

Scoping support for New Zealand Sign Language users accessing the Curriculum

Part II: A New Zealand Overview



Prepared for the Ministry of Education Special Education by



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Inquiries should be made to the Ministry of Education Special Education
St Pauls Square, 45-47 Pipitea Street
PO Box 1666, Thorndon
Wellington 6011, New Zealand

www.minedu.govt.nz/SpecialEducation

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van Asch Deaf Education Centre

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Language instruction to children with hearing loss requires the highest level of competency at the earliest age levels in order to optimize neural plasticity providing the child the best opportunity to develop age or cognitively appropriate language development. This document addresses the need for children with hearing loss and their families to have high quality opportunities in visual communication, as we would also strive to provide for auditory/spoken language communication.

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An Overview

1. Summary

Somewhere between 300 and 500 (12 – 20% of) deaf¹ children in New Zealand require visual communication to develop language effectively, and by this means, the capacity to develop the insights, knowledge and skills required for active citizenry. Most will be severely or profoundly and prelingually deaf.

For hundreds of years, educationalists have been grappling with the best way to instruct all deaf students. Traditional systems of teaching through oral and auditory approaches and manually coded systems of English have been successful for many deaf children but much less so for this group who need visual support, despite considerable progress in amplification and teaching methods.

Education levels are much lower than would be expected for a group of children and adults largely without cognitive impairment, although precise data on educational achievement is difficult to obtain. Negative employment, mental health and social support service statistics reflect a challenging reality for many adults in the Deaf community.

Deaf people have long been arguing that educational access through Sign Language is essential for those who cannot easily access the spoken word. We know that language development is critical in the first few years of life and that the specific language that is used is less material. There is evidence that comprehensive and inclusive approaches that include both sign and spoken languages as well as specialist deaf support are successful.

A recent Human Rights Commission survey established that the perceived three highest priorities for development after the passing of the New Zealand Sign Language Act are the use of NZ Sign Language (NZSL) in education, together with early and easy access for parents to Sign Language training and the use of educational interpreters. Other NZ legislation and policy also support the use of Sign Language access.

For all these reasons, the Ministry of Education wishes to address the issues and challenges of teaching this group of children from birth to school-leaving age in NZSL.

It is certainly not a simple issue with conflicting views and evidence. On one hand is the call for accessible language in education for all children who may require NZSL as well as spoken language and that both need to be provided to as many people as want or need them. On the other is the claim that the numbers of children who require NZSL are very small and decreasing even further in

¹ This report uses the generic term “deaf” but focuses on the needs of children who require visual communication. At least some of these children may not identify as culturally “Deaf”.

number because of the effectiveness of current methods. The latter group further argue that if any visual communication system is offered, it should be Signed English or Sign Supported English (SSE), because English is much more easily learned from this base. The counter claim is that NZSL is a natural language for many deaf children and that learning English, even in signed form, is still too problematic for some. Psycho-social needs are also considered best served by recognition of different learning patterns.

Neither view has conclusively proven educational success for all deaf children who require visual communication. Deaf education levels still languish behind their hearing peers on average, even though there is growing evidence of improving standards.

This report has concluded that if NZSL or its derivatives (such as Sign Supported English) are used in education, that it must be offered to all children and families, even though the significant majority will not be using sign language. This is not a discrete group of children who can be easily separated from all deaf children. Some profoundly deaf children and their families will choose to focus on learning only spoken language. Some will change their minds as time passes. Some with moderate hearing losses may wish to learn both spoken and signed languages.

The precise number of children needs to be identified for the allocation of resources, but in fact systems need to be designed regardless of whether it is 100 or 1000 students. Families will determine demand based on their value of having an alternative communication option.

Offering education in NZSL as well as spoken language in a systematic but flexible way impacts on all of Deaf education. This report has therefore taken a broad look at the complex issues facing the delivery of NZSL in schools. It is hoped that this report will provide a basis for ongoing discussion.

Teaching in NZSL in a bilingual-bicultural model

The primary purpose of bilingual programmes is to enable deaf children to become linguistically competent in both a primary language as well as a secondary language (NZSL and English), so that they can access an age-appropriate curriculum.

Minimal requirements of a bilingual programme include the involvement of native users of the Sign Language, delivery of at least some of the curriculum in that language and explicit approaches to using Sign Language to teach reading and writing skills.

Obtaining a sound base of a language early is considered critical. The acceptance of a cultural perspective has also been shown to have a positive impact on self-esteem of some deaf children, which in turn has a positive impact on learning. Conceptual development and the ability to converse, question and wonder is considered as important as literacy or numeracy.

There is considerable evidence of the positive educational impact of bilingual programmes, although it is also clear that they do not necessarily solve all of deaf children's educational challenges. Academic achievement has been most closely linked not to language use but to parents' socio-

economic status, education and level of support, ethnicity and gender, age of identification, and absence of other impairments.

Sign bilingual programmes differ from other bilingual programmes in three significant ways: language modality (signed vs. spoken or written); the absence of a written form of language; and the inconsistent exposure of deaf children to their first language.

Inclusion of Spoken Language

Some children with cochlear implants or hearing aids, who are learning to hear and speak, still need access to Sign Language. It is fortunate then that children's use of sign has been shown not to interfere with spoken language development, as long as there is sufficient exposure.

There is local disagreement about this that needs to be resolved, but the strength of the literature and international expertise has led to the conclusion that dual approaches can be successful.

Approaches can include the flexible use of Sign Supported English for children responsive to this. Many students and staff may learn NZSL but may prefer to "code switch" and use the signs in English word order, and it appears that this can be accommodated in a flexible system.

The practice of bilingual education must therefore enable cultural and linguistic approaches to coexist with appropriate oral/aural exposure and support. Auditory-oral approaches, including the use and maintenance of amplification aids such as hearing aids and cochlear implants, can be used in conjunction with other approaches, including bilingualism.

Many aspects of development such as social-emotional, cognitive, linguistic, perceptual and physical skills influence and modify and may be dependent on one another, making flexible responsive approaches to individual students vital for their development. At the same time, there also needs to be a consistent framework available across the country to ensure similarity in approach and resource allocation.

This review has examined international and local literature on educational approaches and outcomes in a variety of settings and has discussed these with key stakeholders. There is strong alignment between the literature and views of local stakeholders, including current conflicting views. There is though an apparent trend towards moderate stances that allow multiple modalities to operate.

It concludes that a variety of options are possible and that while there are many challenges to implementation, the transition to a cost-effective and high-performing education system that includes Sign Language does appear feasible over a 5 – 10 year period. The many positive aspects of current Deaf Education, including the many dedicated and enthusiastic staff and developing programmes need to be valued and built upon.

2. Key Challenges for Implementation

Philosophical Approach

Early intervention as a means to access language early is required. However, most deaf children do not get easy access to Sign Language because they are usually born into hearing families who do not sign. Deafness tends to be primarily seen by hearing people as a medical condition requiring cure, and speech is the dominant educational approach. Nearly a quarter (22%) of all children already identified as using a signed language in some form have a cochlear implant and are likely to have a primary focus on learning spoken language. Although there is good evidence that learning Sign Language does not interfere with the learning of speech, signing may not be advocated until past the critical learning period when speech has proved too challenging.

