

# **Should I Just Decide Where I Think They Are At?**

Exploring The Literacy And Numeracy Assessment Landscape Of Deaf And  
Hearing-Impaired Students In New Zealand.

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## **Chapter 1: Introduction**

### **The purpose of the study:**

Currently very little reliable data is available in New Zealand on the performance of deaf students across the country as a whole. Establishing data about these students is important at this point in time. Changes to the educational contexts for deaf students early learning are likely as a result of the Universal Newborn Hearing Screening Programme. Once this programme is functioning throughout the country, the age at which deafness is detected in New Zealand will drop from an average of 33 months in 2005 to about 3 months. Changes to the performance of deaf and hearing-impaired students in numeracy and literacy are certain to occur. To track those changes over time it is important to have some current reliable data.

The purpose of this study is two fold. First, is to examine which assessment tools are used in New Zealand to measure achievement for deaf and hearing-impaired / hard of hearing students in the areas of numeracy and literacy. The second aim is to identify and describe the ways these assessments are used.

Knowing more about the range of assessment tools and the way they are used will inform:

The wider Deaf Education Community.

The Ministry of Education.

The Deaf Education Aotearoa New Zealand (DEANZ) Board.

The community of Teachers of the Deaf, and

Highlight issues and concerns about assessment tools and practices in relation to the assessment of deaf children.

Data collection about the performance of deaf and hearing-impaired students in New Zealand in literacy and numeracy was gathered nationally between 2002 and 2005. DEANZ was contracted to gather data for the Ministry of Education and did so by requesting information from Teachers of the Deaf, about the students on their caseloads. At the time information was being gathered by DEANZ, teachers were asked to provide a curriculum level for students in English and Mathematics.

Powers, Gregory and Thoutenhoofd (2000) reviewed 300 international research documents on behalf of the United Kingdom's Department of Education and Skills who commissioned the writers to identify gaps in what was known about effective and efficient practice in the educational achievements of deaf children and to inform further research that should be carried out to guide policy development. The writers described 19 key findings and made 15 recommendations. Two of the recommendations made by the authors are of particular interest to me:

(2) That GCSE and National Curriculum Test results be collected on a regular basis for deaf children in such a way that attainments for this particular group can be identified (p. 181)

(15) That the data currently collected within schools and services form the basis of a study, which could also provide longitudinal information (p. 182).

It is recommendation 15 that links most closely with the focus of my study which aims to examine the range of assessment data that is currently collected within schools and services within New Zealand and which might be used in the future to track achievement. The recommendation is as equally valid in New Zealand as it was in the United Kingdom because there continues to be very limited useful data on the educational attainments of deaf pupils (Powers, 2007).

### **Background to the Researcher:**

I am a practitioner in the field that I have chosen to study. I work each year as an itinerant Resource Teacher of the Deaf with between five and seven deaf students who are mainstreamed in local or private schools. In the process of working with the students on my caseload, I have worked in a wide range of different preschools, primary schools and high schools over the last seventeen years. I have participated in the process of recording information about the students on my caseload for the national database that was managed by Deaf Education Aotearoa New Zealand (DEANZ), and for the Centre in which I work.

In the year prior to beginning the Master of Teaching and Learning degree I explored dynamic assessment as part of my appraisal development agreement. During that year I had a pivotal experience when I observed a student taking a post-test. Contrary to my expectations the student was getting much of the test incorrect. I took a copy of the test home and reordered the questions the student had completed inaccurately. The next day I wanted to see what support the student would need before he was able to complete the test on his own. On the first problem, I had simply swapped the column of numbers and the column of words to the opposite side. I said to

the student “read me this number,” (790). He did so and then proceeded to complete the entire test with out any further difficulty, or support from me. On this day he got the questions correct and the day before he got them all wrong.

This was an experience that made me more acutely aware that assessment is a complex and intriguing process. I went on to take the Masters Re/visioning Assessment paper at Christchurch College of Education and to include assessment as a focus within other Master’s papers such as the Issues in Numeracy paper where I began a provisional exploration of what made a difference to a fourteen-year-old deaf student’s analysis and completion of the National Certificate of Educational Achievement (NCEA) mathematical assessment tasks. I also wrote a critical literature review of assessment in mathematics for the same paper. In other papers that I have taken as part of the MTchLn degree, such as the paper, “Meeting the Challenges of Literacy Difficulties,” I have always had a focus on deaf students.

When I first submitted my proposal the database at one Centre included sections to record the level attained by each student as measured against the National Curricula in reading, writing, listening, speaking, and mathematics, and for recording the student’s reading age. The database asked for the student’s communication mode; i.e. New Zealand Sign Language (NZSL), Sign Supported English (SSE) or Spoken English. It did not ask for the level of fluency in either NZSL or SSE. The DEANZ database asked for the recording of the student’s current achievement objective level (in accordance with the New Zealand Curriculum Framework) in ‘English’ and ‘Mathematics’. How these curriculum achievement objective levels are ascertained by individual teachers in response to requests to provide this information to both databases was not clear. We had no information that told us how teachers arrived at the final levels they ascribe or which assessment tools if any, they used to make these judgements. An experienced itinerant teacher asked how she should go about entering the curriculum levels information onto a database. “Should I just decide where I think they are at?”

Deaf Education in New Zealand costs approximately twenty-six and a half million dollars each year. Despite this very considerable cost in expenditure to the Ministry of Education, no reliable information is recorded nationally on the achievement of deaf students in New Zealand.

The Ministry of Education in New Zealand has supported the development of assessment tools mapped to the National Curriculum that provide normative data. These initiatives include Assessment Tools for Teaching and Learning (asTTle), the National Exemplars and the National

Education Monitoring Project (NEMP). The New Zealand Council for Educational Research has developed the Essential Skills Assessment, the Assessment Resource Banks and revised the Progressive Achievement Tests in Mathematics and Reading. The question arises as to whether these assessment tools are being used with deaf students in New Zealand.

Anderson (2003) found a wide range of assessments used by teachers of the deaf in one locality. One teacher had used 29 different assessment tools across her caseload. The average range of assessments was 20. While the focus of my study is on literacy and numeracy tools, a language sample and assessment tools based on that sample were included because of the high priority placed on language acquisition in deaf education and the close relationship between language and literacy development. One of the core tasks of the itinerant service is to assist classroom teachers with the assessment of learning outcomes involving language and literacy and to provide accurate information about student achievement. Are we able to identify those tools, which most reliably describe the achievement of deaf students?

### **Historical background to deaf education in New Zealand:**

In Europe and America throughout the 18th and 19th centuries two opposing views had developed regarding the education of deaf children. One supported the method of teaching via the use of signs and the other supported teaching via speech. *The Second International Congress on the Education of the Deaf* held in Milan in 1880 passed two resolutions that were to have a significant impact on the direction of deaf education. The congress declared that speech was superior to signs and should be used to educate deaf children and that speech alone was preferable to attempts to combine both speech and sign simultaneously.

The first residential school for deaf children in New Zealand, Sumner Institute for the Deaf and Dumb, was established with government funding at Sumner in Christchurch in 1880. The school's first principal, Gerrit van Asch, supported the teaching of deaf children by the oral method and students who signed were not accepted at the school. Students with disabilities other than deafness or blindness were not provided for until after the Education Amendment Act 1907, which allowed "defective" or epileptic children to receive compulsory education. A school for the blind had been started in Auckland in 1891. The New Zealand Education Act had been passed in 1877 making education free, secular and compulsory between the ages of 7 and 14. In the *Attorney-General v. Daniels* (2003) it is recorded that

The act of Parliament placed a duty on the parents of blind or deaf children between 7

and 16 [the general leaving age remaining at 14] to provide efficient and suitable education for those children (School Attendance Act 1901). A parent who was unable to meet that obligation was to notify the Minister and to send the child to such institution for the deaf or blind as the Minister directed; the parent was to contribute to the child's maintenance and education as agreed with the Minister or up to ten shillings a week as fixed by a Magistrate (ss3, 4 and 21).

In 1910 the term "special school" was introduced in statute and in addition to the deaf and blind, included provision for other disabilities such as epileptics and the physically or mentally disabled. The educational provisions for the child now applied up to the age of 21.

A second school for the deaf opened in 1944 in Titirangi following a Rubella epidemic and in 1952 a school was opened at Mt Wellington. The opening of Kelston School subsumed both schools for the deaf in 1958. A catholic School for the Deaf (St Dominic's) started at Island Bay Wellington in 1944 and then moved to Fielding in 1953, but closed in 1989.

Recurrent Rubella / measles epidemics on a 2- to 3-yearly pattern, contributed significantly until 1980 to the number of deaf children in New Zealand. In 1944 the roll at Sumner School for the Deaf rose by 64 as a result of a rubella epidemic. Immunisation had been introduced in 1969 but the coverage was ineffectual so in 1978 a 5-year programme to eliminate Rubella was introduced. This succeeded in extending the cycle to 5-6 years but the immunization coverage was only 80%. A predictive model for Rubella epidemics has been developed (Roberts & Tobias, 2000). Based on the current immunisation programme the cycle pattern remains at 6 years, however, control of outbreaks once they occur has improved. Initially the Rubella vaccine was given to all girls who were 11 years old in year 7 (form 1). Immunisation was provided for boys as well from 1992. In 2007 there were 20 measles notifications. In June 2009 there were 15 confirmed cases and a further six suspected cases in Canterbury. This had risen to 100 confirmed cases by August and a spread of the infection to Auckland. The possibility of a sudden increase in the number of deaf students remains while New Zealand does not have a full immunisation programme.

Maternal rubella in the first eight weeks of pregnancy results in fetal damage in up to 85 percent of infants, and multiple defects are common...some infected infants may appear normal at birth, but have nerve deafness detected later. Infants with CRS may excrete the virus for a year or more after birth. (Immunisation Handbook 2006, p. 231)

Cytomegalovirus, herpes, toxoplasmosis, Syphilis, Parvo virus B-19, Human Immunodeficiency virus and hepatitis B are other in-uterine infections that can cause damage to the developing fetus which may result in deafness. In addition there are more than 120 independent genes for

deafness. More than half of the cases of profound deafness are from genetic causes and more than half of these cases are associated with mutations of one particular gene. The use of amino glycosides antibiotics can also result in deafness for patients with a genetic sensitivity to them.

In 1987, the Education Act was amended to include people with special education needs into the state's provision of education. The 1989 Education Act provided for equal rights to primary and secondary education for all students.

For most of the 20th century, disability was thought to be a problem inherent in individuals. This is commonly known as the 'medical model', where disability was seen as being something 'wrong' with a person, which could be 'cured' or at least contained...Solutions to the 'problem' of disability took the form of government and wider society helping to fix or accommodate the problems of those afflicted individuals. This was often by segregating people with the problem and providing a service (such as an institution) to meet their 'special' needs. As a result, the 'human' needs of many individuals were unmet. (Office for Disability issues, 2010).

The medical model has been most strongly rejected by members of the Deaf community whose mode of communication is predominantly NZSL and who see themselves as a distinct social group. The older members of this group are more likely to have attended a *School for the Deaf* than their local school.

Towards the end of the twentieth century three changes began to have an impact on the service delivery to deaf students and on the ability of students to succeed. Firstly, there was a movement away from segregated schools for the deaf to students remaining in their local community attending a local school. Secondly, sign language became an accepted option available as a communication mode for use within learning contexts. Australasian Signed English was introduced in 1980. In this system there was a sign for every key word needed in the education context and followed the patterns of English syntax. During the eighties Total Communication (the using of any means of communication - sign language, voice, finger spelling, lip-reading, amplification, writing, gesture and visual imagery) was often used to provide both sign and spoken language mediums for learning. Then in 1993, (NZSL) became the preferred option for those students learning through sign language, in educational settings, with a swing towards bilingual bicultural classrooms in some residential schools and unit / satellite classrooms from 1995 onwards. The emphasis has been on developing a strong first language in NZSL before translating from English to NZSL or NZSL to English. Thirdly, the technology and speed of innovation involved in the equipment to augment hearing has become increasingly sophisticated.

It is possible for digital behind-the-ear hearing aids to have a computing capacity of 40 million instructions per second and to collect data about client patterns of use. Consideration is currently more regularly given to embedding a cochlear implant in both ears.

Current research (Marschark, Lang & Albertini, 2002) shows no advantage between either sign language or spoken language as a communication and learning mode, however there is evidence that to write requires facility with English structures and that a spoken language background makes developing academic writing skills much easier. Reading is also supported strongly by phonemic awareness skills and this relies on access to audition (Mayer, 2007). Technological changes in the development of hearing aids and cochlear implants have given more deaf children greater access to audition and therefore greater access to hearing speech sounds and language. Better access to the building blocks of reading and writing should enable greater achievement for deaf children.

Deaf Education Centres see themselves as providing a continuum of services to support deaf students and their families from pre-school through to high-school by providing options with regard to the support offered to families by way of assessment, ongoing support, the educational placement of students and the mode of language used for learning. Language use may vary along the continuum for spoken English accessed primarily through listening alone (this is called an auditory-verbal approach), through listening with access to visual information on through to English supported with sign language and then full NZSL. Support may be provided in a residential school, within a mainstream class, or a satellite class or unit. They hope to deliver educational services that are “early, effective, and coordinated,” *National Plan* (DEANZ, 2005, p. 6).

### **Recent developments in deaf education in New Zealand:**

The needs and rights of Deaf New Zealanders have been accorded high status in recent years with the passing of the New Zealand Sign Language Bill on April 10, 2006. The purpose of the New Zealand Sign Language Bill was to promote and maintain the use of New Zealand Sign Language by:

- a) Declaring New Zealand Sign Language to be an official language of New Zealand; and
- b) Providing for the use of New Zealand Sign Language in legal proceedings; and

- c) Empowering the making of regulations setting competency standards for the interpretation in legal proceedings of New Zealand Sign Language; and
- d) Stating principles to guide government departments in the promotion and use that they should make of New Zealand Sign Language in the promotion to the public of their services and in the provision of information to the public. (New Zealand Government, 2006)

Other initiatives have included the introduction of the NZSL in the *New Zealand Curriculum* (2007); Sign Language Interpreting and Te Reo Maori Scholarships in 2008 and 2009; and the collaborative development of a *NZSL Mathematics Lexicon* by Kelston and van Asch Deaf Education Centres and Learning Media (Ministry of Education, 2007).

Free hearing tests were introduced for all newborn children in New Zealand in August 2005. Deafness at birth affects 135 – 170 newborns each year in New Zealand. Amongst these figures Maori are disproportionately affected, accounting for 46 percent of all deafness notifications according to the National Screening Unit (2006). Smith, Bale, and White (2005) report that deafness is the most frequently occurring sensory deficit found in developed countries. It occurs over 50 times more frequently than Phenylketonuria, which is a condition 99% of New Zealand babies are currently screened for. Research by Yoshinaga-Itano, Sedey, Coulter, and Mehl (1998) has shown that with good early intervention, approximately 80% of children with hearing loss can develop age appropriate language and communication. The first six months appear to be the most crucial time in the development of language. Newborn hearing screening programmes bring the age of detection down to between six to eight weeks.

Existing measures in New Zealand to detect hearing loss had included well child checks by doctors and Plunket Nurses, and screening in kindergartens and schools by hearing and vision testers. These measures were only sensitive enough to deliver an average age of detection of 35 months (National Audiology Centre, 2007). The range within which Hearing Loss had been detected in New Zealand until the introduction of Newborn Hearing screening in 2007 had provided a significant barrier to the normal language development of those children who fell outside the first six months. It is not the deprivation of auditory input and language development alone that disadvantages the child but the development of normal relationships within the family and wider community that may also be affected. Not only are innumerable meaningful interactions lost to the deaf child but the wealth of world knowledge that is built up by a hearing

child's ability to absorb incidental information from their environment is also lost to them. This lack of world knowledge has significant implications for the deaf child's learning according to (Marschark et al., 2002) and steps to combat this lack of world knowledge needs to be a very high priority. Assessing the development of skills expressed in literacy and numeracy is a fundamental part of the teaching and learning process and helps to identify those areas where world knowledge are lacking, enabling teachers to begin the process of addressing areas of need. Ninety percent of deaf children are born into hearing families. For these children the age at which their hearing loss is detected is crucial. Late diagnosis may result in poor quality language interactions with family members. Even when diagnosis is reasonably early and hearing parents take up sign language as their mode of communication with the child, the quality of their signing skills may not prove adequate for the development of a language which will sustain learning.

### **Age of detection:**

The final *National Deafness Notification Data Report (2005)*, (National Audiology, 2007) gave the age of detection of deafness as 33 months on average. This means that some children were detected even later than this by quite some time. It all depends upon the degree of loss. The worse the loss, the earlier children tend to be detected. Children with a severe-profound hearing loss might be identified at about one year, while moderate losses might be between two and three years and children with a mild loss at about five years (A. Kelly, Auckland District Health Board Audiology Centre, personal communication July 14, 2009). There has been no recorded data relating to the age of detection in New Zealand since 2005. The figure for 2005 should have been reasonably accurate since duplications were removed from the database prior to the final collection of data. The previous year, while the duplications were still present, the average age of detection had been recorded at 45.3 months.

Fifty nine percent of children identified with a hearing loss have no known risk factors. Early identification for these children is crucial in order to provide optimal early listening opportunities. The late detection of children is likely to have contributed to the records of poor achievement for deaf students. Similar situations have been prevalent world wide prior to the introduction of Newborn Hearing Screening. Canada for example had an average age of detection of about 30 months. While some research evidence shows that deaf students can make a year's progress in the course of a year, this does not enable them to catch up if they start from behind their peers and so every effort to increase the deaf student's rate of progress is important.

## **The role of the Itinerant Teacher of the Deaf:**

Twenty-three of the 24 participants in this survey were itinerant Resource Teachers of the Deaf. The role of the itinerant Teacher of the Deaf has been a topic of discussion amongst syndicates of teachers within New Zealand over the last two years. It is a topic that has appeared internationally in professional journals increasingly over the same period. One of the professional tasks that I undertook on behalf of the Centre I'm employed by was to prepare a Literature Review on this topic. It is outside the scope of this study to include much of the detail from within the review, which remains incomplete at this stage. I have however included a summary of the role from the perspective of a practitioner. It is important to add this detail since it was teachers in this role who feature predominantly as the respondents to the questionnaire. My practice perspective pertains most accurately to the Centre I work for. There may be slight variations in practice between Centres such as reporting requirements. Despite a persistent reference by teachers to the idea that in other countries itinerant Teachers of the Deaf have a more consultative role, Hyde and Powers (2004, p.59) have reported that the consultative model is used infrequently. Many Resource Teachers of the Deaf in New Zealand use a mix of one to one pull out teaching combined with in class support.

The itinerant Teacher of the Deaf supports students who have been admitted to the Itinerant Service through an admissions procedure that takes into account a range of factors such as: having a profound, severe, or moderately severe hearing loss, having a mild to moderate hearing loss and demonstrating a significant disparity between their language and the level of appropriate language and cognitive development, being between 3 and 8 years of age and in an educational setting, having their hearing loss diagnosed at a late stage in their childhood development, being in a schooling transition phase such as moving from a pre-school to primary school, from primary to intermediate or high school, or having a change of schools, sitting formal examinations such as NCEA, having deaf or hearing-impaired parents or, having a hearing loss and coming from a family where there is little or no English spoken at home.

Each itinerant teacher works with a caseload of students who are attending a mainstream educational facility. The itinerant teacher's primary role is to support the deaf learner with the development of language competency and to ensure that there are systems in place to enable optimal access to the curriculum. To enable this primary role, the itinerant teacher has a range of core tasks. These include ensuring that the learner's audiological equipment such as hearing aids,

cochlear implant speech processors, Frequency Modulated (FM) transmitters and receivers are regularly checked and are all working optimally.

Teachers provide direct support to the deaf learner in developing his or her listening or signing skills, speech and language skills, literacy development, and with the language and conceptual aspects of other curriculum learning areas when deafness is considered to be a significant barrier to learning. In addition to these core areas they may also support a range of other goals that have been identified in the student's Individual Education Plan (IEP) such as the development of independence, study skills and appropriate behavioural goals. Itinerant teachers are expected to work with students from kindergarten through to year 13. In some parts of the country teachers have additional students on their caseload who are there to be monitored on a regular basis but who do not require intensive ongoing support.

One of the core tasks of the itinerant teacher is to carry out assessments that help to establish the needs of the student and their achievement over time. Data from these assessments, along with formative information created from interactions with the student are described in a report produced by the Resource Teacher of the Deaf prior to the student's IEP. There has been a practice of distributing these reports to all members of the team who work with the learner and to the learner's parents. These reports also form part of the cumulative record of the student's achievements.

During sessions with the student the teacher's role is to provide a language-enriched focus on identified learning goals from the student's IEP. Woven into these interactions the itinerant teacher may be modelling the use of mediated/ facilitated strategies that are effective in giving access to the learning information provided by the classroom programme such as:

Using the student's language for learning, (English, or NZSL), recording instructions in a visual form and clarifying, explaining the meaning of unknown vocabulary, modelling the required process, modelling language structures that are new to the student, modelling the thinking strategy by talking aloud, increasing the redundancy of the message by adding natural mime, gesture and facial expressions, asking questions that clue the student in to thinking about a particular aspect of the topic, rephrasing and repeating information, using a known synonym when the vocabulary is too difficult, providing additional information, using a graphic organizer, writing notes, showing relevant pictures or diagrams, breaking ideas down into parts, linking to

known information, giving an auditory model, probing the students understanding, providing immediate feedback, summarizing and simplifying.

