The implementation of the principles of sign bilingualism in a self-described sign bilingual program: Implications for the evaluation of language outcomes

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1 Introduction

In the past two decades, 'non-oral' or 'pro-signing' approaches to the education of deaf children have increasingly described themselves as bilingual and bicultural ('BiBi') programs. There has been a shift away from Total Communication programs and/or programs that use Manually Coded English (MCE) systems such as Seeing Essential English, Signing Exact English, and Signed English, as developed and used in North America; Sign Supported English in Britain; and Australasian Signed English in Australia and New Zealand (Jeanes, Reynolds, & Coleman, 1989). Some of these programs have been replaced or succeeded by sign bilingual programs (as bilingual/bicultural programs will be referred to in this paper) as educators have increasingly better understood native sign languages (or NSLs after Fischer, 1995) and their role in the linguistic development and education of deaf children. Educators have also increasingly recognized the structural limitations of English conveyed in a sign-based manual mode and the inherent deficiencies of Simultaneous Communication (the favored environment for MCEs), notably the conflict between signing and speaking at the same time while trying to maintain a natural rate of delivery (Baker, 1978; Drasgow & Paul, 1995).

With the increase in the number of programs that describe themselves as sign bilingual there has been increased interest in the types of outcomes being achieved in order to justify a given program or to provide a rationale for moving towards one. However, recent experience in deaf education has shown that before the implementation and efficacy of a particular educational philosophy or methodology can be evaluated, it must first be established if a school, educational program or curriculum which describes itself using the label of a particular methodology is, in fact, a proper exemplar of an approach. As various attempts at MCE systems have revealed, much of the visual and supposedly accessible English produced by teachers using these systems actually fell far short of an accurate and full representation of English that it was claimed to be. Ignoring the inherent structural difficulties of Simultaneous Communication, it has been shown that, in actual practice, most users of MCE systems were not at all proficient. Indeed, the message in sign and speech was regularly degraded and almost always incomplete (Marmor & Petitto, 1979; Strong & Charlson, 1987; Woodward & Allen, 1987; Leigh, 1995; Leigh & Hyde, 1996; Leigh & Hyde, 1997).

Given the significant linguistic and human resources that must be available in order to fulfil the requirements of sign bilingualism, as are detailed below, one must ask if the increasing number of sign bilingual programs are, in fact, *bona fide* programs of this type. Strong (1995) questioned whether seven such identified programs in the United States were really comparable to the oft-cited models of such programs in Sweden and Denmark (Mahshie, 1995). Indeed,

one recent survey of self-described bilingual/bicultural programs for the deaf in the United States which use ASL (American Sign Language) (LaSasso, 2000) has supported anecdotal evidence that many of these programs are sign bilingual in name only and fall far short of what one might expect. For example, LaSasso found that "44% (n=8) of the 18 BiBi programs rated at least half of their instructional staff as being less than fluent ASL users [...]. In only 28% (n=5) of programs were more than half of the faculty rated as being fluent in ASL, and not a single program reported more than half of the support staff as being fluent ASL-users." This raises serious questions regarding the way in which evaluations of any of these sign bilingual programs are to be conducted and interpreted.

This paper reports on research that has reviewed the practices within a self-described sign bilingual program in Australia. First, a brief but comprehensive restatement of the fundamental principles of sign bilingualism is presented. No attempt is made to be exhaustive with respect to the literature as several such reviews of sign bilingualism are already available in the literature (see below). Second, the particular self-described program is described. Third, the basic principles and practices of sign bilingualism are examined individually and compared with the approach taken by the self-described program. Fourth, details are given of significant points of divergence and innovation in practice to evaluate the implementation of these principles. Finally, the paper concludes with an assessment of the sign bilingual character of the program. It is only by first establishing that an educational program is a *bona fide* sign bilingual program that one can reasonably attribute subsequently identified educational and linguistic outcomes to its 'sign bilingual' nature. The efficacy of sign bilingualism cannot be evaluated if programs are not correctly identified.

2 The philosophy of sign bilingualism

The philosophy of sign bilingual education has grown out of two major influences. The first is the recognition of the vital role NSLs play in deaf communities and in the education of deaf children. The second is the belief that the circumstances of spoken language bilingualism have direct relevance to deaf education. Specifically, it is argued that educational practices designed to address problems and challenges presented where the spoken language of the school, education system, and wider community is different from the spoken language a child brings to school are also believed to be applicable to the situation of a signing deaf child.

The principle of bilingual education for children whose first language (L_1) is different from the language of the surrounding majority community is based on the observation that recognition of, and initial instruction in, the child's L_1 appears to facilitate the learning of a second language (L_2) and, consequently, overall educational achievement (Cummins & Swain, 1986; Cummins, 1991; Hamers, 1996; Hamers & Blanc, 2000). Children who are suitable for such programs are assumed to present at school with age-appropriate proficiency in their home language even though they may not be proficient in, or indeed may be completely ignorant of, the language of the wider community and education system. In other words, bilingual education is advocated within the context of a normal pattern of L_1 acquisition by a child.