One of the main challenges in teaching Sign Language to students who require visual communication is that the group is neither discrete nor homogenous. Students may require pure NZSL, Sign Supported English depending on their language preference, hearing and speech ability, and a host of other factors. Makaton is also a simple sign system that is used by some children with an intellectual disability. Most students will require or benefit from speech and language training as well as Sign Language. The service needs to be more of a **flexible, responsive and multi-layered continuum** than stand-alone and preset, if deaf children are to arrive at school with age-appropriate language and learn the curriculum.

Critical mass in language development has to be available through frequent language exposure. New Zealand's biggest challenge is its dispersed and small population.

A child needs to have enough users of a language around them in their family and whānau and other children from whom they can learn. Clustered groups of children who prefer to sign are preferred as it not only provides children who can communicate easily with each other it also provides positive validation of the deaf cultural linguistic group.

Special education is structured at a funding and policy level to view deafness as a disability, with groups of deaf children seen as segregational rather than as cultural or ethnic groupings. However, developments in Māori educational services, such as kohanga reo and kura kaupapa schooling, suggest that a cultural approach is possible and relevant models are available.

Increasing cultural diversity among students demands consideration of how bilingualism can adapt to other cultural requirements. Māori Deaf people, for example, sit on the boundaries of both Māori and Deaf worlds and are often more disadvantaged in gaining full access to their communities. High levels of cultural competence should be required of all Deaf education staff, so that they can effectively engage with families of diverse cultures.

Learning English remains a significant challenge for many signing deaf students because of frequent delayed language and the fact that NZSL is a different language and not written. It requires all teachers to use a multimodal presentation of both languages (sign, print, pictures, fingerspelling) in order to make the language meaningful. NZSL can provide an effective vehicle to teach English, even if we are not sure exactly how to best teach English through NZSL.

A nationally unified approach is needed to ensure a consistent range of options are offered to families.

Resources

A broader range of early childhood intervention staff is required to ensure adequate development of Sign Language. This includes an impartial first point of contact which is not affiliated with provision of the teaching service, a specialist counselling and social worker, a deaf consultant and Sign Language instructor.

Flexible and trained Human Resources are key. Training of mainstream teachers, teachers' aides, Resource Teachers of the Deaf (RTD), and early intervention staff in NZSL and cultural issues has been occurring to some extent in past years but the gap is a large one, if fluent Sign Language use is expected. It will require extensive resources, including the development of **high-quality and consistent Sign Language training**. A broader range of staff is required in the service mix to include Sign Language instruction and educational assistants as well as educational interpreters. Training Deaf staff, who already have the linguistic and cultural skills, is considered key to development. The ability to effectively evaluate student as well as staff performance will be critical.

Development of Sign Language resources and curriculum materials for teaching may be resource intensive. Assessments and data collection will also be critical if changes are to be monitored and evaluated.

Technology provides hope that there could be distance learning for geographically isolated students, especially for those who are older and have a good language base. Distance training will also be useful for parents and staff in learning Sign Language. Captioning has been found to be as effective as interpreting for some students; speech recognition software is starting to be used by some teachers with relatively little training, and interpreting by video is also possible for some in remote areas.

Structure

Closer ties with Early Childhood Education could help to provide a more-inclusive and deaf-friendly environment for young deaf children during the critical language developing years.

Deaf children with disabilities form a significant proportion of the deaf student population (around 30%) and all systems for instruction need to consider their needs. Closer ties with other disability agencies are needed so that students' multiple needs can be met and some consideration is given to funding models to ensure other agencies can be involved as needed.

3. Options Possible for Accessing the Curriculum for NZSL Users

There are several ways to teach children in Sign Language across the country and the basic structures are listed below. This review suggests they can all be used depending on demand to ensure that students' diverse and fluctuating needs over time can be accommodated. Clustered groups in mainstream schools are likely to be the most common variant. There is no doubt that group instruction is more cost effective but there will be many instances where individual access is required or preferred.

All the models, however, require some fundamental changes and these are listed below together with an implication on cost.

The model will not necessarily address all educational inequity caused by the impairment of a major information channel. Many deaf students find it harder to acquire information than their hearing peers, at least partially because sequentially produced information is required rather than simultaneous visual and aural information. Much also rests on the ability of the system to ensure children's linguistic readiness for school will enable instruction in the curriculum. Nevertheless, there is reason to be optimistic that education levels can be lifted significantly.

The operational costs of these options could be similar to current provision, although there will be some establishment costs. Educating larger groups of children together could deliver possible cost-savings and improved educational outcomes.

Required Organisational and Service Features	Cost Implication
Leadership from a single national Deaf organisation that employs and contracts key staff and delivers a consistent approach in a hub and spoke model with the two DECs operating as centres of excellence.	Low and one-off – establishment of a single governance body.
Excellent NZSL training at all levels with easy access. Parents may have access to funding for learning NZSL through the Child Disability Allowance ² Two year interpreter training programme involves 1 year of NZSL training – current or distance modules may be able to be used for educational staff.	High in establishment – involves tutor programme analysis, development and training. Medium ongoing costs.

² Child Disability Allowance is an MSD fortnightly payment made to the main carer of a child or young person with a serious disability. It is paid in recognition of the extra care needed for that child.

Required Organisational and Service Features	Cost Implication
Flexible, student and family focused and impartial early intervention.	Medium – ongoing employment of part-time coordinators and range of intervention staff.
Strong auditory verbal and oral programmes seen as essential to partner strong NZSL programme to ensure adequate choice for families.	Low – current programmes are further developed than NZSL. Further development may be required but is outside of the scope of this report.
A focus on audited continuous quality improvement that involves regular student assessment.	Low – possible within system.
Educators and related staff with strong Sign Language skills who can work with children from a variety of cultures.	Extensive training required. May break even on operational costs – considerable teacher travel savings if children are clustered.
Specialist educators (signing and auditory verbal/oral therapists) in the bigger cities who take professional leadership roles.	Breakeven at around 1:3 ratio – see Appendix 3.
Multidisciplinary educators and related staff in smaller population areas who can work with a range of children and are skilled in speech development, can instruct in NZSL and Sign Supported English and Signed English.	May be as low as 1:3 because of population size.
Deaf and hearing-impaired people encouraged to train in all positions including teachers and Advisers.	May involve long-term sponsorship or scholarship costs within training budget.
Advanced tele-schooling with a range of products, from stories in Sign Language for young children, educator training and support, Sign Language training, to virtual classes focusing on the curriculum for older children with strong language. Captioned classes, speech recognition software are also possible. Classes can be recorded and reused as well as monitored.	High investment in product development short term. Technology infrastructure should be included in MOE plans for general development.
Strong linkages with other disability agencies and services at board and school level, and agreed funding models for sharing service responsibility.	No additional cost – management and staff commitment.
Sign Language systems (Makaton, Signed English, baby signs) that are all aligned with NZ Sign Language.	Low cost – some staff training.

Required Organisational and Service Features	Cost Implication
Changes in roles to the service mix. Teacher aides are upgraded to education assistants with strong skills in Sign Language. Educational interpreters and Deaf consultants (mentors) and Sign Language tutors would also be employed and recognised as specialists.	Change in operational cost may be low and establishment costs could be mitigated with a planned gradual approach.
Children are grouped to enable full-time specialist educational staff to be employed.	Change in operational cost may be low (see Appendix 3).
The development of assessment and curriculum material in NZSL.	Medium – may require 2000 hours of development ³
A sustainable funding system that recognises the needs and develops a transparent and fair system of allocation.	No additional cost – consideration required of key provider access vs. local school.
Requires long-term planning and systematic development, considering total deaf education budget.	No additional cost.

