

**A Language and Literacy Framework
for
Bilingual Deaf Education**

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The publication of this document is supported by a grant from the Social Sciences
and Humanities Research Council of Canada

Acknowledgements

This document reflects the contribution and work of many people. Firstly, I want to acknowledge the students, parents, and staff of the Manitoba School for the Deaf. It has been through my interaction with students in classrooms and homes that I have learned the most about language and literacy development. Thank you to parents and guardians for allowing me this time with your children. Thank you to teachers, particularly Patricia MacDonald, Ricki Hall, and Becky Isaac, for welcoming me into your classrooms, and to administrators, Carol Airhart, Brenda McDaniel, and Kathy Melnyk, for your ongoing support of my various projects. Language specialists, Bev Geddes and Christine Spink-Mitchell, provided helpful and informal advice and consultation.

I also want to thank my research assistants for helping me to stay focused on the tasks at hand, providing much needed technical skills in terms of managing the video data, and reading through endless articles and children's literature. Thank you Kyra Zimmer, Judith Yoel, Natasha Tuck, and Sarah Kelly.

I must acknowledge my colleagues at the Center for ASL/English Bilingual Education and Research (CAEBER), and in particular Dr. Steve Nover, who invited me to participate in the 2005 CAEBER Conference, an event that

really clarified for me the concept of language planning and its importance in bilingual education for deaf students. In the same way, I want to thank Dr. Marlon Kuntze for his work and insights into cognitive-academic language skills and the influence these skills have on literacy development.

Finally, none of this research would have been possible without the grant I received from the Social Sciences and Humanities Research Council of Canada.

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Introduction

Literacy is essential for success and an enhanced quality of life in our society. It is estimated that 2 – 3 % of Canadians are Deaf¹ and the majority of them have inadequate literacy skills (Schein, 1996). This prevents most Deaf people from attaining post-secondary education (Carver, 1991), limits their opportunities for employment (Carbin, 1996) and results in a loss of human potential. What disables Deaf people is not that they cannot hear, but that they cannot read and write. This framework suggests that one way of addressing the literacy crisis in the Deaf community is to refine and adapt language arts curricula for Deaf students incorporating visual language processing, meaning-based strategies, and bilingual teaching principles.

The question of how best to promote literacy in deaf children has long frustrated teachers. From the beginnings of English literacy instruction, which primarily emphasized the use of amplification (hearing aids) to develop speaking and listening skills, to the development of simultaneous communication (speaking and signing at the same time) in the 1970's, the overall reading level of deaf high school graduates did not increase beyond the level of grade four (Fruchter,

¹ Throughout this document the lowercase *deaf* refers to the audiological condition of not hearing, and the uppercase *Deaf* refers to deaf children and adults who share a natural signed language (such as, ASL) and a culture.

Wilbur, & Fraser, 1984; Holt, 1993; Moores, 1987; Quigley, Montanelli, & Wilbur, 1976). However, one group of Deaf children, those with Deaf parents, scored consistently higher on tests of English reading skills than their deaf peers with hearing parents (Allen, 1986; Trybus & Jensema, 1978). These children had the advantage of learning their first language through consistent and accessible exposure to proficient language models. Even though that language, American Sign Language (ASL), was different from English, it facilitated their ability to learn written English as a second language (Hoffmeister & Wilbur, 1980). These observations suggested to educators that Deaf education should be considered a form of bilingual education. In this system children learn a natural signed language as their first language and a spoken/written language, such as English, is introduced as a second language (Strong, 1988).

The promise of a bilingual approach to educating Deaf students has not been fully realized. This is partially due to the fact that it requires a shift from viewing Deaf people as disabled to viewing them as belonging to a distinct linguistic and cultural group (Lane, 1992), and partly because bilingual education with Deaf students differs from spoken language bilingual programs in several ways (Evans & Seifert, 2000). These differences include the language modalities (signed and written), only one language (the spoken language) having a written form, and Deaf students arriving at school with varying levels of development in

their first language. These differences indicate that the principles of spoken language bilingual teaching cannot be directly applied to educating Deaf students. Adaptations to the unique features of visual language processing are needed, as well as an understanding of the support first language skills provide in developing second language competence. There is now growing evidence from case studies (Evans, 1998; Schleper, 1992; Wilcox, 1994) and the ongoing work in Sweden and Denmark (Mahshie, 1995; Svartholm, 2000), to indicate that appropriately adapting the principles of bilingual teaching is the key to successfully developing age-appropriate literacy skills in Deaf students.

The purpose of this framework is to continue to reduce the gap that remains between the theoretical aspects of a bilingual approach to teaching Deaf students and the practical aspects of its implementation. The key factors in addressing these concerns are the importance of language planning within a bilingual program, and an understanding of the role that cognitive-academic language skills play in literacy acquisition. By addressing these issues, we as educators, can begin to unlock the literacy potential of all Deaf students.

Chapter 1: Theoretical Foundations

In this framework, a bilingual approach has been applied to educating Deaf students. Applying a bilingual model to the education of Deaf students involves viewing Deaf people from a cultural perspective. This includes recognizing the signed and spoken languages as different and distinct and valuing both of them equally, developing pride and identity in being Deaf, exposing students to Deaf role models and peers, and addressing issues and conflicts with cultural sensitivity and awareness (Evans, Zimmer, & Murray, 1994). It also implies that Deaf students are learning a signed language as their first language, and learning a spoken language as a second language, usually in written form. Overall, there is agreement that early exposure to a natural signed language, such as American Sign Language (ASL), allows Deaf children to establish an effective way to communicate and interact with the world around them (Paul & Quigley, 1987). Disagreements arise in how this should be applied to guide Deaf children into reading and writing English. Hearing people tend to rely on the correspondence between the linguistic structures of the written pieces and the retrievable speech patterns when learning to read and write; however, additional cognitive steps are needed for the Deaf learner (Livingston, 1997; Paul, 1998).

Strategies unique to educating Deaf students that take into consideration visual language processing, a definition of literacy beyond reading and writing, and the importance of developing cognitive-academic language skills, must be incorporated into an effective bilingual Deaf education program.

An understanding of bilingual education with Deaf students builds upon the general study of bilingualism. This chapter, therefore, begins with a discussion of spoken language bilingualism, followed by an application of this information to bilingual programs for Deaf children, and concludes with an overview of the importance of cognitive-academic language skills for literacy acquisition.

Bilingualism

For most of the history of the study of language development, bilingualism was considered a disadvantage to children cognitively, intellectually, and educationally (Reynolds, 1991). This attitude began to change, however, as a result of a landmark study by Peal and Lambert (1962). Using standardized assessment of French-English bilingual children in Quebec, these researchers suggested that bilingual children, in comparison with monolingual children, demonstrated increased mental flexibility, superiority in concept formation, and a more diversified set of mental abilities. These conclusions were supported by Vygotsky's sociocultural learning theory, which emphasized the significance of

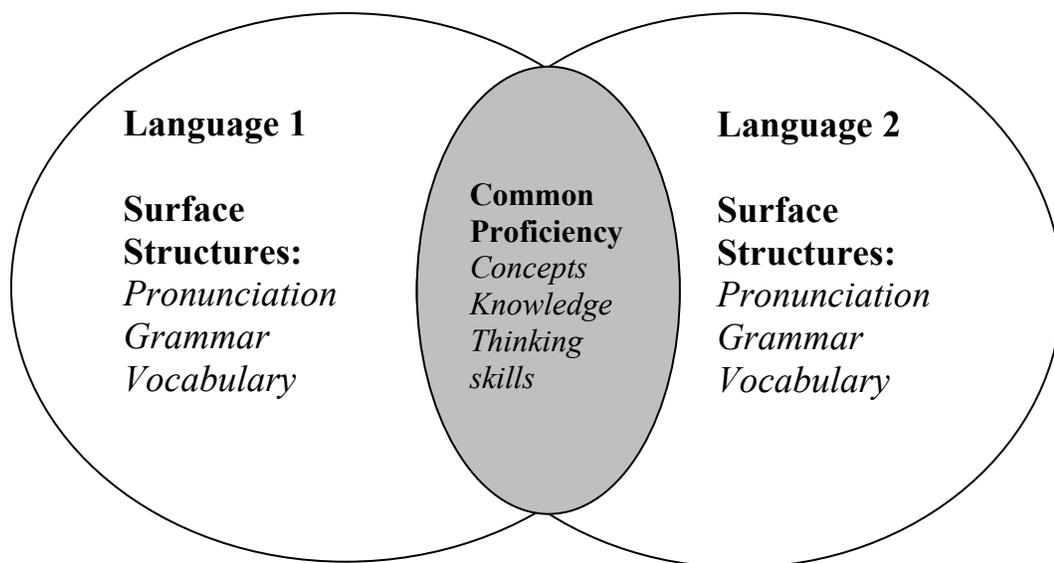
language as the primary mediator in learning about the world (Vygotsky, 1978). Vygotsky suggested that through bilingualism the child could view phenomena under more general categories, could see each language as a particular system among many, and ultimately gain an awareness of linguistic operations.

Since the work of Peal and Lambert, other research studies have tended to emphasize the benefits of bilingualism and bilingual education programs (Reynolds, 1991). Research on bilingualism expanded from describing the cognitive benefits to describing the psycholinguistic effects, such as the relationship between the two languages and their mental representations. In general, the psycholinguistic research suggested that bilingual people display both independent and interdependent functioning between languages. The research also suggested that their underlying cognitive systems are structurally separate and yet interconnected (Paivio, 1991).

The relationship between first and second languages is diagrammed in Figure 1. This representation is based on Cummins' model of linguistic interdependence (1984) and indicates that the two separate language systems are linked to a common conceptual core or underlying proficiency. This is a significant factor in bilingual educational programs because it implies that experience with either language can promote the proficiency underlying *both*

languages. It is also important to notice the nature of the common proficiency and that it does not exist at the surface levels of the languages, but at the deeper conceptual levels. This suggests that the grammar, vocabulary, and pronunciation of each language must be learned separately, but that transfer can occur at the level of concepts, subject-matter knowledge, and higher-order thinking skills.

Figure 1: The Relationship Between First and Second Languages



Bilingualism and Deaf Children

Research on bilingual education programs for hearing children in North America has been carried out for several decades. Although there continues to be discussion regarding the timing of language acquisition and exposure and its

impact on academic achievement, there is general agreement that fully bilingual students enjoy cognitive advantages over monolinguals (Collier, 1989). The idea of deaf education as a form of bilingual education is relatively recent (Strong, 1988). The movement to teach English to Deaf students as a second language came out of the research documenting natural signed languages of the Deaf as languages (Baker & Battison, 1980; Johnson, Liddell, & Erting, 1989). As this research became widely known, Deaf people in Canada and the United States identified themselves as a linguistic minority rather than a disabled group. The identity of Deaf people as minority language users also linked the field of deaf education with English as a Second Language (ESL) research and teaching strategies. For Deaf students, like many immigrant children, knowledge of English is not only an advantage as an additional language but also a necessity as the majority language (Edelsky, 1989). Gradually the shift to cultural affiliation has influenced deaf education by shifting some aspects of the field from special education to bilingual education and the incorporation of an ESL approach.