Sign bilingual education is based on these observations (Ahlgren & Hytlenstam, 1994; Mahshie, 1995; Pickersgill & Gregory, 1998). Deaf children with a signed language as an L_1 have been reported as having an advantage in acquiring or mastering the majority community spoken language (effectively an L_2) over deaf children who do not have a normal pattern of L_1 acquisition (or proficiency) in either a signed or a spoken language (Strong, 1988a; Johnson, Liddell, & Erting, 1989; Bouvet, 1990; Mayberry & Eichen, 1991). The advantage

in the L_2 of deaf children who have a signed language as an L_1 is usually measured in the L_2 as a written language, but it can also manifest itself in L_2 oral skills. Care must be taken in interpreting these research findings and they do not go unquestioned (Marschark, 1993). Nonetheless, though it may well be that deaf children of deaf parents may not necessarily be at a linguistic advantage to deaf children of hearing parents, it is clear that a strong and normal early development in a first language is necessary for long term linguistic development in that same language and/or the later learning of a second language. In this sense, deaf children of deaf parents are more likely to have a strong L_1 (in a signed language) than deaf children of hearing parents a strong L_1 (in a signed *or* spoken language). Evidently, though, this is not sufficient— deaf children of deaf parents are not guaranteed easy access and exposure to English by their parents nor excellent instruction in it by their teachers, both of which are manifestly required if this potential is to be realised.

As with hearing children whose L_1 is different from the language of school and education, it is assumed that deaf children with a signed language as an L_1 are using this language as a 'bridge' to the learning of an L_2. Indeed, it is part of the conscious pedagogical techniques of teachers within a bilingual education program to use the L_1 as a vehicle for talking about and learning the L_2 (Ewoldt, Israelite, & Hoffmeister, 1986; Johnson et al., 1989). Consequently, sign bilingual education also strives to exploit the L_1 signing skills of all deaf children (both those that have signing deaf parents and those that do not) in the learning of an L_2, a majority community spoken language (primarily, but not exclusively, in its written form).

We could thus define sign bilingualism as an approach to the education of deaf children in which the first language of the deaf child (L_1)—the language of the deaf community—is used as the foundation upon which the second and majority community spoken language (L_2) is taught and learnt. In Australia the L_1 is Auslan and the L_2 is English. Auslan and English are both used as the languages of instruction. The underlying philosophy of the approach recognises the deaf community as a linguistic and cultural entity and views deafness within a socio-cultural model of disability. Philosophically, this is situated within a worldview that recognizes and accommodates multiculturalism and pluralism.

It is important to remember that sign bilingualism is not an educational approach or methodology that simply uses Auslan and English, or whichever are the two relevant languages, as languages of instruction. The claims of the appropriateness and benefits of sign bilingual education are built upon observations of hearing children who present at school with age-appropriate proficiency in a first language that is different from the language of schooling *and* the parallels that have been observed with deaf children who have a signed language as their L_1 (see above). No general claims are made for the overall benefits of bilingual education for any child, deaf or hearing, who presents at school *without* age-appropriate L_1 acquisition. In recognition of this fact, sign bilingualism seeks to normalise the linguistic environment of the deaf child, so that they *do* present at school with age-appropriate proficiency and competency in a first language. Sign bilingualism is thus not an educational approach which attempts to address linguistic problems due to a weak L_1 *after* children present at school.

Consequently, sign bilingualism includes an additional important linguistic goal not found in 'normal' situations where one may advocate bilingual education—it strives to create the conditions in which deaf children will present at school with age-appropriate native-like proficiency in a signed language. The reasons for this are simple. First, the vast majority of deaf children are born to hearing parents who do not know a signed language and some kind of language-based early intervention is therefore required to compensate for this fact. Second, in order to build on the same kind of linguistic foundation that the advocates of bilingual education generally claim to be able to exploit (i.e., native-

like proficiency in an L$_1$) the advocates of sign bilingual education therefore need to ensure that children have native-like proficiency in a signed language before, or at least shortly after, they enter formal education.

Sign bilingualism, therefore, necessarily also involves an early intervention component—a program in which deaf community language role models offer Auslan instruction and interaction with parents, other family members, and, naturally, the deaf child. This is the first phase of sign bilingual education. Then, from the beginning of formal school-based education, Auslan and English are used. English is regarded as the child's second language and is taught as such.

3 The principles, practice and implementation of sign bilingualism

Though there are several comprehensive overviews of sign bilingualism to be found in the literature (Bouvet, 1990; Ahlgren & Hytlenstam, 1994; Mahshie, 1995; Pickersgill, 1997) of which two in particular are repeatedly cited (Strong, 1988b; Johnson et al., 1989), there are relatively few detailed descriptions of individual sign bilingual programs (Davies, 1991; Mahshie, 1995; Nover & Andrews, 1998). In this context, the contribution of Pickersgill & Gregory (1998) is particularly relevant in that it describes the fundamental principles that need to be adhered to if an educational program catering for deaf children who use a NSL as an L$_1$ is to be correctly described as 'sign bilingual'. They specify the basic components of any such program, and detail the resources that need to be in place if sign bilingualism is to have a chance of realising expected outcomes. What constitutes 'best practice' in this area is as follows (taken from Pickersgill & Gregory, 1998).