Other aspects that may need to be established for the learner are better acoustic properties in the classroom, a slower pace to the delivery of information and longer time allowances for the deaf student to complete work, and the encouragement of cooperative learning. The class teacher and all other professionals working with the learner must be able to recognise circumstances that become a barrier to learning. Itinerant teachers take responsibility for enabling contact between deaf learners by running Keeping In Touch days where they organise an activity as a focus for bringing deaf students in mainstream settings together.

Close liaison between the class teacher and the itinerant is needed to enable the itinerant teacher to be able to come into the class programme at varying times of the day and pick up on where the student is at with the task at the time, and their learning needs. The itinerant teacher will also be endeavouring to keep the class teacher informed about ways that the learner's deafness is impacting on his or her learning, the best practices to use with the student when support is not available, and sharing the results of his or her assessments and observations of the student.

In addition to the class teacher or subject teachers in the case of high school students, the Itinerant teacher has a number of other people whom they need to keep informed of their schedule or the student's progress. These include the learner's parents, the Regional Coordinator of Itinerant Services, office staff at the Centre and in each facility they visit, the student's Advisor on Deaf Children, the school SENCO, Teacher Aides and Ongoing Reviewable Resource Teachers when applicable. The learner may also be involved with other professionals such as a Speech Language Therapist, an Occupational Therapist, Group Special Education Psychologist, an Audiologist, the Cochlear Implant Audiologist, Cochlear Implant Rehabilitationist, a Key Worker, and teachers in the Early Intervention Centre. The Itinerant Teacher may request additional support from a Specialist Resource Teacher of Literacy, Specialist Resource Teacher of Speech and Language, Specialist Resource Teacher of Visual Communication and the Deaf Resource Co-ordinator – Language and Culture.

Itinerant teachers have administrative/ unseen tasks, which are also part of their role. These include: Recording information about their daily work with students, designing a timetable schedule for the caseload, analysis of assessments, attending syndicate meetings, being part of a committee with responsibility for a particular task, managing battery supplies, getting equipment

to the technician when there is a fault, gathering resources, maintaining a cumulative record of the students achievements and reports that relate to the student, preparation of teaching materials, providing achievement data for the centre's database, writing reports, attending IEPs, liaison with class teachers, parents and other professionals, coordinating a date for IEPs may fall to the Itinerant, constructing ways of recording student learning goals, providing an overview of their caseload, completing Annual Achievement Target tasks, recording appraisal data, filling out running sheets for their vehicle, maintaining the car (oil and tyre pressure), and maintaining professional development both in the field of deaf education and in regular education curricula.

All but one of the teachers who took part in this study worked as itinerant Resource Teachers of the Deaf. The only teacher who was not working in this capacity was a teacher working with a group of deaf students in a satellite class within a mainstream school setting.

### *Summary*

Deaf Education in New Zealand moved from a primary focus on oral education to one, which now includes a range of setting and language options. Recent developments have seen New Zealand Sign Language enacted as the one of three official languages. The speed of advancements in hearing aid and cochlear implant technologies has increased dramatically. These have already impacted on student development particularly in spoken language but in other areas as well, such as literacy. New born Hearing Screening programmes will make another considerable difference to the age of detection and as a result, the language development of deaf students. The role of the Resource Teacher of the Deaf has been outlined because this is the predominant role of teachers of the deaf in New Zealand.

In the next chapter I will describe the contextual milieu for the study and review the literature relating to the assessment of deaf student achievement. Chapter three discusses the methodology for data collection while chapter four reports the results. Next chapter five discusses these findings. The final chapter recommends some future directions for research and discusses the implications for the practice of Teachers of the Deaf.

## **Chapter 2:**

### **The contextual milieu**

#### *Introduction:*

This chapter begins by presenting a view of the current context and the research related to deaf students and their achievements with an emphasis on literacy and mathematics / numeracy. This is followed by an examination of the literature regarding assessment in general and then of deaf students in particular including accommodations and differences in practice.

#### **Current context:**

Before I explore any research related to deaf education, literacy, numeracy or assessment, I want to position a general view of research in deaf education. Moores (2008) states that

Applied research is difficult, especially today, in view of Individualized Education Plans mandated for each deaf or hard of hearing student. Random assignment of subjects to different educational treatments is not possible, and even causal-comparative research is difficult (Moores, 2008, pp. 273 – 274).

Moores, Anderson, Krantz, Lafferty, Locke, Smith and Weide (2008) reviewed all 183 articles published in the *American Annals of the Deaf* between 2001 and 2007. They assigned the articles to one of the following groups: Instruction, Teacher / Professional characteristics, Teacher Preparation, Social/ Social-Emotional, Health and Medical, Vocational, and Cultural. The Instruction category was further subdivided into: Literacy; Communication, Academic Placement, and Technology; Academic Content and Related Academic content; Student Characteristics and Parents/Families.

Having reviewed all the articles relating to these areas, the discussion section identifies as most significant, the change in the role of Teachers of the Deaf from classroom teachers to itinerant teachers. There is debate currently about the role of itinerant Teachers of the Deaf. The authors above suggest that the research articles provide no indication of the effectiveness of an itinerant model when compared with other models of service delivery. They ask whether itinerant teachers should concentrate on academic content or limit themselves to issues of equipment maintenance and language and communication.

One of the articles cited in the review, (Luckner, Sebald, Cooney, Young, & Muir 2005) examined the literature on literacy published between 1963 and 2003. This work, which was restricted to looking only at experimental studies which included a control group of deaf or hard of hearing students, found that no two studies examined the same aspect of literacy, there were few well designed group studies, no systematic replication of studies, and that there was limited data available to establish evidence based practices. Luckner and Handley (2008) have expanded on the previous review to include all studies that focused on reading comprehension. This review included research that was: experimental (6%), descriptive (44%), correlational (6%), quasi-experimental (21%), single subject (4%), one shot case studies (9%), case studies (6%) causal comparative, and qualitative. None of the 52 studies met the U.S. Department of Education Institute of Educational Sciences' (2003) criteria for "strong" or "possible" evidence of effective practice. Five reading comprehension-teaching strategies did meet the "tentative" evidence-based practice criteria. These were:

- Explicit Comprehension strategy Instruction, including: direct explanation, modelling, guided practice, and application. The most frequently taught strategies were: Prediction, questioning, imagery, activating prior knowledge and summarising, [defined as, condensing the main ideas, deleting irrelevant details, and succinctly retelling the key points in the text (p. 30)].
- Teaching Story Grammar/structure
- Modified Directed-Reading Thinking Activity
- Activating Background Knowledge
- Using Well-Written, High-Interest Texts  
(Luckner & Handley, 2008, pp. 28-31)

Both of the reviews of literacy studies noted a lack of research evidence to support the use of most of the programmes and techniques widely used in the field of deaf education (Luckner & Handley, 2008; Luckner et al., 2005). The largest numbers of research articles, about any topic in deaf education, come from America. A small number of articles come from Australia and the United Kingdom. There are a scattering of articles from other countries such as Israel, Sweden, Greece, Netherlands and Africa.

## **Research related to deaf students and their achievement:**

Deaf students are a heterogeneous group. Hearing loss is not indicative of a uniform disability. The level of loss at particular frequencies, the technological interventions available at particular times, the interventions that are provided educationally, and the family milieu are complex interactive components. Not all deaf students use technologically assistive devices. These students may be totally reliant on NZSL, as their medium of communication.

International research on the achievements of deaf and hard of hearing students has for a long time suggested that although deaf and hearing children follow similar developmental trajectories, deaf children have tended to lag behind hearing children in their achievements in literacy and numeracy, by up to six grade equivalents (Traxler, 2000). In addition the achievement levels for deaf students had changed very little between 1979 and 2000 (Powers et al, 2000).

More recent American research suggests that there has been a shift in achievement levels. Antia, Jones, Kreimeyer, and Reed (2009) found that 63% - 79% of a group of 197 students with mild to profound hearing loss, in mainstream schools who attended a regular classroom at least two hours a day, and when tracked for 5 years, scored in the average to above average range in maths. 48% - 68% were in this range for reading and 55% - 76% were for written language. The students, however, remained half a standard deviation below the norm for hearing students. The average annual gains for 79% - 81% of the students were one or more year's progress. Previous studies in the 1970s and 80s had reported the growth rate for reading comprehension to be one-third of a grade equivalent. Data collected in America by Gallaudet University and often quoted when referring to the poor showing by deaf students is taken from students who come from a wide range of settings although it also included students in self-contained classrooms within mainstream settings (Antia et al, 2009). The data for a cohort of students predominantly in mainstream classrooms may present different information.

There are only a small number of studies completed in New Zealand that have some reference to the achievement levels of New Zealand deaf students. The Deaf Studies Research Unit at Victoria University, carried out research

to investigate communication, access and learning outcomes for deaf children in New Zealand mainstream classrooms who are categorised by Specialist Education Services as 'high needs' and 'very high needs'. The majority of deaf students in these Resourcing categories are severely or profoundly deaf (McKee & Smith, 2003, p.1).

It should be noted that while Resource Teachers of the Deaf work with students in this category they were intended by the Ministry of Education to work with students in the moderate category. It is in fact students in the moderate category who are at greater risk of academic failure according to Easterbrookes (1999, p. 547). The study at Victoria produced six reports, one of which included data on the examination results for secondary deaf students for the preceding five years. The authors found no centralized record of mainstreamed deaf and hearing-impaired academic achievement either at national or regional level and they therefore gathered their data from the itinerant Teacher of the Deaf case records. This particular section of their study had a 7 % return rate, and it was therefore difficult to draw conclusions about that section of their data (McKee & Smith, 2003).

Specialist Education Services in New Zealand (SES) commissioned the writing of two reports on the educational needs of deaf children in 2000. These reports were written in response to the government's education policy, *Special Education 2000*, (Ministry of Education, 1995). The ACNielsen (2000) report, which endeavoured to establish the needs of deaf children as perceived primarily by the families of these children, had the larger sample size of 432. The report by Fitzgerald & Associates (2000) had a sample of 22 students. It is only this latter report that includes an attempt to provide information on educational achievement. The authors concluded that the academic performance of the group of students in the sample was generally below that of their hearing peers. The data upon which this conclusion was reached was derived from the analysis of samples of work in addition to the opinions of teachers and families. A percentage of difference was established indicating how far the student was ahead or behind their peers. New Zealand has a small population of deaf students in educational settings. It is therefore difficult to take into account the wide range of other variables such as the level of hearing loss, age, school setting, additional disabilities and the level of service provided to the student across such a small sample. While this research tells us something about the likely status of deaf students in relation to their hearing peers it does not tell us precisely what it is that deaf students can do or struggle with.

Powers et al. (2000) describe other factors in the lives of deaf children as confounding factors. They include:

parental hearing status, additional handicapping conditions such as syndromes, age of detection, age of onset, degree of hearing loss, ethnicity, ability, prior achievement, socioeconomic status, instructional methodology, different signing approaches, school placement, parent and teacher expectation, amounts of demanding content in lessons, teacher expertise in specialist areas, parental involvement in school process, amount of individual support, gender and coming from a minority culture.

It is this heterogeneity of deaf populations that is often referred to in the literature. It would be impossible with a small population such as we have in New Zealand to gather data that tries to match students for such a wide range of factors.

### **Literacy and deaf students:**

Literacy is defined as: “the ability to understand, respond to, and use those forms of written language that are required by society and valued by individuals and communities” (Ministry of Education, 2006, p.18). In New Zealand we have a range of assessment tools, which allow for both standardized and formative assessment to be used nationally. These include asTTle, the Reading Comprehension and Reading Vocabulary PATs (2008), the National Exemplars, the Assessment Resource Banks (ARBs), the NEMP Assessment tasks, and the Supplementary Test of Achievement in Reading (STAR).

There are a small number of New Zealand studies relating to the achievement of deaf students in Literacy. Pritchett (1998) examined the reading comprehension levels attained by deaf students in the Southern and Central districts of New Zealand when measured by Progressive Achievement Tests. The results of this study showed “that there is a wide range of reading ability among the prelingually severely / profoundly deaf readers aged 9 – 19 years in the southern region of NZ.” The author reported “While a few are achieving at their chronological age or above, there are a disproportionate number who are reading at a low level when compared with their hearing peers” (all from page p.48). Two earlier New Zealand studies were completed in the 80s. Newcombe (1985) reviewed written language in hearing impaired students and found that there had been an improvement in the word knowledge and written language of deaf students since an earlier study carried out in 1961 and reported by Vandenberg (1971). However the results for deaf students showed that the improvement was greatest for students with the smallest degree of hearing loss and “the gap between the achievements of hearing impaired and normally hearing children was still considerable,” (Newcombe, 1985, p 164). A second study by Limbrick (1988) examined the reading and language development of profoundly deaf children taught in a Total Communication environment. This study showed results that were very similar to those found in other countries such as America where the average reading age at 15 years is the same as a 9 or 10 year old. The rates of improvement were also very similar with an increase in age level approximately every three years.

## **Mathematics / Numeracy and Deaf students:**

In the *New Zealand Curriculum* (2007) mathematical texts are included under the Key Competency, Using language, symbols, and texts. While students who are educated at a Deaf Education Centre receive mathematical teaching in accordance with the national curriculum, students who are on Resource Teacher of the Deaf caseloads do not always experience additional support from these teachers in mathematics. Support may be given if it is considered that the language of mathematics is presenting a barrier to learning or that their deafness would exclude the student from being able to access the mathematics curriculum without support. There is no mention of mathematics in the Ministry of Education, Regional Teaching and Specialist Services Agreement (2000), which was negotiated with both Deaf Education Centres. The focus of the agreement is to provide support to students “that recognises the importance of language, communication and culture,” “Assisting Classroom Teachers with assessment of learning outcomes involving language and literacy achievement,” is a stated priority and an outcome is that “accurate student achievement data will be available.” It does also state however, that students will have “improved access to the New Zealand curriculum” (institutional documentation).

Two prominent Deaf Education journals have been noted to publish only nine articles relating to mathematics in a six-year period and only one paper has been written and published in New Zealand reporting the mathematical challenges faced by pre school deaf children (Ray, 2001).

Nunes and Moreno, (1998) cited in Nunes (2004) is an example of research that has shown that deaf students do find mathematics difficult. The authors compared the performance of deaf students with the norms for the NFER-Nelson 7-11 series of mathematics assessments. The mean for the 85 deaf students aged between 8 and 11 years, was equivalent to the results for the weakest 2% of hearing students. When they removed the scores of the 16 students who performed below the 2% level for their year group, the average score for the deaf students was equal to the weakest 15% of hearing students.

There is agreement that deaf and hard of hearing students progress along the same mathematical development path as hearing students, (Hyde, Powers, & Zevenbergen, 2003; Nunes & Moreno, 1998). Nunes and Moreno see hearing loss as a risk factor in mathematical development rather than the specific cause of developmental delay. They identify two specific difficulties that they believe explain the low achievement of deaf students in mathematics. One is that deaf children

have fewer opportunities for incidental learning and as a consequence fail to grasp certain concepts. The second difficulty relates to the idea that deaf students have difficulties processing a sequence of events over time.

In New Zealand we have a range of assessment tools, which allow for both standardized and formative assessment of mathematics. These include asTTle, the Mathematics Progressive Achievement Test, the National mathematics exemplars, the Assessment Resource Banks and the NEMP assessment tasks (see Appendix A page 83)

### **Assessment Overview:**

The *New Zealand Curriculum* (2007) asserts, “the primary purpose of assessment is to improve students learning and teachers’ teaching” (Ministry of Education 2007, p. 39). Assessment is used for a number of purposes. It supports the learning process between the teacher and student and may be summative, formative or diagnostic. It may be the teacher, a peer, a qualifications authority or the student themselves who undertakes the assessment. Data from assessment can be used to identify strengths and weaknesses, to monitor progress against benchmarks or exemplars, achievement standards or standardised norms. Assessments are used to give feedback to students about their learning, about what the next steps in learning are, and how they can achieve these. It may be used to report progress to parents, a new teacher or new school. It may be used to support school-wide decision-making and systems-wide policy, or to report to boards of trustees, and the Ministry of Education in order to improve programmes.

Assessment can be thought of as assessment for learning, assessment of learning and assessment as learning (Learning and Teaching Scotland, 2009). Absolum, Flockton, Hattie, Hipkins and Reid (2009), in writing about the direction they believe assessment in New Zealand should go, are adamant that the focus of assessment should be on students developing the ability to assess their own learning.

The research evidence, which underpins the current focus on assessment, began with the work of Black and Wiliam (1998). The ideas based on this work, such as

involving students in assessment and increasing the amount of descriptive feedback while decreasing evaluative feedback are described as the having a more powerful positive impact on learning than any educational innovation ever documented (Davis, 2000 p vii).

Since the publication of this research the Ministry of Education in New Zealand has placed a strong emphasis on the use of tools that can be employed to inform the next steps in the teaching and learning process. The Ministry has put planning and resources into professional development programmes such as Assessment to Learn, (AToL). Outcome findings from the ATol programme's implementation in schools show overall an increase in student achievement that was up to twice the expected rate (Poskitt & Taylor, 2008).

Assessment for Learning according to the Assessment Reform Group (2002) is

part of effective planning for teaching and learning; focuses on how students learn; is central to classroom practice; is a key professional skill for teachers; is sensitive and constructive because any assessment has emotional impact; takes account of the importance of motivation; promotes a shared understanding of the learning goals and criteria by which they are assessed; helps learners know how to improve; develops the capacity for self assessment, reflection and self management; and recognises all educational achievements of all learners ( p. 2).

A summary of the key ideas to come from assessment research includes the following aspects: Praise should be used sparingly and be task specific, (Crooks, 1988), feedback should be about the quality of the work, (Black & Wiliam, 1998) and effort (Crooks, 1988). Opportunities to present understanding should be designed into every piece of teaching and when students make their thinking explicit it causes learning. Marks and grades lower self-esteem. As well as waiting longer for the student to answer, wait longer before responding to their answer. Questions develop reflection: focusing on what the students say rather than accepting an answer, leads to sustained discussions. Peer assessment: the shared language forms increase motivation and strengthen the student voice and self-assessment enables students to take responsibility for their learning.

The New Zealand National Assessment Strategy focuses upon setting specific and challenging goals with students, fostering partnerships in learning, using information to improve learning, developing high-quality assessment tools, developing teachers' assessment literacy and informing strategic planning (Ministry of Education, 1999).

## **Assessment of deaf students:**

Pivotal to setting specific and challenging goals for deaf students is the IEP process, which enables the relationship between the family, and the school setting to collaboratively work towards improving learning is the ability to use quality assessments. One writer commenting specifically on the assessment of deaf students suggests that assessment should guide instruction and in order to do so it must be descriptive, involve parents and students, capitalize on motivation, incorporates student collaboration, embraces reflective thinking and learning process, be based on current theories, be developmental and authentic, be comprehensive, balanced and be supported by a well developed system of record keeping (French, 1999, pp. 3-6). Luckner and Bowen (2006) investigated the assessment practices of professionals working with deaf students. The authors identified “a paucity of information specifically focusing on assessment of students who are deaf or hard of hearing” (p. 411). These authors cite the writing of Stewart and Kluwin (2001) who highlight a number of assessment challenges are noted. Firstly, many skills that are assessed require reading skills even though it is not reading that is being assessed. Deaf students may understand the topic but be disadvantaged in their ability to demonstrate this because of poor reading and writing skills or a delay in language development and communication skills. Assessment of deaf students may be even more difficult when these students have an additional disability or come from another culture and language background. Cawthon and Wurtz (2008) identified portfolios as a common form of alternative assessment of deaf students particularly for those who had significant delays. Some of the teachers surveyed in their study felt that allowing a deaf student to sit tests and assessments at a lower year level enabled students with poor reading to demonstrate their ability while other teachers believed that deaf students should be taught the same material as hearing students and assessed in the same ways. It appears that a great deal of the evaluation of deaf students is by locally designed assessments and these often do not undergo rigorous trialling and moderation.

While mandated large scale “high-stakes” testing has received considerable attention, the majority of program and accountability measures used to determine the progress of deaf and hard of hearing students provide limited functional or technically valid information. (Rose, 2007, p. 6)

Discussions about the assessment of deaf students in the past have often centred on whether it was appropriate for deaf students to take part in national or standardized testing. For most deaf students in mainstream settings there is now an expectation that they will take part in these

assessments. The discussion is now focussed on any accommodation that recognizes the disadvantages faced by deaf students while maintaining the credibility of the assessment. There remain students for whom the learning outcomes assessed by standardized or national assessments are too far removed from the level at which the student is able to engage with any chance of success. More appropriate individualized achievement targets can be set for these students within their existing IEP framework or utilizing the New Zealand Curriculum Exemplars for Learners with Special Education Needs (Ministry of Education, 2009).

### **Accommodations:**

Accommodations are changes in test administration. Accommodations for deaf students might include ensuring that assistive devices such as hearing aids, speech processors and frequency modulated aids (FM) are working, or providing an interpreter to sign the instructions and test questions and to interpret signed responses. Further accommodations could include providing more time to complete the assessment, eliminating visual distracters, the provision of access to a Thesaurus or dictionary so that the deaf student's language deficit is not too great a barrier, reading the assessment aloud to the student, providing a separate room for assessment administration, seating in a position that allows for a clear view of any person giving instructions and allowing for rest breaks. Another accommodation that has been used in some parts of the USA, is to allow the student to sit the test at a level at which they might be expected to be able to demonstrate knowledge and skills rather than the year level their hearing peers would be participating at. The Stanford Achievement Test, 9th edition: National norming and performance standards for deaf and hard of hearing students (Traxler, 2000) was constructed by giving deaf students an appropriate level of assessment after first administering a screening assessment. The Woodcock-Johnson III (Woodcock, Mather & McGrew, 2001) Tests of Cognitive Abilities Examiner's manual suggests that the subject's audiogram should be taken into account when scoring responses. They note "that students with a high frequency loss will miss /s/ endings and may hear /ed/ as a /t/" and suggest that "articulation errors and unusual speech patterns" should not be penalized (Woodcock et al, 2001, p. 43).