Bilingual Deaf Education (BDE) differs from other bilingual programs in three significant ways. The first difference is in language modality (signed, spoken, and written), the second is that one language, usually the students' first language, does not have a written form (signed languages do not have

conventional writing systems), and the third key difference is the inconsistent language exposure and background that deaf children experience prior to school entry.

Language Modalities:

Proponents of BDE advocate that students' first language be a natural signed language, such as ASL (Johnson, et al, 1989; Mahshie, 1995). Such a language, they argue, functions and is represented mentally in ways analogous to spoken languages.

Linguistic analysis of ASL shows that it is a complex, structured language with distinct grammar, and that it exhibits the fundamental properties that linguists have posited for all languages (Klima and Bellugi, 1979). The properties are manifested in distinctive structural characteristics of *simultaneity* and the *use of space*. Simultaneity means that grammatical features involving movement and facial expression, can be produced at the same time as the root sign and thereby add to, or alter, its meaning. These modifications to sign production do not simply provide paralinguistic information, but are morphological markers in ASL. Thus several morphemes are expressed at once. Points in space are used to refer to people, things, and places that are not present. The linguistic structures of ASL are adapted to maximize visual processing, visual memory and manual dexterity. ASL uses simultaneity and space to convey similar concepts that depend on a

sequential transmission of sounds in spoken language. In the visual mode, stimuli that occur simultaneously can be perceived in a meaningful way, whereas in the auditory mode, stimuli must be perceived sequentially in order to be meaningful, because when two sounds occur together often only the louder one is perceived. ASL is uniquely adapted to capitalize on the processing differences between Deaf and hearing individuals by using space and motion where spoken language uses time for the same purpose.

Studies examining the linguistic features of ASL show that it functions in the same way as spoken languages. It allows people to request, command, argue and persuade as well as to express feelings, tell jokes, and create poetry. More abstractly, it functions not only as a linguistic system, but as a purveyor of culture, a representation of the real, a means for exerting or resisting power and control, a homeland, and a marker of identity (Kouritzin, 1999). Further evidence that ASL is a bona fide language exists in the study of its acquisition by children, both Deaf and hearing, with Deaf parents. In these children, language acquisition parallels that of children learning spoken languages. Children of Deaf parents, for example, also experience periods of over- and under-generalization of ASL rules, just like children learning English (Meier, 1991; Newport & Meier, 1985; Pettito & Marentette, 1991).

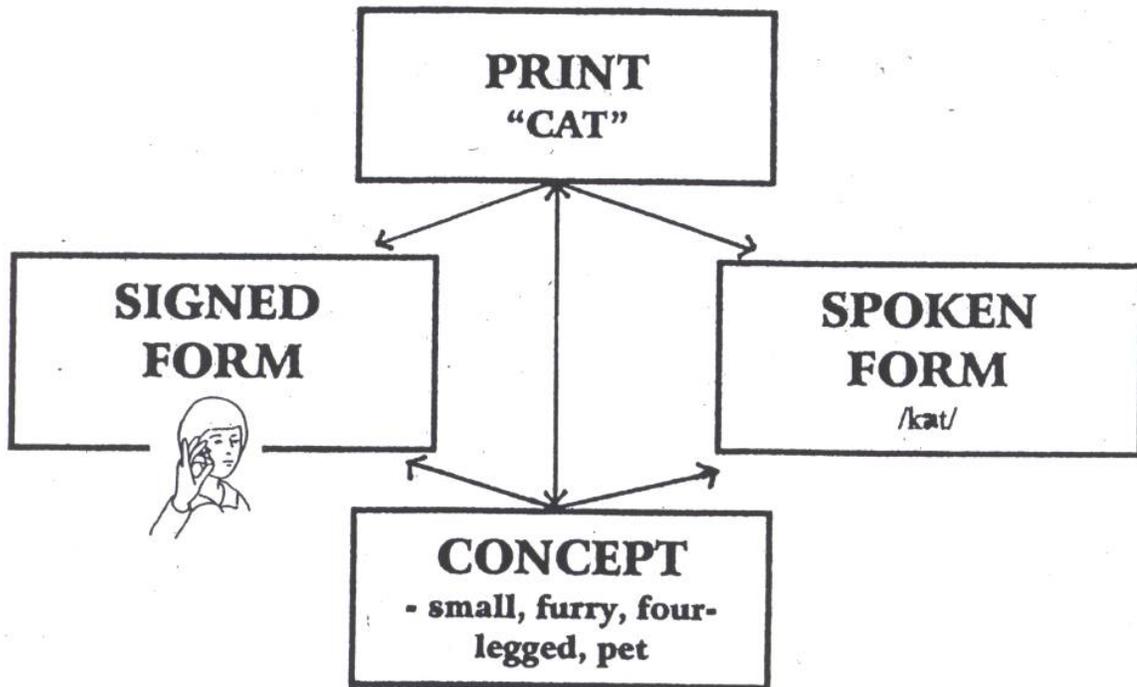
Although ASL does not result in a difference in function or development, the question of a difference in mental representation remains, particularly since ASL uses visual and spatial skills rather than auditory ones. This issue was addressed by Bellugi, Poizner, and Klima (1989) by studying the cognitive and language skills of Deaf people suffering left and right-sided brain lesions. They found that the left cerebral hemisphere in these persons was specialized for signed language, in the same way that the left cerebral hemisphere of hearing people is specialized for spoken language. The researchers argued, further, that the left hemisphere appears to be innately predisposed for language, as well as independent of language modality. Neurologically, therefore, ASL may function very much as a "verbal" language. Although its surface structures are significantly different from spoken languages, ASL is related at a deeper level to the same conceptual core or common underlying proficiencies.

The difference in modality between spoken and written English may also influence Deaf children's acquisition of English literacy. Although hearing children learn to read by forming sound-symbol associations, learning to read without forming such associations is necessary, and hopefully possible, for Deaf children. In other words, being a symbol without being mediated by the sound system should be possible for a visually represented pattern.

Further insight into learning to read can be gained by considering orthographies that are syllable-based and therefore less dependent on phonetic associations. In the case of Japanese, for example, Hatano (1986) states that an experienced reader of Japanese uses several different internal codes for a word. Japanese orthography has two distinct written systems, one linked with pronunciation (called kana) and the other linked with meaning (kanji). Meaning is achieved by the Japanese reader directly through the kanji symbols, but can also be mediated through the kana symbols and the phonetic code. The Japanese experience suggests that similar processes might occur in Deaf readers reaching meaning from written language. At times they might access meaning directly by the written symbol (word) or at other times through the signed code (see Figure 2).

The conclusion that can be reached from reviewing the literature regarding signed languages is that although modality must be a consideration when determining teaching approaches and strategies, these languages function in linguistically, socially, and neurologically similar ways as do spoken languages.

Figure 2: Linking Meaning to Print



Signed Language Lacks Written Form:

Another significant feature of BDE is that the signed language, usually the first language, does not have a written form. Some have argued that this feature reduces the transfer of proficiency from ASL to English (Mayer & Akamatsu, 1999; Mayer & Wells, 1996; Paul, 1988; Ritter-Brinton, 1996). The argument assumes, however, that literacy consists only of the reading and writing

components of language. A broader definition of literacy, one that includes the context of language use, changes the predictions somewhat. When literacy is defined broadly (to include what some might call *communicative competence*), it is clear that it requires a range of abilities from formal, decontextualized language to more conversational language. Literacy becomes the ability to use appropriate language forms depending on the social context. Schley (1992) studied the ability of Deaf children to modify their ASL use in contextualized and decontextualized language situations and found that the children did produce different types of language appropriate to the situations. Their literacy-related and metalinguistic skills were part of the deeper structures of ASL and knowledge of them transferred across languages in bilingual children. By expanding the definition of literacy, in this way, bilingual proficiency and literacy would be expected to develop even where one language does not have a written form. Further discussion of how skills from the first language support the development of skills in a second language is included in the *Conversational and Cognitive-Academic Language Proficiency* section of this chapter.

Inconsistent Language Exposure and Background:

BDE differs from both bilingual education in heritage languages and bilingual education in second language immersion programs, in that the family

language background of Deaf children is not consistent. Among children born deaf, less than 10 percent come from families with even one Deaf parent or older Deaf relative (Meadow, 1972; Trybus & Jensema, 1978). When such relatives do exist, Deaf children can acquire ASL and develop relatively normal socio-emotional family interactions. Bilingual programming for this minority of Deaf children would follow the typical approach of building on the "heritage" language, and of introducing English as a second language.

For the other 90 percent of Deaf children, however, the situation is quite different. Here the Deaf child is the first Deaf person in the family. For the child's parents, encountering deafness in the child is generally unexpected and traumatic. The parents and siblings of Deaf children seldom have signed language communication skills required to provide these children immediate access to the acquisition of a natural language, a circumstance that limits access to the family's cultural knowledge and resources. The children tend to enter kindergarten without a sophisticated competence in any language, signed or spoken (Johnson, et al., 1989). Bilingual programming for these children, therefore, requires that they first develop proficiency in ASL, before facilitating acquisition of English as a second language.

The strategy of learning ASL first is supported by research with hearing bilingual children who have not established a clear first language before entering

school. The Carpinteria Spanish-language preschool program, for example, initially consisted of a bilingual preschool in which both English and Spanish were used concurrently, but which put strong emphasis on English skills for children with a Spanish language background (Cummins, 1984). Kindergarten teachers reported, however, that children from these programs often talked with a mixed version of English and Spanish ("Spanglish"). As a result, the experimental program introduced a Spanish-only preschool with the goal of developing the children's school-readiness skills and simultaneously building their first-language skills. At the conclusion of the program, despite exclusively Spanish language programming, the children did better than other Spanish-speaking children on both Spanish and English assessments. Program developers attributed success to the use of meaningful language (i.e., Spanish), integrated into daily activities, factors that encouraged high levels of conceptual and linguistic skills in both languages. The reinforcement of the children's identity and involvement of parents in the program was also considered to contribute to the positive outcome. Cummins concludes:

The findings clearly suggest that for minority students who are academically at risk, strong promotion of first language conceptual skills

may be more effective than either a half-hearted bilingual approach or a monolingual English “immersion” approach. (p. 149)

The assumption that two separate language systems are linked to a common conceptual core plays a significant role in bilingual educational programs, because it suggests a common underlying proficiency (Cummins, 1984). It also implies that experience with either language can promote the proficiency underlying *both* languages. To understand the transfer of skills across languages, however, an examination of the relationship between language proficiency and academic achievement is needed.

Conversational and Cognitive-Academic Language Proficiency

Frequently, educators and researchers have made the assumption that the language skills required for ESL students in everyday conversation are similar to those required for completing English academic tasks in the classroom. Research, however, suggests a distinction between the requirements of conversation and academic language. Immigrant students typically demonstrate appropriate conversational skills within two years of their arrival; however, they require, on average, five to seven years to reach grade-appropriate norms in their English academic skills (Cummins, 1984). The primary reason for the lag is context. Conversational skills reflect fluency in pronunciation, basic vocabulary and

grammar, and are supported by contextual cues and information. Academic language skills require an understanding of deeper structures, such as semantics and pragmatics (rules of language use), within decontextualized situations. Academic tasks and interactions are often not based on real life situations. As a result, students must rely on the linguistic forms themselves for meaning rather than on the speaker's intentions.