3.1 Language and communication

(a) Preschool intervention and support programs are provided to ensure opportunities for the early acquisition of Auslan (and English, where possible).
(b) Age-appropriate competence and proficiency in the child's first language from an early age are an essential and expected component of successful sign bilingualism.
(c) The first language of deaf children should be an NSL, such as Auslan.
(d) Auslan is regarded as the everyday language of face-to-face interaction in the educational setting.
(e) Auslan and English are regarded as the languages of education. They are used in instruction across the curriculum. The interdependence between Auslan and English is recognized and the transfer of skills between them is encouraged.
(f) Auslan and English are kept separate as far as possible, but it is recognized that forms of 'contact signing'[1] will spontaneously come from students and teachers. Auslan and English are compared and contrasted and the differences explored so that with the contrastive knowledge students are encouraged to develop metalinguistic skills.
(g) 'Signing in English' (henceforth NSS[2]) has a place in instruction and communication, but this is restricted and well specified. A NSS is only used in

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[1] Contact signing was formerly called Pidgin Sign English by many sign language linguists because of the superficial similarity this mixed kind of signing has with spoken language pidgins. It is now realised that such a description is inaccurate because contact signing does not share all the characteristics of a pidgin. Contact signing displays features of both Auslan and English. Importantly, contact signing does not represent English fully or completely. Its mention here is simply a recognition of the fact that many hearing family members will not achieve fluency in Auslan or a form of MCE (putting aside reservations about the latter).
[2] In this context 'signing in English' simply means any natural way of representing English word for word (i.e., in English word order) using the vocabulary of Auslan signs and fingerspelling (Johnston, in press). This type of signing is often referred to in the literature as a Natural Sign System (NSS) (Fischer, 1995). The expression Manually Coded English (or MCE) has been reserved for a number specifically designed manual

instruction where the subject matter is itself English. Students and teachers may have recourse to 'reading out' (manually) word for word a phrase, sentence or text in order to focus on and discuss its structure. This could also include tightly controlled role plays and mini-dialogues using an NSS where English grammar, idioms, lip-patterns and phonology are the focus of attention.

3.2 Curriculum and assessment

(a) The general level of cognitive demand or challenge in learning, should reflect the child's preferred (or first) language level and not that of the second language. That is, overall course content should not be adapted (simplified) to match students' abilities in English.

(b) Both Auslan and English are taught as subjects, as well as being languages of instruction. A curriculum is available for the teaching of Auslan and English and appropriate resources, such as textbooks, videos and CD-ROMs, are available.

(c) First and second/foreign language curricula and teaching approaches should be available for Auslan and English. A curriculum is available for Auslan and English as first and second/foreign languages. Appropriate resources, such as textbooks, videos and CD-ROMs and other teaching materials, are also available.

(d) A deaf studies curriculum should be available for teaching about deaf culture, history and signed languages generally.

(e) The development of curriculum-based signs should be done by and with deaf people.

(f) Language specific assessments for Auslan and English should be used. Language specific assessment tests for both Auslan and English are available and used.

3.3 Staffing

(a) All staff should be able to use Auslan competently and proficiently to a minimum floor level. They should be able to be characterised as fluent, though not necessarily 'native-like'. Specific relevant linguistic qualifications are demanded of all staff, not just educational qualifications. At minimum, these specific qualifications include certification of Auslan skills and ESL ('English as a Second Language') teaching methodology.

(b) All staff should be bilingual in the sense that they are proficient users of Auslan and English. It should therefore be possible to hold staff meetings, without interpreters, using Auslan.

3.4 Parents and community

(a) There should be links with the deaf community. In particular, children and their families should have access to deaf Auslan-using adults from an early age.

(b) Parents should be informed about sign bilingualism and made aware that a successful sign bilingual education requires the participation of the family, not just the child. Parent participation in the school and school community is expected.

(c) Parents must be given every opportunity and support to help them learn Auslan at the earliest opportunity, and then to practice, maintain and develop their skills. Child and parent communication is possible in Auslan or some form of contact signing, families are visited by deaf adults socially or as sign language instructors.

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systems (such as 'Australasian Signed English', etc.) that use specially standardized signs, invented and contrived signs and special conventions for representing English.

4 The self-described sign bilingual program

There are three major components to the self-described sign bilingual program studied here. The first is an early intervention component for deaf and hearing impaired children and their parents. The second is a preschool play and child-care centre for deaf, hearing impaired, and hearing children. The third is a primary and secondary school for deaf, hearing impaired, and hearing children. The school currently caters for children in grades K (kindergarten/preschool), through grades 1-6 (primary/elementary school), to grades 7 and 8 (high/secondary school). Collectively the three components are referred to here as the combined sign bilingual program.

4.1 The early intervention component

Parents of children who have been newly diagnosed with a hearing impairment are visited and counseled and provided with information on services and programs for deaf and hearing impaired children. Information is provided on the combined sign bilingual program, as well as other educational programs and options that are available to parents and their children. In the period of time immediately prior to this study, a deaf community liaison officer (a deaf native adult user of Auslan) was employed. The liaison officer regularly visited up to ten hearing families with deaf children and offered them basic instruction in Auslan and opportunities for their child to interact and play with a deaf signing adult. However, at the time of the study the position was vacant.

