also be sufficiently familiar with second language acquisition, and its implications, to be able to employ appropriate scaffolding approaches that move students from the more context embedded/cognitively undemanding contexts characteristic of conversational language proficiency to the more context reduced/cognitively demanding aspects of academic or classroom-based language (see Cummins 2000a, 2000b; May, 2002b; see also Diagram 6).

Finally, teachers need to be well versed in appropriate assessment strategies, as well as being aware of the limitations of particular assessment measures in different language contexts. This last issue has also been consistently highlighted in Aotearoa/New Zealand research with respect to the (in)appropriateness of adopting, or even adapting, some English language assessment measures to Māori-medium contexts (see Berryman et al., 2002; Rau, 2003).

In this light, current levels of professional development for bilingual/immersion teachers in Aotearoa/New Zealand remain palpably inadequate. Preservice teacher training is of particular concern here since, given the constraints of a 3 year Bachelor of Teaching, almost no meaningful instruction can be provided – even for general teachers – in second language acquisition and/or bilingual education. Even generalist teachers would benefit immensely from such instruction, since mainstream Aotearoa/New Zealand classrooms have an increasing number and range of bilingual students within them and most teachers remain demonstrably ill equipped to teach them.

Inservice professional development is better served but still strikingly limited and disparate. The recent funding and development of the Ngā Taumatua (Resource Teachers of Literacy, Māori) inservice programme is a significant advance here, however. So too is the recent development of the first specialist postgraduate qualification in language and literacy education – including the only postgraduate paper available in Aotearoa/New Zealand specifically on bilingual education research, policy and practice. Both qualifications are provided by the University of Waikato.

Be that as it may, both preservice and inservice provision in Māori-medium education need to be significantly extended, and resourced nationally as part of a coordinated policy approach to bilingual/immersion education. Such teacher education programmes need to be developed further in relation to already-existing specialist rumaki/immersion programmes and, crucially, in conjunction with the further development of, and training in, appropriate Māori language assessment resources. They also need to address
effectively the ongoing concerns about the initial, often highly varied, Māori language proficiency or competency of teacher trainee applicants (not to mention, teachers).

One possible model that might address all these concerns is a 4 or 5 year specialist teacher training programme offered by 1 or 2 designated providers that involved at least one year of full-time Māori language study (preferably via immersion) for all non-fluent Māori speakers at the start of the programme, followed by 3-4 year specialist teacher training in bilingual/immersion education. Given the longer training period required, such a programme would need to be funded by scholarships and, ideally, should bond students to teach in bilingual/immersion contexts on completion of the programme. Current inservice education should also continue to be extended along similar lines, wherever possible.

Limiting specialist bilingual/immersion programmes to 1-2 providers would also effectively concentrate scarce resources and expertise. Such providers would need to demonstrate strong Māori language programmes, as well as expertise in bilingual/immersion education – at the very least at undergraduate level, and preferably at graduate level as well. The importance of teacher education and teaching continuing to be informed by a strong research evidence base is crucial to the long-term effectiveness of such programmes.

9.3 Level of immersion

The wider research literature highlights a number of key issues with respect to level of immersion:

1. Higher levels of immersion result generally in higher levels of language proficiency in the target language, particularly if the target language is an L2 for students (see, for example, Campbell, Gray, Rhodes, and Snow, 1985; Genesee, 1987).

2. Levels of immersion may vary but the most effective additive bilingual/immersion programmes in the literature range from 50% to 90% immersion in the target language, with 90-10 and 50-50 being the most common. 90-10 programmes often move from an initial 90% in the target language to 50-50% over a period of 4-6 years.

3. The minimum requirement for effective additive bilingual education is 50% in the target language. Programmes with less than 50% have consistently been found to be less effective in establishing bilingualism and biliteracy for students. They may have other benefits – such as fostering cultural support and culturally appropriate pedagogy – but they cannot be regarded as effective bilingual programmes.

Implications for Aotearoa/New Zealand

Māori bilingual programmes are currently funded at four levels of immersion:

- Level 1: 81-100%
- Level 2: 51-80%
- Level 3: 30-50%
- Level 4: 12-30%
Level 1 programmes equate with ‘full immersion’, Level 2 programmes equate with effective ‘partial immersion’ programmes, Level 3 with ineffective partial immersion programmes (less than 50%), and Level 4 with foreign language teaching programmes.45

Funding for these programmes also varies accordingly, as Table 5 below indicates. This budget differential provides additional resources for schools on the basis of the added costs involved in staffing and resourcing bilingual/immersion programmes. Higher levels of immersion involve more cost, in terms of staffing, resources, and wider infrastructural support, and therefore gain greater funding.