Understanding this difference provides a framework for instruction and assessment in bilingual educational programs, and explains the academic difficulties that conversationally fluent ESL students may encounter in the classroom. It also gives clues about the nature of the relationship between language proficiency and academic achievement, and about the nature of the common proficiency underlying bilingual language development. In particular, it suggests that the common proficiency exists not at the surface levels (pronunciation, grammar, vocabulary) of the first and second languages, but at the deeper conceptual levels (Cummins, 1984). The common proficiency facilitates the transfer of cognitive/academic or literacy-related skills across languages. The skills would include conceptual knowledge, subject matter knowledge, higher-order thinking skills, reading strategies, and writing composition skills. It is important to note that competency in the conversational use of language is not

predictive of decontextualized skill in that same language. However, decontextualized skills in one language are predictive of decontextualized skills in another language (Snow, 1987). In a French-English bilingual program, for example, French instruction developing reading skills is not just developing skills in French, but also facilitates a deeper proficiency related to written literacy and general academic skills.

Similar benefits occur in an ASL-English bilingual program. However, the key differences between spoken language bilingualism and Deaf bilingualism must be taken into consideration. Specifically, this involves defining literacy more broadly than the ability to read and write. Researchers have claimed that the linguistic interdependence model does not apply to Deaf bilingualism because ASL does not have a written form (Mayer & Wells, 1996). In this interpretation “cognitive-academic proficiency” is limited to the skills required to process language in written form. Becoming literate involves more than acquiring specialized skills, such as word recognition – it involves exposure to particular language use, modes of thought, and developing a formal style of discourse (Calfée, 1982; Olson, 1994). Studies examining the relationship between ASL and written English encourage this broader view of literacy to include forms of “face-to-face” discourse, such as debating, formal lecturing, and storytelling (Padden & Ramsey, 1996; Prinz & Strong, 1997). Skill in this formal,

decontextualized ASL, and the ability to engage in reflective, analytical, and rational thought when using ASL, constitute the theoretical underpinnings of the relationship between signed and written language literacy skills (Kuntze, 2004).

The relationship between signed and spoken languages is complex. It is important for teachers to understand these complexities as well as the key differences between spoken language bilingual programs and BDE programs. When these principles are understood and implemented the benefits of first language signing skills can be linked with second language literacy development.

Chapter 2: Bilingual Deaf Education Principles

A review of documents from four educational programs adopting a bilingual approach to educating Deaf students was conducted to determine the key principles involved in the implementation of these programs. The programs reviewed included the Star Schools project based in the Center for ASL/English Bilingual Education and Research in New Mexico (Nover, Baker, & Andrews, 2003), the Thomas Pattison School Literacy Plan in Sydney, Australia (Naylor, 2002), the Swedish Schools for the Deaf curriculum documents (www3.skolverket.se), and the Edmonton Public Schools ASL/English Language Arts curriculum from Alberta, Canada (Edmonton Public Schools, 1999). The results of this review included a set of guiding principles common to all of the bilingual programs for Deaf students, as well as a common set of issues and concerns experienced in the implementation of these programs.

Review of Documents from Bilingual Deaf Education Programs

The complete list of common principles in Bilingual Deaf Education (BDE) programs is presented in Table 1; however, only three of them will be highlighted in this discussion. The first is the importance of establishing a first language base. This is the premise upon which all BDE programs are based –

without an established first language the entire program is brought into question. The primary objective is to facilitate the normal acquisition of language, cognition, and social structures through an accessible first language and then build the skills of academic learning and English literacy upon this foundation. Therefore, if deaf students enter school without an established language base, this must be the focus of education before proceeding with other curricular areas. The strategies for introducing first and second languages will be discussed further in following chapters.

The second principle is that students learn to transfer skills from one language to the other through the development of metalinguistic awareness, or at the cognitive-academic level of language. This principle builds on Cummins' (1984) model outlining the relationship between first and second languages, where the common underlying proficiency includes concepts, knowledge, and thinking skills, rather than the surface structures of vocabulary and grammar. Although Deaf students need to be taught the specific vocabulary and grammar of English, building on existing concepts, knowledge, and learning strategies can facilitate the literacy process.

The principle that language and culture are intertwined is also worth mentioning. The cultural component of a bilingual approach to educating Deaf students frequently involves the presence of Deaf role models and Deaf peers

(Evans, Zimmer, & Murray, 1994; Grosjean, 1992; Mahshie, 1995). This component is generally not part of integrated school programs for Deaf students, which raises the question of whether a bilingual approach can truly be implemented in such a setting. Evidence suggests that efforts to include a cultural presence, through the clustering of several Deaf students in one class or school, pulling out Deaf students into self-contained classrooms for part of the school day, or hiring Deaf teaching assistants, result in more successful educational experiences for integrated students (Ramsey, 1997). Given the current movement away from educating Deaf students at separate schools, it is particularly important to assess the influence of educational environment on language development and cultural identity.

Table 1: Common Principles of Bilingual Deaf Education Programs

- Living as a bilingual person in society is the primary educational goal
- Viewing Deaf people from a cultural perspective
- Developing pride, linguistic confidence, and a sense of identity in being Deaf
- Exposing students to Deaf role models and peers
- Seeing language and culture as intertwined, and therefore developing heritage through literacy
- Understanding the importance of establishing a first language base and how this influences second language learning
- Recognizing a natural signed language as a way to access and enhance knowledge of other languages (spoken/written)
- Using a natural signed language as a foundation to guide children into reading and writing (the two languages are a bridge to each other)
- Being able to transfer skills from one language to another (metalinguistic awareness)
- Teaching translation steps and skills through comparative analysis of the two languages
- Implementing a natural signed language as the language of instruction in the classroom (dual curriculum)
- Becoming literate in both signed and spoken languages

Common Issues and Concerns of Bilingual Deaf Education Programs

The review of the four Bilingual Deaf Education programs also revealed some common concerns that continue to exist regarding this approach. Table 2 provides a general listing of the identified issues. The concerns raised generally fell into two categories – concerns regarding the differences between Deaf bilinguals and hearing bilinguals, and the lack of empirical evidence to support the relationship between signed languages and written language skills.

Table 2: Issues and Concerns in Bilingual Deaf Education Programs

- Similarities and differences between Deaf bilinguals and hearing bilinguals
- Empirical evidence to support the theory that learning signed language leads to increased literacy skills
- Mixing languages in the classroom
- Knowledge of signed language transferring directly to knowledge of written or spoken language
- Introduction of languages – timing and procedures
- Language influence and/or interference – how does signed language affect speech and vice versa
- Connection between “storytelling” (or story signing) in signed language and reading skills

The differences between spoken language bilingual programs and BDE programs have been discussed earlier in this document. There is no doubt that a lack of a written form and a variety of language levels at school entry create significant challenges for teachers and students. However, with a more broadly defined understanding of literacy acquisition and a clearly outlined language plan, these challenges can be overcome. Specifically, the following chapters will address the challenges that arise related to the topics of language use, keeping languages separate and distinct, the role of speech skills, establishing first and second language acquisition, and literacy development.

Chapter 3: Language and Literacy Planning

The focus of this chapter involves the area of “language planning” (Cooper, 1989). Although this concept has frequently been central to the study and discussion of spoken language bilingualism, it has generally been overlooked in the promotion of Bilingual Deaf Education. The chapter begins with a definition and explanation of the key principles of language planning, followed by a discussion of how these principles can be applied within BDE programs. The chapter will conclude by outlining how an effective language plan can address the unique challenges regarding language modalities, acquisition and use that arise in the implementation of bilingual education programs for Deaf students.

Language Planning

Language planning consists of three distinct elements: status planning, corpus planning, and acquisition planning (Cooper, 1989).

Status Planning:

The status of a language is essentially related to the recognition it receives from the government. The importance of one language in relation to others is determined by its designated function, such as, as a means of instruction in certain educational settings, or as an official language of the country.

Corpus Planning:

The corpus of a language refers to its structures and forms within and how they may change, either through addition or modification. Corpus planning involves activities like developing new expressions, changing spelling, or incorporating new vocabulary within an existing language.

Acquisition Planning:

The goal of acquisition planning is language spread. Essentially this involves increasing the number of people using the language by providing opportunities and incentives to learn it. Acquisition planning is determined by both the purpose and the method for increased use of the language. For example, the purpose of language acquisition could be to learn a second or foreign language (like people in Japan learning English), or to maintain a language that is in danger of loss (like introducing Cree language programs in schools of northern Aboriginal communities). The methods of language acquisition centre on either creating opportunities to learn the language, or providing incentives to learn the language, or both.

Clearly, there is a relationship between these three elements. If a language increases in status there will be a demand for ways to acquire that language and possibly a need to make revisions or modifications to it if it is expected to serve newly designated functions.

Application of Language Planning to BDE

It is not surprising that a move to develop bilingual programming with Deaf students came after the recognition of ASL as a bona fide language and also involved numerous political movements to have signed languages recognized as official languages of Deaf communities or languages of instruction. This kind of “status planning” was needed to ensure the effectiveness and long-term stability of bilingual educational programming. The increased status of ASL and other signed languages through official government recognition drives the need for opportunities to acquire this language. The increased demand for acquisition and use of signed languages in educational settings also required an increase in corpus planning. As people used signed languages for more purposes and in a greater variety of contexts, these languages needed to adapt and become appropriate for such purposes. No longer were signed languages limited to social situations, such as the playground and residence, but were now the medium of instruction in mathematics, chemistry, and language arts. There is still an ongoing need to develop materials to support instruction through signed languages in classrooms and this is a large part of language planning for all bilingual programs for Deaf students.

Within BDE the focus continues to be placed on valuing or emphasizing the acquisition of signed languages for the real purpose of improving skills in the written or spoken language, rather than in the competency of signed language itself. This reflects a lack of genuine value for bilingualism and again feeds into the notion that the real power and value lies in one's competence of the majority language (spoken/written language). As long as bilingual programs for Deaf students promote the use of signed languages only as a bridge or facilitation strategy to the development of spoken/written language skills, the status and use of signed languages will never be truly equal. We need to value bilingualism as an end in itself – that anyone can benefit from knowing an additional language, including a signed language. This must be true for hearing students, for students with oral/auditory skills, for students with cochlear implants, and for students with no speech skills at all.

Key Concepts for Language Planning within BDE

One of the key concepts is that language, not speech, is the foundation for literacy learning. The second key concept – literacy involves making and sharing meaning – in some ways addresses the issues that arise from the first key concept. If speech is meaningful to children, whether they are hearing or Deaf, then it can be used to mediate print; however, if speech is not meaningful to a Deaf child then another mediator, such as signed language, must be used to make the

connection. Meaning drives learning and as teachers we must find ways to link unfamiliar symbols, such as language in print, with symbols that are familiar and meaningful to children (Harwayne, 2001). The third key concept is that the transition from language to literacy in Deaf children has some unique features. As indicated previously, this is primarily because Deaf children's internal linguistic structures often do not correspond with the structures of written language. Curricular adaptation must incorporate some of the principles of bilingual education that are unique to Deaf students.