4.2 The preschool component

The combined sign bilingual program has evolved from the preschool component established in 1992. The preschool was established explicitly as a sign bilingual program, as understood in the literature on the education of the deaf and as practised in a few key centres around the world, such as Copenhagen and Stockholm. It was established with the intent of preparing deaf children for a sign bilingual education at the sign bilingual primary school. At the time of the study, 31 children were attending the preschool. Not all were present at any one given time and none attended on a full-time basis. There were seven staff, one of whom was deaf.

As at August 1999, well over half of the children in the preschool program were hearing (18 of 31 children). Importantly, of these hearing children, only 5 were children of deaf adults (CODAs). Deaf children represented just over one third of enrolments.

The largest group of native signers (or at least potential native signers) were actually hearing CODAs. A significant proportion of the children in the program were hearing children who had no prior personal or family connections with deaf people, apart from the fact that at least one of their parents was an employee. All the Auslan known by children in this group had been picked up at preschool. Some hearing parents reported that their hearing children seemed to understand basic Auslan, but it was rare for them to be able to sign very well.

The *majority* of the *deaf* children at the preschool did *not* come through the early intervention component. Over the life of the combined sign bilingual program only a very small number of deaf children had deaf parents themselves, and thus might not have needed to be supported in the early intervention component (at least from the perspective of the need for early intervention in Auslan language use and teaching). At the time of the study, there were no deaf children with deaf parents at the preschool.

It should be noted that in every year except 1996 more hearing children (mostly CODAs) have progressed to the primary school from the preschool than deaf students.

4.3 The primary and secondary school component

The sign bilingual school was established shortly after the preschool with the intention that the preschool would act as a feeder to that school. The school has gradually lifted the upper limit of the schooling it provides (from K through to grade 8) as the initial cohort of children in that component of the program have become older.

As at August 1999, there were approximately 43 students in the school, ten teachers (two of whom were deaf), four teacher aides (all of whom were deaf), three other support staff (a librarian, an interpreter, a child psychologist, who were all hearing), and an administrative officer and the principle (both of whom were also hearing). There were 28 deaf students in the school. One third of all students in the school were hearing (15 of 43 students) and, of these, 4 were hearing siblings (HSs) of other deaf students, with the remainder (11) being CODAs. Indeed, there were more hearing students (CODAs and HSs) who had received an on-going sign bilingual education, in that they had been in such an environment throughout their entire schooling, than deaf students (15 hearing children as opposed to 11 deaf children).

Significantly, the majority of deaf students at the school (17 of 28) were 'external' to the program in the sense that they had enrolled in the school without any Auslan early intervention component such as that provided by early intervention program and/or the preschool. Even more significantly, all but 3 of these late arrivals enrolled at eight years of age or older (6 at twelve or thirteen years of age). Some had had oral backgrounds, most had been in education systems based on the use of Signed English (the name of the MCE used in some Australian educational settings).

5 Implementation

The inspiration for the combined sign bilingual program came from the Scandinavian model of sign bilingualism. The preschool and then the primary school were established after management and educationalists had visited and inspected several Scandinavian programs in the late 1980s and early 1990s. Reports and recommendations from these visits formed the basis of the philosophy adopted and the direction taken in the newly established sign bilingual program. However, it was decided not to imitate any of these models in simpleminded way but, rather, to develop and evolve a program which reflected the needs and desires of the local deaf community. The basic principles with which program attempts to adhere are as follows:

- The language of instruction is the natural language of the Australian deaf community (Auslan).

- The program seeks to develop English language primarily through reading and writing but also spoken English where appropriate and desired. Essentially English is learned as a second language.

- English is explained through Auslan.

- Auslan and English are presented as distinct and separate languages

- Auslan and English are compared and contrasted and the differences between the two languages are explored in order to help students develop metalinguistic skills.

- The acquisition of sign language is encouraged as early as possible, accompanied by an understanding of deaf culture, in order to develop self esteem and pride.

- Deaf adults, peers and significant others are the preferred role models for language acquisition, the development of a social identity and the enhancement of self esteem.

- The culture of both communities is presented as valued and equal.

- Parents and the deaf community are given opportunities for involvement in the various aspects of the school program.

- Speech skills are developed through a variety of approaches designed specifically for the cultural background and hearing loss of the student.

- Children of deaf adults and siblings of deaf children have a place in the program as additional members of the Bilingual/Bicultural community.

This summary of the guiding principles which underpin the program leaves one in little doubt that the intention is to implement a sign bilingual approach which is in accordance with accepted practice as exemplified in Pickersgill (1997) and Pickersgill and Gregory (1998), as discussed. Apart from the explicit mention of CODAs and HSs, there is nothing in the stated objectives that is unique or controversial.

The program identifies itself as bilingual and bicultural. That is, the sign language of the deaf community is properly recognized and used, alongside English, in the program. Given that the education of the deaf in most other environments in Australia is still essentially monolingual (in spoken and written English, and sometimes in Signed English), this is a not an insignificant advance in practice. There is recognition of the need to nurture a positive deaf image and identity among students. To this end, there are a number of deaf teachers and deaf teacher aides in the program. Importantly, teachers and teacher aides value each others work and work well together. The preschool and the school provide a secure and happy environment for all the children. A significant number of teachers can use Auslan proficiently and adequately in their jobs, though all teachers recognize the need to improve their sign language skills. In response to this, management has provided a once-a-week Auslan class for staff.