Given the particular history of Māori-medium education, and its symbiotic relationship with the Kōhanga Reo movement from which it emerged, Level 1 immersion programmes are most often (but not exclusively) associated with Kura Kaupapa Māori. These schools have also been the ones most often associated with the success of Māori-medium education, both nationally and internationally.

Table 5: Ministry of Education Māori Language Factor Funding Allowances

<table>
<thead>
<tr>
<th>Immersion Level</th>
<th>Programme Delivery</th>
<th>$\text{$ per Māori student 2002}$</th>
<th>$\text{$ per Māori student 2003}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>81-100% immersion</td>
<td>$886.69</td>
<td>$902.65</td>
</tr>
<tr>
<td>Level 2</td>
<td>51-80% immersion</td>
<td>$443.34</td>
<td>$451.32</td>
</tr>
<tr>
<td>Level 3</td>
<td>30-50% immersion</td>
<td>$221.67</td>
<td>$225.66</td>
</tr>
<tr>
<td>Level 4</td>
<td>Less than 30% but at least 3 hours per week</td>
<td>$53.81</td>
<td>$54.78</td>
</tr>
</tbody>
</table>


The widespread adoption of a full-immersion approach among kura emerged out of a specific commitment to additive bilingualism, an associated awareness of the limitations of transitional bilingual education, a wider social and political commitment to reversing language shift and loss of te reo Māori, and a related reassertion of tino rangatiratanga (self-determination). This history of Māori-medium education is consequently reflected in the predominance of students in full-immersion Māori-medium programmes. In 2000, just over 11,000 Māori students were involved in Level 1 Māori immersion, while less than half this number of Māori students (5,117) were involved in Level 2 or Level 3 (5,480). Level 1 programmes accordingly are also predominantly separate whole-school programmes, while Level 2-4 programmes are predominantly associated with bilingual units within mainstream schools. This is also an important issue of resourcing, since the teachers who are most committed to Māori language revitalization and/or are the most fluent speakers have also tended to teach in kura kaupapa contexts.46

45 Foreign language teaching usually comprises between 12-30% instruction in one or more languages, the higher levels being most apparent in Europe. While it can be a very positive experience for students, it cannot be regarded as bilingual education (see 5.2). The difficulty of equating Level 4 Māori-medium education with ‘foreign’ language teaching can be obviated by adopting the Finnish definition of teaching a ‘second domestic language’ (our thanks to Tove Skutnabb-Kangas for pointing this out to us).

46 This is not meant to imply that teachers in mainstream bilingual units are less committed to these principles. It simply reflects the fact that the limited pool of fluent Māori teachers, or those who are relatively fluent, have, not surprisingly,
The international research literature on bilingual/immersion education clearly indicates that a high level of immersion is entirely appropriate for the wider goal of revitalizing te reo Māori, and the more specific goal of fostering the highest levels of language proficiency possible among students in te reo Māori, if the school or programme have the appropriate staff and resources to accomplish this.

However, the international research literature also clearly highlights that effective additive bilingual programmes may also be partial immersion programmes, as long as the minimum level of instruction in the language is at least 50% – equating to Level 2 Māori-immersion. This has not been a view that has been widely held in Aotearoa/New Zealand up until now. Indeed, what seems to have transpired in Aotearoa/New Zealand is a widespread view that only full immersion programmes (Level 1) can be described as authentic additive bilingual programmes – hence, the regular distinction in Aotearoa/New Zealand still made between immersion and ‘other bilingual’ programmes. Consequently, all partial forms of immersion (Levels 2-4), including the burgeoning number of bilingual units within mainstream school contexts, have tended to be viewed far less favourably – often being simply equated or elided with subtractive and/or transitional programmes.

It is equally clear from the international research literature, however, that many partial immersion programmes are ineffective. These programmes are almost always those that have less than 50% instruction in the target language and/or do not teach the target language sufficiently as a language of instruction – that is, the equivalent of Level 3 and Level 4 Māori-immersion in the Aotearoa/New Zealand context. Consequently, the basis of differentiation among Māori-medium programmes needs urgently to be reconsidered.