Language, Not Speech, is the Foundation for Literacy Learning

Phonological decoding plays a central role for hearing children beginning to read, and for this reason, it is frequently considered to be equally important for Deaf readers. The research investigating this area has primarily focused on whether or not Deaf readers actually engage in phonological decoding (Campbell & Burden, 1995; Hanson, 1989, 1991; Hanson & Fowler, 1987; Waters & Doehring, 1990). In an extensive review of studies examining Deaf readers' phonological decoding skills (including working memory, word recognition, spelling, and knowledge of phonological structure at the word level), Leybaert (1993) concluded that, although there was evidence for phonological decoding in both signers and non-signers, it varies widely. This variability was related to

degree of hearing loss, age, reading level, and method of communication – factors that were not often controlled for in a systematic way in all studies. It is important to note that Deaf signing children may have access to phonological information from various sources, including residual hearing, lipreading, or cued speech (Leybaert, 1993). These skills, as well as their knowledge of signed language, will all contribute to their decoding skills. Another explanation that requires further study is that Deaf children who become skilled readers acquire knowledge of the phonological system represented by orthography as a consequence of reading (Chamberlain & Mayberry, 2000). In this way they do not necessarily use phonological decoding as they are learning to read, but only once they have become skilled readers. Smith (2003) argues that this is, in fact, the order of the process for all readers. We must read and understand before we can convert written words to sounds – a direct conversion with any kind of phonics code is impossible.

Relatively little is known about whether and how deaf students use decoding strategies derived from mental representations of signed language. The term “decoding” refers to multiple functions during the reading process. Chamberlain & Mayberry (2000) have described three key functions encompassed in this term in the following way:

- a) a prelexical link between the printed letters of a word and the word in the child's head (mental representation) that facilitates retrieval of word meaning (as in figuring out orthographic patterns in order to recognize words that the child already knows in sign or speech);
- b) a postlexical, mental notepad to hold in mind meaning that has already been recognized in print (as in working memory); and,
- c) a means to pronounce or express and hence keep in mind (overtly or covertly) an unknown word encountered in print until a meaning can be attached to the new word (as in novel word learning via reading) (p. 251)

Hearing readers will perform all these functions using the same code – a phonological code derived from speech. However, Deaf readers probably use a variety of codes to perform each one. This may explain the inconsistencies in the literature regarding how Deaf readers who sign decode print. Studies suggest that these readers use phonological, sign-based, fingerspelling-based, and grapheme (visual-orthographic)-based decoding (Hirsh-Pasek, 1987; Mayberry, 1995; Padden, 1991; Ross, 1993; Treiman & Hirsh-Pasek, 1983). This evidence shows that beginning Deaf readers whose primary language is signed actively seek patterns and structured relationships between the sublexical features of signs and

the written form of words in print. This is reflected in the example of the four-year old boy that wrote the word “into” with the letter “B”, as this is the handshape used in the ASL sign. By contrast, more skilled Deaf readers develop the skills to link printed words directly to their mental concepts or sign lexicon. Similarly, the use of fingerspelling played an important role in helping Deaf readers to decode unfamiliar words and that this skill improves as a consequence of learning to read rather than vice versa. This evidence suggests that the predictive relationship between phonological skills and reading ability, in all children, may be more a reflection of overall language abilities.

A case study of a Deaf child reveals how she, and possibly other Deaf children, can use the phonology of ASL to solve the problems they face learning to read (Wilcox, 1994). The child created a three-way link between the visual phonetics of signed language (the Y phoneme and its feature [+spread]), fingerspelling (T), and English orthography (“that”). The ASL handshape represented the meaning of the word, and the fingerspelling helped to link this meaning with the printed representation. It appears that Deaf children bypass the phonological system and use a system they can understand. They do this by matching their existing linguistic knowledge of sign language constructs to print. This can occur even when this knowledge of sign language is limited, or when it conflicts with rules of English. This is demonstrated by the child that Wilcox

(1994) studied when she learned that the “-ing” ending in English represented the present progressive tense. She was also aware of the tendency for verb tense to be indicated at the beginning of sentences in ASL. This resulted in her producing sentences that combined her knowledge of the two languages, such as, “-ING ME EAT ME”. It is important that these productions be recognized for their creativity and the understanding of linguistic structures, rather than simply considered errors.

Deaf children initially learn about reading when they begin to connect sign language with meaning to printed forms. Andrew & Mason (1986) compared the pre-reading skills of Deaf children and hearing children. They found that Deaf children easily acquired knowledge about letters using fingerspelling and about words using signs. They differed from hearing children in that they did not “sound out” new words.

If the assumption is made that hearing children develop inner speech which is uniquely designed to most efficiently represent their spoken language, Deaf children, too, can develop such an internal representation of their visual language. The process of developing reading skills in Deaf children then becomes a way of linking their internal linguistic structures to the grammatical features of English. This must be done explicitly. This suggests that Deaf people

possess the internal linguistic structures and syntactic relationships necessary for learning to read but lack the guidelines by which to regulate and apply the processing of the information (Hoffmeister, 2000; Prinz & Strong, 1998).

Although most children learn to read through forming sound-symbol associations, learning to read without forming such associations should be possible for Deaf children. In other words, being a symbol for something without being mediated by the sound system should be possible for a visually represented pattern. This tends to be the case for mathematical “sentences”. For example, “ $5 + 6(10 - 3) = x$ ” can be verbalized as “Five plus six, bracket ten minus three, bracket, equals x”. The symbols can be verbalized through the sound system; however, we do not need to name the symbols to access their meaning. In fact this verbalizing frequently inhibits the processing of the mathematical equation rather than facilitating it. The written symbols appear to map directly to mental concepts without being mediated by speech. In the same way, printed words can map directly onto mental concepts without being mediated by speech, which is often the case for fluent readers. For beginning readers, the purpose of linking printed words to spoken words, is to capitalize on the previously established link between spoken word and mental concept, and in this way mediate the link between print and meaning. For Deaf children, connecting print to the spoken word is often meaningless, because the connection between speech and concept

does not exist. Mediating through speech is only helpful if speech is meaningful to the child. For this reason it is important to link print to signs as a way of mediating the connection to meaning for Deaf children.

In the same way that hearing children's cognitive abilities are shaped by their auditory experiences, Deaf signing children's spatial abilities may be enhanced for some aspects of spatial cognition (Bellugi, O'Grady, Lillo-Martin, O'Grady Hynes, van Hoek, & Corina, 1994). The difference between Deaf and hearing children appeared most strongly in the task of spatial analysis of dynamic displays. Deaf children, even in the first grade showed a marked advantage over hearing children in the ability to remember, attend to, and analyze spatial displays that involved movement patterns. Bellugi, et.al. (1994) also found that the enhancement of spatial abilities seen in Deaf children had lasting effects into adulthood. Although this study does not specifically address the issue of linguistic encoding, it points to how various cognitive processes, in this case spatial cognition, can be shaped by experience with a visual language. The ability to discern visual patterns may allow Deaf children to develop analytic links between the orthography of written texts and the "phonology" (or meaningful features) of signed language as a strategy for decoding print.

A recent study (McQuarrie, 2005) challenged the long-held assumption that the cognitive processes, including phonological awareness, are ‘qualitatively similar’ in deaf and hearing children learning to read. The study investigated 52 deaf readers’ awareness of phonological structure at three levels of linguistic complexity – syllable, rhyme, and phoneme. A unique aspect of this study was that it included distracter items to separate the acoustic, tactile, and visual features within the phonological judgment tasks. These tasks allowed for a more accurate analysis of how deaf students were, or were not, processing perceptual information, and suggested that visual (speechreading) and tactile cues may not facilitate spoken language phonology as previous studies have implied. McQuarrie’s (2005) findings indicated that deaf readers of all ages and within poor and good reading groups were insensitive to phonological structure at all three levels. This refutes the claim that phonological development improves with age and with reading ability in deaf students, and suggests that other factors, such as language skills (including signed language) and orthography may contribute more to the reading abilities and difficulties that deaf students experience (McQuarrie, 2005).

Although many Deaf children struggle to gain literacy skills, many others do become very fluent readers (Chamberlain, Morford, & Mayberry, 2000). The evidence from these cases challenges the widely held assumptions regarding the

primacy of phonological skills in learning to read. Reading programs that emphasize the development of sound-symbol associations and the importance of pre-reading skills and drills, may be diverting our attention from discovering alternative routes to meaning for all students, deaf and hearing, who struggle with auditory processing. Evidence from Deaf readers helps to clarify the relationship between phonological skills and reading ability and re-emphasizes that this relationship is correlational not causal. This cautions us regarding administering interventions that may be teaching skills that result *from* reading ability rather than skills that *lead to* the ability to read. Further research is needed to explore the relationship between auditory-based skills and strategies and the reading process. Studying instruction that focuses on building language skills rather than emphasizing the deficits of struggling readers can provide different perspectives and insights. Further research is needed to determine if it is possible for skilled signing Deaf readers to be able to “exploit the phonological patterning in ASL and discover on their own more predictable patterns of association between their conversational language and the language of print” (McQuarrie, 2005, p. 121). This is only possible if we put aside our assumptions regarding spoken and written language and consider reading that is truly silent.

Literacy Involves Making and Sharing Meaning

A holistic perspective is about seeing the mind and body as one. It is about knowing that what counts as real for one person may not be the same reality for the next person. The reality that Deaf education has focused on has been the hearing persons' reality. For hearing children, the process of language acquisition is a natural one. Through exposure, joint focus, and a connection between their internal meanings and the words they hear, they learn the language around them without being explicitly taught. With Deaf children, the acquisition of spoken language does not follow this natural process. In specifically teaching language to Deaf children, it has typically been broken down into its component parts (Johnson, Liddell, & Erting, 1989). This analytic approach has been applied to teaching Deaf children written language as well. This approach emphasizes the deficits of Deaf children and influences educators to force Deaf people to become more hearing-like, instead of teaching Deaf people to become literate.

When children do not learn language, or other concepts, from natural exposure and stimulation, there is a tendency among educators to teach it more explicitly (Rhodes & Dudley-Marling, 1988; Stires, 1991). The explicit teaching process involves imposing structures, incorporating drill and practice, and breaking down the information into smaller, but also less meaningful, chunks. The more explicit the teaching, the less actively involved the student becomes in the

learning process. Although the students have not been able to figure out the rules through natural exposure, teaching must continue to keep them involved in trying to figure them out.

Traditionally, programs for teaching Deaf students to read have emphasized the mechanistic features of language because they are easier to teach (Livingston, 1997). Basal reading programs are readily available and they carefully introduce text containing limited vocabulary and sentence structures, and then gradually add new words and structures as the child progresses. The content of each book builds on the previous one, and in this way the child's reading level is clearly identified.