### **Differences in practice:**

When comparing the tools used in New Zealand and lists of assessments used overseas the only similarities are in the use of language and writing samples and occasionally in the use of running records. Specialist teachers in the speech and language field in New Zealand are more likely to use tests imported from overseas such as the Peabody Picture Vocabulary Test, but these are not used by teachers of the deaf in general. In New Zealand teachers draw on a wide range of assessments to gain information about the students they work with. Information about these assessments can be found in appendix A on page 83.

### **Research Question:**

We do not currently have in-depth data about the achievement of deaf and hard of hearing / hearing impaired students throughout the whole of New Zealand. We also know little about the patterns of use of assessment tools being employed by classroom teachers and Teachers of the Deaf with these students. This raises questions about assessment of deaf students that have shaped this study. I aim to explore the assessment landscape for deaf students in New Zealand and my research questions are:

In what ways is the achievement data of deaf and hard of hearing / hearing-impaired students in New Zealand currently gathered and used in literacy and numeracy?

In order to survey the current assessment landscape for these students I asked the following sub-questions:

1. What mathematics and literacy assessment tools are used with year 4 and year 8 deaf students?
2. Which assessment tools inform the IEP and learning outcomes for deaf students?
3. Which assessment tools inform the daily practice of teachers of the deaf?
4. How are assessments about deaf students used by teachers and students?
5. What assessment information do teachers of the deaf use to respond to requests for information about their student's performance in literacy and mathematics.

*Summary:*

The reason the research questions above are pertinent at this time is because what literature there is highlights the lack of research on assessment of deaf students and the need for the identification of quality tools that can reliably track the development of deaf student's achievements. Accountability and the day to day monitoring in order to raise achievement require that we examine our current practices. In the past deaf students have not matched their hearing peers level of language, literacy and mathematical attainments. We hope that there will be a distinct shift with the introduction of newborn hearing screening and the rapid developments in hearing aid and cochlear implant technology.

## **Chapter 3:**

### **Methodology**

#### *Introduction:*

This chapter will explain the choice of methodology and selection of assessment tools included in this study followed by an outline of the design of the questionnaire. Ethical considerations will be discussed next. I will report the returns to the survey and conclude by reporting the data describing the teachers in the study and information about the students they work with.

#### **Methodology:**

The question “In what ways is the achievement data of deaf and hard of hearing / hearing-impaired students in New Zealand currently gathered and used in literacy and numeracy?” arises out of a desire to understand the intentional conscious decisions that are made about assessments, by Teachers of the Deaf, that are used to gather data about deaf students. In order to gather this information I made a decision to use survey methodology. “Survey research is widely regarded as being inherently quantitative and positivistic” (de Vaus, 2002, p. 5). Positivistic meaning that it describes the phenomena that are experienced. Positivism is “an epistemological position that advocates the application of methods of the natural sciences to the study of social reality and beyond.” (Bryman 2001, p.12). Positivism asserts that “only phenomena and hence knowledge confirmed by the senses can genuinely be warranted as knowledge” (p. 9). It is more helpful, however to distinguish between research methods that yield structured and unstructured data sets than between methods which are quantitative and qualitative (de Vaus, 2002 p. 5). Johnson and Christensen (2004) give an example of mixed model research where a researcher might use a questionnaire that is composed of closed-ended or quantitative / structured items as well as several open-ended or qualitative type items. I have chosen to use a mixture of closed and open-ended questions within the survey methodology.

I designed a survey around a postal questionnaire as my means of gathering data, because the population to be sampled was geographically widespread throughout New Zealand. The survey is considered a methodology because it gathers large-scale data in order to generalize to a population (Mutch, 2000, p. 112). She describes a questionnaire as a related method and a mailed questionnaire as a possible strategy. Face to face interviewing via the questionnaire would have been impossible for me to carry out because my time and finances were limited. I

also eliminated a phoned version for the same reasons. The common factor between various survey methods is the endeavour to take a 'snapshot' of a groups' attitudes, values, or behaviour at a given point in time (Davidson & Tolich, 1999, p. 176). They quote a definition of the term 'survey' (Marshall, 1994, p. 554): "This describes the term survey as referring to data collections that employs both [written and verbal] interviewing and sampling to produce quantitative data sets amenable to computer-based analysis". In addition surveys allow for a wide range of methods to be employed within the survey framework, such as face-to-face interviews, telephone interviews and postal and electronic questionnaires (Davidson & Tolich, 1999, p. 176).

There are a range of question types that can be used with a questionnaire such as open and closed question forms, matrix questions which allow for a large amount of data to be collected at one time, and scale questions (de Vaus, 2002). My questionnaire incorporates all of these. Surveys sample many respondents who answer the same questions (Davidson & Tolich, 1999; Hoek & Gendall 1999; Neuman, 2000.) The researcher asks the same questions so that they can see the patterns that might exist within the kinds of answers that are given. The focus of this descriptive survey is to document some of the characteristics of Teacher of the Deaf assessment practices with deaf students. Some Classroom Teacher assessment practices with deaf students will be reported briefly. One of the difficulties in using a postal questionnaire is that it is not possible to go back to the participant to clarify something that has been recorded. If the survey had been done face to face or over the telephone it would have been possible to have the participant explain anything that was unclear. Being faced with 12 pages may have been too daunting for some of the recipients. On reflection perhaps limiting the questionnaire strictly to the assessment tools and their use, rather than also including the professional development questions might have shortened the questionnaire enough to have more replies. However, I was very interested in the professional development that has been available in the areas of numeracy and literacy. The data was collected in November 2006 and the situation now is not identical to the point in time when this snapshot of the assessment landscape was taken.

### **The selection of assessments:**

The assessments included in question seven which relates to Teacher of the Deaf assessments were selected from my experience as an insider in this category of teacher. The assessments in the common classroom assessments were selected from the literature about assessments tools used in New Zealand with reference to the Ministry of Education website, Te Kete Ipurangi, the New Zealand Council for Education Research review of diagnostic assessments (Croft, Strafford

& Mapa, 2001), and the published research by Dunn, Strafford and Marston (2003). The participants would be identifying assessments used during the year and up until the point that the survey data was gathered (a period of nine months).

**The design of the questionnaire:**

It is Neuman’s opinion that good surveys require thought and effort (Neuman, 2000). I have taken some time to carefully construct a questionnaire, which will enable me to gather the data that will help to answer the research questions. I piloted the first draft of the questionnaire in early August 2006 by asking my colleagues who did not have a year 4 student to trial the questionnaire for me. I asked that they time how long it took to complete and to record a note of any questions that they found unclear or language usage they didn’t understand. I asked for feedback on any issues with the way the questionnaire was formatted that might have made it difficult to use or hard to understand. After piloting I also checked for important aspects, such as sufficient variation in responses, how the question is understood, whether all items are necessary and whether scale items actually scale (de Vaus, 2000).

The research questions were explored through the questionnaire in the following ways:

<b>Research Question</b>	<b>Data to inform this question provided by questionnaire questions</b>
1. What mathematics and literacy assessment tools are used with years 4 and 8 deaf students?	7, 8, and 10
2. Which assessment tools inform IEP planning for deaf students?	7 and 8
3. Which assessment tools inform the daily practice of teachers of the deaf	6, 7, 8, 9 11 and 12a
4. How are assessments about deaf students used by teachers and students	6, 7, 8, 10, 11, 12a, 2b and 12c
5. What assessment information do teachers of the deaf use to respond to requests for information about their student’s performance in Literacy and Mathematics?	13a, 13b, 14a and 14b
Contextual information will be provided by questions:	1, 2, 3, 4a, 4b, 4c, 5, 6, 16 and 17
Participants given the opportunity to express their ideas and feelings.	15

Table 3.1 the relationship between the research questions and the questionnaire.

The final version of the questionnaire is in Appendix **B** and is presented in the form that was posted to participants. The first section sought brief demographic details about the teacher and then asked for information about the teacher's involvement in professional development for the Numeracy Project, the Literacy Professional Development Project and Assessment to Learn. This section ended with a question about how information from standardised assessments was used. The second section focused on the use of specific assessments such as the Teacher of the Deaf related assessments followed by common classroom assessments. This section was completed with a question that endeavours to find out which assessments Teachers of the Deaf valued most. The third section briefly explores the sharing of learning goals with students and student self-assessment. The fourth section examines the assessments teachers use to arrive at an allocation of a curriculum level for students. The fifth section asks teachers to make comments and raise any issues they may have about assessment for numeracy and literacy. The questionnaire concludes by asking for contextual information about the students that the respondents worked with.

I selected teachers working with students who were at either year 4 or year 8 as my unit of analysis. The selection of specific year levels in order to examine the assessment practices of New Zealand teachers in English and Mathematics was undertaken by Dunn, Strafford and Marston (2003). This study selected teachers working at years five, seven and nine. The Ministry of Education in New Zealand made a decision when it accepted the Otago University design for National Monitoring in 1993, to sample achievement at years 4 and 8. The Education Review Office has also elected to review the quality of teaching in relation to various curriculum areas at years 4 and 8, (Education Review Office, 2006). The reason these years are pertinent is that

they represent mid and end points in primary education - two points that are useful for system wide assessment and monitoring of learning. By year 4, students have generally attained some level of personal confidence in school settings, and levels of literacy that enable them to follow/communicate on a range of assessment activities (L. Flockton, personal communication, December 12, 2006).

Another reason for selecting slices of the population was to avoid an unmanageable quantity of data for analysis.

### **Ethical considerations:**

Participation of teachers in the survey was voluntary. Anonymity of students, teachers and school settings was guaranteed but full anonymity could not be guaranteed to the two Deaf Education Centres. There are only two Centres in New Zealand. Discussion that refers to the centres will make them identifiable as one of either of the Centres or refer to both Centres.

I labelled the Centres (A) and (B). I took particular note of the need to avoid adverse effects and sought to limit any stress I might give the teachers involved by increasing their workload. I tried to design a questionnaire that would be quick to fill out and checked this by piloting the questionnaire. The response forms had no coding that might have made the teachers identifiable.

Once academic and ethical approval had been granted I sought permission to contact teachers from the Principals of both Deaf Education Centres. This permission was given and the names and contact details of teachers of the deaf working with students in years 4 and 8 were provided by the representatives of both Deaf Education Centres, An example of the letter sent to the Principals and their consent form, and the information for participants are included in Appendix C. I sent copies of the letters and the survey to the Regional Coordinators as a matter of courtesy. In addition I requested access to the most recent descriptive information about deaf school aged students in New Zealand from the administrator of DEANZ. I would use this data to provide a contextual background to my research. The information needed only to be in a summarized form. I did not receive a reply. When the questionnaires were returned the data in each questionnaire was coded to represent the participant with a number to maintain anonymity. The field of Deaf Education in New Zealand involves a small community of teachers. It was possible for this to present a risk that an insider might be able to identify a participant. I have endeavoured to report the data in ways that limit the possibility of this happening. As the researcher I was also an insider and this created the possibility that despite the coding of responses I might recognise comments as made by a teacher I knew. There was one response that I recognized as identical to a statement made by a teacher during a syndicate meeting and because this might identify that teacher I eliminated it from the data.

## **Returns:**

A week after the questionnaires were first mailed I emailed the participants to provide an online copy of the questionnaire. I continued to email on a weekly basis with a reminder of the date for the final close of data collection as November 24, 2006. There were 51 Teachers of the Deaf in New Zealand in 2006 who worked with either a year four or year eight student, or who worked with both. The number of possible questionnaire returns from these teachers was 63, which took into account that 12 teachers worked with both year groups. Neuman (2000, p. 217) suggests that in order for a sample of small populations to yield the same results as that population, a sample size of 30% is required. I needed a response from 15 teachers to reach 30% of my selected population. Twenty-four teachers responded to the questionnaire, which provided a 47 % response rate. There were 29 responses altogether since five teachers responded to both age groups.

## **Data Analysis:**

I coded each response throughout every questionnaire before collating the data that related to each question. Initially I grouped the responses for year 4 and year 8 separately and analysed these question by question. While some data was quantitative in that the result was a number much of the data was qualitative in that it required me to search for themes and characteristics from the teacher's responses. I went on to combine both year groups and much of the data is reported in an aggregated form. I had originally recorded each question for each year group into a word document and then I was able to print off sections and work from the overall picture with my data on large sheets of paper so that I could annotate and highlight to match up similar response. The original separate data records for each year have been revisited many times to check on information. When I felt familiar with the data I moved back to recording data into tables and finally to summarizing these.

## **Teacher demographics:**

There were 24 teachers involved in the survey and the participants, in their questionnaires, provided the following information. Only two of the teachers were not trained as teachers of the deaf. One of these teachers had worked with deaf students for 2.5 years. This teacher was one of the teachers who had answered a questionnaire for a year 4 and a year 8 student. The other teacher had worked with deaf students for 14 years within a 35-year career that had involved

working as a Resource Teacher of Learning and Behaviour and as a Speech Language Therapist and who at the time of the data gathering worked on contract as an Itinerant teacher of the deaf with a year four student. Fourteen teachers were employed by Centre A. Since a number of these teachers occurred twice in the responses the total number of responses from Centre A was 17. The ten teachers employed by Centre B contributed to twelve responses. The length of time teachers had worked with deaf students was on average 13 years with a range between 2.5 years and 35 years. The teacher who had worked for the longest time was teacher 117 and this participant was the only teacher who worked in a unit/ satellite class.

### **Student information:**

Year four students who had been selected as the focus student by each of the teachers ranged in age from 8 years and 2 months to 9 years and 8 months. Four of these students were described as having a moderate hearing loss, a further four as having a severe loss and eight as profound. Six of the profoundly deaf students had a cochlear implant. Four of the students were European New Zealanders, six were Maori, two were Pacific Islanders, one student was Indian and one was South African. All the students spoke English although one signed at home and one student had English as their second language. All the students were in Primary school, two of which were private schools.

The year eight students, who had been selected, ranged in age between 12 years and 3 months and 13 years and eleven months. Five of these students were described as having a moderate hearing loss, six as having a severe loss and five as having a profound loss. All five of the students with a profound loss had a cochlear implant. Six students were described as Maori, five as European New Zealanders, one as Samoan and one as South African. Twelve of the students spoke English and one was a NZSL user. The Samoan student had English as a second language. Six of the students were in Primary schools and five were in Intermediates. One student was in a satellite/ unit class. This student was the only user of NZSL in the school setting.

*Summary:*

In this chapter I have discussed my choices of survey methodology and my method of postal questionnaire. The questionnaire was designed to gather data about the assessment landscape for deaf students and incorporated assessments that are used in mainstream classrooms as well as the assessments commonly used by Teachers of the Deaf. I have also discussed ethical considerations in the planning process and in dealing with the eventual data, taking particular note of the anonymity of participants since this is a small population who are likely to know each other well. While every effort has been made to maintain anonymity, I did however acknowledge in the letters to Principals that with only two Deaf Education Centres in the country it would be difficult to guarantee complete anonymity to the Centres. Twenty-four teachers returned their questionnaires and the analysis of this questionnaire data are reported in the following chapter.

## **Chapter 4:**

### **Results**

#### *Introduction:*

In this chapter the frequency with which particular assessment tools are used for assessment in Literacy is presented. I will report the differences in assessment practices between the two Deaf Education Centres and the data describing how teachers use tools, including the formative use of data. Then I will continue with a synopsis on how teachers have responded to requests for information about their students. The issues and difficulties identified by the teachers in this survey will also be reported. I will describe the data from teacher 117 because this was unique and finally I will summarize the teachers' professional development experiences in Literacy, Numeracy, and Assessment.

#### **Literacy Assessment Tools:**

There were thirty-three literacy assessments selected for inclusion in the survey and five numeracy assessments. These are referenced in Appendix A. At the time the survey was completed, a National Writing Project undertaken collectively by the two Deaf Education Centres, was entitled "Written English for Deaf Students". The revised edition (2007) is now called "Deaf Students' Written English Exemplars." The use of these assessments by teachers of the deaf and the classroom teachers they worked with were explored in questions seven and eight of the questionnaire. The results indicated that there were only two assessment tools that were not used by any of the teachers. These were Sails Literacy Charting Progress, and the NEMP Assess Tasks.

The remaining thirty-seven assessment tools were either completed, used to inform the IEP process, resulted in a learning outcome or underpinned daily practice. Some assessments were completed but not used to inform the IEP or daily practice. It is important to remember that the data described here relates to the assessments done by teachers in relation to one student on their caseload, or two students as in the case of the five teachers who returned data for both a year 4 and a year 8 student. The data for the two groups has been combined in most cases.

The following table displays the data that illustrates how teachers used assessments within the IEP process.

Literacy Assessments			
	Informed IEP without further impact	Goal Set At IEP No impact On daily practice	Informed the IEP, a goal was Set and daily practice was impacted.
Formal Reading Retell			20
Oral Language Sample	3	1	16
Written English for Deaf Students Exemplars		1	18
Auditory Skills Placement Test	1	2	16
PM Benchmark Running Record	1		16
Patrick Stone: Conversational Development	1	1	10
Articulation assessment	3		9
PROBE Reading Assessment	1	1	7
First Steps Continuum: Oral Language	3	2	4
Connie Mayer assessment tool for written text		1	7
Laura Lee grammatical analysis	2		7
First steps Continuum: Writing	3	1	4
McShane Communicative Functions	3		3
Burt Word Reading	4		2
First Steps Continuum Reading	3	2	
Writing Interview	2		3
STAR Supplementary Test of Reading	1		4
Ling Phonetic Level Evaluation			4
AsTTle Writing	1		2
Reading Interview		1	2
Language Processing Screening Test			3
National Curriculum Transactional Writing			2
AsTTle Reading			2
National Curriculum Poetic Writing			2
HSU syntactical profile	1		
National Curriculum Oral Language Exemplar Interpersonal speaking			1
PAT reading Comprehension			1
PAT Reading Vocabulary			1
Assessment Resource Bank English			1
PRETOS	1		
Essential Skills			1
NEMP assess tasks			
Sails Literacy Charting Progress			

Table 4.1 Literacy assessments used by Teachers of the Deaf to inform the IEP process.

In seven of the assessments, involving one teacher on each occasion, the IEP goal did not become part of daily practice. For three assessments there were two teachers for each assessment for whom the goal did not become part of daily practice. This was a total of ten assessments where the IEP goal did not inform practice. Seventeen assessments informed the IEP but did not

become incorporated into the document as a Learning Objective. Eight of these involved one teacher alone, three involved two teachers, six involved three teachers and one involved four teachers. Teacher 117 was the only teacher of the deaf who completed, informed the IEP process and used in daily practice the data from asTTle Mathematics, the Assessment Resource Bank material in English and Mathematics and the Essential Skills material. It is unsurprising that reading and writing assessments followed by oral language assessments have the greatest impact on the daily practice of teachers of the deaf. The following table presents the data related to the level of use of assessments to support daily practice.

<b>Teacher of the Deaf use of assessment to inform daily practice</b>	
<b>Literacy Assessments specific to teachers of the deaf, in descending order of frequency as they impact on daily practice</b>	<b>Assessments used by teachers of the deaf in mainstream classrooms, in descending order of frequency as they impact on daily practice</b>
Formal Reading Retell Written English for Deaf Students Oral Language Sample Auditory Skills Placement Test Patrick Stone: Conversational Development Articulation assessment Connie Mayer assessment tool for written text Laura Lee grammatical analysis <b>Usage greater than one fifth</b>	PM Benchmark Running Record PROBE Reading Assessment <b>Usage greater than one fifth</b> STAR Supplementary Test of Reading Transactional Writing Exemplars AsTTle reading AsTTle Writing Poetic Writing Exemplars Burt Word Reading PAT Reading Comprehension Pat Reading Vocabulary Assessment Resource Banks: English Oral Language Exemplars: Interpersonal speaking Assessment Resource Bank: English PRETOS Essential Skills Sails Literacy Charting Progress NEMP Assess Tasks
First Steps Continuum Oral Language First Steps Continuum: Writing Ling phonetic Level Evaluation Language Processing Screening Test McShane Communicative Functions Writing Interview Reading Interview First Steps Continuum: Reading HSU Syntactical Profile	

Table 4.2 The Literacy tools used in descending order of use in supporting daily practice, according to whether they were Teacher of the Deaf specific or assessments commonly found in mainstream classrooms.

Just under half of the Teacher of the Deaf assessments were used by at least a fifth of the teachers to inform daily practice while only a ninth of classroom assessments were used by more than a fifth of the teachers. It is evident that Teachers of the Deaf predominantly use deaf specific assessments in their work with deaf students. I then focused on the most commonly used assessments. The data for which is presented below. The full data set ranking all the teacher of the deaf and classroom assessment tools is available in Appendix E. and a table comparing assessments used to inform the IEP and daily practice can be found in Appendix F.