Rather than differentiating between Level 1 full immersion programmes and all other partial immersion programmes, as is currently the case, the differentiation should be clearly between programmes at Levels 1-2 and Levels 3-4. Thus, partial immersion programmes that exceed 50% – that is, Level 2 programmes – should continue to be specifically fostered in Aotearoa/New Zealand along with Level 1 full immersion programmes. Level 1 programmes that move to more equivalent levels of instruction in Māori and English over time (e.g., 90/10 to 50/50 over 6 years), as is common in bilingual programmes internationally, should also not be penalized financially. For example, if the minimum level of immersion in Māori is maintained above 80% for the first 2-3 years, these programmes should still be regarded as Level 1 programmes.

Meanwhile Level 3 and Level 4 programmes should be encouraged to meet these higher immersion levels, if possible, perhaps within a specified period of time. If they cannot – and one might expect this to be the case for the majority of current Level 4 programmes, and at least some of the Level 3 programmes – these programmes should be redesignated as Māori language support programmes, rather than as bilingual or Māori-medium programmes, and funded under a different basis (see also below).

The redesignation of Level 3 and Level 4 programmes is particularly important for any meaningful ongoing national evaluation of Māori-medium programmes, since only Level

tended to be found and/or encouraged into full-immersion contexts, where their combined language and teaching skills are most needed.

As discussed in 9.2, the only proviso is that some form of specific academic English language instruction should occur before the end of the programme.
1 and Level 2 programmes are regarded as being comparable to effective additive bilingual education programmes elsewhere, as identified consistently by the research literature.

Such redesignation would also avoid the confusion that has characterized the debates on the effectiveness of bilingual education in the USA, where the less effective results from programmes with less than 50% instruction – the majority of US programmes, in fact – were included alongside the significantly and consistently more effective results from maintenance and enrichment programmes with more than 50% instruction. Consequently, undifferentiated national results on the effectiveness of ‘bilingual education’ in the USA were inevitably diminished overall. This has allowed the anti-bilingual campaign in the US to continue to fuel public misunderstandings about bilingualism and bilingual education, a development that has actually led subsequently to the disestablishment of many of the most effective bilingual programmes.

The importance of differentiating between Levels 1-2 and Levels 3-4 also has potentially significant implications for current Māori language factor funding arrangements. At present, there is a significant gap between Level 1 and Level 2 funding (see Table 5 above). Given that the equivalent of Level 2 programmes are regarded as providing the basis for effective bilingual programmes, a shift in emphasis to supporting both Level 1 and Level 2 programmes should necessarily involve further funding support for Level 2. By implication, less funding – or, more appropriately, a different basis of funding – for current Level 3 and Level 4 programmes should be considered. Alternatively, Level 4 funding could be eliminated, given that this low level of immersion clearly means that these programmes cannot be considered to be bilingual (although, of course, they are likely to be bicultural). Level 3 programmes should also be provided with incentives to achieve Level 2, perhaps within a designated, time-limited period.

If funding were to be eventually concentrated and/or consolidated at Levels 1-2, as we recommend, this would also address a related concern with the current proliferation of Māori-medium programmes across the sector, many of which are at levels of immersion that are not considered to be effective. In other words, the further development of Māori-medium education should concentrate on quality or depth, not coverage or breadth – consolidating focus and resources on those programmes that have been identified as the most effective in achieving bilingualism and biliteracy for their students. This would also make best use of the limited staffing and resources currently available to Māori-medium education (although the latter should be extended wherever possible, in light of the earlier recommendations in this section). Should further bilingual programmes be developed for Pasifika students, as we also recommend, a similar approach of concentrating on quality rather than quantity, and comparable funding criteria, should also be adopted.48

In both instances, however, schools, parents and the wider whānau would need to be advised accurately on the significant benefits of higher levels of immersion, not least because of the ongoing misconceptions among many that ‘too much’ concentration on the target language will detrimentally affect the acquisition of English.

This requires, in turn, a wider educational campaign aimed at highlighting the benefits of bilingualism and bilingual education, and addressing the many myths and misconceptions

48 This principle is also the basis for our earlier recommendation of the consolidation of specialist bilingual/immersion teacher training via 1-2 designated tertiary providers.
surrounding them. Again, it is hoped that this Report might provide the basis for such a development.