The problem with these programs is that they do not provide children with exposure to real literature. The importance of selecting a book, because it is about a topic of interest, is not part of the program. Many of the context cues, such as those provided by using adjectives, are eliminated because they are not words the child can "read"; however, not including them actually makes the text less meaningful. Reducing the grammatical complexity can also eliminate redundancy, which means the child has fewer opportunities to grasp the information. Controlled vocabulary and sentence structures often come at the cost of developing setting, characters and plot. In short, these programs frequently

develop stories which children may be able to read, but rarely are able to connect to their own experiences and make truly meaningful.

Studies have shown that Deaf students use semantic clues to make sense of difficult grammatical structures (Yurkowski & Ewoldt, 1986). When they process these sentences, the Deaf readers appear to consider “what makes sense” rather than analyzing the grammatical relationships between words. Many instructional practices with Deaf children emphasize the grammatical structures that focus on the students’ weaknesses (syntax) and ignore their strengths (semantics). It is true that Deaf students have difficulty with English syntax. Consequently, many educators feel that simplifying text to facilitate reading skills is necessary. In contrast, it is felt that rewriting difficult syntactic passages may inhibit rather than promote growth. Without exposure to a variety of syntactic patterns, Deaf children cannot use their effective strategies (semantics) for mastering complex syntax (Yurkowski & Ewoldt, 1986). This does not imply that Deaf children be exposed to reading material that is well beyond their reading level. The emphasis on semantic processes must be developed systematically by providing background knowledge, real life experiences, and the use of syntactically simpler reading materials. Educators have the responsibility to ensure the English is represented appropriately in the texts they present to Deaf students (List, 1990).

In meaning-based or whole language theory, knowledge and skills are learned within the context of a meaningful task, something understandable and relevant to the learner (Mayher, 1990). All forms of language - reading, writing, and sign language – contribute equally to creating meaning and can be learned interdependently and with reciprocity (Livingston, 1997).

Transition from Language to Literacy in Deaf Children has Unique Features

The unique features of Deaf Bilingual Education programs are centred around two key principles – establishing a first language base, and recognizing that the transfer of language skills occurs at the cognitive-academic level.

The first principle is the importance of establishing a first language foundation. This is the premise upon which all Deaf bilingual programs are based – without an established first language, the entire program collapses. The primary objective is to facilitate the normal acquisition of linguistic, cognitive, and social structures through an accessible first language and then build the skills of academic learning and English literacy upon this foundation. Therefore, if Deaf students enter school without an established language base, this must be the focus of education before proceeding with other curricular areas.

The second principle that needs clarification is that students learn to transfer skills from one language to the other through the development of cognitive-

academic skills or metalinguistic awareness. Cummins (1984) proposed that the two separate language systems of bilinguals are linked to a common conceptual core, suggesting a common underlying proficiency. This implies that experience with either language can promote the proficiency underlying *both* languages. The common proficiency does not exist at the surface levels (pronunciation, grammar, vocabulary) of the first and second languages, but at the deeper conceptual levels (knowledge, thinking skills, literacy strategies). Although Deaf students need to be taught the specific vocabulary and grammar of English, building on existing concepts, knowledge, and learning strategies acquired in ASL can facilitate their English literacy development.

Key Components of a Language Plan for BDE

Given the challenges and unique features of bilingual teaching and learning within programs involving signed and spoken languages, four components must be addressed when establishing a language plan for BDE. These include guidelines for establishing a first language base, principles regarding language use, the role of cognitive-academic language, and a scope and sequence of language acquisition across the curriculum.

Establishing a First Language Base

As indicated previously, the foundation of a bilingual program for Deaf students is based on the principle that skills within their first language, usually a

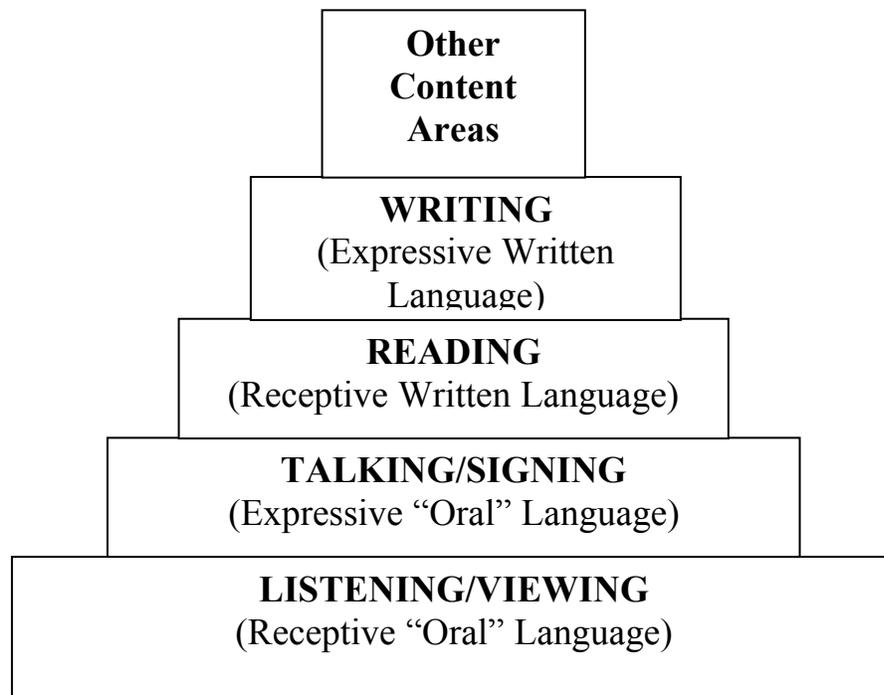
signed language, will facilitate the acquisition of a second language, usually a spoken language in written form. However, the reality is that many Deaf students enter school without an established first language. This problem is compounded when students who have not been successful in other educational settings arrive at BDE programs at later ages (8 years and older) without adequate skills in either a spoken or signed language.

Language is an important foundation for literacy skills for all children. This relationship can be illustrated as a hierarchy, as indicated in Figure 3. The bottom block represents all the words or signs that the child can understand (receptive language) and it is the largest. A portion of those words they can speak or sign (expressive language). Again, only a portion of those expressive words will be the ones they can read (receptive written language), and even less will be part of their writing (expressive written language). As the top block indicates, only a small portion of the child's receptive language is brought to the task of learning in other content areas (science, math, social studies, and so on). If the child's receptive language base is limited to begin with, this influences all other areas of language and literacy learning further up the hierarchy. It is clear from this diagram that when children have a limited receptive oral (signing) language,

it has a decreasing proportional effect on the other language, literacy, and content areas.

Figure 3: Language and Literacy Hierarchy

(Adapted from Robertson, 2006)



The decreasing proportional effect does not imply that each level should be taught separately, initially focusing only on receptive skills, followed by expressive and so on along the hierarchy. It does, however, imply that the tools and background knowledge the child with limited language skills brings to the

tasks of reading, writing, and learning in the content areas must be taken into consideration. Adaptations to the curriculum must be made and ongoing efforts to build language skills at the lower levels of the hierarchy must continue throughout academic programming.

Language Use

The guidelines for language use within BDE programs are complicated by the fact that concurrent use of both languages in the classroom will be required. It is often necessary to discuss the written language through the use of the signed language and this challenges the need to keep languages separate and distinct. Several concepts related to language use within general bilingual education can provide guidelines for how to effectively use signed, spoken and written languages together in the classroom.

The principle of **language separation** is very important in bilingual education. Language separation establishes distinct boundaries between the two languages and ensures that the minority language has equal value and purpose. Support for language separation also comes from “one person, one language” homes, where each parent serves as a model in the child’s bilingual language acquisition (Genesee, Paradis, & Crago, 2004). Language separation in the classroom ensures that appropriate language models of both minority and majority

languages are provided. Language separation can be based on subject/topic (math is always taught in one language and social studies in the other), person (staff are identified with a specific language), time (mornings in one language, afternoons in the other), place (main floor for one language and second floor for the other), activity (different languages used for listening, speaking, attending, signing, reading writing), function (formal tasks in one language, informal in another), and student (preference or ease of use determines language switching).

Another important concept related to language use is **codeswitching**. Codeswitching happens naturally in individuals using two languages within a bilingual environment (Genesee, Paradis, & Cargo, 2004). When people codeswitch they continue to exhibit the standard rules and usage of each language, but move between them at some level – it could be just a word or two, or an entire sentence or paragraph. Codeswitching is the use of more than one language, dialect, or language variety by a speaker in a given situation.

Purposeful codeswitching occurs when people have a specific reason for changing the language they are using (Baker, 2000). For example, a teacher may switch to a students' stronger language to make sure the explanation is understood. Also, a mother might respond to her child in their second language as way to encourage the child to switch over to this language. It is customary to codeswitch in many bilingual classrooms. On occasion, as mentioned previously,

the integrated use of both languages (rather than language separation) can be of value in a lesson.

Randomly switching languages or unstable codeswitching (**codemixing**) occurs when a person changes languages in a manner that is not rule-governed, does not have a purpose, or breaks the linguistic rules of one or both languages. This is not recommended for use in the classroom.

Translating involves repeating what was communicated in one language into the other language. Teaching activities can involve either literal translation (the linguistic structure of the source language is followed closely, but the target language's grammar is still maintained), or conceptual translation (finding the equivalent meaning in the other language is emphasized over following linguistic structure).

A combination of codeswitching and translating may be used to present information to students in alternating languages within a lesson to ensure comprehension. For example, the teacher may initially introduce a new topic to the students in ASL (the minority or first language). Students may then be required to read information related to the topic in written English (the majority or second language). Following this reading activity, a discussion to ensure comprehension of the written material will occur in ASL. Information could just

as easily be presented first in written English. This alternation allows for exposure to both languages and ensures understanding of the concepts introduced.

Essentially, the strategy of intentionally deciding when to switch languages has been termed **purposeful concurrent usage** by the group of researchers and teacher educators at the Center for ASL/English Bilingual Education and Research (CAEBER, 2004). Ultimately, teachers want to make sure that exposure to the two languages is equal and balanced between activities. Teachers have a variety of reasons for moving between the two languages. This can be done at specific points within a lesson to reinforce a concept, where the teacher may stop signing and write the word on the board. It may occur to review or summarize information in ASL that was being read in English. Changing languages may be necessary to gain students' attention, alleviate fatigue, or when praising or reprimanding them. Often these changes occur quite naturally, but teachers must become conscious of balancing the time spent using both languages, as well as becoming aware of the purpose, manner, and method of their use.

Use of Cognitive-Academic Language

The importance of developing a formal or cognitive-academic level of signed language skills has been emphasized throughout this document. In order to develop this level of language competence certain learning conditions are

required. These include the student having enough language to participate in a communicative interaction with a more knowledgeable other (teacher or peer), who can help guide the student's effort to make sense of the text. The more knowledgeable other will also need to be able to understand the student and to be able to make him/herself understood. Another condition is that the student must have opportunities to observe and engage in rhetorical use of language, including formal lectures, debates, speechmaking, and storytelling, in order to stimulate reflective and analytical thinking.