1	Formal Reading Retell
1=	Written English for Deaf Students Exemplars
2	PM Benchmark Running Record
3	Oral Language Sample
4	Auditory Skills Placement Test
5	PROBE Reading Assessment
6	Patrick Stone: Conversational Development
7	Articulation assessment
8	Connie Mayer assessment tool for written text
9	Laura Lee grammatical analysis
10	STAR Supplementary Test of Reading
10=	asTTle Reading

Table 4.3 Tools used most frequently by (RTD) to inform their daily practice. The tools indicated above all had usage greater than one fifth. Shading indicates a (RTD) Specific Assessment.

One of the tools most frequently used to support practice is from those most commonly thought of as specific to teachers of the deaf and the other most frequently used assessment was from the group commonly used in mainstream classrooms. The assessments most frequently used are the Formal Reading Retell, Written English for Deaf Students and Running Records. These will be considered in more depth in the next chapter.

**Teacher belief about the value of the specific assessments:**

Teacher use of assessments and teacher value of assessments differed as can be seen in the following table.

Number of teachers who felt the assessment was most useful.	
15	Written English for Deaf Students Exemplars
10	Formal Reading Retell
9	PM Benchmark Running Record
8	PROBE Reading Assessment
4	STAR Supplementary Test of Reading
4	asTTle Reading
3	Oral language sample
3	PAT Reading
2	National Poetic writing exemplars
2	Connie Mayer assessment tool for written text
All of the following assessments were considered useful by individual teachers	First steps continuum for reading and writing; McShane Communicative Functions; Comprehensions & retell; Auditory Skills Placement Test; Laura Lee; Language processing, TROG, CASE; Articulation assessment; and Patrick Stone Stages of Conversational Development.

Table 4.4 Tools which teachers believed were the most useful to use with deaf students. Shading indicates RTD assessments.

Reading and writing assessments are both viewed as beneficial and are the most frequently used assessments. This is unsurprising given that the role of teachers of the deaf has been to support the literacy development of deaf students. It is also evident that while some assessments are completed frequently they are not always considered to be the most beneficial.

It is of interest to note that the Written English for Deaf Students Exemplars appear to be the most valued but when PM Benchmark and Probe are combined as being assessments of oral reading, it is reading assessments that are considered the most useful. It also becomes apparent that apart from the Written English for Deaf Students, the Formal Reading Retell, and the Oral

Language Sample, it is the general classroom assessments that are favored in terms of usefulness. The comments made by teachers valued assessments that gave a clear picture of where the student was functioning, and provided indications of the next step in learning. More comments were written about the Written English for Deaf Students Exemplars than any other assessment. Two examples follow.

Clear progress of sub-levels, teaching points and strategies to assist.

Excellent for students with significant language delays. Ensures areas of greatest difficulty for deaf students examined and addressed. More accurate assessment and curriculum levels. [Class] teachers can look to them.

Teachers appreciated the writing exemplars because they felt they more closely matched the stages that deaf students went through in their writing development and clearly delineated the appropriate level to allocate to the student. This was a task that had not always been easy for teachers to do when they felt that the deaf students writing did not closely resemble that of a hearing student.

**Use of Common Classroom Literacy Assessments:**

Assessment tool	RTD	CT	Combined
PM Benchmark Running Record	19	11	30
PROBE Reading Assessment	12	10	22
Burt Word Reading Test	8	7	15
Supplementary Test of Reading (STAR)	5	7	12
Poetic writing Exemplar:	4	9	13
PAT: Reading Vocabulary	3	14	17
PAT: Reading Comprehension	3	13	16
asTTle: Writing	3	7	10
asTTle: Reading	2	9	11
Oral language exemplars	2	4	6
Transactional Writing Exemplar:	1	6	7
PRETOS:	1	1	2
Assessment Resource Bank: English	1	4	5
Essential Skills Assessment: IS	1	4	5
NEMP: Assess Tasks	0	0	0
Sails Literacy Charting Progress	0	0	0

Table 4.5 Number of Common Classroom Assessments completed by (RTD) and the (CT) who also worked with the deaf student using Common Classroom Literacy assessments. The combined figures are for 29 teachers of the deaf responses and the 29 classroom teachers they worked with, a total of 58 teachers.

More Teachers of the Deaf than classroom teachers completed the PM Benchmark material, PROBE and the Burt Word Reading tests but more classroom teachers completed all other tests. The group of students completed 123 literacy assessments with either the Teacher of the Deaf or their class teacher. Seventy-six of these were for reading. Thirty related to writing, six for oral language, and eleven for generic skills. The use of the National Curriculum Writing Exemplars by Teachers of the Deaf seem low with a total of 6 but 22 of the teacher responses indicated they had used the Written English for Deaf Students Exemplars. Four Teachers of the Deaf of year eight students did not use a writing exemplar of any kind. The one year-eight teacher, who used

both the National Curriculum Exemplars and the Deaf Student’s Exemplars, was teacher 117. Three teachers who worked with a year four student used both the deaf and national Exemplars. Two teachers of year four students used no form of writing Exemplar at all.

**Use of national reading and writing assessments:**

The table below reports the data relating to the use of national reading assessments by Resource Teacher of the Deaf and class teachers.

Assessment	TD	CT	Combined
PAT: Reading Vocabulary	3	14	17
PAT: Reading Comprehension	3	13	16
Burt Word Reading Test	8	7	15
Supplementary Test of Reading (STAR)	5	7	12
asTTle: Reading	2	9	11

Table 4.6 Standardized assessments for reading and their use by teachers of the deaf and classroom teachers with deaf students.

The figures for Teachers of the Deaf and for classroom teachers are out of 29 possible responses in each case. The combined totals are out of 58 possible responses. A little more than a quarter of students were assessed using Burt and the PATs. Teachers of the Deaf were more likely to complete a Burt word reading test, while classroom teachers completed PATs and asTTle more often. Close to a fifth of the deaf students in this study were assessed using asTTle Reading and STAR. The following table reports the data relating to the use of national writing assessments by Resource Teacher of the Deaf and class teachers.

Assessment	TD	CT	Combined
National Curriculum Exemplar: Poetic writing: Character and Personal Experience	4	9	13
National Curriculum Exemplar: Transactional writing: Argument and Explanation	1	6	7
AsTTle: Writing	3	7	10

Table 4.7 Standardized writing assessments or exemplar benchmarking use by Teachers of the Deaf and Classroom Teachers with deaf students.

Low Teacher of the Deaf use of National curriculum exemplars writing assessments is unsurprising due to the existence of a set of exemplars designed specifically for use with deaf students.

#### **Patterns of assessment tool use in the two Deaf Education Centres:**

Every teacher of the Deaf in New Zealand is employed by either Centre A or Centre B depending on their location. I had asked teachers which region of the country they worked in. I had considered this to be contextual background information and had not considered separating the data according to Centres when I began the research. After working with the data for some time it became apparent that there might be material of further interest if I separated the data out in relation to the two Centres. I only did this in relation to the information gathered in questions seven and eight.

It was stated in the letters to both Principals when I was seeking permission to approach teachers that only partial anonymity could be guaranteed to the Deaf Education Centres since there are only two within New Zealand. Statements relating to teachers who work in a Centre can only refer to one or the other.

Centre B teachers completed per response, four fewer assessments than Centre A teachers and were more consistent in their use of these. They did the assessment and went on to include it in the IEP, a learning outcome arose from the information gained, and it informed their daily

practice. There was an average loss per teacher response from completion to use in daily practice of 0.3 assessments for Centre B teachers and a loss of 4.4 assessments per teacher for teachers from Centre A. There is little difference between the two Centres when the data is considered at the point where the assessments informed daily practice.

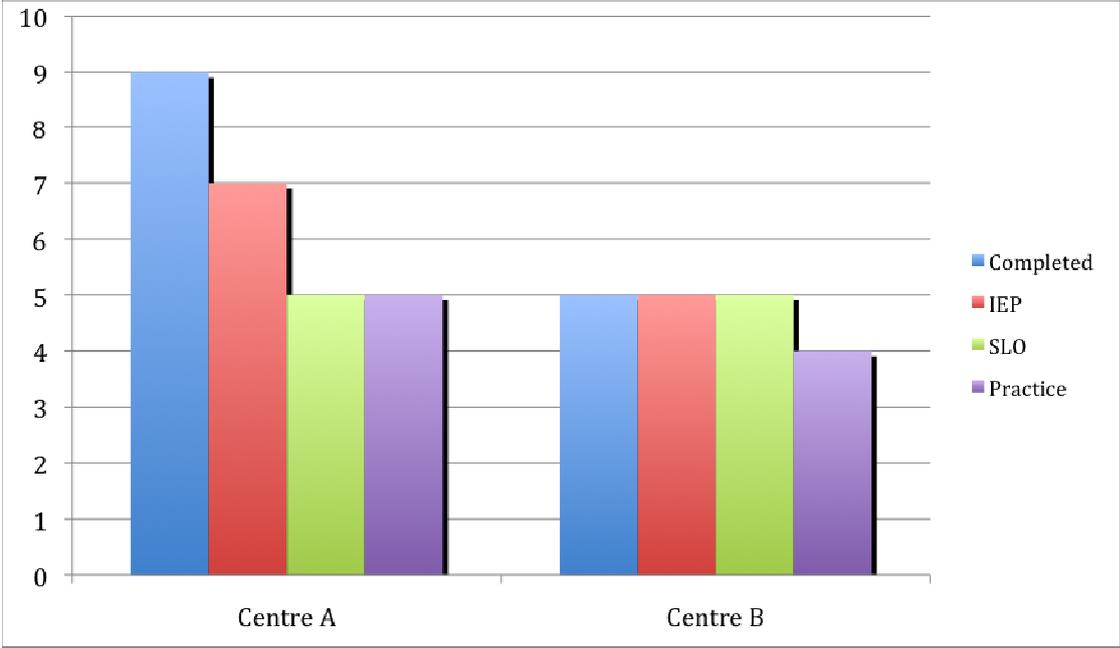


Figure 1 represents the average number of assessments completed, informing the IEP, the foundation of a SLO and informing daily practice, by all teachers in both Centres.

Teachers employed by Centre A completed a wide range of assessments but failed to use all of these in their daily practice.

The Reading Interview was completed as often as the Formal Reading Retell by Centre A teachers, but was used to inform the IEP, SLO (Specific Learning Outcome) and daily practice by only a fifth of the teachers. When the Teacher of the Deaf Assessments and Classroom Assessments were combined, Centre A teachers and their classroom teachers completed 197 assessments, an average of 12 per teacher and Centre B teachers completed 82 assessments, an average of 7 per teacher. The results are presented in the following table:

	Year 4 teacher responses (9) Centre A	Year 8 teacher responses (8) Centre A	Totals for Centre A.  (17)	Year 4 teacher responses (6) Centre B	Year 8 teachers (6) Centre B	Totals for Centre B.  (12)
Oral language Sample	9	7	16	5	4	9
Reading interview	8	6	14			
Formal Reading Retell	7	7	14	6	5	11
Written English for Deaf Students Exemplars	8	5	13	3	5	8
Patrick Stone Conversational Development	7	6	13			
Auditory Skills Placement Test	8	4	12	4	3	7
First Steps Continuum for Oral Language	7	4	11			
First Steps Continuum for Writing	6	4	10			
First Steps Continuum for Reading	6	3	9			
Writing interview	5	4	9			
Connie Mayer: Assessment Tool for Written Text	4	4	8	2		3
Laura Lee Grammatical Analysis	4	3	7			
Phonological Profile / Articulation Assessment	4	3	7	2	2	4

Table 4.8 Centres A and B assessments completed by 2 or more teachers. The number of teachers in each Centre is indicated in brackets.

It is clear from this data that both Centres did not complete the same assessments. One hundred percent completion was only achieved by Centre A Year 4 teachers completing the Oral Language Sample and by Centre B Year 4 teachers completing the formal Reading Retell.

For individual teachers from Centre A the difference between the number of assessments completed and the number informing daily practice could be as much as nine assessments. For all the teachers at Centre A, the difference between all assessments completed and all assessments informing daily practice was 74 assessments. The difference for Centre B was four assessments. Teachers at Centre B showed a remarkable level of consistency. One teacher did not complete question 7. Only two of the remaining teachers showed any variation between the number of completions and the level of use. By sharp contrast there was only one of the 17 teachers from Centre A that showed consistency across the four variables.

### **How teachers arrive at a curriculum level.**

At the time I undertook to survey the assessment landscape via the questionnaire teachers were being asked to supply information periodically to Deaf Education Aotearoa New Zealand (DEANZ). This included information about the achievement of deaf students in English and Mathematics. I asked teachers three questions about the way they responded to the requests for information from DEANZ. The results of these questions may be relevant in any situation where teachers are asked to provide curriculum levels across a subject area.

The DEANZ database student profile recording sheet question 3.5 asked, “What is the school aged student’s current achievement objective level?” (In accordance with the New Zealand Curriculum Framework) in English and Mathematics. I asked teachers what assessments they drew on to record the student’s current achievement objective level in English. Teachers mentioned thirty-seven assessment items. Some responses were so non-specific that their intended meaning could not be established e.g. “Look at IEP assessments,” and “ Those completed by the classroom teacher.” The number of assessments used to arrive at a decision ranged from 0 to 10. The mean equaled 3.24 and the median and mode both equaled three. No two teachers used an identical set of assessment tools to arrive at their decision about a curriculum level.

I also asked how the teachers combined achievement objective level information for the Oral Language, Written Language, and Visual Language strands to arrive at an overall curriculum level for English.

When the responses were grouped they ranged from non-specific statements such as:

Using my gut feeling, with difficulty, generalize to others such as  
“Shared judgment with the class teacher”  
“Guided by class teacher who has evidence based assessments”  
“Against the curriculum”  
“By lining up specific assessments, such as Stone and with first step indicators”  
“Restricting to reading and writing information”  
“Cross checking with a range of tools” and  
“Best fit and finding an average.”

These explanations indicate the varied approaches teachers took to this task. More teachers relied on the class teacher than on any other strategy, however teachers endeavored to find some form of benchmark or reference against which to make a decision.

### **The formative uses of assessments**

I asked teachers, “In what ways do you present learning intentions / learning goals / or targets that are included in the student’s IEP or derived from recent assessment with or for your student so that they know what the next learning step is?”

For Reading, eight year four teachers gave both a spoken and written learning intention whereas there were only three year eight teachers who did this. For writing year four teachers gave nine spoken and written learning intentions while only two year eight teachers used this strategy. When both a spoken and written strategy was not used, it was a spoken strategy that was used most frequently. A written learning intention was most likely to be given in mathematics.

There were 14 responses that indicated teachers’ use of learning intentions at every session in reading, and nine indications that this took place when new learning was introduced and a further five at the start of a new topic. There were eight indications that learning intentions were used at every session in writing and 14 indication for use when new learning commenced and a further seven indications that these were used when a new topic was introduced. Across subjects 12 responses indicated that learning intentions were used at every session and 11 responses

indicated a learning intention was shared when new learning occurred. At the beginning of a unit of work was indicated in one eighth of responses. One teacher added the following detail to her responses: “Each day I have a sheet of paper with ‘Today I am learning to: Say ‘ch’ at the beginning of words; spell five more essential list 4 words; read “the cross country race” and complete exercises; write three sentences about my friend’ - She is given a choice as to what order she does them and ticks them off as completed.” I will discuss this response in the next chapter. I also asked teachers how often the student self assessed whether or not they had achieved their goal or learning intention. Almost half of the students working with these teachers only sometimes self assess and a further 4 students seldom self assess. Less than one third of students self assessed often. I also asked how the students self assessed, and the range of responses is presented below.

Range of Responses	
Verbally	10
Looking at success criteria and considering his/her attainment of those learning steps	1
Written check against learning intentions	1
Continuum	1
A face continuum	2
Written questionnaire	1
Too hard-----too easy Enjoy----- dislike Tried hard-----did not try	1
Written for their portfolio	2
Editing card to check against	2
Checklist	1
Peer assessment	1
Looking at goals set at beginning of year and each term	1
Teacher asking how the student is going	2
Student doesn't self assess	1

Table 4.9 How students assessed their work. Shading indicates responses from teachers 22 and 117.

There was a wide range of practices used by teachers in supporting students to assess their success in achieving their learning. Strategies which research has found to be helpful in improving student learning outcomes (Black, Harrison, Lee, Marshall and Wiliam, 2002) were used by teachers who had in-service to support this aspect of teaching and learning.

### **Incorporating Data:**

The most frequent response to the question, *“How do you incorporate the information or data, provided by standardised assessments such as PATs, STAR, NumPA, Exemplars, asTTle etc into Teaching and Learning that supports the deaf student’s learning needs?”* (10 responses) was that the information was used to inform the IEP process. Seven responses indicated that the information would be used in programme planning and one to one programmes. Three responses identified that the assessments gave an indication of how the deaf student’s progress related to their hearing peers and could be used as guidelines for general expectations of skill development. Three responses specified use to identify the next learning steps and that the information would be incorporated into learning intentions. Three responses identified use in establishing the level that a student was working at as a starting point prior to beginning work on an aspect of learning. Two responses identified use in informing parents and teachers. One response identified guidance in selecting, which resources would be most appropriate, and one response identified that the PAT assessment was used to identify question types to teach the student. Only three responses stated that the assessments were not incorporated in any way. Most Teachers of the Deaf made some use of the standardized, Ministry of Education promoted assessments.

### **Teachers’ perspectives about assessment:**

I asked teachers if there were any issues, difficulties or comments that they would like to make or feelings they wished to express about assessments for Numeracy or Literacy.

Twenty-two teachers responded to this question. Two year 4 and 3 year 8 teachers commented on the amount of time it takes to complete assessments. Three year 4 teachers and two year 8 teachers expressed a desire for access to more professional development. The two year 8 teachers specified numeracy as a particular need. Teachers commented on a range of issues such as:

Some assessments such as the PAT listening assessment are not applicable to our Students;

In our position it is often difficult to access the professional development to keep up to date with all the current trends. If we are ever 'off road' we are neglecting students;

Low literacy achievement does not mean low maths;

There is sometimes a dependency on assessments and a push for students to achieve at the same levels as their hearing peers in the mainstream. This cannot always be achieved;

I am interested to know more about NEMP, STAR and Assessment to Learn. Assessment needs to inform learning. Must be referenced against NZ curriculum levels;

Deaf students have specific gaps in some areas, which mean they don't fit the generalised standards for most assessments. We need assessments more suited to our role. I find TACL-R, CASL and CELF, which measure language, a more useful tool than reading assessments;

We need good knowledge about the purpose of specific assessments such as asTTle.

These comments indicate dilemmas and discontinuities for teachers and these will be discussed in the following chapter.

### **A teacher who stood out as being different: Teacher 117**

Teacher 117 was the only teacher in the study who was not an itinerant Resource Teacher of the Deaf but was a teacher in a unit / resource satellite classroom and her responses to the two questions that focused on assessment tools was different to those of other teachers. This teacher had done a Formal Reading Retell and used the Written English for Deaf Students Exemplars as the only two Teacher of the Deaf assessments completed. In contrast she had completed and used 12 classroom assessments, which included: Assessment Resource Bank material in English and Mathematics, asTTle Mathematics and asTTle Reading, The National Curriculum Exemplars for Mathematics, NumPA, PAT Mathematics; PM Benchmark Running Records, PRETOS: Proof-reading Test of Spelling and the Supplementary Test of Reading (STAR).

Teacher 117 was the only respondent who had been a full participant in the Numeracy Project and one of only three teachers who were involved in Assessment to Learn professional development. She hadn't been involved in the Literacy Professional Development Project but knew about it. This teacher found asTTle to be the most beneficial assessment tool for her student and used this to establish the next steps for learning. Teacher 117 used learning intentions with her student at every session or when new learning commences for reading,

writing and mathematics. Because the student was a NZSL user she did not work on listening and speaking. Teacher 117 used both peer assessments and written assessments with her student. The assessment tools she drew on to record a level in English were asTTle, Schonell, Burt reading, the ARBs and teacher-designed tests. To combine the strands she used both the National and Deaf exemplars as benchmarks.

In mathematics teacher 117 was the only teacher who drew on ARBs, asTTle, NumPA assessment data and teacher-designed tests. She used the National Curriculum Exemplars to assign an overall level.

**Mathematics Assessment:**

Mathematics is a core learning area in a child’s development. Since research evidence from other countries suggest that mathematics / numeracy is an aspect of learning where deaf students tend to fall below the level of achievement of their peers, I wanted to know how deaf students in New Zealand were being assessed. The five numeracy assessments selected for inclusion in the survey were asTTle Mathematics: National Curriculum Exemplar Mathematics: Numeracy Project Assessment: PAT Mathematics (Revised, 2006): and the Assessment Resource Bank Mathematics. I choose these tools because they are all Ministry of Education or NZCER developed or funded assessment tools that have been mapped to the New Zealand Curriculum in mathematics and further mapping continues. Only 13 of the 29 possible responses were from a teacher who was supporting a student in Mathematics. The figures in the following table are based on how these thirteen responses were given.

Assessment	Number of responses by teachers for whom the Numeracy Assessment underpinned practice	Rank Order for Classroom Numeracy Assessments
NumPA	Just under half	1
National Curriculum Exemplars Mathematics	A quarter	2=
asTTle Mathematics	A quarter	2=
Assessment Resource Bank Mathematics	A twelfth	3=
PAT Mathematics	A twelfth	3=

Table 4.10 Rank ordering of Mathematic Assessments according to usage in daily practice by Teachers of the Deaf calculated for students receiving support in Mathematics.