In principle then—from the viewpoint of stated policies—the early intervention, preschool and school components would appear to be examples of sign bilingualism in action. However, it appears that only a few of the core principles of sign bilingualism listed in section 3, above, have been or are able to be fully implemented in the combined sign bilingual program. In particular, the successful overall implementation of the principles of sign bilingualism is significantly hampered in one crucial area: language, teaching and assessment resources in Auslan.

Though it has received systematic investigation and documentation of its lexicon (Schembri, 1996; Johnston, 1997, 1998; Johnston & Schembri, 1999), Auslan is a signed language that has received only an initial grammatical and discourse description from linguists and other language experts (Johnston, 1989). In this respect, it is not unlike many other signed languages, with the notable exception of ASL. There is only a relatively small literature that systematically describes aspects of the morpho-syntax of the language. Consequently, there are few resources to draw on to inform course material. Most materials, such as they are, have been developed largely by reference to language descriptions and course materials developed for other signed languages, primarily ASL, and the intuitions of native signers. In addition, the Auslan course materials are themselves severely limited in scope and number and are mostly aimed at hearing adult learners of the language. Teachers thus face significant obstacles in implementing one of the basic requirements of sign bilin-

gualism—teaching the community signed language as a subject to young children. Finally, the problems of incomplete language description and limited teaching resources are compounded by the absence of any standardised and normed language assessment instruments making it extremely difficult for teachers to monitor language proficiency and progress. Naturally, the lack of assessment instruments is itself another consequence of there being little empirical language research and description.

In addition to difficulties in implementing policies and adhering to best practice, there are a number of ways in which the practice in the combined sign bilingual program seems to significantly depart from the core principles of sign bilingualism as discussed above. Two of these are clearly divergences in practice while three appear to be innovations.

5.1 Divergence

The two ways in which the program diverges from best practice appear to be a result of an inability to meet language requirements and are unintended. These are:

- a lack of Auslan fluency in some teachers, teacher aides, and other support staff; and
- a lack of Auslan language support and training for hearing family members as a fundamental aspect of the program in its initial early intervention component and as an ongoing aspect of family program participation.

5.1.1 Auslan skills

On the basis of informal observations of the signing skills of staff, a series of structured staff interviews, and a questionnaire in which teachers self-assessed their Auslan skills (no formal or widely accepted Auslan language assessment instruments currently exist), it emerged that sign language proficiency posed a problem.

Though some teachers had excellent signing skills and were able to meet the demands of their work without any problem whatsoever, by their own admission and self-rating the majority of teachers had poor signing skills. Informal observations confirmed this. In some cases, it was clear (as the teachers themselves reported) they had learned signed communication within a Signed English framework. Though the teachers were aware of the differences between Signed English and Auslan, they were either 'still learning Auslan' or simply could not break their 'old Signed English habits'. Some teachers would have been unable to cope if staff meetings had been conducted in Auslan, without the aid of an interpreter.

Several of the (deaf) teacher aides not only had little understanding of the aims of the program, but they also did not appear to be competent users of Auslan. Indeed, some teacher aides did not seem to fully understand or appreciate the difference between Auslan and other forms of signing, such as Signed English.

The signing skills of some of the half dozen non-teaching staff were found to be wanting. The one exception was a qualified staff interpreter who, not surprisingly, had Auslan skills that were of a demonstrably high standard. One of the newly appointed non-teaching staff had had no previous study of or exposure to Auslan before joining the school. Most of the remaining non-teaching staff had only basic or beginners skills, usually heavily influenced by Signed English, and reported that they were 'learning on the job' and 'had a long way to go'. Some members of staff had skills that were of a most rudimentary form and were simply not capable of active communicative interaction with Auslan-

using children. It was unlikely that these non-teaching staff could explain themselves or interact 'seamlessly' in Auslan with the children.

Even though program policies and guidelines suggest that staff should be hired on the basis that they can demonstrate the required language skills, there appeared to be no formal mechanism in place to guarantee that all teaching and support staff, deaf or hearing, presented a model of fluent and competent Auslan use. This is problematic because at the core of any sign bilingual program is the assumption that the deaf child has access to a linguistic environment in which they can regularly interact with peers, teachers, and adult role models who are also proficient Auslan-users.

5.1.2 Family-based Auslan support and parental use of Auslan

From the reports of all key personnel, it appeared that the involvement of hearing parents in the school was minimal. The deaf parents of CODAs did seem to make more effort to be involved as they represent both parents and the deaf community. Overall, however, there was little contact between deaf and hearing parents except on the few occasions each year that would normally have attracted parents to any school (open days, graduations and awarding of certificates, etc.).

There was no systematic on-going home-based or community-based sign language support for parents, such as tutoring, classes, conversation groups, etc. In addition, there was also little, if anything, by way of additional 'social' support for a viable parent network. For example, working bees, barbecues and picnic days were either poorly attended or no longer organised. A buddy system in which families were paired (deaf and hearing parents with their respective CODA and deaf children) which was once in place in the preschool and school programs had been discontinued due to lack of support.