Options

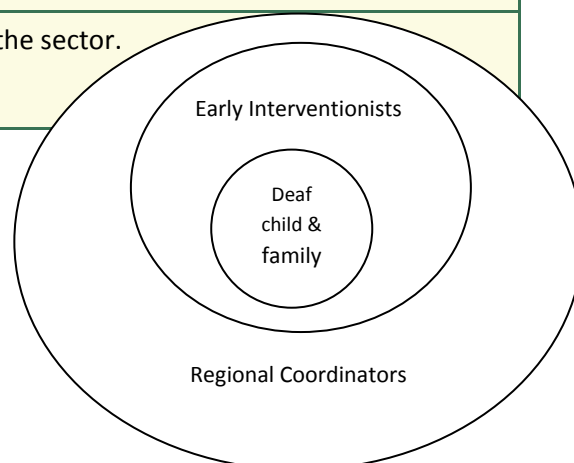
3.1 Early Intervention (Colorado Model)

Role	Description	Number ⁴
Regional coordinators	Provide single point of contact with families after diagnosis – do not provide direct teaching service and are rigorously dispassionate about language choices. Emphasis on counselling, understanding of family systems, bonding theories, social emotional development and grief strategies. Also contract and train all specialist intervention staff (e.g. AVT, Sign Language instructor, deaf consultant). Usually part-time role so geographically spread.	2.8 staff for 180 children under 3 years across NZ
Contracted or employed early interventionists	Have received post-graduate training plus ongoing in-service training. Parents have access to one Sign Language visit (1.5 hours) to the home a week and/or a similar speech development visit.	6

³ Estimate from Kelston Deaf Education Centre management

⁴ Colorado data from the CHIP programme for children under 3 years has been amended proportionately for the population in NZ.

Role	Description	Number ⁴
Consultants	Contracted audiologist, physical therapist, oral communication consultant, auditory verbal or oral therapist, counsellor social worker who advise interventionists.	0.2
Sign Language instructors	May have 50 part-time contractors.	1
Deaf, Hearing Impaired and/or parent consultant	These people provide information and support for parents, as well as possibly providing the child with a successful role model of the deaf or hearing impaired communities.	0.2
Parent mentors	Independent parent-led mentor system. The NZ Federation of Deaf Children has recently launched a parent mentor system, Beacon New Zealand ,which is believed to be partly based on the successful US Hands and Voices Model.	
Key Advantages	Consistent and impartial messages given to families about options and impacts. This is an inexpensive model that is widely considered successful.	
Key Disadvantages	Will require significant change within the sector.	



3.2 Deaf School Programmes

Bilingual classes are largely held in deaf-only settings in special schools. One senior Deaf education professional notes that there is a minimum of 50 deaf students required for optimising class options and networking opportunities for children. Auckland may be the only centre where this is possible and therefore the centre would most likely provide residential support. This model requires policy acceptance of deafness as a cultural construct rather than disability in order to align with current inclusion policies.

They also may be appropriate for a period of time and then fold and relocate or expand with fluctuations in population numbers and level of school interest.

The alternative is to allow the schools to become bases for deaf students with disabilities and language-delayed ESL students.

Role	Description	Number
Resource Teacher of the Deaf	Specialist teacher of the Deaf fluent in NZSL. Groups could be larger if there is consistently good language development occurring by school age and there are sufficient numbers of students.	1: 5 - 12
Other staff	Education Assistant; Deaf staff as teachers or language tutors and models; Spoken language expertise, including Speech language therapist; Counsellor, Educational Interpreter, Disability experts from other agencies.	
Key Advantages	This is expected to be a cost-effective model with the largest number of children in one site. Availability of specialist deaf (human and technological) resources and the ability to communicate with deaf peers. Spoken language expertise would be provided on site. Psycho-social benefits for some children with full acceptance of deafness. Links with disability specialists.	
Key Disadvantages	This model is limited to large metropolitan areas or acceptance that some children will travel or board residentially. The lack of mixing with hearing peers. This model is often perceived as the last resort for parents so children with language failure or special needs are currently the biggest users of the service. Deafness tends to be viewed from a disability rather than a cultural perspective. The costs of residential education and travel reduce the cost effectiveness of this option to some degree.	

3.3 Clusters of Deaf Children in Mainstream Schools

All of the following models involve various levels of team teaching and involvement in mainstream classes. Children may have separate classes for literacy and Sign Language. Bilingual programmes can occur as well as instruction in Sign Supported English.

Deaf staff are employed in a range of roles. Classes may be in whānau-like groupings with children of different ages to gain critical mass.

Regional groupings in “magnet” or specialist schools could provide reasonable access for students living outside of the main cities of New Zealand without undue amounts of travel.

3.3.1 Satellite Units

Satellite units tend to be provided by either the mainstream school or the Deaf Education Centre, hosted in a mainstream school.

Role	Description	Number
Resource Teacher of the Deaf	Specialist teacher of the Deaf fluent in NZSL –works with mainstream teachers to ensure deaf students are as closely linked with the hearing student programme as possible. Co-teaching and bilingual models are theoretically possible in this model.	1: 3 - 8
Other staff	Education Assistant; Educational Interpreter	1: 3 - 8
Key Advantages	<p>Availability of specialist deaf (human and technological) resources and the ability to communicate with deaf peers.</p> <p>Ability to mix and benchmark performance with hearing peers.</p> <p>This model provides an opportunity to consolidate the high level of skills required in teaching deaf children cost effectively.</p>	
Key Disadvantages	<p>It does require some travel for children in areas with small populations.</p> <p>In low population areas, there will be children with a variety of language needs, requiring curriculum and language differentiation.</p>	

3.3.2 The “School Within a School” Model

This model involves a close management partnership between the Deaf Education Centre and the local school, with a high level of ownership by the school, which endorses NZSL learning across all classes.

Similar roles and numbers of staff are expected as above.⁵ A greater level of team teaching with the classroom and specialist teacher working together to develop class resources and approaches.

Key Advantage	School-wide approaches increase the number of hearing children in positive contact with deaf children through the learning of NZSL.
Key Disadvantage	Requires focus and commitment of the entire school.

⁵ One example given in Auckland of a “school within a school” model, has 16 deaf children in 2 classes with 2 RTDs, 1 teacher aide and 1 interpreter.

3.3.3 Co-enrolled (Hearing and Deaf) Classes

Co-enrolled classes use reverse integration of hearing students into a deaf classroom. Hearing children actively apply to enter a deaf classroom rather than deaf children entering a hearing one.

Ideally the numbers of deaf and hearing students are equal to encourage positive and equal relationships. This will be more possible in metropolitan areas. Recommended team approaches include the classroom teacher and teacher of the deaf cooperating to develop resources and strategies for the entire class.

Students learn Sign Language and Deaf culture and there is appropriate educational practice within the class and often right across the school.

Key Advantage	This model encourages the development of critical mass of children using Sign Language and positive social relationships between hearing and deaf children.
Key Disadvantage	A significant amount of time and collaboration is required to make it a successful experience, as both teachers need time to plan together and discuss teaching styles and classroom expectations.

3.4 Individual Placements in Mainstream Classes

Currently, most deaf children with severe or profound hearing loss placed in the mainstream receive visits from RTDs and are removed from class for extra instruction. They are likely to also have access to an untrained teacher aide for most classes. There are few interpreters available.