This approach to the further consolidation of bilingual/immersion education in Aotearoa/New Zealand – concentrating funding and support on programmes that exhibit clear indicators of good practice – also highlights the relevance and importance of school or programme profiling. That is, programmes could be evaluated or assessed in relation to the degree to which they have incorporated and/or are cognizant of key indicators of good practice in bilingual/immersion education. This would address another pressing current concern – that is, the ad hoc development of many bilingual units in mainstream schools, often with little knowledge of, or consistency in, appropriate pedagogical approaches, particularly with respect to teaching a target language such as te reo Māori as an L2.

This is not to suggest in any way that such programmes have been developed in a deliberately cavalier fashion. Rather, their development has most often been as a result of whānau, community and/or school-based initiatives. However, as this Report makes clear, such initiatives may actually prove to be counter-productive if they are not carefully developed and resourced in relation to good practices identified in the wider research literature, and in relation to bilingual programmes that have been identified as effective.

9.4. School Context

Finally, consideration also needs to be given to the particular school context in which bilingual/immersion programmes are situated. As has already been indicated, the majority of Level 1 or full-immersion programmes in Aotearoa/New Zealand are Kura Kaupapa Māori – that is, separate whole-school te reo Māori programmes. As Table 6 below indicates, however, there are also a considerable number of other whole-school Māori-medium programmes, at varying different levels of immersion – 154 in total. In addition, there are 276 schools that have bilingual units, or classes, within them – again, with widely different levels of immersion.

Table 6: Number of Kura Kaupapa Māori and other Māori-medium schools

<table>
<thead>
<tr>
<th>Number of Schools</th>
<th>Year 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kura Kaupapa Māori</td>
<td>59</td>
</tr>
<tr>
<td>Other Immersion Schools</td>
<td>16</td>
</tr>
<tr>
<td>Bilingual Schools</td>
<td>79</td>
</tr>
<tr>
<td>Schools with Immersion Classes</td>
<td>104</td>
</tr>
<tr>
<td>Schools with Bilingual Classes</td>
<td>172</td>
</tr>
<tr>
<td>TOTAL</td>
<td>430</td>
</tr>
</tbody>
</table>

Source: Ministry of Education (2002: 28)

Whole-school bilingual/immersion programmes have several advantages over other options. In terms of their environment, they have a greater ability to create an overall additive environment that is more conducive to learning the target language and attaining high academic levels in their subjects. The buying of resources for this type of school is less problematic also. When catering for a single language group, a single resource will have a broader utilization by the students at the various levels of the school, so there will be less purchasing of similar resources in two languages. The planning and coordination
of programmes will also be less complex because they will all share their most essential characteristics and principles with one another.

In contrast, bilingual/immersion programmes within English-medium schools will experience a number of challenges not experienced by whole-school programmes. When the target language programme is situated within a context where the majority language dominates, any additive bilingual context fostered by the programme may be potentially undermined by a wider subtractive view of the target language, and of the programme itself. Consequently, it is crucial to establish an additive environment towards the target language, and the programme itself, throughout the whole school (Johnson and Swain, 1997). In this regard, Met and Lorenz (1997) make the point that effective bilingual programmes also place high emphasis on integrating all the students within the total school programme. This is demonstrated in the Aotearoa/New Zealand context by the success of such schools as Richmond Road Primary School, Clover Park Middle School and Finlayson Park Primary School (see May, 1994, 1995: McCaffery and Tuafuti, 1998; McCaffery et al., 2003).

The principal also has a particularly important role in a bilingual/immersion school as the person who is central to the planning and coordination of the programme, who cares for the welfare of the staff, and who can act as the spokesperson for the programme (August and Hakuta, 1997). As the earlier example of the Fort Defiance Navajo school programme highlights (see 7.2.5), if this support is lacking the programme may well collapse. In order to be able to support a bilingual/immersion programme effectively, however, the principal also has first to be committed to the bilingual programme, understand and support its underlying philosophy and particular programme approach, impart this understanding and support to the wider staff and school community, and be able to articulate and, where necessary, defend the programme in a wide variety of forums. This is particularly important if the programme’s aims are to be correctly understood and supported by the wider school and community, and in effectively addressing any related misconceptions about bilingual/immersion education. In the Aotearoa/New Zealand context, the influence of Jim Laughton, the principal responsible for establishing the internationally lauded bilingual/multicultural approach at Richmond Road School, demonstrates this clearly (see May, 1994, 1995; Corson, 2000).