It is unsurprising that NumPA is the most frequently used assessment following the push for PD in the Numeracy Project across the country. Even though this data is from teachers who are supporting deaf students in mathematics, the NumPA underpinned practice for less than 50% of Teachers of the Deaf. There were extremely low figures of completion by teachers of the deaf for all mathematics assessments. Whether this may be due to issues underpinning the Role of the Resource Teacher or whether the data reflects the level of need for individual students will be discussed further. Resource Teachers of the Deaf tend to volunteer to do any assessments that the

class teacher would like done and so this might explain the assessments being done for students who are not normally being supported in mathematics by a teacher of the deaf.

Mathematical Assessment tool	NumPA	PAT	asTTle:	Curriculum Exemplars	ARB:
No. completed by RTD for student supported in mathematics (13)	3	2	1	1	1
No. completed by class teacher for student supported in mathematics by RTD (13)	4	5	5	2	1
No. completed by RTD for student not supported in mathematics over all students (29)	1	2	1	0	0
No. completed by class teacher for student not supported in mathematics over all Students (29)	5	6	5	3	1
Total No. completed by a RTD of all deaf students in survey (29)	4	4	2	1	1
Total number of Assessments completed By class teacher of all Deaf students in survey (29)	9	11	10	5	2
Total number of mathematics assessments completed for deaf student sample	13	15	12	6	3

Table 4.11 Mathematics assessments completed by Teachers of the Deaf and Classroom Teachers with deaf students on Teacher of the Deaf Caseloads.

The figures for class teacher completion of assessments of deaf students are not particularly high. There were three students, who were supported by a Resource Teacher of the Deaf in mathematics, who were not assessed using any of the tools by either the Teacher of the Deaf or the class teacher. There were a further five students who were on a Teacher of the Deaf caseload who were not assessed by either the class teacher or the Teacher of the Deaf using any of the

assessment tools. It would therefore appear, that any standardized tool that could have reliably given benchmarked scores or descriptions of their achievements in mathematics had not been used to assess eight of the deaf students. Even when the figures are calculated on only the responses from teachers who were supporting a student in mathematics, the number of times a Teacher of the Deaf completed a mathematics assessment was low. Even when assessments were completed 26 were not used in any way as can be seen from the data recorded below.

Mathematics Assessment tool	Number of times Mathematics Assessment completed but not utilized in any way
NumPA	7
PAT: Mathematics (Revised, 2006)	11
asTTle: Mathematics	5
National Curriculum Exemplar: Mathematics	2
ARBs: Mathematics	1

Table 4.12 Mathematics Assessments completed but not appearing to be utilized further.

Only two teachers recorded that a mathematics assessment had informed the IEP process and none of the teachers recorded mathematics goals included in their student’s IEPs. Only eight teachers provided information about Mathematics tools, which they believed were beneficial for their student. The most popular was NumPA, followed by asTTle, the curriculum exemplars, and PAT Mathematics. Seventeen teachers had used the Numeracy project material to support the classroom programme and small group work. This is despite the fact that only thirteen were supporting goals in Mathematics.

The tools teachers used to provide information on Mathematics levels were given as NumPA, PAT Mathematics, class tests, asTTle, the National Curriculum Exemplars and the students IEP, basic fact skill sheets and classroom teacher information. Thirteen responses recorded asking the class teacher for information. Five responses identified NumPA and four responses identified asTTle. Other items were mentioned once each. Teacher 117 used ARBs, asTTle strands, Numeracy Strategy and Number Knowledge, and teacher-designed tests.

I asked teachers how they combined achievement objective level information for the Number, Algebra, Measurement, Geometry, and Statistics strands to arrive at an overall curriculum level for Mathematics. This question received the least responses. Once again teachers tended to rely on the class teacher. Other responses included.

I have problems with the limited amount of time we have as RTD being spent on extensive assessments, really difficult.

The levels for individual strands are decided and with the classroom teacher's guidance an overall level is arrived at. It can often be very subjective.

Students can be working at different levels for multiplication & division, addition and subtraction, fractions and decimals etc, I believe an overall level can be achieved by averaging the levels.

This student is a proficient math student and in the top group of his maths class.

Average them all or pick the lowest level or most common level of achievements

Teachers of the Deaf either checked with Classroom Teachers or made an attempt to establish a level by applying a best fit to the information available to them.

### **Literacy professional development:**

I asked teachers whether they had been involved in the Ministry of Education Literacy Professional Development Project. I asked the question because I believe that we need to keep up to date with current knowledge and procedure in this key area of our practice. I wanted to know if teachers of the deaf were involved in this professional development. The project is part of the Ministry of Education's Literacy Strategy. Work in schools with student in years 1-6 and 7-8 began in 2004 and has continued with invitations to join the 2008 and 2009 cohort current towards the end of 2007. Schools who became involved could choose to focus on either reading comprehension or writing. School-wide professional development was provided to schools that were part of the project. The Observational Survey, asTTle reading and writing and STAR were the assessment tools used to gather data during the project.

Two year four teachers said that they had been involved. These two teachers used the asTTle writing framework to assess student's writing and to develop personalised programmes. They believed that the asTTle writing framework provided a good structure for writing assessment and found using the learning pathways report a positive way of celebrating the student's strengths and for identifying gaps or areas to be worked on. One teacher stated that the student had benefited because it was a school wide approach.

One teacher also, however, felt that the use of levels was unproductive since progress might be slower for deaf students and therefore discouraging. This teacher felt that it was better to identify small learning steps. This same teacher felt that her particular student needed a great deal of help to understand the questions. An ongoing theme in deaf education discourse is that deaf students require learning goals to be broken down into smaller steps than would be expected for hearing students. I will comment on this briefly in the next chapter. The one teacher who hadn't been involved in the project but who added comments to the question relating to the Literacy Professional Development said that she had used the asTTle writing tasks but found some of the topics were too difficult and outside the experience of her student. Twenty-seven teachers in the survey had not been involved and thirteen teachers had never heard about the project. One teacher said she didn't know that both schools she went into were part of the project until the questionnaire arrived and she then asked about it. I asked teachers what other literacy assessments they used, which had not been included in the questionnaire. They mentioned Peter's Spelling, TALC-R, the South Australian Spelling Test, Spelling Under Scrutiny, The language Processing probe, Miscue analysis of oral language, Schonell, and classroom expressive language assessment.

### **Assessment to Learn:**

I wanted to know what professional development teachers of the deaf had had about assessment to support learning. I particularly wanted to know if they had been involved with the AtoL (Assess to Learn) programme. AtoL is a Ministry funded professional development school based contract that involves applying research based formative practices to teaching and learning with the support of an AtoL facilitator. Three teachers had taken part in Assess to Learn professional development. When asked how they had used the content of the AtoL professional development in relation to deaf children, these teachers responded that they had used feedback on written language, such as reminder, scaffold and example prompts, had talked about learning intentions and encouraged the students to self-assess against success criteria. One of the teachers expressed

that what had worked well had been her/his own professional development supported by purchasing the text *Unlocking Formative Assessment* (Clarke, Timperley, & Hattie, 2003) and having someone else unpack these texts for them which enabled them to dig a little deeper especially concerning children setting success criteria and self evaluation. Another teacher mentioned the process of asking students to explain what it is they are learning to do and using visuals on whiteboard and chart to scaffold learning steps had also been helpful. One teacher felt that the professional development had helped them to be able to use the information gathered [from assessment] to plan for individual and diverse needs. When asked what has not worked well, one teacher made the statement: All good stuff, while another teacher said that as a RTD there is insufficient time for this process to be effective. “It would work better if I were involved in a learning community and meeting regularly with them for discussion and support.”

Obstacles that had needed to be overcome had been:

Just time – slowly integrating concepts & practices in to my teaching;

the development of vocabulary and concepts that enable the student to reflect on his/her practice;

and time management constraints. Working in isolation as an itinerant meant being unable to link in with colleagues in the mainstream for discussion, support and feedback.

### **Numeracy Professional Development:**

Eighteen Teachers of the Deaf in the survey had attended Numeracy Project workshops as observers and a further four had attended a one-day workshop. Teacher 117 was the only teacher who had been a full participant in the Numeracy Project. Fourteen teachers said they had received support from Teacher Support Services in mathematics. I’m unable to establish from the data whether this was additional support or whether these figures related to the personnel facilitating the numeracy workshops. The teachers felt that the aspect of the programme that had worked well for them were the materials and books available as part of the programme and the ability the assessment provided of identifying the student’s strengths and weaknesses in strategy and knowledge.

Amongst the responses to what hadn’t worked well teachers mentioned time and timetabling as a factor in restricting their ability to get enough time with the student to give consistent support; NZSL counting on fingers is different to just counting with fingers for a hearing student; deaf

children with limited expressive language find it hard to explain a process in mathematics and mixed ability grouping in some classes making it difficult for the deaf student to manage the group experience. Teachers also mentioned obstacles that they had needed to overcome in using the Numeracy Project with students. These included signing and vocabulary clarification, the pace of the classroom teaching being too fast, time constraints and the pressure to work on literacy and oral language first, and budget constraints to getting numeracy equipment.

### **Other Professional Development in Literacy and Numeracy:**

I asked teachers what other literacy and numeracy professional development they had taken part in. Their responses showed that 21 teachers had attended in-service focused on writing. Of these teachers ten had attended in-service with Dr Connie Mayer on writing for deaf students and eight teachers had attended in-service on the Written English for Deaf Students Exemplars while a further three teachers had attended other writing in-service. These responses are consistent with the push within Deaf Education in New Zealand at the time to develop a writing assessment tool for use with deaf children and to train teachers in its use. Dr Connie Mayer had presented two-day workshops at both Deaf Education Centres. I suspect that attendance at these workshops has been underreported. Fifteen teachers had attended other literacy in-service: Three with deaf education Specialist Resource Teachers, five attended other literacy in-service and three teachers specified language and literacy courses. A further four teachers had attended workshops on other aspects such as spelling. Six teachers had attended numeracy in-service. When asked if teachers had received support from other specified sources, 13 had support from a Deaf Education Support Resource Teacher in Literacy; four from a Ministry Resource Teacher of Literacy (RT: Lit); six from a Teacher's Support Services advisor specializing in literacy; 11 from a Teacher's Support Services advisor specializing in numeracy and three had received no support. This data illustrates that Teachers of the Deaf focus primarily on in-service that relates to their role as teachers who support the literacy needs of deaf students in mainstream schools. It is likely that the 11 teachers who reported support from a numeracy advisor along with the six teachers who previously mentioned numeracy are part of the 18 teachers who were participants in the Numeracy Project workshops.

*Summary:*

This chapter has reported the data for this study and highlighted a number of important findings. First, is that Teachers of the Deaf use assessments commonly used in deaf education more often than classroom assessments but they do make considerable use of Running Records. Two of the notable deaf education assessments are a Formal Retell and the Written English for Deaf Students Exemplars. Second, is that there is variance between the assessments used and the level of consistency of use of assessments, between the two Deaf Education Centres. Third, is the level of difference between the ways teachers arrive at assessment decisions such as allocating a curriculum level to a learning area and fourth, is that divergence of roles in Deaf Education seem to result in the employment of different assessments as exemplified by teacher 117. There were deaf students on Resource Teacher of the Deaf caseloads who were not assessed in mathematics. There are a number of minor findings such as the low level of student self-assessment and the fact that teachers of the deaf attend in-service in literacy that are often initiated from within deaf education rather than attend in-service in national literacy education. The data presented in this chapter will now be discussed in Chapter 5.

## **Chapter 5:**

### **Discussion**

#### **Literacy Assessments used with year 4 and year 8 deaf students:**

All but two of the 38 assessments were used by this sample of Teachers of the Deaf. Despite these findings Teachers of the Deaf have a much smaller selection, which are key to their practice. These are:

Formal Reading Retell, Written English for Deaf Students Exemplars, PM Benchmark Running Records, Oral Language Sample, Auditory Skills Placement Test, Patrick Stone Conversational Development, PROBE Reading Assessment, Articulation Assessment, Connie Mayer Assessment Tool for Written Text, Laura Lee Grammatical Analysis.

The rank ordering for these assessments is maintained for the IEP process and daily practice with only minimal movements between the last five. However not all of these assessments are used nationally. The Laura Lee Grammatical Analysis and Patrick Stone Conversational Development were assessments only used by one Deaf Education Centre.

One of the interesting findings from the data was that there were a variety of teacher beliefs about the usefulness of particular literacy assessments and the frequency with which they completed the assessments. It is likely that teacher of the deaf assessments were completed more often because these are the assessments required to be completed by the Deaf Education Centres. Despite an environment that encourages the use of Teacher of the Deaf specific assessments, teachers often valued the common classroom assessments more highly when they are relating the assessment to their daily practice. Completion of, and assessment without further use, could suggest that the assessment was completed to comply with a policy requirement. The assessment might, however, have provided information that indicated the student did not have a need in the particular area assessed. Having provided information to eliminate need or confirm success with a task is as valuable a role as informing the IEP process and daily practice.

This study found that three forms of literacy assessment were significant for informing the IEP process and daily practice. These assessments are the Formal Retell, Running Record and the Analysis of writing samples against the Written English for Deaf Students exemplars. In addition, teachers placed a great deal of value and credibility on these three tools. The information from these assessment tools is incorporated into written records that then become

indicator data about student achievement. For these reasons, I will now discuss Formal Retelling, Running Records and Written English for Deaf Students in more detail. By outlining and critiquing some of the features of these tools, I aim to place my findings in a way that illustrates the complexity and sometimes contradictions of assessment practices for Teachers of the Deaf

### **Retelling:**

One of the assessment tools most frequently used by teachers of the deaf is a formal retell. Since retelling rates so highly amongst the assessments it warrants further exploration. Formal Reading Retells have been a feature of deaf education in New Zealand since the 80s. These are used to gauge a deaf student's level of comprehension following the reading of a text. A Formal Retell asks a student to retell the story they have just read. There are selections of prepared Retell Forms that match the PM Benchmark books in kit one and two. After a flick through the PM benchmark book the student is asked to read the book silently if possible and then asked to retell the story with as much detail as they can remember. This is recorded or videoed for later transcription onto the form. Students can be prompted with such things as, "Can you tell me more about that?" The student may refer to the book if they cannot remember. A running record is taken once this is completed and the comprehension questions from the PM Benchmark record form are asked. The transcript is written onto the Retell Form and then what the student has said is compared with the expected information. The descriptors of student performance and an abbreviated example of the way a marking sheet would be set up follow.

Score	Description	Student Behaviour
Less than 45	Ineffective use of reading strategies	<ul style="list-style-type: none"> <li>▪ Leaves out most of the main events in the story</li> <li>▪ Usually misses the point of the story</li> <li>▪ Tells very little about the characters</li> </ul>
45 - 60	Some effective use of reading strategies	<ul style="list-style-type: none"> <li>▪ Leaves out some important events in the plot</li> <li>▪ Sometimes misses the point of the story</li> <li>▪ Describes several of the characters</li> <li>▪ Might include some information about characters</li> </ul>
60 - 70	Moderately effective use of reading strategies	<ul style="list-style-type: none"> <li>▪ Usually includes major events of the story</li> <li>▪ Generally understands the point of the story</li> <li>▪ Describes many of the characters</li> </ul>
70 and above	Highly effective use of reading strategies	<ul style="list-style-type: none"> <li>▪ Includes most of the main events</li> <li>▪ Usually understands the point of the story</li> <li>▪ Describes important characters and how they change</li> </ul>

Table 5.1 Descriptors of performance for the Formal Retell.

Main points	Score	Transcript of student's responses
The fire engine left the station and drove to the old wooden house.	/7	The fire engine raced. They drove to the house.
The fire officer jumped out and ran to the back of the truck to get the hose.	/7 /50	Man ran to get the hose.
Details:	/6	Little boy dropped ice-cream
The little boy had dropped his ice-cream and the cat had licked it	/25	
Characters		Fireman, mum, cat
• Firemen	/7	
• Boy	/6	
• Cat	/6	
• Mum	/6	
	/25	

Table 5. 2. An abbreviated example of an invented script for a Formal Retell scoring sheet.

While retelling receives a mention in literature it is largely used as a tool in research to assess some other aspect of student learning behaviour such as to capture a language sample or to elicit writing for further analysis. One example of this is the Tell Me section of School Entry Assessment (SEA), (Ministry of Education, 1997). This tool was designed for use in establishing student Oral Language achievement at school entry. In their critique of the technical and methodological aspects of SEA, Anderson, Lindsey, Schulz, Monseur and Meirs (2004) identified that SEA did not provide reliable data at a systems level. The Tell Me section of SEA was found to present a number of aspects that reduced its reliability. They posited the possibility “that the comprehension section of Tell Me did not fit the scaling model either because of problems with the marking guide or because comprehension and re-tell skills represented different dimensions of language that did not fit the same scale” (p. 29). The formal retells based on the Ewoldt model which are used by Teachers of the Deaf in New Zealand, differ from the Tell Me retells in that the formal retells depend on the child reading the book where the Tell Me stories are read to the child and then they retell them to an audience. Another example of a retelling is found in Paris and Paris (2003) where picture books without words were used to elicit Narrative retelling. The assertion is that the ability to retell is a predictor of later reading comprehension.

Teachers of the Deaf in New Zealand have for many years focused on the student’s ability to retell a text following reading as evidence of reading comprehension. Retelling of texts is also used as a teaching tool in part to draw attention to the aspects of characters, setting, sequential events, problems and resolutions, as part of narrative story grammar, and in part to prepare students for the formal assessment of retelling. While classroom teachers are interested in knowing whether their students have an understanding of the story and can give verbal evidence of having identified some salient information from the text, they tend to identify understanding through asking the students questions rather than relying on what the student can give them primarily from recall. The fact that it is possible to elicit more information through questioning during retelling, has I think been poorly understood by many teachers of the deaf, myself included. Teachers in the United States do construct retelling rubrics but this is not a common practice in New Zealand schools. Many of these American rubrics have different scoring structures.

Retelling for use with deaf students in New Zealand was based on the work of Carolyn Ewoldt (1976) who later became involved in deaf bilingual programmes and research. Her work in 1976 was done to explore the benefits of the Tuscan Early Education Model (TEEM). This was a model implemented as a programme funded under Programme Follow Through (FT), which

began in the United States in 1967 and finished in 1995. This billion-dollar programme was hoped would help alleviate the educational effects of poverty and break the poverty cycle. Thirty-three children in the Ewoldt study were participants in the Follow Through Programme and thirty-six children were from schools that were not part of the programme. The study used a selection of seven books that were matched to the student's reading abilities and were then read and retold by the students. A miscue analysis was carried out on one story for each child.

As I read the original version of this work and compared this to the two editions of formal retells produced by one of the Centres I realised that there was an aspect of the procedure I had completely failed to notice previously. While Carolyn Ewoldt had 50 hours of training in using the procedure, I have in my entire Teacher of the Deaf career had about 2 hours of training and this may account for my misconceptions and failure to grasp that retells should have two distinct sections. One that is an unaided retelling of everything the student can remember and the other a directed retelling by asking open ended questions based on the information already given by the student. Gibson, Gold and Sigouros (2003) suggest however, that the prompted section of the retell should include questions about the parts of the story the child did not mention such as when it took place.

Ewoldt notes three limitations associated with the retelling procedure. One being that it is only possible to analyse the data that the students have been willing to contribute. Lack of motivation and effort on the part of students in testing situations can present an incomplete picture. A second limitation was believed to be the amount of time required to successfully train a researcher "to ask open ended questions and guide the retelling, so that the information the child has gained will be revealed, is not easily learned and requires more time than it was possible to provide." (p. 57). The third point she makes is I feel very important. She states that the information gained from the retellings gave evidence only of the child's interaction with a particular story [on a particular day] and should not "be equated with competency," (p. 58). This seems to me a good reason to challenge the use of retelling as a measure to be used in assessing a student's overall reading ability where it could be weighed up against other data such as asTTle and PAT Reading Comprehension.

The SEA critique recommended the use of only one text for all students. It is quite possible that with a different book a different picture might emerge. Even when students are assessed against benchmarked material teachers have a sense that some books are easier for some students to read. Background experience and world knowledge play a part in this. The marking guides are the area that I believe particularly makes reliability of the data questionable. While these may

have been thoughtfully compiled, these guides are the opinion of the designer, and while they are likely to have been discussed between colleagues involved in the literacy area they have not been through a process of rigorous trialling and moderation. How teachers interpret the division of 10 marks allocated to a response, that is a sentence containing several elements, is likely to be contentious. I have been mystified, while trying to allocate marks for a partial response, as to the designer's intended purpose in allocating the overall amount. When no clear guide is given as to the number of elements perceived to be in the sentence, it falls to each individual teacher to endeavour to interpret the intended purpose, a situation that is inherently unreliable. The lack of clear marking guidelines that identify precisely how the marks are to be allocated may be an area for further development and teacher moderation.

The importance that is placed on regular retelling after every story is challenged by the National Institute of Child Health and Human Development (2000) which reports that there has been a move away from the use of a single strategy approach to reading comprehension in view of the greater success of multiple strategy teaching. The authors found that the strategies most likely to improve comprehension were comprehension monitoring, cooperative learning, graphic and semantic organisers including story maps, story structure, question answering, question generating and summarization, with question generating having the greatest scientific evidence for effectiveness. The summarization effects were largely for writing of summaries but there was also support for recall.