The use of interpreters or communicators in mainstream classrooms has some limitations, especially with young children who have not yet developed a strong foundation of language. International experience suggests that the skill levels of interpreters is also variable and does not necessarily guarantee full understanding by the student. However, there will be students who can benefit from this model (especially older students in high school) and it should be available for those who can use it well.

Educational interpreters need to have some flexibility in their approach for students who do not have strong enough language to use interpreters to simply translate information. Some students need:

- Educational assistants to provide instruction on the curriculum
- A mix of educational assistant and interpreter
- Interpreter for translation only.

Deaf leaders have asked for three levels of educational interpreters to be formally recognised and allocated as needed.

Teachers, students and the environment need to be supportive and clear about the interpreting role, for it to be used effectively.

The use of teacher aides who are unskilled or semi-skilled in Sign Language is largely deemed to be ineffective in helping the student learn the curriculum. If greater flexibility with resources is possible and there is formal recognition of other key staff as specialists (e.g. interpreter, education assistant), larger groupings of students become possible and Sign Language instruction can be more feasible.

Key Advantage	This model enables education in local schools with hearing peers and many children are achieving academic and social success with a strong language base.
Key Disadvantages	Linguistic access for some is not possible without a full-time specialist staff member. This may not always be achievable within current funding limits, without grouping children. This may not be possible in very low density populations without travel, or if parents choose to mainstream their child individually. Social isolation occurs for children who are unable to communicate with their hearing peers.

3.5 Technology

The use of tele-schooling focusing on the curriculum for older children with strong language is a distinct possibility, particularly for isolated high school students who may not be able to access curriculum in Sign Language any other way. For example, a chemistry class could be timetabled nationally. Primary school children who use NZSL could also increase their access to signing peers through video conferencing for the purposes of language and social development as well as direct instruction.

It is unlikely that technology will provide a full-time schedule of classes to replace face-to-face education, but it will be able to meet specific needs across all the options listed above.

Storytelling in Sign Language for younger children might be recorded and reused as well as monitored for standards.

There is evidence that live captioning of classes is as effective as interpreting for students with good English. Speech recognition software⁶ for teachers' use and remote interpreting are expected to become more available. Technology could also support NZSL instruction for families and staff.

⁶ Speech recognition software can translate voice into text on a computer. It requires at least a few hours' training to ensure the person's voice is understood. There are still some problems with getting uncommon words and names spelt correctly.

3.6 Status Quo

No effort will be required but fragmentation and unreasonably low achievement caused by delayed language development will continue among children who require visual communication.

4. Recommendations

It is recommended that the Ministry of Education:

Immediate (0 – 1 year)

1. Acknowledge the ability of children to learn both signed and spoken languages, the need to have both available at a high quality for all children requiring them, and the importance of guaranteeing parents' right to choose free of influence from service providers
2. Analyse the ability to acquire NZSL training for staff and cost of delivery
3. Acknowledge the usefulness of a cultural linguistic approach and clustering for children who would benefit from visual communication
4. Cost and plan in detail the required service changes, including changes in staff roles in consultation with parent and deaf agencies. Establish clear job descriptions and management responsibility for delivery
5. Select a service provision framework that will enhance national cohesion, choice for families of deaf students and provide a single point of entry
6. Clarify the definition of "uses NZSL" to ensure accurate data can be collected
7. Ensure learning outcomes can be recorded for all deaf children
8. Ensure the MOE plan for technology meets deaf student requirements

Medium Term (1 – 3 years)

9. Begin the new approach to Early Intervention, providing independent assessment and formally allow dual language development for those who need or prefer it, and evaluate
10. Ensure all deaf education educators and relevant other staff have access to training in NZSL
11. Ensure all deaf education educators and relevant other staff have access to training in working with people from a range of cultures

Long Term (3 – 10 years)

12. Include changes to primary and secondary schools as children move through school levels, as a means to control the pace of change and evaluate

The New Zealand Context

5. Numbers of Deaf Students who use Sign Language in New Zealand

With 943,000 New Zealand children enrolled in early childhood to the end of compulsory secondary schooling, it can be deduced that there should be 565 students who require visual communication in schools, if we are comparable to the UK, where 0.06% of the total population of pupils follow a syllabus for the deaf (Swanwick and Gregory, 2008). This also aligns with a detailed Australian study which suggests the Deaf community form 0.06% of the population (Johnston, 2006).

The Ministry of Education has 320 children on their 2007 database of 2,600 pupils (12%) who sometimes use a form of sign language or visual communication (NZSL, Signed English, Makaton).

The Ministry of Education's 2008 database focusing only on those children using variants of signed communication including NZSL has only 202 children on its list. Roughly half of these children only use NZSL.

This report has used the 2008 data because it is slightly more recent and the type of educational placement is included for analysis. It includes all forms of signed communication but acknowledges the significant individual differences in visual language needs.

Many international studies assume 0.1% of the population have severe or profound deafness and are visual communicators, which could suggest as many as 950 children.

This report concludes that the numbers of children who may benefit from the use of NZ Sign Language are likely to be somewhere between 300 and 500 students. This is likely to include a number of children who do not currently have access to NZSL or any visual communication at present.

There is a fierce debate among key stakeholders as to the correct number of children likely to use or benefit from NZSL, depending on their ideology and approach. NZSL advocates were strongest in the north and speech advocates were strongest in the southern parts of the country. There is, however, core agreement that current data on deaf students is probably not accurate, as precise definitions are difficult to determine and have not been collected consistently.

- Deaf sign language culture proponents argue that many children who could benefit from Sign Language are often not given that opportunity with the child's language preference influenced by the ideology of the education professional. There is neither criteria nor data available on the number of children who **could** benefit from Sign Language. Therefore the numbers of signing students are anticipated to be higher than currently thought.

- Speech advocates argue that the numbers of children who would benefit from Sign Language are in fact much lower, as most children are succeeding very well using amplification technology and oral/aural approaches. Indeed recent MOE statistics (2010) on the number of deaf children under the age of five in the Auckland metropolitan area show only 4% of children using NZSL and another 12% who use both sign and speech. Over three quarters use spoken language only.

Regardless of the ultimately correct number, it is clear that New Zealand has a small and dispersed population of deaf children who use Sign Language.

The two Deaf Education Centres have nearly 800 students on the roll at either the base deaf school or receiving itinerant services from RTDs.

Appendix 2 shows the information we have on the 202 children currently identified as using NZSL or sign system from a variety of perspectives (MOE, 2008):

- Nearly half (48%) use only NZSL and just over a half use sign with spoken language, presumably including English and other sign systems.
- 22% have a cochlear implant and a further 70% use hearing aids.
- As children age, they are more likely to be placed with a Deaf Education Centre.
- A quarter of known signing students are in Deaf Education Centre base schools; nearly a half are in Deaf education satellite units in mainstream schools, and another quarter are fully mainstreamed in hearing classrooms.
- A large proportion (72%) of children aged between 6 – 12 are in Deaf education satellite classes.
- 20% live outside the five main cities in provincial and rural areas.
- Children in the provincial areas are almost all in mainstream settings.
- The largest proportion of signing children with cochlear implants (50%) and lowest number of children using NZSL (6%) are based in provincial areas in the lower North and South Island.
- The lowest number of children in mainstream settings are in the two areas where there are Deaf schools.