Teachers reported that most hearing parents used some form of Signed English (that being the early educational background of their children anyway) if, indeed, they could be said to use any sign language or sign system with a degree of proficiency. Furthermore, it appeared that most NESB ('Non English Speaking Background') parents had very little signing ability (and, for obvious reasons, this could not even be described as Signed English).

5.2 Innovation

There are three other departures from the standard practice which appear to be deliberate program innovations. One is justified on the basis of the philosophy of 'reverse integration': the inclusion of non-signing hearing children in the preschool who have no prior personal or family experience of deaf people. The other two are intended to either improve the sign bilingual environment and/or to provide older children with access to a sign bilingual environment that they had previously been denied. This involves the acceptance and prevalence of CODAs and HSs in the program and the acceptance of late arriving non-Auslan using students with a Signed English or oral background.

5.2.1 'Reverse integration' in the preschool

Well over half of the children in the preschool program were hearing (18 of 31 children). Some of these children were CODAs and some were the hearing siblings of other deaf students in the program (HSs). However, the majority were non-signing hearing children from the local community who did not have any prior personal or family contact with deaf people. Importantly, only 5 were CODAs and who thus might have been able to contribute to the pool of native-like signers in the preschool environment.

The presence of hearing children represented a conscious application of the philosophy of 'reverse integration' which program documentation justified in the following fashion: "The centre implements a model of reverse integration. The program sees interaction between deaf and hearing children as vital to the successful education of deaf children. Because of our excellent pupil-teacher ratio, curriculum and resources, the program is able to cater for the needs of all the children who attend and to see that they all have the opportunity to develop to their full potential."

This departure from expected practice appears at first inexplicable in educational terms since it had the result of mixing poor or non-signers with signers. Given that the overwhelming majority of deaf children are not born into an already signing environment, educators face significant challenges in ensuring that signing L_1 skills are acquired early. If educators are to take advantage of probable critical period effects, preschool should be seen as a relatively late stage at which to give deaf children the oppotorunity to acquire sign language in an age appropriate fashion. This is a time to maximise the child's exposure to Auslan through peers, care givers, and other adult role models. If the majority of children in the preschool are hearing children from the community with no prior contact with signing, then reverse integration may have the effect of limiting the opportunities for some deaf children to get the maximum early benefit of an otherwise rich linguistic environment.

Nowhere in the literature on sign bilingualism nor in any description of any existing sign bilingual program is explicit mention made of CODAs or HSs, except for the Sign Talk day care centre (preschool) in Winnipeg, Manitoba, Canada. (Evans, Zimmer, & Murray, 1994). In this program hearing children are enrolled along with deaf children in preschool in what Mahshie (1995) calls 'two-way' bilingualism. The program does not extend beyond the preschool. Notably, it does not include non-ASL-using hearing children.

The only other known example of the presence of large numbers of hearing children in a school program that describes itself as 'sign bilingual' is the Claremont Project (Tasmania, Australia) (Gifford, 1997). It is not exactly comparable to this program's 'reverse integration' approach in the preschool, or with the Sign Talk program in Winnepeg, as it applies throughout the school program, not just in preschool.[3]

There are two points to be made here—one regarding 'reverse integration' itself and a second regarding the presence of hearing children in sign bilingual programs. With respect to the first, whatever the arguments for 'integration' or 'mainstreaming' may be (e.g., 'desegregation', 'de-institutionalisation' and 'anti-discrimination', etc.) the linguistic dimension to the situation of deaf children who use a sign language cannot be ignored. At minimum, the benefits of mixing with hearing children in terms of socialisation must be weighed carefully against the benefits of developing and reinforcing Auslan skills as early as possible.

5.2.2 CODAs and HSs

In the school program, all of the hearing children were either CODAs (the majority) or the hearing siblings of other deaf students in the program (HSs). In August 1999, one third of all students were hearing. Four were HSs, the remainder were CODAs (15 of 43 students).

The impact of the presence of hearing children in the sign bilingual program appeared to be significant, especially when they constituted such a large pro-

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[3] At Claremont, a variety of learning and teaching environments are encountered. Essentially the 'bilingual school for the deaf' is within a local hearing school and deaf children are taught in classes exclusively for deaf children, in classes where the majority of students are deaf, and in classes where the majority of students are hearing, according to age, subject and abilities. Auslan is offered to all hearing students as a LOTE ('language other than English'), but instruction, except in all-deaf classes, is never exclusively in a signed language. Lessons are either signed and interpreted into speech or, more often, spoken and interpreted into Auslan or some other form of signed communication.

portion of the school population (and the majority of the children in the pre-school program).

Their presence may have compromised the integrity of the program, delivering less than optimal results for both deaf and hearing children. Furthermore, the presence of one of these two groups of hearing children, the HSs, could actually be viewed as potentially counter-productive in that the assumption that HSs are fluent in Auslan cannot be made as readily as it may be made for most CODAs. Importantly, the inclusion of hearing children throughout the combined sign bilingual program represents a divergence from 'standard practice' that would limit the validity of cross-program comparisons one may wish to make.