The need to increase opportunities for complex interactions with others to have a positive cognitive impact can be accomplished through (Kuntze, 2004):

- developing inferential as well as literal components of text comprehension
- familiarity with the literate register (use of cohesive devices and complex structures when communicating)
- academic discourse in ASL (using and understanding de-contextualized language)
- opportunities to think about what to say/sign and to monitor and make revisions (processing and evaluating language is not part of more casual and spontaneous conversation)

- cognitively engaging dialogues in ASL to support literacy development and promote new pedagogical practices.

Teachers who are fluent in both languages and have a clear understanding of language development and bilingual learning principles can incorporate these kinds of interactions into a variety of classroom activities.

Sequence of Acquisition

It is important for a language plan to outline the sequence of acquisition of language structures, for both languages, throughout the educational program.

Although many children acquire language through natural exposure, this may not be the case for most Deaf children. They may not have had the opportunity to be exposed to a signed language, and a spoken language may not have been accessible to them. For this reason, it is particularly important to outline and follow a structured plan for introducing and developing language grammar skills within BDE programs.

The sequence of normal language acquisition in spoken languages, like English, has been thoroughly researched and numerous checklists and grammar charts can serve as a basis for establishing an acquisition plan within BDE programs. Please refer to Appendix A for a list of sources in this area. It is important to note that Deaf children are often learning the language as they are learning to read that language; therefore, many of the grammatical structures need

to be taught explicitly and through repeated exposure within the text. Following a consistent sequence of introducing these structures can facilitate the process for both teacher and students.

The sequence of acquisition of signed languages, like ASL, has received less attention by researchers and therefore it is more difficult to assess children's levels of signed language ability and to plan for instruction. However, despite a lack of standardized assessment measures, considerable information is available regarding the linguistic features of ASL and their relative grammatical complexity and this can be used to develop guidelines regarding the sequence of acquisition (see Appendix A for available resources in this area). An example of an ASL Checklist (Evans, Zimmer, & Murray, 1994) is included in Appendix B.

The Role of Teachers in Language Planning

Teachers must demonstrate their knowledge of language planning by consciously separating and monitoring the two languages and presenting them as distinct systems, rather than using them intermittently, throughout daily classroom instruction. Teachers must ensure that they create a learning environment where both ASL and English skills can flourish (Nover, Andrews, Baker, Everhart, & Bradford, 2002). Teachers have the responsibility of encouraging students to become equally proficient in both languages. This is accomplished by giving

each language equal importance in both curriculum and instruction. Teachers need to expect Deaf students to use one language (ASL or English) only during certain instructional activities. In this way, students will produce equal amounts of signed and written work and will learn not to mix languages within their school tasks.

The challenge for teachers is to make curriculum and instruction rich in both languages, with language acquisition opportunities interwoven with content instruction in multiple disciplines. In order to meet this challenge, teachers must have a solid understanding of the form, content, and use of both languages. For signed languages, such as ASL, this includes an understanding of the basic units of the language (handshape, movement, location, and palm orientation), the regular and irregular grammatical constructions (word order, classifiers, facial markers, etc.), and the features of an academic level of ASL (complex sentence structures, inferential arguments, abstract vocabulary and concepts). Teachers must also possess a strong understanding of written/spoken language to identify the difficulties Deaf students may have with spelling and structuring of narrative or expository text, and to determine alternative and appropriate strategies to facilitate the learning of these constructions.

Language planning is important for the successful implementation of any bilingual educational program, but it is particularly important within BDE programs because of the unique teaching and learning challenges that arise when combining a spoken/written language and a signed language. However, with careful consideration of key concepts, like the importance of language vs. speech skills, an emphasis on meaning-based strategies, and establishing a first language base, guidelines for effective language planning can be developed.

Chapter 4: Strategies for Literacy Instruction with Bilingual Students

The differences between BDE and spoken language bilingual education, as described previously, frequently create confusion and inconsistency in the implementation of programs for Deaf students. In spite of differences, however, there are also aspects of spoken language bilingual education that can be applied to bilingual education with Deaf students. Some of these are described in this section; they are drawn from the general literature on literacy instruction with bilingual children, but many are supported in the research regarding bilingual instruction with Deaf children.

Motivation and Self-Concept

Developing students' motivation and self-concept is important to any teaching, but it is particularly important with bilingual students who may not feel that their skills and knowledge are recognized because they cannot easily express what they know verbally. Accepting the students' most familiar language as equal to any other language encourages a sense of self-worth. Having faith that second language learners will learn and maintaining high expectations for them are also important.

Literacy in two languages (also called biliteracy) often occurs in a context of unequal power relations, with one or the other literacy becoming marginalized (Hornberger, 1989). This is also true for biliteracy programs with Deaf children, with English dominating ASL. Factors that contribute to the marginalization of ASL include limited and recent linguistic awareness of ASL, attitudes that deafness is disability, and the lack of a written form for ASL. Furthermore, because of the past denigration of ASL and Deaf culture, overemphasizing the value of ASL for Deaf children is often necessary. In the long term, however, ASL and English should be recognized as separate and distinct languages, but valued equally. Emphasizing the value of ASL can be accomplished, for example, by inviting storytelling by members of the Deaf community (Israelite, Ewoldt, & Hoffmeister, 1992), and by teachers constructing, expanding, and modifying stories in ASL. These strategies can motivate students to create their own stories, and to take pride in their stories, language, and Deaf culture. Such pride can enable them to feel more confident and ready to learn English.

Language Development

Teachers must have a thorough understanding of language development, so that they can monitor and sequence the linguistic "load" they place on the students. A key principle is that language learning is maximized by incorporating

language development in the academic curriculum, explicitly and systematically (Genesee, 1991).

The value of awareness of the linguistic load on Deaf students is illustrated in a study by Mozzer-Mather (1990). The investigator sought to improve Deaf students' writing by combining writing process and translation techniques. The students used transcribed English glosses (words) of their signed versions of stories to help them prepare written texts. The students' first drafts in English deviated in many respects from conventional standard English; however, this did not mean that they were unaware of the conventions. Instead, it reflected their difficulty in paying attention to these concerns while juggling concerns about content during the creation of a first draft. Second drafts, written with the assistance of glosses to remind them of content, were substantially more grammatical than the first drafts. The reduction of the linguistic constraints, with regard to vocabulary, enhanced the volume, syntactic complexity, and correctness of the subjects' writing.

Basic Knowledge of First Language

Basic knowledge of a child's first language is also necessary, in order to be aware of points of linguistic interference or conflict between the two languages. The knowledge helps teachers to identify errors that are systemic in nature and can be eliminated by emphasizing the distinction between languages rules. The strategy is especially important for teachers of Deaf children. Clues to understanding Deaf students' linguistic processing may lie in their use of space, facial expression, or body shifting, even though these features are not part of written language expression and therefore can easily be overlooked. Deaf children must link new meanings in print with their existing knowledge of language, which is necessarily visual rather than auditory.

An understanding of fingerspelling and the rules for sign production, for example, can help in understanding Deaf children's invented spelling (Schleper, 1992). The strategy of handshape borrowing, or writing the word based on the handshape of the sign, may result in spellings not easily understood. For example, a child may spell "in" starting with a "B"; or "cat" starting with an "F", based on the handshapes used in producing the signs for these words. Substitutions of letters may also occur based on how closely they resemble each other on the hands, not whether they sound alike. Students with knowledge of two languages may produce sentences that combine elements of the two

languages incorrectly. A teacher without knowledge of ASL grammar might label these productions as language disordered rather than recognizing them as systematic problem solving in a step towards bilingual acquisition.

Speak Then Read

Another general strategy in educating bilingual children is to teach them the spoken form of a language before introducing reading in the language. This practice has been questioned, however, in light of studies where "write first" instructional approaches have been more effective for developing literacy in some learners (Mercado, 1991; Wald, 1987). The belief that language develops sequentially from listening to speaking, to reading, and finally to writing therefore does not seem to occur for all students. All language processes may instead develop simultaneously, and practices such as those of delaying instruction in reading and writing until there is oral mastery of what is to be read in English as a second language are of questionable value, serving to limit the learning opportunities rather than enhancing them. The shift away from requiring sequential mastery of literacy skills is promising for Deaf students since many Deaf children learn English through reading and writing.

Most models of second-language acquisition emphasize the importance of an internalized phonemic system in oral literacy acquisition processes (Rosner,

1986). But analogies exist for Deaf children, who seem to develop an internal representation of their visual language (Brooks, 1978). The process of developing reading skills in Deaf children must therefore link these internal structures to the grammatical features of written English. Ruiz (1995), in a case study of her Deaf daughter's literacy acquisition, found that the daughter did not need an orally-based, internalized phonemic system, nor the phonemic awareness activities or direct phonics instruction which many researchers and teachers consider indispensable.

Allow Translation

Bilingual children should be allowed to translate to their first language (ASL) when reading in their second language (English), and the translations should not be considered errors. This is a useful reading strategy for making print meaningful.

One method for using ASL to teach English involves making comparisons and translations between the two languages explicit (Neuroth-Gimbrone & Logiodice, 1992). The students initially express story content in ASL, and the expressions are videotaped. The production of English writing then becomes a process of transcribing these videotapes. The relationship of spoken to written language needs to be taught and translation from one language (sign language) to another (written English) can be systematic (Erting, 1992). It appears that more

attention should be directed to the non-manual components of ASL (movement, facial grammar, body shifting), as these convey vital grammatical information that needs to be linked explicitly to the corresponding grammatical features of English (Marschark, 1993).

Emphasize Comprehension

In teaching second language learners, teachers should try to make information meaningful and comprehensible (Hudelson, 1994). The core of literacy is the construction of meaning, whether the text is the student's own or one written by others (Wells, 1986). The construction of meaning is central whether literacy is occurring in a first or second language. Studies have documented this principle with Deaf students by showing, for example, that Deaf students use semantic clues to make sense of difficult grammatical structures (Yurkowski & Ewoldt, 1986). When they process these sentences, the Deaf readers appear to consider *what makes sense* rather than analysing the grammatical relationships between words. Unfortunately, instructional practices with Deaf children commonly emphasize the grammatical structures that focus on the Deaf students' weaknesses (syntax) and ignore their strengths (semantics).

Use Children's First Language to Determine Comprehension

Written text in the child's second language can be discussed in the child's first language to ensure comprehension of the textual information and to develop vocabulary knowledge in context (Swaffar, 1988). For Deaf students, this means that instructional conversations can take place in ASL about written English and should also occur in written English about ASL (Erting, 1992). Formal instruction related to higher-order thinking and literary forms have been helpful with Deaf students, whose problems occur not only at lexical and sentential levels but also at broader levels of context (Kretschmer, 1989), such as knowledge of genres, coherence, and author's voice and reader's perspective. Intervention with Deaf students should therefore include making textual structures and connections more explicit, and stimulating reflection by providing appropriate inferential questions. Teachers should use the students' native language in teaching these broader literacy skills that are necessary for the development of full reading comprehension (Paul and Quigley, 1987)

Incorporation of Culture

Teaching bilingual students also requires having an understanding of their cultural values (Ching, 1976). Incorporating the visually oriented features of Deaf culture is essential in teaching Deaf children. Strategies can be as simple as flashing the lights to get attention and using a variety of visual aids when

presenting lessons, or as complex as developing visual poetry. Besides visual strategies, ASL discourse patterns also influence the most effective method of presenting information. ASL frequently uses a "diamond" discourse strategy, where the main point is presented initially, followed by expansion and background information, and closing with a restatement of the main point (Small & Philip, 1992). This contrasts with the more typical English discourse strategy of beginning with general information and concluding with the specific point.