- 68% of all very high ORRS⁷ allocations for deaf children using any signing system only use NZSL. 84% of NZSL users are considered to have very high needs under ORRS.
- 65% of children with a cochlear implant who use NZSL are recorded as having a very high need under ORRS.
- Over half of the children from Pacific Island-speaking homes are placed in Deaf Education Centres.
- 32% of all children using Sign Language have additional disabilities. Nearly half of these children only use NZSL to communicate.

One of the perceived benefits of sign language is that when children have a strong language base, their ability to learn English is greatly enhanced. At the present time because of the lack of nation-wide assessment, the actual language levels of the children who are deaf are unknown in New Zealand. It is possible to have intelligible speech but be significantly delayed in spoken language, something that many other countries are now finding (Yoshinaga, personal communication, 2010).

The National Plan for the Education of Deaf and Hearing Impaired Children and Young People in Aotearoa/New Zealand is the product of significant collaboration among key stakeholders and there is considerable disappointment in the sector that it is not being implemented. MOE instead sees the National Plan as a set of guiding principles to inform education policy.

It aims for a holistic, collaborative and outcomes approach to education that provides children with access to the same education as hearing children receive. It endorses the right of deaf children to socialise with each other, to receive counselling, and the right of parents to meet with each other and receive information on options and likely implications. It endorses the Deaf community as a partner in the process and the right of children and families to access NZSL and Deaf culture. It advocates multi-disciplinary assessments and professional development for all personnel, including NZSL.

It also notes that 55% of children with a hearing loss are Māori or Pacific even though they constitute only 28% of the general population. Ethnicity is not collected in the MOE NZSL user data but some respondents believed that the proportion of Maori and Pacific children is much lower among severely or profoundly deaf children.

Considerable activity has been underway in specialist deaf education:

⁷ Ministry of Education Ongoing And Reviewable Resource Scheme – a funding stream based on educational needs

- The Universal Newborn Hearing Screening Early Intervention is in the process of being rolled out throughout NZ and is providing early choices for parents. It involves the Ministry of Education and is yet to be reviewed.
- Based in the country's most densely populated city, Kelston Deaf Education Centre (KDEC) has satellite classes in primary, intermediate and secondary schools in South Auckland, North Shore and close to its base school in West Auckland.
- Van Asch Deaf Education Centre (VADEC) has one satellite in a secondary school in Christchurch, is developing a satellite in a primary school in Christchurch and provides resourcing and services to specialist units for deaf students in secondary schools in Wellington and Palmerston North. This is in response to the more widely dispersed population in the van Asch region.
- Both schools employ specialist resource personnel as do the cochlear habilitation services .
- KDEC set up its first bilingual class in 1995, using a Deaf teacher and language assistants. The employment of Deaf people rose significantly after the bilingual class started. Most are in paraprofessional roles, including residential areas, but the number of teachers also increased. Deaf teachers are seen to intuitively work in a bilingual way but many felt their work was not understood or valued (Smith, 2003).
- Bilingual programmes were set up at van Asch in the mid 1990s, using a Deaf teacher and an adult CODA (Child of Deaf Adult) in one class and a CODA and hearing teacher in the second class. Deaf people are employed in both professional and paraprofessional capacity both at the base school and in the Regional Teaching Service. Paraprofessional roles have included, language assistants, residential caregivers, sign language tutors, cultural advisers and sports coordinators (personal communication).
- The Ministry of Education has collaboratively developed a curriculum for teaching NZSL in schools, which describes the Deaf community, its culture and steps to teach the language. It is primarily aimed at hearing learners.
- Kelston and van Asch Deaf Education Centres have collaborated on developing resources for teaching reading in NZSL (VADEC and KDEC, 2006).
- KDEC and VADEC have been developing video clips and DVDs in NZSL to match the curriculum and assess NZSL levels.
- Training for RTDs has been recently re-contracted out to Canterbury and Massey Universities and is now being redesigned. It is expected to include NZSL for all staff.

All deaf children have access to 28 Advisers, with a ratio of 96 children to 1 Adviser. There are over 90 Resource Teachers of the Deaf supporting deaf students in their local school.

91% of 150 ORRS-funded deaf students participating in a NZ study have a teacher aide (TA) who is present for most of their school hours (McKee, 2004). Their role is to adapt and tutor in curriculum tasks, especially literacy and maths, interpret in Sign Language or orally, manage behaviour, and practice speech training.

McKee observes that other professionals would have specialised training for all the TA roles. 55% of all TAs had no formal training in working with deaf students and many reported brief one to three-day courses. Neither appraisals nor job descriptions offer TAs formal training identification or provision. Most TAs are evaluated by the classroom teacher who has no specialised knowledge of deaf education. RTDs do not tend to be involved in their recruitment or appraisal (McKee, 2004).

It is not surprising then that teacher aides report a high level of satisfaction with their job but a high level of dissatisfaction with their conditions of work, undertaking a complex role for little pay and training and low status (McKee, 2004).

Deaf paraprofessionals and some RTDs express concern over how TAs may promote dependence and low expectations of deaf students in their academic work. McKee suggests either providing more training to TAs, or providing interpreters directly, or creating regional groupings of deaf students with access to specialist teaching and interpreting resources. The preferred option is the last as it would acknowledge the linguistic, social and educational benefits of deaf students learning together (McKee, 2004).

The five key gaps in the education system identified in 2006 by Deaf Education Aotearoa New Zealand (DEANZ, 2006) were:

- Early Intervention Services to ensure early linguistic development.
- Personnel and training at all levels of compulsory schooling who are skilled in working with Deaf and deaf children.
- Consistent accessibility to resources nationally.
- Service to Māori and Pacific Island families.
- Standardised assessment and monitoring.

Issues and Comments

6. Local Stakeholders' Views

6.1 Language Approaches

It is estimated that a fifth of New Zealand's deaf children require visual communication to access information. Around a quarter of these have cochlear implants and 70% use hearing aids. Cochlear implanted and hearing-aided children almost all have strong goals in speech.

The most fruitful window of opportunity for language development is up until the age of three. All agree that it is vital to ask what the child will need to be successful in life and accept that different answers will emerge. No one communication approach will fit all children's needs.

A balanced approach of signing and speech is seen as needed by a significant proportion of stakeholders, including Deaf people.

Those with most concern about this combined approach are involved in teaching speech and audition. Their reasons include:

- Most parents are choosing speech options.
- Auditory verbal or oral approaches can be very demanding on parents and families in terms of focus and time. In reality, it is difficult for parents (usually hearing with little or no experience with hearing loss) to learn to use Sign Language well **and** to learn auditory training techniques frequently. It is important that children learn language well and there is a risk that they will do both poorly in any watered-down combined approach.
- Children must be immersed in the language they are learning in the home, which is usually English for most families in NZ. Because most parents of Deaf children do not know NZSL, they have great difficulty in providing competent language models in sign for their children.
- NZSL is without voice and does not mirror English and does not easily translate to a written form, so does not easily align with spoken or written English. Simultaneous communication (sim com), where both signed and spoken language are used together, is seen as the most efficient means of communication while teaching speech and audition. Therefore, Signed English is seen as the only form of visual communication that supports the delivery of an oral outcome.

The sector is screaming for signed English.

Many Deaf speak while they sign except for the purists.

- Bilingual programmes in New Zealand did not improve outcomes and graduates still did not achieve beyond a 9 – 10 year academic level.