5.2.3 Late enrolments in the school program

Only 11 of the deaf students enrolled in the school component of the program had previously been enrolled in the preschool. Of these it was not clear how many of these children began preschool or at least kindergarten with age-appropriate Auslan skills.

In other words, the majority of deaf students at the primary and secondary school (17 of 28) were late arrivals and had not had the benefit of early Auslan use in the early intervention or the preschool component of the program. Nine of these 17 children joined the program when aged eight years or older, after several years of oral or Signed English education. Even though a 'bilingual' approach of sorts was being applied to deal with these late arrivals, there was no systematic and separate introductory instruction in Auslan prior to their acceptance into the program.

The late arrival of significant numbers of older oral or non-native Auslan signers must have disturbed the linguistic environment of younger deaf Auslan signers. Not only are the numbers of students at the school small but these older students, simply by virtue of being older, must be setting some kind of example for the younger students. They might even be seen as language role models for them. The literature reviewed above makes it quite clear that the core of a sign bilingual program must consist of a viable population of native or native-like signers who regularly interact with peers, teachers, and adult role models who are also proficient Auslan-users.

6 Conclusion

Only some of the eighteen listed best practice principles of sign bilingualism seem to have been properly implemented in the combined sign bilingual program. In addition, we have identified five major areas of divergence from standard or ideal practice: (i) poor staff Auslan skills, (ii) inadequate early intervention, (iii) appropriateness of the 'reverse integration' model, (iv) percentage of hearing children in the program, and (v) acceptance of late enrolments.

Considered as a whole, it may be that this program represents a unique and valid response to special circumstances, or represents a positive innovation and extension of sign bilingual philosophy. For instance, the inclusion of CODAs throughout the program could be seen as a legitimate attempt to boost the number of native signing peers in the deaf children's environment; the inclusion of non-signing hearing children could be seen as 'reverse integration' in practice; and the inclusion of late arrivals could be seen as an attempt to offer bilingual education to children who had previously been denied one.

However, it is arguable whether these three initiatives are either positive innovations or appropriate responses to 'special circumstances'. It may be argued that they have evolved due to a weakening of commitment to the underlying principles. On balance, one must conclude that the program under investigation is, at minimum, not easily comparable to other sign bilingual programs or, at worst, is not a proper exemplar of sign bilingualism in action. (It should be

noted, however, that the program under investigation is be far from unique in this regard both nationally and internationally.)

This does not mean that the program in place is not worthwhile and serving an important educational service for deaf children. It represents a significant improvement on previous sign language based educational philosophies (e.g., Total Communication or Simultaneous Communications approaches using forms of MCE). It does, however, have implications for the evaluation of the efficacy of the sign bilingual programs as such. Importantly, divergence and non-adherence limit the validity of any cross-program comparisons one may wish to make. It is clearly problematic to try to characterise as 'sign bilingual' an educational setting for deaf children in which one third of students are hearing and in which more than half of all the deaf students have not had, or cannot be shown to have had, early Auslan intervention and support. In other words, one cannot assume these children have Auslan as an L_1. It is certainly inappropriate that late arrivals be considered in the evaluation of the efficacy of the sign bilingual philosophy and, for the purposes of evaluating deaf education, the language outcomes for hearing children in such programs are irrelevant. Furthermore, the deaf students who may have experienced something akin to a sign bilingual education throughout their schooling are so few in number as to cast serious doubt on any meaningful program evaluation based on this population alone.

In conclusion, this review of a self-described sign bilingual program does caution us to ensure that evaluations of sign bilingualism as a methodology be based on a bona fide programs that are properly implemented and supported.

Acknowledgments

References

Ahlgren, I., & Hytlenstam, K. (Eds.). (1994). *Bilingualism in Deaf Education*. Hamburg: Signum Press.

Baker, C. (1978). How does "sim-com" fit into a bilingual approach to education? In F. Caccamise & D. Hicks (Eds.), *American Sign Language in a Bilingual, Bicultural Context. Proceedings of the Second National Symposium on Sign Language Research and Teaching, Coronado, California, Oct 15-19, 1978* (pp. 13-26). Silver Spring, MD: National Association of the Deaf.

Bouvet, D. (1990). *The Path to Language*. Clevedon & Philadelphia: Multilingual Matters.

Cummins, J. (1991). Interdependence of first-and second-language proficiency in bilingual children. In E. Bialystok (Ed.), *Language processing in bilingual children* (pp. 70-90). Cambridge: Cambridge University Press.

Cummins, J., & Swain, M. (1986). *Bilingualism in Education*. London & New York: Longman.

Davies, S. N. (1991). The Transition Towards Bilingual Education of Deaf Children in Sweden and Denmark: Perspectives on Language. *Sign Language Studies, 73*, 169-195.

Drasgow, E., & Paul, P. (1995). A Critical Analysis of the Use of MCE Systems with Deaf Students: A Review of the Literature. *Association of Canadian Educators of the Hearing Impaired, 21*, 80-93.

Evans, C., Zimmer, K., & Murray, D. (1994). *Discovering with words and signs: Sign Talk Development Project*. Winnipeg, Canada: The Sign Talk Children's Centre.