Deaf communities operate collectively as opposed to the more individualistic standard common in North American culture (Philip, 1987). In the classroom, this principle means agreeing as a group on the rules and expectations for behaviour, rather than the teacher telling the students what the rules are. It also means deciding by consensus, where possible, rather than by majority rule. A belief in collectivism also fosters peer teaching. Students are encouraged to work as a group so that concepts are understood by all and tasks are completed by everyone. Although collaboration like this may be good teaching practices with any group of children, interactional activities are especially beneficial for second language learning (Genesee, 1991).

Use of Language/Cultural Role Models

An essential element of BDE is having teachers who are true role models for Deaf culture. In practice such teachers need to be Deaf themselves, as well as fluent signers of ASL and skilled readers of written English. Several studies have emphasized how Deaf parents and teachers naturally elicit more interaction with Deaf children because they are so much more visually attuned than are hearing people (Erting, 1988; Mather, 1989; Padden & Ramsey, 1996).

The study by Mather (1989), for example, compared a Deaf and a hearing educator's presentation of a story to Deaf children. The Deaf teacher's fluency in ASL allowed her to modify her register to meet the diverse language needs of all the students in the group, and to enter into truly meaningful conversation with them. Many of the strategies she used, such as asking "wh" questions rather than "yes/no" questions, were not unique to Deaf teachers, but were good teaching practices in general. They apparently proved more difficult, however, for the hearing educator, whose limited ASL skills and stronger auditory orientation may have caused her to rely on more structured activities that controlled the language interaction.

Similarly, hearing parents reading with their deaf children were found to be more structured in approach and to create fewer links between the book and personal experiences than parents reading with their hearing children (Paul and

Quigley, 1987). The differences may limit the development of pre-reading skills in Deaf children, and may be linked to difficulties with meaningful conversations as well. Hearing parents can best facilitate their children's literacy skills by observing more natural interactions within Deaf families (Erting, 1992).

A wide variety of teaching strategies incorporating ESL or bilingual education principles have been shown to be effective in the education of Deaf students. The following chapter will outline how many of the "best practices" for teaching language arts to all students can also be directly applied to educating Deaf students within a bilingual context using signed and spoken languages.

Chapter 5: Teaching Activities and Materials

The key to developing an effective bilingual educational program for Deaf students is in laying the groundwork. This includes establishing a language plan to clarify the introduction of L1 and L2 through appropriate language use, cognitive-academic discourse, and following an acquisition sequence, as well as teachers, knowledgeable and skilled in both languages, who can implement the plan. Establishing this groundwork is in itself an enormous challenge. However, once it is in place many teaching strategies and best practices for developing language and literacy with all children can easily be adapted to fit within BDE.

The Manitoba Language Arts Curriculum Framework (reference) can be used as an example of how general outcomes for all students can be applied to a bilingual and meaning-based curriculum for Deaf students. The five general outcomes of this framework are broad enough to include the skills of “viewing” (or visually comprehending) and “signing” (or visually expressing) in a signed language, such as ASL. These can be added to the typical skills of “speaking”, “listening”, “reading”, and “writing”. Table 3 provides a summary of the curriculum framework with the general outcomes stated across the top and a brief list of the skills included in these outcomes in the columns below. Because the

emphasis is on “language”, the general outcomes of the language arts curriculum are easily adapted to a bilingual approach – these outcomes can apply to skills in any language, even a signed language.

Table 3: Manitoba Language Arts Curriculum Framework

GO1 Explore thoughts, ideas, feelings, and experiences	GO2 Comprehend and respond personally and critically to oral, literary, and media texts	GO3 Manage ideas and information	GO4 Enhance clarity and artistry of communication	GO5 Celebrate and build community
1.1 Discover and explore 1.2 Clarify and extend	2.1 Use strategies and cues 2.2 Respond to texts 2.3 Understand forms and techniques	3.1 Plan and focus 3.2 Select and process 3.3 Organize, record, and assess	4.1 Generate and focus 4.2 Enhance and improve 4.3 Attend to conventions 4.4 Present and share	5.1 Develop and celebrate community 5.2 Encourage, support, and work with others

Four Essential Practices

I believe that within every classroom for Deaf students, four language and literacy learning practices are essential. These include development of sight vocabulary, process writing, guided reading, and a home reading program. The

implementation of these practices can take many different forms and can be adapted to meet the needs and levels of students as well as the individual teaching styles of teachers.

Sight Vocabulary

Vocabulary development is an important part of reading comprehension for all students. However, the development of sight vocabulary for Deaf students is particularly significant. This is true because many Deaf students do not have access to the phonological code to facilitate decoding of unfamiliar words. They need to establish a repertoire of words they can automatically recognize and link to concepts to facilitate initial comprehension of text and to help them develop decoding strategies involving spelling patterns, word formation, and context.

Vocabulary development is most effective when the following elements are included in the teaching process: a) exposure to a wide variety of quality children's literature, b) teaching individual words in an organized and systematic way, c) explicitly teaching word-learning strategies, and d) fostering an awareness of and interest in words (Graves & Watts-Taffe, 2002).

a) Exposure to Literature

When children are first learning to read, they begin with books that include very simple language structures and consist of familiar words and concepts. In order to foster vocabulary growth through reading, children must be exposed to literature that includes rich and sophisticated language. Reading stories aloud to children can do this. For Deaf students, this involves presenting the stories in signed language. The main purpose is to develop their understanding of new concepts and new ASL vocabulary, with some exposure to the English words in print.

b) Teaching Individual Words

The second important element in developing reading vocabulary is to teach individual words in an organized way. This teaching occurs on three different levels:

- Teaching students the English word for vocabulary they already have in ASL
- Teaching students new concepts and new vocabulary at the same time (signs and words)
- Teaching multiple, extended, or associated meanings for a known sign/word.

These levels emphasize that knowing a word or sign is not an all-or-none event – the process of understanding the nuances and innuendos of word meaning

are ongoing. For this reason, it is important not to limit children's understanding of words to "one word = one sign" simplifications. Translations of written and signed languages must be conceptual, and children must be taught that context determines the correct interpretation between languages.

An organized classroom approach to teaching vocabulary should target teaching 400 words each school year. This breaks down to approximately 10 words/week. In order to make this task manageable, vocabulary should be introduced by categories. The structure of these categories can vary depending on the needs of students and preferences of the teacher. Some suggested categories include most frequently occurring words, subject area vocabulary (number words for math, direction words for social studies, weather words for science), and functional vocabulary (household items, foods, sports). The activities used to introduce, reinforce, and maintain the new words should be a regular part of the classroom routine. Many of the activities that have been developed for teaching vocabulary to all children can be used effectively with Deaf students. Such activities include a word box, a word wall, personal dictionaries, bingo/lotto games, and cloze messages. Please see Appendix C for a list of suggested resources for vocabulary building activities.

c) Teaching Word-Learning Strategies

The strategies typically included in this element of vocabulary development focus on phonological or phonemic awareness – the sound patterns and sound-symbol associations between spoken and written letters in words. Despite the fact that many Deaf children may not have access to speech sounds, this level of knowledge is still required for effective reading development. For this reason, it is important to adapt these strategies to incorporate visual rather than sound-based approaches. In the same way that children can identify sound patterns, Deaf children must learn to identify orthographic (spelling) patterns. They must also be able to break words down into parts, understand prefixes, suffixes, root words, and compound combinations. Teaching the phonological components of signs can facilitate this understanding. As children become aware of how signs can be broken down into smaller parts (handshape, movement, location, and palm orientation), they can appreciate the parts of written words (syllables, letters). This leads to an understanding of repetition in patterns to represent rhyme and rhythm in a visual manner.

d) Fostering Word Consciousness

The final element in an effective program to develop vocabulary is encouraging students to become conscious of words/signs and how we use them.

Students should always be on the lookout for interesting ways to describe people, objects, and actions. When students are able to talk about words that they like, that are used in a different way, or that they don't know, then they are developing an understanding of language from the inside – metalinguistic awareness. This is an essential skill in becoming an effective reader.

Process Writing

In the past two decades there has been an emphasis in research related to teaching writing to define the writing process. As a result a shift has occurred in instructional methods from focusing on the written *product* to emphasizing the *process* of writing itself (Bright, 2002). The commonly agreed upon steps of this process include preparing/planning (prewriting), drafting, revising, editing, and publishing. Authors begin the process by planning, or thinking about what to write, brainstorming ideas, considering their audience, purpose, and form of writing. Drafting involves getting the ideas down on paper (or on the computer screen) without concern for the accuracy of the formal structures, like spelling and punctuation. Authors will typically get feedback from others to assist them with the revising stage, where changes (additions, deletions, reordering) are made to the flow and content of the writing. The next part of the process is editing and involves making corrections to the conventions of writing – grammar, spelling,

and punctuation. The final step is taking the writing to a formal form through publication or presentation to an audience. These steps are not necessarily sequential and writers move back and forth between them as they construct their work (Peterson, 1995).

This description of the writing process is the foundation for implementing “writing workshop” within the classroom. It allows teachers to create an environment where students are writing for real purposes, becoming independent in their writing, and participating actively in the learning process. These same principles guide the implementation of the process within classrooms with Deaf students. The key adaptation is that students proceed through the steps of writer’s workshop to produce stories in both ASL (on video) and English (on paper) versions. Working in the two languages builds on the students’ underlying knowledge, ideas, and sense of literacy to facilitate their use of the different surface structures (grammar and vocabulary).

Again, numerous activities can be incorporated into the structure of process writing, but the sessions can include mini lessons with the whole group, independent writing time, individual conferencing with the teacher, a peer, or another adult (educational assistant, parent, resource personnel), and sharing written or signed stories with the class. Prewriting activities are conducted to help students generate ideas and develop background information on a particular topic.

These initial activities should include both English print materials and ASL resources. Following the prewriting stage, students are required to develop a story plan in either print (point form) or picture format. When the plan is completed, students are able to choose whether to draft their story in ASL (recorded on video) or in written English. Students then complete the revising, editing and publishing stages within that same language before proceeding through these final stages again using the other language.

Table 4: Curriculum Adaptation for Writing Workshop (Process Writing/Signing)	
<p>Description</p> <ul style="list-style-type: none"> • Preparatory work (ideas, planning, brainstorming) • First draft (rough) • Feedback (response from peers/teacher) • Revising (content, style, form) • Feedback (peers/teacher) • Editing (proofreading, spelling, punctuation, choice of words) • Publication (sharing) • Evaluation (grading) 	<p>Adaptations for Deaf Students</p> <ul style="list-style-type: none"> • Introduce “Process Signing” to produce texts in sign language (add language to their thoughts) • Combine process signing and process writing to produce texts in two versions (written and signed) • First draft can be written, drawn or signed • Connect print to pictures or signs • Each version has a “published” form (print or video)

All students are expected to produce final products in both written English and videotaped ASL. Table 4 provides a summary of how the process of writing

workshop can be adapted to include process signing and the creation of stories in both written English and videotaped ASL.