One senior educator noted that from experience parents will not choose bilingual or alternative language options until they see that they are available and effective.

Sign Language proponents see NZSL as the best medium for instruction, to further assist the child to acquire language for navigating the world and for developing a clear and positive cultural identity. However, some Deaf respondents in this review noted the usefulness of Sign Supported English, Signed Exact English or Sim-com as a bridge for teaching literacy. Sign Supported English (SSE) is seen by many, however, not as a language in itself and limiting the linguistic development of many Deaf people.

One respondent notes that terminology for different modes of communication (e.g. key signs, signed English, visual communication) are often used interchangeably and should be more clearly defined.

Some NZSL proponents believe that all deaf children will benefit from NZSL. Once language is developed through Sign Language, the development of a second language is seen to become much more feasible.

The Colorado model teaches Sign Language (ASL) but acknowledges Sign Supported English (SSE) is often used by parents and in some teaching situations where required.

Children who can both sign and speak are often doing the best at school.

Supported by the literature and current practice in some successful examples, many state that visual language can in fact be used in conjunction with speech and audition training.

The argument was made that further detail on “Best Practice” is needed if both languages are to be taught effectively.

It is widely agreed that all children need skilled analysis to monitor progress, identify delays quickly with red flags and be responsive in finding solutions for effective language development. The problem is that it can often be too late, with children having significant language delays by the time they enter school.

Children with cochlear implants can often speak well and operate well one to one but not in class or in busy noisy environments. They often need better access (to information) than their implant can give.

The cochlear kids I work with are not doing well – they need NZSL.

The risk of failure for some children learning speech alone is seen as too high and potentially too disastrous to take. Delays in language and schooling can consign people to educational, employment and social failure as well as state dependency throughout their lives.

6.2 Early Intervention

There is widespread agreement that the early years of life are critical for language development and as much effort as possible should be made here.

Deaf people acknowledge the right of families to make the critical decision of learning NZSL but are eager to offer the benefit of their experience to contribute to the decision.

We must get the buy in from families.

Families must be able to make contact with Deaf or hearing impaired adults to help with decision making. Sign Language classes should be freely available to parents and be of high quality.

The US model of parent leadership through Hands and Voices is referred to frequently as it provides a parent mentor and family activities role through parent networks and established web-based guides, and works closely with the Deaf community. Funding support may be required to establish such a programme here.

There is talk of parent mentors being established here.

There is also a keen awareness that offers of NZSL support must be delivered. Parents want to see what will be available and its quality before they commit to a course of action.

New parents are asking for access to both sign and speech support but they are limited to what's available.

If parents ask if their child will get an interpreter and how they will learn the language and are told those services are not available easily, they choose oral approaches because at least then they know what they are getting.

Parent training in NZSL is critical.

There is some hope though that even in provincial areas, some accommodation can be made for learning NZSL. One group of all different ages meets monthly in one provincial area to learn NZSL and simply be together.

The children often play outside together while instruction is given to parents and families. But they are learning from each other too.

The impartiality of the advice given to parents is repeatedly mentioned as important. Currently Advisers are the first point of contact for parents from education services, although audiologists or Ear Nose and Throat surgeons are often the initial professional contacts with families. Many see these groups as often having a particular belief about service that they pass on to families, perhaps even unconsciously.

In contrast, the Colorado model, so widely admired by all participants, ensures one single point of contact to maintain consistent messaging and impartial information on language choices for families. Staff who make first contact do not provide service. Early intervention is then provided for children with a predetermined language preference. A wider range of early childhood education resources include specialist counselling and social worker, deaf consultant and Sign Language instructor. Equal focus is given to speech development.

There is a lack of policy and relevant professional development for deaf children in general preschools.

6.3 Social Needs

Proponents of NZSL consistently mention the need to consider the mental and social-emotional health of deaf children. It is argued that this is often negatively affected by a lack of access to Sign Language and there is considerable research that this is the case for the Deaf community internationally and locally.

The importance of interpersonal, intrapersonal and metacognitive needs gets missed when you only focus on language development. Social–emotional needs have a huge impact on learning.

Social interactions in the school playground with other hearing children is low.

6.4 Teaching in NZSL

NZSL will not necessarily provide the total answer to equalising Deaf access to education and life opportunities but it is seen to provide better access to education and life for many of these students.

While it is acknowledged widely by proponents of NZSL that some deaf children can and do function well in mainstream classrooms, they also argue that providing access to NZSL for children individually is usually both expensive and lonely, without others who can sign.

Critical mass is needed for language learning and so flexibility in groupings is required. There is strong support for clustered groups among NZSL supporters. Clustering is preferred in magnet schools and it is acknowledged that this could involve group transport and/or short or long-term residential courses for children in some rural areas. Children are easiest to group in the metropolitan areas and it is much harder in the provincial areas to find groups of children with common age, language preference and development history.

Small towns could have one school that specialises in deaf education.

Clustering is a challenge though in small areas. The Māori model of whānau groups of different-aged children is supported where needed. The range should not be beyond what is manageable and teachers need to be able to differentiate the curriculum and language for students.

There is recognition that class sizes could be theoretically much larger once good language development is in place.

If the children have a good base of NZSL, bigger classes are possible and preferable (they could learn from each other), but if not, then 5 – 10 is the maximum you should have in a class.

Reverse integration is seen as a particularly positive model as it encourages respect for both cultural and language differences.

It can work if the hearing children are accepting of difference and teachers ensure that the hearing children are not held back.

Different sign systems are used by students with different needs. There is though wide agreement that signs from NZSL should be incorporated into any other sign system used, such as Sign Supported English, Makaton and Baby Signs.

There is some cynicism that Special Education can operate a dual paradigm of disability and culture but it is hoped that MOE's experience with Māori may allow a wider cultural and linguistic view to be taken.

Many people mentioned the need to look to the Māori model of education and development, particularly the kohanga reo, kura kaupapa and whānau approach. The kaitakawaenga, who helps Special Education provide culturally appropriate services to Māori children and young people, and their whānau and educators could be mirrored with Deaf cultural Advisers.

6.5 Multi-culturalism

There is agreement that services need to be familiar with Māori culture so that Māori deaf and their families are comfortable and there is also agreement that this is often not practised. Some imply that there are other larger issues within deaf education and so it is often parked indefinitely even though it needs to be dealt with.

Cultural difference is a critical issue for students and families particularly among an increasingly culturally diverse country.

We need better understanding of cultural groups and how deaf education should be accommodating cultural difference. It's a training issue.

6.6 Human Resources

Professional development is widely considered the cornerstone of good education. Professional development in Sign Language and teaching methodologies is considered crucial if learner requirements are to be met.

NZ is not close to having professionals with a lot of training.

Language choices are made depending on the skills available among staff.

There is agreement that current NZSL classes are not yet adequate for the task of training staff, parents and children nationally and the infrastructure of tutors and class design needs development.

NZSL tuition is generally poor with most tutors teaching vocabulary rather than grammar and language. There is poor access.

There are no agreed standards on NZSL competency in staff and no testing procedures available. There are currently no resources allocated by the Ministry to develop the workforce in NZSL. Unit standards in NZSL are available on NZQA, but there are no achievement standards on the NCEA framework to encourage language learners in school.

Many commented on the loss of NZSL community classes and the need for development of the language at tertiary level so that good-quality programmes can filter down to all levels of instruction.