Ewoldt, C., Israelite, N., & Hoffmeister, R. (1986). *A Review of the Literature on the Effective Use of Native Sign Language on the Acquisition of a Majority Language by Hearing Impaired Students*. A Final Report to the Minister of Education, Ontario; Faculty of Educa-

tion, York University; and the Centre for the Study of Communicaiton and Deafness, Boston University.

Fischer, S. (1995). *Critical Periods for Language Acquisition: Consequences for Deaf Education*. Paper presented at the 18th International Congress of Educators of the Deaf, Tel Aviv, Israel, July 1995.

Gifford, F. (1997). *Bilingualism and Integration: The Claremont Project*. Paper presented at the National Deafness Conference (Access Means Opportunity), May 22-26, Hobart, Tasmania.

Hamers, J. F. (1996). Cognitive and Language Development of Bilingual Children. In I. Parasnis (Ed.), *Cultural and Language Diversity and the Deaf Experience* (pp. 51-75). Cambridge: Cambridge University Press.

Hamers, J. F., & Blanc, M. H. A. (Eds.). (2000). *Bilinguality and Bilingualism*. Cambridge: Cambridge University Press.

Jeanes, R. C., Reynolds, B. E., & Coleman, B. C. (1989). *Dictionary of Australasian Signs for communication with the deaf* (2nd ed.). Melbourne: Victorian School for the Deaf.

Johnson, R. E., Liddell, S. L., & Erting, C. J. (1989). *Unlocking the Curriculum: Principles for Achieving Access in Deaf Education. Gallaudet Research Institute Working Paper 89-3.* Washington, D.C.: Gallaudet University.

Johnston, T. (1989). *Auslan: The sign language of the Australian deaf community*. Unpublished doctoral dissertation, University of Sydney, Sydney.

Johnston, T. (1997). *Signs of Australia on CD-ROM: A dictionary of Auslan (Version 1.0 for Windows)*. Sydney: North Rocks Press.

Johnston, T. (1998). *Signs of Australia: A new dictionary of Auslan*. Sydney: North Rocks Press.

Johnston, T. (in press). The Representation of English using Auslan: Implications for deaf bilingualism and English literacy. *Australian Journal of Education of the Deaf*.

Johnston, T., & Schembri, A. (1999). On defining lexeme in a sign language. *Sign Language & Linguistics, 2*(1), 115-185.

LaSasso, C. (2000). *Preliminary Results: National Survey of Bilingual-Bicultural Education Programs in the United States And Implications for Bilingual-Bicultural Research in the United States and Other Countries*. Paper presented at the 19th International Congress on Education of the Deaf and 7th Asia-Pacific Congress on Deafness, 9-13 July, Sydney, Australia.

Leigh, G. (1995). *Teacher's use of Australiasian Signed English system for simultaneous communication with their hearing-impaired students*. Unpublished doctoral dissertation, Monash University, Melbourne.

Leigh, G., & Hyde, M. (1996). Teachers' Use of Fingerspelling in Simultaneous Communication with Deaf Students. *Australian Journal of Education of the Deaf, 2*, 24-29.

Leigh, G., & Hyde, M. (1997). The Relationship between Teacher Attitude and Effectiveness in the Use of Signed Communicaiton with Deaf Students. *Australian Journal of Education of the Deaf, 3*(2), 17-20.

Mahshie, S. N. (1995). *Educating Deaf Children Bilingually*. Washington, DC: Gallaudet University Pre-College Programs.

Marmor, G., & Petitto, L. A. (1979). Simultaneous communication in the classroom: How well is English grammar represented? *Sign Language Studies, 23*, 99-136.

Marschark, M. (1993). *Psychological development of deaf children*. NY: Oxford University Press.

Mayberry, R. I., & Eichen, E. B. (1991). The long-lasting advantage of learning sign language in childhood: Another look at the critical period for language acquisition. *Journal of Memory and Language, 30*, 486-512.

Nover, S. M., & Andrews, J. F. (1998). *Critical Pedagogy in Deaf Education: Bilingual Methodology and Staff Development*. A report by the New Mexico School for the Deaf (Star Schools Project) to the U. S. Department of Education (September 30).

Pickersgill, M. (1997). Towards a model of bilingual education for deaf children. *Deafness and Education, 21*, 10-19.

Pickersgill, M., & Gregory, S. (1998). *Sign Bilingualism*. [UK]: LASER (Language of Sign as an Educational Resource) Publications.

Schembri, A. (1996). *The structure and formation of signs in Auslan (Australian Sign Language)*. Sydney: North Rocks Press.

Strong, M. (1988a). A bilingual approach to the education of young deaf children: ASL & English. In M. Strong (Ed.), *Language Learning & Deafness*. Cambridge: Cambridge University Press.

Strong, M. (1988b). *Language Learning and Deafness*. Cambridge: Cambridge University Press.

Strong, M., & Charlson, E. (1987). Simultaneous Communication: Are teachers attempting an impossible task? *American Annals of the Deaf, 132*, 376-382.

Woodward, J. C., & Allen, T. (1987). Classroom Use of artificial sign systems by teachers. *Sign Language Studies, 61*, 405-518.