Retelling has some similarity with story structure procedures, which are used in reading narrative texts. Improvement is greatest for poor readers. It does not increase improvement in competent readers according to the findings of the National Institute of Child Health and Human Development (2000). Story structure is described as the student learning to ask and answer who, what, where, when, and why questions about the plot. This may also involve mapping a time line, characters and events (p. 6). Paris (2008) suggests that retelling is developmentally appropriate at grade 3 / year 4 and should lead on to more complex summarization in the middle and upper primary. The Ministry of Education's effective practice handbook (2003) does not include retelling in the index or under the section on comprehension. Cunningham (2007) records his belief that there is an overuse of decodable text, levelled books, retelling to assess comprehension, and literal comprehension questions. He cites Taylor, Pearson, Peterson and Rodriguez (2003), who linked routine practice-orientated approaches, to teaching of comprehension processes with a lower growth in reading comprehension.

Teachers of the Deaf value retelling highly. I frequently see eyes light up at the mention of the word, but we as Teachers of the Deaf should look reflectively at this assessment practice through the lens of current knowledge and research. The limitations that were acknowledged by Ewoldt (1976) may need to be heard again in 2010. Firstly, that we only get from the student what they are willing to give us. We need to be aware of the effects of motivation on assessments. Secondly, that asking open-ended question is a skill that needs nurturing and training if we are to enable children to demonstrate what they know. Thirdly, that retelling is only evidence of what the child could do on the day and should “not be taken as competency” (Ewoldt, 1976, p. 57). While the same can be said of any assessment, I want to emphasise that it is this idea that a running record or a Formal Retell is in fact taken as having established a level of competency that needs to be challenged.

Retelling is not only used as an assessment but as a teaching tool in teacher of the deaf practice. There is some blurring of the lines between the two uses. French (1988) cited in Rose (2007) reported using retelling “as an assessment as well as an instructional intervention” (p.9). As has been noted earlier retelling has some similarity with story structure procedures, which are used in reading narrative texts. Improvement is greatest for poor readers, National Institute of Child Health and Human Development (2000). While this report, prepared for the National Reading Panel, is referring to a strategy I mention it because in New Zealand and elsewhere there is this rapid movement between the two uses. Perhaps the reason for retellings persistence within deaf education is its impact on poor readers. It is interesting to note the recommendation that retelling is most suitable at a particular age (year 4) and not something to be carried on continuously (Paris, 2008). Consideration might be given to moving deaf students on from a focus on the story structure to summarizing which is defined as condensing the main ideas, deleting irrelevant details, and succinctly retelling the key points in the text. While Teachers of the Deaf as individuals do use a range of strategies to improve comprehension, it may be that at a systems level such a strong focus on one particular assessment tool should take account of the National Institute of Child Health and Human Development (2000) finding for a move away from single strategy approaches to reading comprehension. There are other tools such as the PAT Reading Comprehension test that would give reliable data that would enable the student’s achievement to be tracked over time.

## **Running Records:**

Running records are common diagnostic assessment tools, employed within New Zealand classrooms. They were designed by Marie Clay (1993) to enable teachers to analyse a child's decoding strategies. Teachers also use them to monitor the changes in the student's reading development and we assume, that if a student has gone up a level, then they have improved in their reading ability. Teachers of the Deaf make considerable use of PM Benchmark Running Records and PROBE not only to see what it is the student can do, but also what the child finds difficult. This information is used to identify the next steps in learning and also to assign a benchmark level against which progress can be monitored over time. This has not been an uncommon practice in New Zealand but there has been a move away from a reliance on running records to also include other assessments such as asTTle Reading, STAR and PAT Reading Comprehension. The importance that running records have in the assessment tool box of Teachers of the Deaf is recognised, but it may be appropriate to examine the use of these at a systems level for recording the achievement of deaf students and to give consideration to some of the issues that using running records for summative purposes pose.

Scott Paris, Head for the Centre for Research in Pedagogy and Practice at the National Institute of Education, Singapore, and well known research writer on reading comprehension has stated the opinion that running records should never be used for summative purposes (2002) "Changes in children's performance are confounded by differences in passage or level difficulty," (p. 169). One of the criticisms raised by Paris about levelled texts is that the interval between levelled materials is not always regular. A movement from one level to the next doesn't necessarily indicate an improvement in reading skills. On the PAT scales however one unit equates to the same amount of change in knowledge and skill, no matter where the student's achievement is located on the scale, (p.14). If progress is being made the student's scale score will increase each year.

There may be an issue when using PM Benchmark material for running records and then taking that data and using it in a summative way. The material is highly controlled and predictable. Children need to be assessed against a range of material so that the reality of dealing with variable material is evident. The new national standards are using a range of materials including the Ministry of Education's Ready to Read material which is not so predictable. In addition there has been a strong call for the use of multiple sources of data when assessing students (Flockton 2008; Ministry of Education, 2007). Student's reading ability should not be evaluated based on a Running Record level alone.

Timperley, Mirams and Portway (2004) explored the use of running records in schools. They comment about the practice of taking running records in a two-week block to establish text levels and meet the needs of management teams. They felt that diagnostic data on individual needs of student were likely to be less of a focus in this type of process. Teachers of the deaf don't have 25 or 30 children to deal with so this may not be such an issue but in at least one Centre teachers are also collecting writing samples and analysing these within the same time period as they take running records. Gathering data and taking running records is not as straight forward as it might be for a classroom teacher who can have a set of reading material and recording sheets in one place. Resource Teachers of the Deaf need to source the appropriate books from either their work site or the schools they go into. They are often competing with other staff to get these materials. The logistics of just getting the job done may detract from a focus of gathering the best quality sample possible. In deaf education taking running records and formal retells go together. They are taken around the same text. Clay, (2000) makes some comments and cautions about adding comprehension questions and retelling to the taking of a running record. She emphasises that "comprehension is dependent on the difficulty level and that if the text level is instructional that tells the teacher to teach for understanding. The answers to comprehension questions depend more upon the difficulty of the question asked than on the child's reading" (p. 14). In addition the deaf child with poor expressive language is also confounded by their struggle to formulate ideas into an intelligible sentence in response to the question. For young children Clay suggests that the child needs to be supported to understand the story *before* they read it. While reporting on the use of running record data, Timperley et al, (2004) found that teachers using PM Benchmark kits and PROBE, frequently reworded the questions to make them easier, (ten out of 16 teachers). Validity issues around the lack of standardization might be dealt with through a moderation process whereby teachers come to agreement about the best wording. The authors above repeatedly emphasised that running records to establish levels with fluent readers might not measure competence or comprehension and were not a worthwhile use of time (p.28).

### **Written English for Deaf Students.**

The written English for Deaf Students Exemplars were developed as a joint project between the two Deaf Education Centres in response to the call from the National Plan (2005) for Assessments designed for deaf students in New Zealand. This assessment is now widely used and accepted by teachers of the Deaf in New Zealand. It was designed by a team from each Centre working in conjunction with Dr Connie Mayer from York University, Toronto. The resource includes exemplars correlated to the matrix for written English progress indicators

across levels 1 and 2 of the New Zealand English Curriculum. The National Curriculum Writing exemplars at level one have three sub sections whereas the exemplars for deaf students have five. Level two has been divided into three sections while the National curriculum has one. Each sublevel includes guidelines for teachers. Although the exemplars were gathered from sign language users, there is an expectation that Teachers of the Deaf will use the exemplars with all deaf students while they are within levels 1 and 2. Teachers in this study were very positive in their comments about the exemplars and as mentioned earlier there were more comments, made about this tool by the participants, than about any other.

Deaf students who are NZSL users may have only a limited experience of written English. The grammatical structures of both languages are different. Deaf students who were not diagnosed in their first year of life are likely to have language delays, vocabulary gaps and less world knowledge than other students. This deficit in language experience impacts on their reading and writing skills. Deaf students who are not working at the same level as their peers tend to have more grammatical errors in their writing, such as the misuse of tenses and pronouns or lack articles and conjunctions. Detail and elaboration are frequently missing as a result of their restricted vocabulary and limited expressive language skills. Struggling to hear all the sounds of spoken language can negatively impact on the deaf student's spelling skills, which rely heavily on phonological awareness. The increase of sublevels from four to eight across levels one and two of the Written English Curriculum (English Curriculum, (1992) provide for the wider range of variability found in deaf students writing at these earlier stages.

### **Findings about the differences between the two Deaf Education Centres:**

The differences between the two Centres were not significant when compared at the level of daily practice. However, the variability amongst teachers at Centre A and the consistency between teachers at Centre B was fascinating. It is important to remember that for Centre A, the difference between all assessments completed and all assessments informing daily practice was 74 assessments. The difference for Centre B was four assessments. Teachers at Centre B showed a remarkable level of consistency. One teacher did not complete question 7. Only two of the remaining teachers showed any variation between the number of completions and the level of use. By sharp contrast there was only one of the 17 teachers from Centre A that showed consistency across the four variables. There was a high level of consistency in one centre and markedly less in the other. While I might speculate on the reason for this, I would like to actually know why this was.

There appear to be some difference in the assessments that are gathered by teachers from the two Centres, however the traditional Teacher of the Deaf assessments still predominate in both Centres. It appears that Centre B teachers did not generally use the Laura Lee Grammatical Analysis. One teacher who was not a trained Teacher of the Deaf, from Centre B, did use the analysis. The other significant Teacher of the Deaf assessment that was not used by one Centre was the Patrick Stone Conversational Development. The differing results for a number of assessment tools might be attributed directly to their inclusion in assessment guidelines for the particular Centre or it could be that one Centre had a stronger emphasis on preparing for the IEP.

### **Findings related to how teachers arrive at a curriculum level for English:**

Another important finding is that no two teachers used an identical set of assessment tools to arrive at their decision about a curriculum level, when responding to requests to provide this information. This might suggest the possibility that such disparate data, when aggregated, might be unreliable. The dilemma is which assessments should be used to gather data nationally about deaf students. The tension will be in the choice between Teacher of the Deaf and common classroom assessments.

One teacher made a comment in this section that the decision was based on teacher knowledge and experience. What knowledge and what kinds of experience was the teacher talking about? Experiences and knowledge may be unique to each teacher. Another teacher stated that he/she was guided by the classroom teacher who had evidence based assessments. Does this statement suggest that Teacher of the Deaf assessments are not evidence based or that the teacher felt that the classroom assessments were more reliable?

A participant made the comment that she/he lined up specific assessments such as McShane and Stone with the First Steps indicators; Reliable mapping to the New Zealand Curriculum has never been verified by curriculum experts. Another commented, "I ask the teacher and they usually respond, we are working at level..." Where the class is working is not necessarily where the deaf students is functioning. A further response stated "the use of levels is unproductive as progress from one level to the next may be slower than for the hearing students and therefore discouraging. It is better to identify small learning steps." The comment about small learning steps was interesting since it would appear that this teacher was involved with asTTle writing and therefore would have been aware that this is measured in sub levels of basic, proficient and advanced. An ongoing theme in deaf education discourse is that deaf students require learning

goals to be broken down into smaller steps than would be expected for hearing students. This is evidenced in the Written English for Deaf Student's Exemplars.

### **Teacher 117:**

This teacher's responses to the questionnaire were particularly important to me because she was the only teacher who was not a Resource Teacher of the Deaf working as an itinerant teacher. Teacher 117 worked in a satellite class and made greater use of common classroom assessments than other Resource Teachers of the Deaf. Her responses are important because there is currently a shift away from students who might normally attend a deaf only facility or special school to attending unit/ satellite classes in mainstream facilities. This teacher used the Formal Retell and Written English for Deaf Students as the only two deaf education assessments. The assessments used by teacher 117 are primarily national Ministry of Education sponsored assessments. Teacher 117 was also involved in two out of the three Ministry of Education professional development programmes unlike the majority of other Teachers of the Deaf. The expectations of the host school may have been a factor in this teacher's use of assessments. A closer look at the way Teachers of the Deaf who work in a satellite class use assessment would be interesting. Could a mix of assessments including those designed to be used with the deaf such as the Written English With Deaf Students and a selection of assessment tools mapped to the *New Zealand Curriculum* provide quality assessment of achievement for deaf students?

### **Findings related to the uses of assessment for formative purposes with deaf students:**

Teachers of the Deaf do use learning intentions with their students. About a half of the responses indicated teachers present them regularly in reading and about a quarter presented them regularly in writing. Almost half of the students working with these teachers only sometimes self assess and a further 4 students seldom self assess. Less than one third of students self assessed often. Given the strong statement by the New Zealand Assessment Academy (2009) that the direction for New Zealand assessment needs to be towards student self assessment, this is an area for further discussion among teachers of the Deaf.

Clarke, Timperley and Hattie (2003) emphasize the need to separate the learning intention and success criteria from the task instructions. "Historically education has had a task orientation so that teachers who experienced this in their own educations find it difficult to distinguish the task from a learning focus," according to (Absolum, 2006, p. 67). One teacher added the following detail to her responses about formative assessment: "Each day I have a sheet of paper with 'Today I am learning to: Say 'ch' at the beginning of words; Spell five more essential list 4

words; Read “the cross country race” and complete exercises; Write three sentences about my friend’ - She is given a choice as to what order she does them and ticks them off as completed.” The skill of being able to say ‘ch’ at the beginning of words and memorizing the spelling of more words do involve learning and it is possible for learning to happen while the student reads the particular story or writes about their friend, however, I can’t tell precisely what learning is expected to happen while the students is doing these because it has not been stated. This more closely resembles a “to do” list. This teacher’s belief that she knew about learning intentions may be an example of what possibly happens to Teachers of the Deaf working in mainstream settings where they might see a class teacher putting something into practice and by osmosis pick up on an aspect of this without fully understanding the purpose and theory behind the idea as a result of not having had professional development about it themselves.

### **Teachers’ perspectives about assessment:**

Teachers in the study made a number of responses, which I felt warranted some further discussion.

There is sometimes a dependency on assessments and a push for students to achieve at the same levels as their hearing peers in the mainstream. This cannot always be achieved.

The research evidence supporting the holding of high expectations would suggest that striving for a higher goal is more successful in raising achievement than holding a negative expectation. Quality teaching as focussed on raising student achievement and that teaching that improves the achievement of advantaged students does the same for disadvantaged students (Alton-Lee, 2003, 2005). There is clear evidence that disadvantaged students can make even greater gains than advantaged peers when formative assessment strategies are used or a programme such as the Literacy Professional Development Programme is run in a school. One of the dilemmas for deaf education will be that with the advances in technology and earlier intervention a segment of the population of deaf students will more closely approximate their peers. At the same time advances in medicine, are enabling children who are born prematurely or born with significant disabilities to survive. Some of these children will have deafness as a factor in their disability. There will increasingly be two distinctly different groups of children that teachers of the deaf will be asked to work with. Children with multiple disabilities will still struggle to achieve.

Some assessments such as the PAT listening assessment are not applicable to our Students.

In the past many teachers of the deaf working in mainstream schools will have suggested that there was little point to the deaf student participating in a listening PAT. When I first read *Inside the Black Box* (Black & Wiliam, 1998) I annotated the section on page 8 that talked about the cycle of repeated failure with the comment “deaf students should not do listening PATs.” I went on to argue that a particular student of mine should not sit the listening PAT. I felt so strongly about it that I wrote two paragraphs of argument. Fortunately my arguments were ignored. The student completed the PAT and came out in the top average percentile band. Beliefs that we have long held may no longer be true for a new generation of students who have been better assisted by technology.

Deaf students have specific gaps in some areas.

The use of global statements about deaf students is I think quite common. I frequently hear Teachers of the Deaf make comments that start with “Deaf student’s can’t/ don’t/ need/ are... Historical discourses around deaf students may not hold true any longer due to the rapid rate of change within technologies which assist hearing.

I prefer formative assessment approach with daily notes that determine the next step in learning.

As well as noting the next step in learning the teacher needs to work out what adjustments to instruction need to be made and to assess whether the student is in fact able to use these adjustments to meet their learning needs. Teachers need to be aware that sometimes in the daily interactions we think the student understands but in fact they don’t. Sometimes a piece of summative assessment removed a little in time from the teaching is more able to reveal gaps in knowledge and skill. Alton Lee makes the point that:

Learning that is forgotten can mislead the teacher. There is evidence that students who have not had particular experiences of the wider world can appear to have learned something as judged by assessments immediately after instruction, but because the new information is not linked to relevant prior experience, the new understandings are quickly lost from memory. Such superficial learning is not available to the student to build further knowledge and skills, and accordingly may not be a good indicator of quality teaching. (Alton-Lee, 2003, p. 11)

### **Findings related to national professional development projects:**

The Numeracy Project was the only national professional development project that Teachers of the Deaf had been involved in across the country. While eighteen of the 29 Teachers had been observers in the Numeracy Project only one teacher had been a full participant. This is likely to be because she was a unit class teacher and not an itinerant Resource Teacher. While it may not be necessary for Itinerant Resource Teachers to be full participants, it would be an advantage for them to receive additional in-service on an ongoing basis so that their knowledge in this area does not fall behind.

Teachers of the Deaf had little involvement in both the Literacy Professional Development Project and the Assessment to Learn Project. Teachers were engaged in literacy professional development around deaf education assessment measures rather than the national initiatives. This may be appropriate and sufficient for teachers to carry out their role and to maintain a point of difference from classroom teachers. However, since their role takes them into mainstream classrooms they need to be aware of the assessments and professional learning going on in schools. Teachers of the Deaf need to be able to understand the assessments class teachers do in order to either verify or illuminate disparity between the assessments they have completed and the assessments completed by class teachers. An example from my personal practice is the information from a PAT Reading Comprehension, and STAR confirmed that a student was at a particular stanine level. This information enabled me to question another assessment that had been completed about the student. If we don't have a range of assessments to view the work of a student by, we are unable to make reliable statements about a student's achievement. Only a few Teachers of the Deaf have been involved in the Assessment to Learn project. There may be issues in the lack of assessment pedagogy understood by Teachers of the Deaf that need to be addressed. There are also long held discourses that we in deaf education need to challenge ourselves to re-evaluate.

### **Findings relating to the use of mathematics assessments with deaf students.**

A significant finding is that there were students who were on a Teacher of the Deaf caseloads who were not assessed by either the class teacher or the Teacher of the Deaf via any of the mathematics assessment tools. While efforts have been made to ensure that assessments are completed in language and literacy for deaf students, it appears that it not always the case that students are assessed in mathematics. This means that there are gaps in what we know about the achievement levels of deaf students in Mathematics and this is an area of concern because

research has shown deaf students have difficulties with mathematics as well as literacy (Hyde et al, 2001). Language plays a significant role in the mathematical comprehension for both deaf and hearing. Research results suggest that reading comprehension level was directly related to the children's problem solving abilities (Pau, 1995).

It is unsurprising that NumPA is the most frequently used mathematics assessment following the push for professional development in the Numeracy Project across the country. More than half of the participants in the study had been observers at Numeracy Workshops. Classroom teachers have been involved in continuing in-service around the Numeracy Project and it would be interesting to know whether any of the teachers in the survey has been able to attend follow up sessions. If Teachers of the Deaf have not been involved in ongoing in-service, then they may be falling behind in their knowledge and teaching expertise in the area of mathematics.

It is interesting to note a comment from a Teacher of the Deaf about NumPA being accurate, clear and comprehensive when talking about what is only after all a snapshot-screening device. Decisions about strategy stage and knowledge are made based on only a small number of test items and on one or two half hour slots in the year. I have seen within my own practice that a student tested by me one day and then retested by the class teacher a few days later because she had misplaced my assessment, showed different results.

Another lesser finding is that deaf students are not supported in mathematics as often as they are in literacy. The data indicates that nine year 4 and seven year 8 teachers were not supporting mathematics learning in the 2006 sample which would suggest that their students were making satisfactory progress in mathematics, however, many deaf students do not succeed as well as their peers in this area of learning by (Moreno & Nunes, 1998; Traxler, 2000).

### **Limitations of the research:**

One of the difficulties with gathering data using a questionnaire is that it is not possible to check back with the respondent as to their intended meaning or to gain elaboration. This meant that I couldn't be absolutely certain that I had understood the participants' intended meaning in every case. The data was collected in November 2006 and the situation now is not identical to the time when this snapshot of the assessment landscape was taken. A purposive sample of the population rather than the whole group or a random sample may be viewed as a disadvantage however it would have been difficult to deal with the large amount of data that such a change to the sampling method would have brought. It is possible that error may occur in self-reported data as a result of forgetfulness or that the data may be deliberately misrepresented by participants,

according to Davidson and Tolich (1999). Participants may feel too embarrassed to answer in a different way or try to exaggerate some aspect of their behaviour.

I would have liked to gain a clearer picture about whether there were any assessments that were completed only because they were required and not because they were considered to provide valuable information. I didn't ask a question that would have given me that information. If I had asked the following two questions I might have gained a clearer picture: "Were there any assessments that you completed **only** because they were a policy requirement?" Along with "Were there any assessments which you completed that established that the student was achieving at an age / class / curriculum appropriate level and therefore not requiring further goals in that area? I also didn't take into account the possibility that ORR's teachers might have completed some of the assessments. The responses from one teacher in particular alerted me to this.

Summary:

In this chapter the key findings from the study have been discussed. These included the findings that Teachers of the Deaf use assessments commonly used in deaf education more often than classroom assessments, but do make significant use of running records as well. There were differences between the two Deaf Education Centres use of assessment, and also disparity in the ways teachers arrive at assessment decisions such as allocating a curriculum level to a learning area. There was variance between the assessments used by a Teacher of the Deaf working in a satellite classroom, as exemplified by teacher 117 and the assessments completed by itinerant Resource Teachers of the Deaf. There were found to be deaf students on Resource Teacher of the Deaf caseloads who were not assessed in mathematics by either the class teacher or the Teacher of the Deaf and the level of support by Teacher of the Deaf in mathematics is low. There are a number of lesser findings such as the low level of student self-assessment and low levels of teacher participation in national professional development apart from some participation in the Numeracy Project in the initial stages. In the next and final chapter I conclude the discussion of this study.