As already noted, language most commonly develops in the home with the family. In the case of deaf children who require visual communication, this is often not the case, and additional contact with fluent signers is needed for good language development. Regular contact must also be sought with other deaf children and adults through holiday programmes, regular social events, NZSL classes and specific school arrangements.

Many stakeholders also mentioned the recent loss of Deaf mentors who were trained and working in Deaf education. Deaf role models of language and culture are considered critical to ensure that people with language and cultural skills are available for parents and children as they learn the language. Many adults with good NZSL levels are likely to need considerable training in their roles and several commented that this is better provided through action-based learning with on-the-job supervision, support and regular face-to-face workshops.

Deaf mentors must be put in positions with significant training in interpersonal skills, the importance of confidentiality, child development, language development and teaching skills. We need very good full-time employed staff on an ongoing basis.

There is strong support for the development of specialists within current teacher and Adviser roles to ensure adequate linguistic and cultural knowledge. The training of teachers of the deaf is considered by some to be too generic with little capacity of any graduate students having strong skills in NZSL. Inclusion of some specific elective training in undergraduate courses was mentioned by some.

You can't be a jack of all trades.

One year of training is unreasonable and insufficient.

The Adviser service is perceived as variable. Some question the lack of experience in Deaf education of new Advisers, who do not yet have sufficient understanding of the sector to advise others, or the lack of up-skilling of more experienced staff in the new available training on Deaf culture and

language. It is possible to avoid NZSL and cultural models in current Adviser training without a clear strategy to specialise teaching resources. Specialists in smaller population areas will be difficult to maintain but there may be some merit in considering quotas of Advisers with cultural and linguistic knowledge.

Some tell parents that learning Sign Language is their last choice if speech fails, but it's too late then.

*Deaf cultural understandings are frequently lacking in this group which often follows a medical model in their approach...The risk of **uninformed** advice by Ministry staff to families is a real risk both to the families and to the Ministry.*

Some Advisers commented that the addition of Deaf Advisers and teachers was welcome but that more were needed with the required training and skills.

Close liaison with Advisers is seen as definitely required and many argue that they should be firmly in a single deaf education organisation.

A wider range of roles and functions is also sought:

There is no allocated budget for interpreters, advanced teacher aides, Deaf mentors or family access to NZSL tuition.

Educational interpreters are not recognised as a profession.

We need an advanced teacher aide that can be involved in teaching.

Many noted the lack of interpreters but also the fact that they are not always used constructively.

Educational Interpreters – the child, teacher and environment have to be ready to accept and make best use of an interpreter.

Some also mentioned that specific educational electives are included in some international training programmes to ensure they could undertake broader roles if required with some knowledge of teaching requirements.

Interpreters have one year of NZSL training which may also be able to be offered to education staff.

There is considerable agreement that a reallocation of current resources may be able to be used to operate a more-efficient service that more closely meets learners' needs.

Training in NZSL will be the most significant investment in this development. Some discussion with Deaf community leadership around the use of Deaf school grounds for this purpose may be useful.

6.7 Educational Practice

Most believe that visual and aural methods can be accommodated in early intervention periods with close early monitoring and engagement with parents.

There is enough material on bilingualism to train staff in its methods and British Sign Language (BSL) assessments for expressive and receptive skills are considered locally as easiest to adapt for NZSL but still need to be formally adopted with the language differences noted.

There is however, a dearth of signed general curriculum resources.

The importance of inner language needs to be emphasised. It is more important to have meaningful conversations than provide explicit rigid teaching.

Total communication using a range of sign systems including Sign Language and Sign Supported English is commonly used in Colorado provinces as a way to serve the needs of a variety of students, including those with special needs. The quality of instruction is considered pivotal for these students.

6.8 Technology

Technology is expected to be very helpful in overcoming some of the disadvantages of a small, dispersed population.

High-definition and real-time video conferencing or virtual classrooms are possible with high bandwidth through the National Education Network within five years. Some believe this should happen urgently.

The need is there – find a means to do it!

Technology is not yet good enough for virtual classrooms as high definition needs to be available. Live captioning and video phones will become available. Nearly every school already has video conferencing capability.

High-school learning is more difficult in some ways to resource because subject choice is so wide and it is more difficult to group. On the other hand, many older students with more developed language could make use of virtual classes using technology.

This capacity can support the professional development of teachers, and deaf education professionals, NZSL training of parents and general education of children. Storytelling is possible at a young age but general classroom instruction will require a depth of language and maturity in concentration. Some primary school children who use NZSL could also increase their access to signing peers through video conferencing for the purposes of language and social development as well as direct instruction.

No child is likely to have all their education undertaken on screen but it will be a useful addition. Mixtures of face to face and video conferencing is possible for whānau groupings.

IT resources can be published online. Training using DVD and web-based resources are increasingly available. For example Babysign DVDs are now available in Wellington. Resource development however is currently largely ad hoc and needs focus and resource.

Captioning, speech recognition and remote interpreting are seen as potentially very useful for students.

6.9 Multiple Disability

From 30% to 40% of deaf students will have additional needs.

Most agree that there are some, but generally poor linkages between Deaf and disability agencies who could collaborate on joint programmes to support these students.

Deafblind children in particular require close liaison between the Deaf and blind education and service agencies.

Deaf children with disabilities in small classes are seen by most Deaf to be inappropriate while others claim that, just as for hearing children, tolerance and compassion can be learned from having disabled people around them. Deaf people who have experienced the significant slowing of learning in small classes strongly disagree. They instead feel treated like they are intellectually disabled as well.

Care is needed to ensure that each student advances at their own pace.

6.10 Change

The scale of change indicated in the report suggests that it may take 5 – 10 years to get into place. It will need a plan of clear, systematic, sensitive and determined development. The principles of the National Plan are seen as a good solid base of this development and is frequently referred to as a reference document.

Caution is advised to ensure choices are offered as they can be made available. For example, offering a parent support from a Deaf mentor is unfair if adequate educational support in NZSL is not available to give the deaf child.

There is also an implication for the outcomes of the current Deaf Education discussion paper that a national “whole organisation” approach through a single governance body would enable a consistent approach as in the Colorado model (see section 3.1). It must be a hub-and-spoke model to allow for provincial and local services, including employees and contractors.

Consideration needs to be given at a national level to the development of structural interfaces with Health funders and services, including disability services.

There is a need to look at current funding policy for deaf children. It is difficult to provide consistent services because the policy in employing specialist teachers is inconsistently implemented in mainstream schools. The current review of special education is looking at ways of better utilising resources.

Some consider ORRS funding to be inappropriate for the needs of the Deaf, and that funding linked to levels of deafness was very restrictive for some children, who need support but may not be profoundly deaf.

All agree that part-time access through unskilled teacher aides and removing students from the mainstream classroom for individual tuition by teachers of the Deaf does not give adequate access to deaf children. Some however argue that ORRS funding gives the right incentives to group children who need NZSL and Appendix 3 shows it is possible to support children appropriately within groups.

A few NZSL advocates called for the development of a NZSL Commission.