Successful bilingual/immersion programmes are also those that enjoy a high amount of parental support and involvement. Indeed, bilingual programmes are often created because of parental pressure on educational authorities to establish such a programme. The initial establishment of Kōhanga, and subsequently Kura Kaupapa Māori, demonstrate this clearly, as do many other Māori-medium programmes. This is also a characteristic of overseas programmes – the initial Canadian French immersion programmes, for example, and indigenous language education programmes more broadly (May, 1999; Cloud et al., 2000).

9.5 Summary of key programme factors

In light of the previous discussion, and on the basis of the research canvassed throughout this Report, we can now briefly summarize the key indicators of good practice in bilingual/immersion education programmes (see also Cloud et al, 2000; Lindholm-Leary, 2001):
1. **Wider school environment**

   An additive approach to bilingualism

   Effective and informed leadership at school level and appropriate administrative support

   An active commitment to equality

   Positive teacher-student and student-student (L1/L2) relationships

   Cooperative learning and teaching approaches

2. **Teachers**

   Need:

   Native or near-native fluency in both languages

   To understand the research and theory underpinning bilingual education generally, and their approach/model in particular

   To understand second language development (e.g. the distinction between conversational competence and academic literacy)

   To have appropriate instructional strategies for L2 learners

   Professional development support in bilingual education and 2nd language development

   Access to appropriate language assessment resources, and consistent and regular training and support in them

   Training/awareness of/commitment to bicultural/multicultural and educational equity

   Training in cooperative learning and teaching approaches

3. **Instructional design**

   Duration of the bilingual/immersion programme needs to be *at least 6 years* at primary school level in order for students to reach a sufficient bilingual threshold level for the cognitive and educational benefits of bilingualism and biliteracy to ensue

   A *50% minimum* of target/minority language use as the language of instruction is essential

   The higher the target/minority language use, particularly in the early grades, the more fluent students will eventually be in the target language. This is
particularly important when the language is an L2, as is the case for many Māori-medium students

Literacy should begin in the target/minority language, although the timing of the subsequent introduction of the L1, and specific teaching of it, will vary

Students need to be introduced to the target language initially via context embedded/scaffolded approaches to teaching and learning

More cognitively extending/demanding language input also needs to be introduced over time in order to develop academic language proficiency in the L2

Some explicit language teaching instruction is required for both the target language and the students’ L1 in order to achieve academic language proficiency in both languages

Separation of languages of instruction for particular learning episodes is crucial

4. **Home/School relationships**

   - Strong community support
   - Strong parental involvement
   - Strong central educational agency resourcing and support

5. **Wider language education policy**

   - A research-informed approach to bilingual/immersion education
   - A consistent approach to bilingual/immersion education across sectors, and in relation to different student/language groups. While the emphasis should continue to focus on Māori-medium education, a more coordinated approach could also encompass Pasifika and Asian language groups in the Aotearoa/New Zealand context who will likely benefit from instruction in their L1.

   - Significant additional funding for the development and extension of Māori and Pasifika language resources, particularly appropriate language assessment resources, to at least senior primary levels.

   - Additional funding for team teaching approaches in bilingual/immersion contexts, particularly where the teacher’s level of fluency in te reo Māori needs further extension and support.

   - The establishment and funding of specialist preservice bilingual/immersion teacher education programmes which incorporate initial Māori language
training, and additional teacher training in bilingual education methodology and 2nd language development.

Further funding support for existing inservice teacher training in Māori language proficiency and specialist bilingual and 2nd language teaching and learning.

Assessment of educational outcomes for students in bilingual/immersion contexts to be cognizant of, and appropriate to, such language learning contexts (e.g. NEMP). This is particularly important, given that language and literacy development for bilingual learners must always account for the 2nd language learning delay in the early years of the programme. Effective bilingualism and biliteracy is achieved over time, not immediately.

Funding directed towards those programmes with features that research has highlighted are associated with the most effective bilingual/immersion programmes.

The potential profiling of schools and programmes in relation to such indicators of good practice, as a means of ensuring the greatest possibility of success for such programmes. Funding allocation of bilingual/immersion programmes could be made dependent on the ‘readiness’ of schools to implement and sustain effective bilingual/immersion programmes.