## **Chapter 6:**

### **Conclusion**

This study investigated which assessments are used to gather data about deaf students to support their learning, to inform IEPs and daily practice and to provide summative data. The findings tentatively suggest that Teachers of the Deaf use assessments that are predominantly used within deaf education. The exceptions are the use of Running Records and PROBE. Other mainstream classroom assessments are completed but the numbers are low. Teacher belief about the value of assessments were consistent for core assessments such as the Formal Reading Retell, Written English for Deaf Students Exemplars, PM Benchmark Running Records and PROBE but then mainstream classroom assessments became more highly valued both as expressed by the teachers and as evidenced in the participants reports of the assessments impact on daily practice. Differences emerged between the types of assessments used by Teachers Of the Deaf who work as itinerant teachers and the one teacher who worked in a unit classroom. Differences also emerged between the two Deaf Education Centres as to the number of assessments completed, the selection of assessments used and the level of consistency across variables from informing the IEP, the basis of a learning objective and informing daily practice. Less than half of the deaf students who worked with the participants in this study were receiving support in mathematics from a Teacher of the Deaf and it seems from the findings that some deaf students may not have been assessed in Mathematics in 2006. Less than a third of students self assessed on a regular basis. A lesser finding was that Teachers of the Deaf attend a mixture of deaf orientated professional development along with other literacy and language professional development. Teachers of the deaf attended the initial Numeracy Project workshops.

At the time the data was gathered DEANZ had requested information from teachers about the curriculum levels of their students in English and Mathematics. DEANZ no longer holds a contract with the Ministry of Education to gather this data and the Ministry was considering how best to gather data about deaf students, Mark Hutton, (personal communication, October 2, 2008). Some people will feel that it is not necessary for national systems level data collection for deaf education. They may feel that it is enough for teachers to know what their students are doing and to have reported this to parents. Some may feel that it is enough that the Centre, from which the students are receiving support, know about their student but what ever the opinion may be, the dilemma that still faces us is, which assessments should be used to gather data about deaf students. As Wiliam, 2006 p. 1 recommends, “the first step is to collect the right sort of evidence.”

The *right sort of evidence* will have implications for Teachers of the Deaf and Deaf Education Centres. This in turn has implications for the professional development that Teachers of the Deaf engage in and the selection of assessments tools used by teachers in different settings. If the *right sort of assessment* data is collected, by Teachers of the Deaf working with their students, then the *right sort of assessment data* will be available to Centres and for aggregation at a national level.

The *right sort of assessment data* is that data which has enabled students to demonstrate what they know in a variety of different but reliable ways. It is data that can be used by the teacher to verify the student's achievements as well as identify the next learning step. It is data that can be elicited from the student in ways that eliminate wide variability between teacher practices. Teachers get many opportunities to observe the processes that students use in their learning. If we can triangulate this with the collection of quality data and then have conversations about this together in a moderation process we may begin to build up evidence of what best practice in assessment with deaf students looks like. We know something about what effective assessment should be already:

It benefits students by clarifying for them what they know and can do and what they still need to learn. When students see that they are making progress, their motivation is sustained. When teachers obtain and interpret information from a range of sources and then base decisions on this evidence, using their professional judgment, it is valid and fair (MOE, p.40, 2007).

### **Implications:**

The implications for the two Deaf Education Centres will be the need to work more closely together and with the Ministry of Education to establish which assessments provide reliable information about student achievement. Centres will need together to establish quality guidelines about assessment practices and to provide teachers with suitable long-term professional development. Short bursts of professional development have been shown to be less effective than ongoing in depth professional development. Centres may need to look closely at the difference in practice between RTDs and unit class teachers.

Teacher assessment practice appears to be varied. Management teams, Lead teachers and teachers will need to look closely at the variations between teachers and indicate which practices they want to verify. The implications for teachers will be that that they may need to further up skill in Teacher of the Deaf assessments, national assessment tools, and mathematics. As Teachers of the Deaf we need to have a good understanding not only of the assessments which

we carry out but also of assessments that are part of the mainstream practice so that the data obtained by Teacher of the Deaf assessment tools can be viewed and made sense of in the light of other data available about the student. Understanding the purposes and information available from other assessments such as asTTle, STAR and the PATs will enable Teachers of the Deaf to better integrate the information they gather about deaf students.

Teachers may need to put additional time into ongoing professional development. I would like to see the Deaf Education Centres support a Teacher of the Deaf on-line learning community where discussions could take place between teachers throughout the country and where access to professional development resources might be made available. This site would enable teachers to share ideas and resources.

Given the strong statement by the New Zealand Assessment Academy (2009) that the direction for New Zealand assessment needs to be towards student self assessment, this is an area for further discussion among Centres, management teams and teachers. A focus on student self-assessment will need to involve teacher professional development and changes to teacher practices. It may be that student IEPs will incorporate some of the elements of student led conferences such as the student presenting evidence of their learning and making suggestions about what they need to learn next.

Mathematics needs be included in a broader discussion of the meaning of literacy because some practitioners in deaf education have taken an interpretation that excludes mathematics. The *New Zealand Curriculum* (2007) has included mathematics in its statement of the Key Competency, Using language symbols and text. I would like to see Teachers of the Deaf involved in professional development in mathematics on an ongoing basis. While I know that many areas need professional development attention, I am concerned that deaf students may be disadvantaged by a lack of knowledge and skills by teachers of the deaf in this learning area. All deaf students who are receiving support from a Teacher of the Deaf need to have their mathematics skills assessed by a range of the assessment tools already available within schools. If deaf students are not to receive support from a Teacher of the Deaf in mathematics it needs first to be clearly established with reliable evidence that there is no need. Mathematics acts as a gatekeeper to many occupations and deaf students need to have every opportunity to access equitable learning.

I have noticed in the years since 2006 that there have been changes in the assessment practices. Teachers are more likely now to restrict themselves just to the assessments required for providing data. Efforts have been made in the last few years to provide more in-service around key assessments such as the analysis of language samples, the Formal Retell, running records and the Deaf Students' Written English Exemplars. While retells and running records are highly valued in deaf education it may be time to reassess the level of focus on these assessment practices at a systems level. This would be a valuable focus of future research. The variance in practice between Centres and the apparent variance in assessment practices between Resource Teachers of the Deaf who work as itinerants and those who work in unit classes further highlight the dilemma about whether there are tools already being used which could provide quality information at a national level. Future research might look more closely at the assessments used by Teachers of the Deaf who work in unit classes.

The requirement that all students be assessed using one of the recognized national assessments such as asTTle, PAT, STAR, ARBs and the National Standards (Ministry of Education, 2009) which are currently being introduced, are an opportunity for Centres and the Ministry to formulate a national assessment plan for deaf students. "The use of at least one nationally referenced tool directly mapped to the standards will provide a point of comparison against which teachers can consider all their findings from various sources of evidence" (Ministry of Education, p.2, 2009). I think it is important for teachers of the deaf to keep this idea in mind. While at the moment it is the schools their students are in who will be required to do this assessment, the idea of referencing work teachers of the deaf do against material that is used in mainstream schools seems important from the perspective of arriving at balanced points of view about the student's work. It would also support the importance of arriving at decisions about the child, based on a range of assessments in a particular area such as reading, rather than merely on a running record and a formal retell around the same text. Powers et al, (2000, p.153), suggest that outcome measures of deaf students "should include national examinations, literacy and numeracy, National Curriculum tests, language and communication competency and personal and social outcomes." The authors also suggest "there is a limit to what can be revealed simply by examining the 'snapshot' type of data that is available" (p.176). I believe we need to take note of this and work to gathering longitudinal data that has a greater likelihood of being reliable.

I would like to see consideration given to the inclusion of deaf students as a subgroup in national data collection tools. While they are a small group and changes to databases are expensive, it would be valuable if changes are made, or new systems established, that the ability to extract data about deaf students be included. Valuable information might have been extracted from

NCEA, NEMP and Numeracy Project data if this option had been included at the time of development.

From within the complex picture of the assessment landscape for deaf students there are a number of signposts for future direction suggested by this study. These are:

- The need for a national assessment policy for deaf students
- The need for data to be gathered nationally about the achievement of deaf students
- Sustained professional development around Teacher of the Deaf, common classroom assessments and national assessment tools.
- A closer look at the marking guidelines for Formal Retells
- The need for student self-assessment practices to be further encouraged.

This study has also suggested some possible directions for further research:

- An exploration of the impact of self-assessment by deaf students on learning outcomes.
- A study which explores the assessment practices of Teachers of the Deaf working in unit classes
- Actual teacher practice needs further investigation. Guidelines and summative data don't tell you what actually happens when the teacher and the child are in the process of working through a piece of assessment.
- Trialling of national assessments tools such as asTTle, Star and the PATs with cohorts of deaf students.

The focus of my study was to examine the range of assessment data that is currently collected within schools and services within New Zealand and which might be used in the future to track achievement. To track those changes over time it is important to have some current reliable data. The pace of change is increasing. The introduction of National Standards may be the impetus needed to encourage a move towards the use of a mixture of diagnostic Teacher of the Deaf assessments with a selection of assessments from the New Zealand standardised options currently available to us.

## Appendix A

### A description of the tools referred to in the questionnaire.

#### *Commonly used Classroom Assessments:*

##### **Assessment Resource Banks in English and Mathematics (ARBS).**

Ministry of Education (1996) Wellington: New Zealand Council for Educational Research.

The assessments are aligned to the New Zealand Curriculum from level 2 through to level 5. Some of the assessments are diagnostic and most offer formative next step information to support teachers. Students are able to complete a range of different task types such as oral responses, brief student constructed responses, longer constructed responses, the selection of a response from a range of options and practical performance based responses.

##### **Assessment tools for Teaching and Learning (asTTle) – Reading, Writing and Mathematics in both English and Maori:** Ministry of Education (2000) Auckland: Auckland University.

Student achievement can be tracked as an individual, part of a group or against the national curriculum objectives for levels 2 to 6 and provide performance norms for students in years 4 to 12. According to the manual it enables teachers and schools to customise 40-minute paper and pencil tests to the learning needs of the students. The assessments can be done at any time of the year and related to teaching programmes. The results can be interactively represented in a variety of ways. A report can be produced which highlights achievements as well as areas of learning that need support and areas that may need further investigation.

**Burt Word Reading:** Gilmore, A., Croft, C. & Reid, N. (1981). Burt Word Reading Test - New Zealand Revision. Wellington: NZCER Press.

Burt Word Reading is commonly used to assess the word recognition and pronunciation ability of individual students, who identify words from a list of 110 that are presented in sequence according to their increasing difficulty. The test continues until a student has been unable to identify 10 consecutive words. It is used with students between the ages of 6 and 12. It gives “preliminary diagnostic information about a possible source of a reading problem.” (p. 3, (1981). It also states “it would be inaccurate to refer to the derived scores as a reading age.”

**Essential Skills Assessment: Information Skills: (ESA:IS)** Croft, Dunn & Brown 2000: NZCER Press. The assessment is used to establish student achievement in finding information is a Library, Reference Source, Books, Graphs and Tables, Prose Text and Information Text. The assessment can be done at any time of the year between March and November with a group of students. The assessments cover two years at each level and can be used to monitor progress over time. It is possible to establish strengths and weaknesses and to use the test for formative assessment.

**National Curriculum Exemplars Mathematics:** Ministry of Education and Learning Media, (2003). The exemplars illustrate student work on a particular mathematics topic such as number, geometry, measurement, algebra, and statistics relevant of the curriculum levels 1 -5. Each strand has two content areas and a number of key aspects of learning.

**National Curriculum Transactional Writing:** Ministry of Education (2003)

Authentic examples of student work annotated to illustrate learning in curriculum level 1-5. The key features are that they illustrate learning and achievement, identify next learning steps and guide teacher interpretation of curriculum levels. (p. 1, (2003). The indicators which are exemplified in the Exemplars include in the deeper features: Audience and Purpose, Content Ideas, Structural Organisation, (including both structure and sentences), and Language which includes language and language features. The surface features

**National Curriculum Poetic Writing:** Ministry of Education: NZ (2003)

Authentic examples of student work annotated to illustrate learning in curriculum levels 1-5. The key features are that they illustrate learning and achievement, identify next learning steps and guide teacher interpretation of curriculum levels. (p. 1, (2003).

**National Education Monitoring Programme Assessment Tasks** included in the NEMP Assess tasks Kits, which are available through NZCER.

The kits are available as:

Aspects of technology 2004, Graphs, tables and maps 2003, Writing 2002

Health and Physical Education 2002, Information skills 2005, Music 2004,

Listening and viewing 2002, Mathematics 2005, Science 2003, Reading and Speaking 2004,

Social Studies 2005, and Visual arts 2003. Each task contains information about the curriculum strand it was used to assess, the focus of the task and the NEMP scripting and instructions for

administering the task. The resources used in the task are provided along with the marking schedule and national results. NZCER (2009)

**Numeracy Programme Assessment: (NumPA)** Ministry of Education, Revised Edition, (2006). This is also known as the Diagnostic Interview.

It is a diagnostic tool that is designed to give quality information about the knowledge and mental strategies of the students you work with. This information is aligned to The Number Framework, (p. 1, 2008). The assessment outlines the materials to be used, the scripts for the teacher to say, advise as to how to score responses, the order of administration and the forms for recording the students responses.

**National Curriculum Oral Language Exemplars: Interpersonal speaking**

Ministry of Education (2003) 10 exemplars relating to group discussions are available on video. The Matrix of progress indicators covers the following aspects under Strategies: Role, Participation and Speaking and Listening Skills. And under Content: Ideas and Language.

**Progressive Achievement Test: Mathematics:** New Zealand Council for Educational Research (Revised 2006) Wellington: NZCER PRESS. Dunn, K., Strafford and Marston (2003) found PAT mathematic use to be reported by 92 % of year 5 and 96 % of year 7 teacher respondents to their survey. The revised mathematics PAT includes the strands: number knowledge; number strategies; geometry and measurement; statistics; and algebra. Students can now take the Mathematics PAT online.

**Progressive Achievement Test: Reading Comprehension and Reading Vocabulary:** New Zealand Council for Educational Research (Revised 2008) Wellington: NZCER PRESS. The scales for both tests allow student progress to be monitored from year 4 to year 10. Each text has a minimum of 2 narrative texts, one poem and a range of transactional texts, (p. 8 Teacher Manual). The comprehension assessment utilises short passages of text and multiple-choice questions. The students at or below their scale scores demonstrate descriptions of the aspects of reading comprehension. These aspects are: using abstract information; using separated information; using multiple pieces of information; using implied information; rejecting competing information; using vocabulary and using grammatical structures. The vocabulary assessment has a target word inserted into a sentence. The student is required to find the best match to the target word from a selection of five words. Results from the assessments can

provide scale scores that can be tracked from year to year to measure movement in achievement. A stanine score is also generated.

**Progressive Achievement Test: Mathematics:** New Zealand Council for Educational Research (Revised 2006) Wellington: NZCER PRESS.

Dunn, K., Strafford and Marston (2003) found PAT mathematic use to be reported by 92 % of year 5 and 96 % of year 7 teacher respondents to their survey. The revised mathematics PAT includes the strands: number knowledge; number strategies; geometry and measurement; statistics; and algebra. Students can now take the Mathematics PAT online.

**PM Benchmark Running Records:** Randell, Beverly, Nelson Price Milburn: Thompson Learning 1999. The books are used to take running records that are analysed to establish patterns of reading behaviour by the student, such as their integration of meaning, syntactical and visual cues, and to help gage their level of understanding of the text. The books range from emergent readers through to a reading age of 12 based on the student's ability to read at 95% accuracy. The assessments can be used to establish the student's level of independence.

**PRETOS – Proof Reading Tests of Spelling:** (1981) Croft, C., Gilmore, A., Reid, and N. & JACKSON. In this assessment the child is required to identify words, which are miss-spelt, and to correct miss-spelt words. The child has also to identify entire lines, which have no errors. The test manual states that the test involved other skills as well such as reading vocabulary knowledge, comprehension and the appropriateness of the word with the context of continuous text in a paragraph. Tests are available for students from year 4 through to year 8. The test is timed and 30 minutes are allocated for its completion.

**PROBE: Prose Reading Observation, Behaviour and Evaluation of Comprehension:** Informal Reading Inventory Emphasising Comprehension: Pool, B., Parkin, C., & Parkin, C. (2002) Triune Initiatives. The material is suitable to use with students between the ages of 7 and 15 with levels from a reading age of 5 through to 15.5 The material is primarily used to assess reading comprehension, oral reading accuracy and reading behaviour, although it can also be used to assess listening skills as well. The areas covered by the comprehension questions for each text are: Literal, Recognition, Inference, Vocabulary, Evaluation, and Reaction. Over the 20 levels there are both fiction and non-fiction texts.

**Sails Literacy Charting Progress:** Eggleton, J., (2005). Pearson Publications:

The Sails Literacy Charting Progress Kit includes: Levelled unseen fiction and non-fiction texts; A variety of comprehension tasks; Checklists from which Learning Intentions can be derived Observation Sheets; Visual language tasks and guidelines on taking reading records and how to document the data. There are also some suggested schedules for information gathering. (Pearson website, 2009) The kit contains 18 books covering levels 1 – 28, 21 benchmark cards and a teacher’s resource book.

**STAR – Supplementary Test of Achievement in Reading:** Warwick B. Elley 2000, 2001, and 2003.

The STAR test helps teachers identify those needing extra help, group children by ability and needs, diagnose areas of difficulty and evaluate programmes. The test provides supplementary assessment in reading. It contains either 4 or 6 subtests. It is designed for year 3, year 4-6 and 7-9. The subtests include word recognition, sentence comprehension, paragraph comprehension, vocabulary range and in Years 7-9 only: language of advertising and reading in different genres. It can be used at any time in the school year and has 2 parallel forms, which allows for testing at the beginning and end of the year. NZCER website (2009)

### **Common Teacher of the Deaf Assessments**

These assessments were included because they were known from personal experience to be used by teachers of the deaf and were referred to in assessment guidelines for teachers of the deaf in at least one of the Deaf Education Centres.

### **Articulation Assessment:**

Phonetic and Phonological information about the students ability to produce individual speech sounds in initial, final and medial positions is elicited by presenting pictures which are named by the student. Additional information is added from listening to running speech or from an electronic recording of speech.

### **Auditory skills Placement Test:**

Romanik, S. (1990). NSW Department of School Education: Special Education & Focus Programs Division. The placement test is a screening device designed to establish a student’s ability to hear and understand sounds and speech in word, sentence and discourse strands. A developmental listening skills programme is linked to the assessment.

**Connie Mayer: Assessment Tool for Written Text: Analysis of Written text:** Connie Mayer et al. (2003 – 2004). This assessment was designed for use in the precise analysis of a deaf student’s written work once they had progressed to level 3 of the New Zealand Curriculum. The assessment begins with an over view and then examines Meaning within the writing in terms of either narrative or expository text structure. Under Form, sentence types, functions, vocabulary, spelling, punctuation and capitalization are examined in detail. The Grammar section unpacks the use of articles, conjunctions, prepositions, pronouns, verb tense agreement, word order and missing or inserted words. These categories have been included because they are often used incorrectly in the writing of deaf students.

**The First Steps “Continuums”** are now known as “Maps of Development.” These have some significant differences in the content and structure of the Phases for example in the Reading Map of Development there is a global statement; key indicators, which cover the use of texts, contextual understanding, conventions and processes and strategies; and the major teaching emphasis, which includes the environment and attitude, use of texts, contextual understanding and conventions; and processes and strategies. This provides a stronger sense of structure than making meaning at text level, strategies for making meaning, making meaning at word level and attitude. There have been name changes to two of the phases. The continuums gave detailed developmental sub skills that were attributed to a particular phase of development. Teachers of the deaf analyse student samples of work and behaviours against the expected indicators so as to be able to allocate a level of achievement and to select next learning steps from within the key indicators and sub skills.

**First Steps, Oral Language Developmental Continuum:** Evens, J. (1993) First steps, oral language developmental continuum, (2nd Ed.) Perth: Education Department of Western Australia. The framework for the continuum was the work of Leanne Allen.

**First steps Reading Developmental continuum:** Rees, D. & Shortland, B. (1994). Melbourne: Longman. (2005 Ed.) Education Department of Western Australia: STEPS Professional Development & Consulting: Rigby Heinemann. [There are different publishers for the First Steps material, depending on whether it is published in Australia or the United States.]

**First Steps Writing Developmental Continuum:** Raison, G., Rivalland, J., Alison Dewsbury (1994) Education Department of Western Australia. WA: STEPS Professional Development & Consulting: Longman

**Formal Reading Retell:** van Asch Deaf Education Centre (revised 2009).

The concept for the retelling forms that were designed by Specialist Resource Teachers at van Asch Deaf Education Centre in consultation with Carolyn Ewoldt were based on Ewoldt's scoring procedure for retelling which allocates 25 points for stating the characters in the text, 25 points for giving additional details and 50 points for recalling the main events. The forms record the ideal components of each section as identified by the designer of the form.

**HSU Syntactical Profile: An Oral Language analysis system:** Hsu, J. R: A developmental guide to English syntax (1977). This is a tool used to establish the grammatical structures present and absent in a persons spoken language.