Appendix 1

NZSL Users in New Zealand Schools

Source: MOE data, 2008

Age Group/Setting	Mainstream	DEC Satellite	Deaf EC	Grand Total
0 – 3	22	12	7	34
	65%	35%	21%	100%
4 – 5	10	6	5	21
	48%	29%	24%	100%
6 – 12	16	68	11	95
	17%	72%	12%	100%
13 +	7	11	27	45
	16%	24%	60%	100%
Grand Total	55	97	50	202
	27%	48%	25%	100%

Setting/Area	Provincial NNI	Auckland	Hamilton	Provincial SNI & SI	Wellington	Christchurch	Dunedin	Total
Mainstream	20	8	2	17	4	2	2	55
	95%	6%	50%	94%	33%	10%	100%	27%
DEC Satellite	0	88	1	0	8	0	0	97
	0%	71%	25%	0%	67%	0%	0%	48%
Deaf EC or Special School	1	28	1	1	0	19	0	50
	5%	23%	25%	6%	0%	90%	0%	25%
Grand Total	21	124	4	18	12	21	2	202
	100%	100%	100%	100%	100%	100%	100%	100%

ORRS/ Communication	Full NZSL	Spoken English with addition of sign	Multiple needs – augmentative communication	Total
Very High	80	31	6	117
	84%	34%	50%	59%
High	11	51	6	68
	12%	55%	50%	34%
Non ORRS	1	10	0	11
	1%	11%	0%	6%
Under consideration	3	0	0	3
	3%	0%	0%	2%
Total	95	92	12	199
	100%	100%	100%	100%

ORRS/ Communication	Full NZSL	Spoken English with addition of sign	Multiple needs – augmentative communication	Total
Very High	80	31	6	117
	68%	27%	5%	100%
High	11	51	6	68
	16%	75%	9%	100%
Non ORRS	1	10	0	11
	9%	91%	0%	100%
Under consideration	3	0	0	3
	100%	0%	0%	100%
Total	95	92	12	199
	48%	47%	6%	100%

Aid/ORRS	High	Very High	Non ORRS	Under consideration	Grand Total
Cochlear Implant	15	28	0	0	43
	22%	27%	0%	0%	23%
Hearing Aid	52	75	10	3	140
	78%	73%	100%	100%	77%
Grand Total	67	103	10	3	183
	100%	100%	100%	100%	100%

Aid/ORRS	High	Very High	Non ORRS	Under consideration	Grand Total
Cochlear Implant	15	28	0	0	43
	35%	65%	0%	0%	100%
Hearing Aid	52	75	10	3	140
	37%	54%	7%	2%	100%
Grand Total	67	103	10	3	183
	37%	56%	5%	2%	100%

Aid/ Primary Language	NZSL	Spoken English/other and sign	Multiple needs – augmentative communication	Total
CI	12	26	6	44
	27%	60%	14%	100%
HA	72	63	6	141
	51%	45%	4%	100%
Unknown or none	12	4	0	16
	75%	25%	0%	100%
Grand Total	96	93	12	201
	48%	46%	6%	100%

Deaf Plus/ Primary Language	NZSL	Spoken English/other and sign	Multiple needs – augmentative communication	Total
Deaf Plus	30	26	9	65
	46%	40%	14%	100%
Deaf	66	68	3	137
	48%	50%	2%	100%
Grand Total	96	94	12	202
	48%	46%	6%	100%

Aid/Area	Provincial NNI	Auckland	Hamilton	Provincial SNI and SI	Wellington	Christchurch	Dunedin	Total
CI	6	24	1	9	2	3		45
	35%	21%	25%	50%	18%	15%	0%	24%
HA	11	90	3	9	9	17	2	141
	65%	79%	75%	50%	82%	85%	100%	76%
Grand Total	17	114	4	18	11	20	2	186
	100%	100%	100%	100%	100%	100%	100%	100%

Area/ Primary Language	NZSL	Spoken English/ other language plus sign	Multiple needs – augmentative communication	Grand Total
Provincial NNI	12	8	1	21
	57%	38%	5%	100%
Auckland	54	65	5	124
	44%	52%	4%	100%
Hamilton	3	1		4
	75%	25%	0%	100%
Provincial SNI and SI	1	12	5	18
	6%	67%	28%	100%
Wellington	8	3	1	12
	67%	25%	8%	100%
Christchurch	16	5		21
	76%	24%	0%	100%
Dunedin	2			2
	100%	0%	0%	100%
Total	96	94	12	202
	48%	47%	6%	100%

Appendix 2

Comparison Costs of Current Services and Possible Future Clusters

Figure 1: Current education costs

Very High Need	Current Weekly Income	Assumptions	High Need	Current Weekly Income	Assumptions
.2 TOD	\$ 326.92		.1 TOD	\$ 163.46	
ORRS Funding for TA or other	\$ 425.00	(17k/40 weeks)	ORRS Funding for TA other	\$ 225.00	9k/40 weeks
Weekly total	\$ 751.92			\$ 388.46	

Figure 2: Cost of RTD

RTD	\$85,000.00 pa
Weekly rate	\$1,634.62
Daily rate	\$326.92
half daily rate	\$63.46
Hourly rate	\$54.49

Figure 3: Current cost of interpreter⁸

Interpreter	\$65,000.00 pa
Weekly rate	\$1,250.00
Daily rate	\$ 250.00
Hourly rate	\$41.67

Assume 30 hours a week

Figure 4: Break-even analysis for clusters of children

# of Children VH Need		# of Children H Need	
1	\$751.92	1	\$388.46
2	\$1,503.85	2	\$776.92
3	\$2,255.77	3	\$1,165.38
4	\$3,007.69	4	\$1,553.85
5	\$3,759.62	5	\$1,942.31
6	\$4,511.54	6	\$2,330.77
7	\$5,263.46	7	\$2,719.23
8	\$6,015.38	8	\$3,107.69
9	\$6,767.31	9	\$3,496.15
10	\$7,519.23	10	\$3,884.62
11	\$8,271.15	11	\$4,273.08
12	\$9,023.08	12	\$4,661.54

RTD	\$1,634.62
Educational interpreter	\$1,250.00
Total	\$2,884.62

RTD	\$1,634.62
Teacher aide (30 hours)	\$540.00
Total	\$2,174.62

Note: highlighted area = break-even

⁸ Educational interpreters may need additional training and payment if they are to provide effective assistance to the mainstream teacher and deaf student. Note some international interpreter training courses allow some education papers to be included in their qualification..

Figure 5: Costs of basic Early Intervention using Colorado model

Spoken language EI 2-hour weekly session	Current cost of EI, using RTD rates	NZSL EI 2 hours weekly session with varied take-up rates	Plus cost of EI using interpreter rates	Total Cost	Difference from current spending
Annual Cost of EI for 2 hours	\$5,667	Annual cost	\$4,333		
Annual cost of EI for 180 children <3 years	\$1,020,000	100%	\$780,000	\$1,800,001	\$780,001
		90%	\$702,000	\$1,722,001	\$702,001
		80%	\$624,000	\$1,644,001	\$624,001
		70%	\$546,000	\$1,566,001	\$546,001
		60%	\$468,000	\$1,488,001	\$468,001
		50%	\$390,000	\$1,410,001	\$390,001

Notes:

Current spending is at least \$1 million as newly diagnosed children get at least weekly visits.

Interventions are costed at the rate of RTDs for early intervention and interpreters to provide language tuition.

Not all families will choose to have NZSL instruction at first or at all. Varying %'s of requirements are factored into the table above.

Ministry of Education
45-47 Pipitea Street
PO Box 1666,
Thorndon
Wellington 6140, New Zealand

Email special.education@minedu.govt.nz
Phone 04 463 8000
Fax 04 463 8001

www.minedu.govt.nz

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