A wider information strategy to be developed and made available to all interested parties – teachers, students, parents, policy-makers and politicians – based on the best available research on the attributes of effective bilingual programmes and on the merits of bilingualism.

Any further development of bilingual/immersion education to be situated within a wider, coordinated, and consistent language education policy, including a critical reappraisal of the efficacy (or lack thereof) of existing English-submersion educational approaches for minority language students and related ESL withdrawal support. Such a review of these latter programmes is long overdue.

Further research evidence on effective bilingual/immersion practices to be gathered via ethnographic/case study research in schools that are already known to be exemplars of good practice. There are a number of schools in Aotearoa/New Zealand – in both kura and mainstream contexts – that have a long history of exemplary practices in bilingual/immersion education. Researching these practices would be highly informative and could be used to further guide the development of specific organizational and pedagogical practices within other bilingual/immersion programmes.
References


http://www.tki.org.nz/r/nesb/nesb_online/classroom/teach_strats/home_e.php


campaign for English as an official language of the USA (pp. 285-292). Berlin: Mouton de Gruyter.


<table>
<thead>
<tr>
<th>Typical programme names</th>
<th>Societal and educational aim</th>
<th>Programme focus</th>
<th>Aim in Language outcome</th>
<th>Languages of instruction</th>
<th>Programme variables</th>
<th>Research on Student outcomes</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBMERSION (Sink or swim)</td>
<td>Assimilation</td>
<td>Cater for difference by treating everyone the same</td>
<td>Success in English</td>
<td>English without ESOL: osmosis/sink or swim</td>
<td>None</td>
<td>Low levels of English &amp; academic achievement</td>
<td>Mainstream NZ/AUST USA/UK education.</td>
</tr>
<tr>
<td>SUBMERSION (with withdrawal classes)</td>
<td>Assimilation</td>
<td>Withdrawal in small groups/individual</td>
<td>Success in English</td>
<td>English with ESOL</td>
<td>Separate program or curriculum classroom linked</td>
<td>Low levels of English &amp; academic achievement</td>
<td>NZ NESB chn awaiting for ESOL funding</td>
</tr>
<tr>
<td>CURRICULUM CONTENT SUPPORT thru ESOL Finlayson does this</td>
<td>Assimilation</td>
<td>Assistance with Language of the curriculum</td>
<td>Success in English</td>
<td>English with ESOL</td>
<td>ESOL tchr or TA/ELA in class curriculum support</td>
<td>Low levels of English &amp; academic achievement</td>
<td>UK Partnership Teaching/Koia Tce. Auckland</td>
</tr>
<tr>
<td>WHOLE SCHOOL climate of respect and value for bilingualism. Finlayson does this</td>
<td>Assimilation</td>
<td>Whole school involvement</td>
<td>Success in English</td>
<td>English with some L1 greetings/Newsletters/ assemblies</td>
<td>The degree of commitment</td>
<td>Low levels of English &amp; academic achievement</td>
<td>Edendale, Richmond Rd, Finlayson Park</td>
</tr>
<tr>
<td>LANGUAGE TEACHING: L1 COMMUNITY</td>
<td>Assimilation</td>
<td>Only minority children</td>
<td>Success in English plus some L1</td>
<td>School in English/After School L1 classes</td>
<td>Hours involved: teaching methods used</td>
<td>Low levels of English &amp; academic achievement</td>
<td>Hebrew, Arabic, Chinese, Dutch, French</td>
</tr>
<tr>
<td>LANGUAGE TEACHING: SCHOOL (International and community languages)</td>
<td>Assimilation</td>
<td>Minority or majority chn by choice</td>
<td>Success in English plus some L1</td>
<td>English for curriculum L1 or L2 as a subject</td>
<td>Time available and teaching methods</td>
<td>Low levels of English &amp; academic achievement</td>
<td>Teaching of: foreign languages, Maori, Samoan, Cook Is…</td>
</tr>
<tr>
<td>ENRICHMENT CLASS/UNIT PROGRAMMES: cultural focus. Finlayson has done this</td>
<td>Assimilation</td>
<td>Minority teacher/chn by choice. Cultural focus</td>
<td>Success in English plus some L1</td>
<td>English as the main medium instruction: from 10 – 40% L1</td>
<td>Amount of L1 used as a medium.</td>
<td>Low levels of English &amp; academic achievement</td>
<td>Many NZ so called State school bilingual programmes</td>
</tr>
<tr>
<td>TRANSITIONAL (Early Exit)</td>
<td>Assimilation</td>
<td>Exit minority chn to all English asap</td>
<td>Success in English plus some L1</td>
<td>Begin in L1 as a full single or dual medium and exit to L2 asap</td>
<td>Single or dual medium: length of time L1 used</td>
<td>Low levels of English &amp; academic achievement</td>
<td>Most USA prog: Proposed for NZ’s Pasifika Programmes.</td>
</tr>
<tr>
<td>CULTURAL/LANGUAGE REVIVAL: Withdrawal from Society: Separatist (Baker) Usually L1 IMMERSION</td>
<td>Minor group aim: Linguistic cultural revival</td>
<td>L1 and cultural revival</td>
<td>Success in L1, L2 not relevant</td>
<td>L1 only as a medium of instruction</td>
<td>Usually a stage in history; rejection of mainstream</td>
<td>Low levels of English &amp; academic achievement</td>
<td>Some Spanish in US: Religious grps. KKM 1987-2002</td>
</tr>
<tr>
<td>MAINTENANCE/HERITAGE (Late Exit) IMMERSION/DUAL MEDIUM (One literacy)</td>
<td>Biculturalism</td>
<td>Goal: L2 literacy</td>
<td>English literacy &amp; L2 oracy</td>
<td>Predominantly L2 literacy. Limited L1 literacy</td>
<td>Amount of teaching done in L1</td>
<td>Below grade age norms: English and academic</td>
<td>Most NZ current Pasifika biling prog</td>
</tr>
</tbody>
</table>
B) Approaches, models and choices in the education of bilingual learners:
Strong and Additive Forms which qualify as Bilingual Education