**Laura Lee Grammatical Analysis: An Oral Language analysis system**

Lee, L. (1974) Developmental Sentence Analysis: A Grammatical Assessment Procedure for Speech and Language Clinicians. North-western University Press. This is a tool used to establish the grammatical structures present and absent in a persons spoken language.

**Language Processing Screening Test:** Richard, G. & Hanmer, M. (1995): Lingui Systems. This test is designed to assess the ability of a student to attach meaning to language and effectively formulate a response. It covers the language areas of labeling, associations, similarities and differences, multiple meanings, stating the function of an object, categorization and describing attributes. It can be used with students between the ages of 5 and 11 years. Students may be attributed a Standardized Score, a Percentile Ranks, and an Age Equivalency for each subtest and the total test.

**Ling Phonetic Level Evaluation:** Compiled by Simpson, J. (2001) based on Ling, D. 1976 Speech and the hearing impaired child: theory and practice. Washington, D.C: Alexander Graham Bell.

**(McShane) Communicative Function Categories** (1999) has been adapted from the work of McShane J. (1980). This classification schema was designed to describe the function of a child's utterance when assessing the language of very young children. The recording sheet covers such things as language to gain attention or give a greeting, to name and describe an object, to refuse or protest, to answer, question or add to a conversation.

**Oral Language Sample:** Origin unknown.

This is usually a sample of at least 50 utterances. It is expected that these will include examples of the student's spoken language used in a narrative retelling of some event, a description on a person place or thing, directions on how to get somewhere, instructions on how to do or make something and will include the use of questions. The sample is often recorded electronically for later transcription although it may include hand written records of language recorded at discrete times.

### **Patrick Stone Conversational Development**

Stone, P. (1988) *Blueprint for Developing Conversational Competence: A Planning-Instruction Model with Detailed Scenarios*. Washington, D.C.: Alexander Graham Bell Association. A student's conversational competence is evaluated against a four-stage framework.

### **Reading Interview (Questionnaire).**

A questionnaire designed by the Specialist Resource Teaching staff at VADEC to elicit information that enables a picture of the students writing habits and preferences to be built up.

### **Writing Interview (Questionnaire)**

A three and a half page questionnaire designed by the Specialist Resource Teaching staff at VADEC to elicit information that enables a picture of the students reading habits and preferences to be built up

**Written English for Deaf Students / Deaf Students' Written English Exemplars:** Miller, C., Nuthall, B., Bruce, K., from Kelston Deaf Education Centre and Hillmer, T., Yonetani, M., Peterson, J., from van Asch Deaf Education Centre, and Dr Connie Mayer, York University, Toronto, Canada (2006 revised 2007). Christchurch: van Asch Deaf Education Centre. The exemplars were designed primarily for use with students who are New Zealand Sign Language users. The resource includes exemplars correlated to the Matrix for written English progress indicators across levels 1 and 2 of the New Zealand English Curriculum. Each sublevel includes guidelines for teachers.

## Appendix B

### Numeracy and Literacy Assessment of Deaf and Hard of Hearing / Hearing Impaired Students in New Zealand.

**(1) I am an:**

Itinerant teacher of the deaf.

Teacher at a Deaf Education Centre.

Teacher in a unit / resource / satellite classroom.

**(2)**

*How long have you worked with deaf children?*

*How long have you been a trained teacher of the deaf?*

**(3) What region of New Zealand do you teach in?**

**(4) Have you attended any of the following in-service courses? Please tick.**

**(4a) Numeracy Project:**

**(4a1)** I have **not** attended any Numeracy Project in-service  **(Continue to question 4b)**

**(4a2)** I have attended as an observer (present for workshops only)

**(4a3)** I have attended as a full participant in workshops and classroom in-service

**(4a4)** How have you used the content in relation to deaf students?

**(4a5)** What has worked well?

**(4a6)** What hasn't worked well?

**(4a7)** What obstacles have you had to overcome?

**(4b) Ministry of Education's Literacy Professional Development Project.**

(Schools are involved in either STAR assessment or asTTle writing)

**(4b1)** Have you been involved in the Literacy Professional Development Project?

Yes  No

**(4b2)** Are you aware of the Literacy Professional Development Project? Yes  No

**(4b3)** How have you used the content in relation to deaf children?

**(4b5)** What has worked well?

**(4b6)** What hasn't worked well?

**(4b7)** What obstacles have you had to overcome?

**(4c) ATOL – Assessment to Learn**

**(4c1)** Have you been involved with Assessment to Learn Yes  No

**(4c2)** Are you aware of the Assessment to Learn Project? Yes  No

**(4c3)** How have you used the content in relation to deaf children?

**(4c4)** What has worked well?

**(4c5)** What hasn't worked well?

**(4c6)** What obstacles have you had to overcome?

**(5) What other Numeracy or Literacy in-service have you attended over the past three years?**

2004 – 2006

**(6)** How do you incorporate the information or data, provided by standardised assessments such as PATs, STAR, NumPA, Exemplars, asTTle etc into Teaching and Learning that supports the deaf student's learning needs?

**(7)** Which of the following assessments have you completed in relation to the deaf student in 2006?

	Please tick if Assessment completed	Was this assessment used to inform the IEP process?	Was a Specific Learning Outcome included in the IEP based on this assessment?	Did this assessment create a significant focus for your daily practice?
Auditory Skills Placement Test				
Connie Mayer: Assessment Tool for Written Text				
First steps continuum for oral language				
First steps continuum for writing				
First steps continuum for reading				
Formal Reading Retell				
HSU syntactical Profile				
Laura Lee Grammatical Analysis				
Language Processing Screening Test				
McShane Communicative Functions				
Oral language Sample				
Patrick Stone Conversational Development				
Reading interview				
Ling Phonetic Level Evaluation				
Phonological Profile / Articulation Assessment				
Writing interview				
Written English for Deaf Students Exemplars				

**(8) Please tick each assessment that has been completed to assess the deaf student in 2006**

If you work as an Itinerant teacher please note any of the assessments that the mainstream class teacher has completed.

CT = Class teacher TOD= Teacher of the deaf	Assessment completed by TOD	Assessment completed by CT	Was this assessment used to inform the IEP process?	Was a Specific Learning Outcome included in the IEP based on this assessment?	Did this assessment create a significant focus for your daily practice?
Assessment Resource Bank material: English					
Assessment Resource Bank material: Mathematics					
asTTle: Mathematics					
asTTle: Reading					
asTTle: Writing					
Burt Word Reading Test					
Essential Skills Assessment: Information Skills					
National Curriculum Exemplar: Mathematics					
National Curriculum Exemplar: Transactional writing: Argument and Explanation					
National Curriculum Exemplar: Poetic writing Character and Personal Experience					
National Education Monitoring Programme "assess" tasks					
NumPA					
Oral language exemplars Interpersonal speaking:					
PAT: Mathematics					
PAT: Reading Comprehension					
PAT: Reading Vocabulary					
PM Benchmark Running Record					
PRETOS: Proof-reading Test of Spelling					
PROBE Reading Assessment					
Sails Literacy Charting Progress Running Record					
Supplementary Test of Reading (STAR)					

**(9)** Which of the previous assessments do you find the most beneficial for your deaf student?  
*Choose three and explain why you think these are the most useful.*

*For Literacy*

- 1.
- 2.
- 3.

*For Numeracy / Mathematics*

- 1.
- 2.
- 3.

**(10)** *Are there any other assessments which are not included in questions (7) or (8) that you have completed this year?*

**(11)** In what ways do you present learning intentions / learning goals / or targets that are included in the student's IEP or derived from recent assessment with or for your student so that they know what the next learning step is, in? *Please tick the appropriate column.*

	Written	Signed / spoken	Not presented
Reading			
Writing			
Listening			
Speaking			
Mathematics			

**(12a)** How often do you specify a learning intention / Goal / target with your students?  
*Please tick as many boxes as you need to give a clear description.*

	At every session	When new learning commences	At the beginning of a unit of work	About once a month	Never
Reading					
Writing					
Listening					
Speaking					
Mathematics					

**(12b)** How often does the student assess whether or not they have achieved the goal?  
*Please tick.*

Always       Often       Sometimes       Seldom       Never

**(12c)** How does the student self-assess?

**(13)** The DEANZ database student profile recording sheet question 3.5 asks, “What is the school aged student’s current achievement objective level?”(In accordance with the New Zealand Curriculum Framework) in English and Mathematics.

**(13a)** *When you record the student’s current achievement objective level in English which assessments do you draw on?*

**(13b)** *How do you combine achievement objective level information for the Oral Language, Written Language and Visual Language strands to arrive at an overall curriculum level for English?*

**(14)** The DEANZ database student profile recording sheet question 3.5 asks, “What is the school aged student’s current achievement objective level?”(In accordance with the New Zealand Curriculum Framework) in English and Mathematics

**(14a)** *When you record the student’s current achievement objective level in Mathematics, which assessments do you draw on?*

**(14b)** *How do you combine achievement objective level information for the Number, Algebra, Measurement, Geometry, and Statistics strands to arrive at an overall curriculum level for Mathematics?*

**(15)** Are there any issues, difficulties or comments that you would like to make or feelings you wish to express about assessments for Numeracy or Literacy?

**(16)** Have you received support with Literacy and Numeracy assessment from any of the following?

*Please tick*

- (a) Deaf Education Centre Specialist Resource Teacher of Literacy
- (b) Resource Teacher Literacy (RT: Lit)
- (c) Teacher Support Services (based at Colleges of Education) – Literacy
- (d) Teacher Support Services – Numeracy and Mathematics

**(17)** *(The following information will provide contextual information only and will not identify any Student.)*

*The student I have selected to base my responses around is:*

**(17a)** Aged:    Years       Months       Year level ....

**(17b)** What is the student's level of hearing loss?

41-70 dB HL - Moderate Hearing Loss   

71-90 dB HL - Severe Hearing Loss      

91+ dB HL - Profound Hearing Loss     

Has a cochlear implant                     

**(17c)** Ethnicity ...

**(17d)** *Please tick as many boxes as necessary to convey an accurate picture of the student's language use.*

Spoken English        NZSL        Uses both speaking and signing        ESOL

Te Reo Maori        A Pasifika Language

**(17e)** *If the student you have selected is on an Itinerant Caseload, which type of setting, is the student in when you visit? Please tick as many boxes as you need to convey an accurate picture.*

Primary school        Kura Kaupapa Maori        Area School

Intermediate        Private School

**I know how busy you are so I really appreciate the fact that you have taken time to complete this questionnaire.**

**Thank you**

**Margaret Anderson**

## Appendix C

October 13, 2006

### **Numeracy and Literacy Assessment of Deaf and Hard of Hearing / Hearing-impaired Students in New Zealand: Information for Participants**

#### **Teacher of the Deaf Questionnaire**

Dear

My name is Margaret Anderson. I work as an itinerant teacher of the deaf and am beginning work on a dissertation towards my Master of Teaching and Learning (MTchLn) degree at Christchurch College of Education.

As part of my research I wish to gather data about the kinds of Numeracy and Literacy assessment tools that are used with deaf and hard of hearing / hearing-impaired students in New Zealand. I am also interested to establish how teachers of the deaf make decisions about the use of assessment data to describe student performance.

In order to gather this information I have devised a questionnaire for participants to fill out. The first draft of this questionnaire has been trialed by a number of teachers of the deaf and they found that it took about 30 minutes to complete.

I'm presenting the questionnaire to teachers of the deaf who work with year 4 or year 8 students. I have selected years 4 and 8 because these are the years identified by the Ministry of Education for National sampling through NEMP and are also the years selected by the Education Review Office to review the quality of teaching in relation to various curriculum areas.

The data collected from the questionnaire will be stored securely, remain strictly confidential and not be read by anyone other than myself. No findings that could identify individual students, you or your school will be published.

Your participation in the study is voluntary. Filling in and returning this questionnaire will be viewed as consenting to participate in this project.

If you work with more than one year 4 student please select just one student to focus your responses around. Similarly if you work with more than one year 8 student just select one year 8 student to focus your responses around.

If you work with both year 4 and year 8 students, please complete a questionnaire for a year 4 student and a year 8 student but complete the data for questions 1, 2, 3, 4 and 5 only once.

The Christchurch College of Education Ethics Committee has reviewed and approved this study.

#### *Complaints Procedure:*

The College requires that all participants be informed that if they have any complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair  
Ethical Clearance Committee  
Christchurch College of Education  
PO Box 31-065  
Christchurch  
Phone: (03) 348 2059

Please contact me if you have any other queries or concerns about the project or would like to be informed of the aggregate research finding. I can be reached on 03 942 0446 or by email: [teachez@gmail.com](mailto:teachez@gmail.com)

The date for the return of questionnaires is

Thank you.

Margaret Anderson

### **Principal Declaration of Consent**

I consent to the teachers of the deaf who work with years 4 and 8 deaf students participating in the project, *Numeracy and Literacy Assessment of Deaf and Hard of Hearing / Hearing-impaired Students in New Zealand*.

I have understood the information provided to me about the research project and what will be required of the teachers who participate in the project.

I understand that the information they provide to the researcher will be treated as confidential and that no findings that could identify them or the schools they work in will be published. I understand that only partial anonymity can be guaranteed to van Asch Deaf Education Centre.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_  
October 13, 2006

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Principal

(Address information removed)

Dear .... and the Board of Trustees

I am currently undertaking a dissertation in order to complete the requirements of a Master of Teaching and Learning, (MTchLn), at Christchurch College of Education. I will be working under the supervision of Dr. Jane McChesney, Senior Lecturer and co-coordinator of Professional Studies, School of Secondary Education, and Faye Parkhill, Head of Literacy Centre, Christchurch College of Education.

As part of my research I wish to gather data about the kinds of Numeracy and Literacy assessment tools that are used with deaf and hard of hearing / hearing-impaired students in New Zealand. I am also interested to establish how teachers of the deaf make decisions about the use of assessment data to describe student performance.

In order to gather this information I have devised a questionnaire for participants to fill out. The first draft of this questionnaire has been trialed by a number of teachers of the deaf and they found that it took about 30 minutes to complete.

I'm presenting the questionnaire to teachers of the deaf who work with year 4 or year 8 students. I have selected years 4 and 8 because these are the years identified by the Ministry of Education for National sampling through NEMP and are also the years selected by the Education Review Office to review the quality of teaching in relation to various curriculum areas.

Copies of the participant information sheet, consent form and survey are enclosed for your information.

I would like your permission to approach those teachers of the deaf who work with years 4 and 8 students. I would also need a list of the names of the teachers, their access details and a note of whether the student the teacher works with is year 4, year 8 or whether the teacher works with students in both year groups.

No findings that could identify any individual participant or student will be published. However, only partial anonymity can be guaranteed to the Deaf Education Centre since there are only two within New Zealand. Statements that comment on data relating to teachers who work in a Centre will clearly refer to either of the Centres or both.

Participation in the research will be voluntary. Filling in and returning the questionnaire will be viewed as consenting to participate in this project.

If you agree to give your permission for me to proceed then I would hope to send the questionnaires out to teachers as soon as possible.

The Christchurch College of Education Ethics Committee has reviewed and approved this study.

*Complaints Procedure:*

The College requires that all participants be informed that if they have any complaint concerning the manner in which a research project is conducted, it may be given to the researcher, or if an independent person is preferred, to:

The Chair  
Ethical Clearance Committee  
Christchurch College of Education  
PO Box 31-065  
Christchurch  
Phone: (03) 348 2059

Please contact me if you have any other queries or concerns about the project or would like to be informed of the aggregate research finding. I can be reached on 03 942 0446 or by email: [teachez@gmail.com](mailto:teachez@gmail.com)

Kind regards

Margaret Anderson

## Appendix D

Literacy Assessments likely to be used by teachers of the deaf	Assessments likely to be used by classroom teachers
Auditory Skills Placement Test	Assessment Resource Bank material: English
Connie Mayer: Assessment Tool for Written Text	asTTle: Reading
First steps continuum for oral language	asTTle :Writing
First steps continuum for writing	Burt Word Reading Test
First steps continuum for reading	Supplementary Test of Reading (STAR)
Written English for Deaf Students Exemplars	Essential Skills Assessment: Information Skills
Formal Reading Retell	PAT: Reading Vocabulary
HSU syntactical Profile	PAT: Reading Comprehension
Laura Lee Grammatical Analysis	National Curriculum Exemplar: Transactional writing Argument and Explanation
Language Processing Screening Test	National Curriculum Exemplar: Poetic writing Character and Personal Experience
McShane Communicative Functions	National Education Monitoring Programme “assess” tasks
Oral language Sample	PM Benchmark Running Record
Patrick Stone Conversational Development	Oral language exemplars Interpersonal speaking: Group discussion
Reading interview	PRETOS: Proof-reading Test of Spelling
Ling Phonetic Level Evaluation	PROBE Reading Assessment
Phonological Profile / Articulation Assessment	Sails Literacy Charting Progress Running Record
Writing interview	
Written English for Deaf Students Exemplars	

## Appendix E

Rank ordering of assessments according to usage in daily practice.				
Rank Order For common teachers the deaf assessments	Rank Order	Assessment	Number of teachers for whom the assessment underpinned practice.	Rank Order for classroom assessments
1	1	Formal Reading Retell	<b>20</b>	
1=	1=	Written English for Deaf Students Exemplars	<b>20</b>	
	2	PM Benchmark Running Record	<b>17</b>	1
2	3	Oral Language Sample	16	
3	4	Auditory Skills Placement Test	15	
	5	NumPA (Table two)	13	2
	6	PROBE Reading Assessment	<b>12</b>	3
4	7	Patrick Stone: Conversational Development	10	
5	8	Articulation assessment	9	
6	9	Connie Mayer assessment tool for written text	7	
7	10	Laura Lee grammatical analysis	6	
	10=	AsTTle: Reading	<b>6</b>	4
	11	NumPA (Table 1)	<b>5</b>	
	12	STAR Supplementary Test of Reading	4	5
	12=	First Steps Continuum: Oral Language	4	6 =
	12=	First steps Continuum: Writing	4	6 =
	12=	AsTTle: Writing	<b>4</b>	6 =
	12=	PAT: reading Comprehension	<b>4</b>	6 =
	12=	PAT: Reading Vocabulary	<b>4</b>	6 =
8	12=	Ling Phonetic Level Evaluation	4	6=
9 =	13=	Language Processing Screening Test	3	
9=	13=	McShane Communicative Functions	3	
9=	13=	National Curriculum Exemplars: Mathematics	<b>3</b>	<b>7</b>
9=	13=	AsTTle: Mathematics	<b>3</b>	7=
9=	13=	National Curriculum: Transactional	<b>3</b>	7=
	14=	Burt Word Reading	<b>2</b>	<b>8</b>
10 =	14=	Writing Interview	2	8 =
10=	14=	Reading Interview	<b>2</b>	8 =
	14	National Curriculum Oral Language Exemplars: Interpersonal speaking	<b>2</b>	8 =
	14=	National Curriculum: Poetic Writing	<b>2</b>	8=
	14=	Assessment Resource Bank: English	<b>2</b>	<b>8=</b>
	15	Assessment Resource Bank: Mathematics	<b>1</b>	9=
	15=	PAT: Mathematics	<b>1</b>	9=
11	15=	First Steps Continuum: Reading	1	9=
12	15=	HSU syntactical profile	1	9=
	16=	PRETOS	0	10=
	16=	Sails Literacy Charting Progress	0	10=
	16=	Essential Skills	0	10=
	16=	NEMP assess tasks	0	10=

## Appendix F

<b>Differences in rank ordering of Assessments according to their usage in the IEP process and Daily Practice</b>	
<b>IEP Process</b>	<b>Daily Practice</b>
Formal Reading Retell	Formal Reading Retell
Written English for Deaf Students Exemplars	Written English for Deaf Students Exemplars
PM Benchmark Running Record	PM Benchmark Running Record
Oral Language Sample	Oral Language Sample
Auditory Skills Placement Test	Auditory Skills Placement Test
Patrick Stone: Conversational Development	PROBE Reading Assessment
Articulation assessment	Patrick Stone: Conversational Development
PROBE Reading Assessment	Articulation assessment
First Steps Continuum: Oral Language	Connie Mayer assessment tool for written text
Connie Mayer assessment tool for written text	Laura Lee grammatical analysis
Laura Lee grammatical analysis	asTTle Reading
First steps Continuum: Writing	STAR Supplementary Test of Reading
McShane Communicative Functions	First Steps Continuum: Oral Language
Burt Word Reading	First steps Continuum: Writing
First Steps Continuum Reading	asTTle Writing
Writing Interview	PAT reading Comprehension
STAR Supplementary Test of Reading	PAT Reading Vocabulary
Ling Phonetic Level Evaluation	Ling Phonetic Level Evaluation
AsTTle Writing	Language Processing Screening Test
Reading Interview	McShane Communicative Functions
Language Processing Screening Test	Burt Word Reading
PAT reading Comprehension	Writing Interview
PAT Reading Vocabulary	Reading Interview
National Curriculum Transactional Writing	National Curriculum Transactional Writing
AsTTle Reading	National Curriculum Oral Language Exemplars: Interpersonal speaking
National Curriculum Poetic Writing	National Curriculum Poetic Writing
HSU syntactical profile	Assessment Resource Bank English
National Curriculum Oral Language Exemplars: Interpersonal speaking	First Steps Continuum Reading
Assessment Resource Bank English	HSU syntactical profile
PRETOS	PRETOS
Essential Skills	Sails Literacy Charting Progress
NEMP assess tasks	Essential Skills
Sails Literacy Charting Progress	NEMP assess tasks

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