<table>
<thead>
<tr>
<th>Typical programme names</th>
<th>Societal and educational aim</th>
<th>Programmatic focus</th>
<th>Aim in Language outcome</th>
<th>Language/s of instruction</th>
<th>Programm e variables</th>
<th>Research on Student outcomes</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRENCH CANADIAN IMMERSION (Majority English speaking children primarily) (two literacies)</td>
<td>Bilingualism/Biculturalism for English speakers in Canada to learn French as well.</td>
<td>Allows majority chn to acquire bilingual bicultural skills</td>
<td>Bilingualism in Bliteracy Mastery of Language of the curriculum</td>
<td>L2 initially for at least 3 yrs. L1 progressively introduced</td>
<td>Begins in L2 When is L1 introduced? Early Middle or Late immersion</td>
<td>High levels of L1 and L2. High levels of academic achievement</td>
<td>French Canadian Immersion</td>
</tr>
</tbody>
</table>

The following types of Bilingual programmes are most usefully described by the programmes goal & purposes. These goals will be different for minority and majority children. Immersion & Dual Medium are methodologies for a number of programme goals/purposes and are not programme goals themselves.

| Finlayson; O le Taiala MAINTENANCE/HERITAGE IMMERSION or MAINTENANCE/HERITAGE DUAL MEDIUM or LATE EXIT BILINGUAL EDUCATION or DEVELOPMENTAL BILINGUAL EDUCATION or (One minority culture learning their own language and an L2 using two literacies as at Finlayson Park.) | Bilingualism Biculturalism for minority chn | Allows minority chn to acquire bilingual bicultural biliteracy skills | Bilingualism in Bliteracy Mastery of Language of the curriculum | L1 initially. L2 progressively introduced | Begins in L1. When is L2 introduced? Can use Immersion or Dual Medium methodology | High levels of L1 and L2. High levels of academic achievement | Navaho, Mohawk, Welsh, Basque Maori Spanish Chinese Italian ……… |

| TWO-WAY TWO-WAY IMMERSION OR TWO-WAY DUAL MEDIUM (Two different cultures learning each others languages using two literacies) | Bilingualism/ Biculturalism for minority and majority chn. | Allows minority and majority chn to learn each others languages and cultures | Bilingualism in Bliteracy Mastery of Language of the curriculum | Both L1 and L2 at varying times in varying % | Majority & minority chn in same class or not. Immersion or Dual medium methodology. Timing, introduction & balance of L1/L2 | High levels of L1 and L2. High levels of academic achievement | English speaking Chn Learning French at Richmond Rd (Auckland) Internatio nal language s in the USA and Europe. |