Guided Reading

Although there are specific programs entitled “Guided Reading”, I am using this term in the general sense to refer to any activities that involve discussing text to arrive at shared meaning and understanding. This encompasses the broad spectrum of reading aloud to children, instructing and supporting the reading of written passages, and discussing or reflecting on text that has been read independently.

Teaching reading must involve a balance of explicit strategy instruction, responding to text, and opportunities to practice reading.

a) Explicit Strategy Instruction

Instruction of reading strategies can occur with groups of children, using chart paper or an overhead projector to ensure that all students have visual access to the print, or in one-to-one situations with individual students. Instruction should include explicit descriptions, teacher models, and active participation by the students. Strategies can be directed at print cues (orthographic patterns, word families, word sorting, word parts), context cues (predictions, cloze procedures), grammatical cues (morphological markers, sentence structures), or text-based cues (semantic webs, story maps, think-alouds).

b) Responding to Text

Through the process of actively responding to text, children understand what kind of books they like, how language can be used in different ways, and that there is not only one right “answer” to interpreting literature. This kind of knowledge encourages them to share their responses and respect the opinions of others. It also helps them develop into more thoughtful and critical readers. Numerous response activities have been developed and proven effective within classrooms and many of these are easily adapted to use in bilingual classrooms with Deaf students. Suggestions include literature circles, novel studies, response journals, timelines, character profiles/portraits, reader’s theatre, mapping, book covers, or creating advertisements.

c) Reading Practice

All children need to spend time reading to develop their reading skills. It is important to have a good selection of books available to students so that they can select books that are of interest to them and at an appropriate level. This means having fiction books of various genres, non-fiction and information books, and books that cover a wide range of topics. Wordless books or books geared to the visual learner can be very effective with reluctant readers.

As mentioned previously, the books that children are initially able to read independently, might be at a very simple level in terms of language and vocabulary. For Deaf students, due to their limited language skills, this may be the case for many years beyond the early grade levels. For this reason it is important to read aloud to students daily to provide them with models of rich description, plot and character development, and story structure. The process of reading aloud with Deaf students involves translating stories into signed language. Teachers can do this in a variety of ways, including reading silently and translating passage by passage, listening to an audiotaped version of the story while they interpret it (for hearing teachers), and presenting a videotaped version of the story in ASL (either one they have made themselves or one from the increasing repertoire of ASL translations that are commercially available).

Please see Appendix D for lists of suggested books to use with visual learners, reluctant readers, and for teaching specific language structures and strategies.

Home Reading Program

The importance of providing opportunities for Deaf students to interact positively and frequently with print cannot be overemphasized. Print provides them access to English because they are learning the language through reading. Daily exposure and repetition are vital and therefore, it is essential to involve the

home in this process. Classroom teachers need to support parents in establishing a daily routine of reading with their children.

An understanding of the development stages within the reading process is helpful in order to recognize the significance of a home reading program.

Essentially, reading develops through the following stages:

- 1) Learning to love books
- 2) Enjoying the meaning of books
- 3) Learning how books work
- 4) Discovering that print has meaning
- 5) Memorizing books
- 6) Rehearsing books
- 7) Recognizing the words
- 8) Developing fluency
- 9) Reading independently

Within this process, often only the final three stages are considered ‘reading’. As teachers we need to help parents understand the importance of interacting with books to establish the foundation for language and literacy learning. Table 5 outlines some basic reading techniques that parents can use – these can easily

adapt to use in signed languages. The emphasis should be on making reading together fun and stress-free.

As parents become more comfortable reading with their children, and as the children's reading skills develop, new strategies can be introduced. Parents can learn to ask questions to build language and thinking skills. This involves avoiding specific questions about "who", "what", "where", and "when", and asking more friendly questions that do not have one right answer. These are more open-ended questions that begin with phrases like, "What do you think...", "I wonder who might...", and "How would you feel..." Parents can also help children make predictions as they are reading. Children can guess what will happen next or create a new ending to the story. Predictions do not need to be exact as children often enjoy making silly predictions.

Table 5: Effective Reading Techniques with Young Readers

- | |
|---|
| 1. Allow your child to select some of the books you read. |
|---|

2. Talk about the different parts of the book such as front, back, title, author, beginning, and end.
3. Read slowly (but don't drag it out!)
4. Consider allowing your child to hold the book and turn the pages. Show them how to turn one page at a time.
5. Vary your voice by using lots of intonation and stress (vary your signing by altering the size and shape of signs and adding facial expression).
6. Talk about the story; relate it to the child's own experiences.
7. Repeat what the child says; add words to make a full sentence (e.g., Child says "Truck", Adult says, "Yes, that's a big truck")
8. Monitor the child's face and behaviour for signs of boredom or fatigue and end the session when the child loses interest.
9. Compliment children on their attempts to read. Tell them they are readers!

Conclusion

Significant variation occurs among the individual characteristics and contextual circumstances of Deaf people. There are Deaf people who, through residual hearing or lipreading abilities, may have more access to the phonological code of spoken language than others. Deaf people also differ in their access to language, some are exposed to signed language by their Deaf parents from birth, while others may have limited access to language, either spoken or signed, throughout their preschool years. Although these differences are significant, they are often not predictable in their influence on an individual's reading ability. For example, it is not necessarily the Deaf people with more access to the phonological code that are the most successful readers (Chamberlain & Mayberry, 2000). For this reason, it is important to consider the challenge for Deaf people from the broad perspective of becoming literate in a visual way.

It is time to consider the reality of Deaf people's experience and perspective of the world when determining instructional programs for Deaf children. It is time to include Deaf people as active participants in research, in both forming the questions and providing the answers. We know that Deaf children who grow up in an ASL environment learn that language in the same

way that hearing children learn their spoken language. We also know that many of these children develop into fluent readers without any access to the sound-based phonology of English. It is time to facilitate the literacy development of Deaf children with an emphasis on language, meaning making, and the unique ways that they visually connect with the word and world.

This framework has attempted to outline such a perspective and provide guidelines for the implementation of instructional programs. The foundation of this approach is the bilingual model that identifies a common underlying proficiency in the concepts, knowledge, and thinking skills of bilingual individuals. This model cannot be directly applied to bilingualism involving signed and spoken/written languages. The differences in modality, lack of written form, and inconsistent acquisition patterns, are significant. Within this framework, however, these differences can be accounted for through careful and conscientious language planning. Such planning must specify language use and separation, outline a sequence/continuum of acquisition in both languages, and address the cognitive-academic levels of language. The potential exists, through creative, effective, and high quality bilingual teaching to foster Deaf students with proficiency, or literacy, in both signed and spoken/written languages.

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Appendix A

Language Acquisition Checklists

English Resources:

1) Speech and Language Checklists

Manitoba Speech and Hearing Association

www.msha.ca

2) Language Development: An Introduction

R. Owens (2001). Needham Heights, MA: Allyn & Bacon

3) The Development of Language

J. Berko Gleason (2001). Needham Heights, MA: Allyn & Bacon

4) Born To Talk: An Introduction to Speech and Language Development

L.M. Hult and M.R. Howard (2002). Needham Heights, MA: Allyn & Bacon

5) Normal Language Acquisition

S.L. James (1990). Needham Heights, MA: Allyn & Bacon

6) How Children Learn Language

J. McLean and L. Snyder-McLean (1999). San Diego, CA: Singular Publishing

American Sign Language Resources:

1) ASL Developmental Milestones – Ages and Stages

Canadian Cultural Society of the Deaf and Ontario Cultural Society of the Deaf (2003)

www.ccsdeaf.com/ocsd/main.html

2) Sign Language Development Checklist

J. Mounty (1993). Educational Testing Service

3) Stages of Language Development: Including Features of ASL

M. French (1999). *Starting with Assessment Toolkit*. Washington, DC: Gallaudet University Press.

4) Syntax/Semantics/Morphology Acquisition Timetable

J. Kegl and R. Loew

5) *Educating Deaf Students; From Research to Practice*

M. Marschark (2002). New York, NY: Oxford University Press.

6) *ASL Acquisition*

T. Wix and S. Supalla (1993). Tuscon, AZ: University of Arizona and Arizona School for the Deaf and Blind.

7) Linguistics of ASL

C. Valli and C. Lucas (1992). A resource text for ASL users. Washington, DC: Gallaudet University Press.

8) Discovering with Words and Signs

Sign Talk Development Project (1994). Winnipeg, MB: Health Canada.

9) The Development of ASL and Manually Coded English Systems

B. Schick (2003). In Marshark & Spencer (eds.) *Deaf Studies, Language, and Education*. New York: Oxford University Press.

10) Assessing Children's Proficiency in Natural Signed Languages

J. Singleton and S. Supalla (2003). In Marshark & Spencer (eds.) *Deaf Studies, Language, and Education*. New York: Oxford University Press.

Literacy Resources:

1) Stages of Literacy Development

M. French (1999). *Starting with Assessment Toolkit*. Washington, DC: Gallaudet University Press.

2) Grammar Scope and Sequence

Western Australian First Steps Program

3) Reading Continuum

B. Campbell Hill and C. Ruptic (2000). *Practical Aspects of Authentic Assessment: Putting the Pieces Together*. Norwood, MA: Christopher Gordon Publishers

4) Writing Continuum

B. Campbell Hill and C. Ruptic (2000). *Practical Aspects of Authentic Assessment: Putting the Pieces Together*. Norwood, MA: Christopher Gordon Publishers

5) English Language Arts Outcomes

Manitoba Education, Citizenship and Youth (1999). English Language Arts Curriculum Documents
www.edu.gov.mb.ca

6) Thomas Pattison School Literacy Plan

A. Naylor (2002). Thomas Pattison School for the Deaf, Sydney, Australia.

Appendix B

ASL Checklist

ASL DEVELOPMENT CHECKLIST (Evans, Zimmer, & Murray, 1994)

Background Information:

Name: _____

Birthdate: _____

Age: _____

Date of Sample: _____

Date Checklist Completed: _____

Person(s) Completing Checklist: _____

Sample Situation:

Exposure to ASL:

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STRUCTURE	Stage1 (1.5 – 2 yrs)	Stage 2 (2 – 3.5 yrs)	Stage 3 (3.5 – 4.5yrs)	Stage 4 (4.5 – 6 yrs)
<u>Sign Formation:</u> 1. Handshapes	Simple (B,C,O,S,1,5)	Inconsistent (G,H,U,D,Y,3)	Complex (X,T,R,7,8)	Finger- Spelling
2. Movement	Simple (up, down, forward, back)	Inconsistent (BEAR – hands not crossed)	Complex (wiggly)	Complex (alternating)
<u>Grammar:</u> 1. Classifiers	Object (2h)CL:O - pole	Object + Mov. CL:3 – car driving forward	Verb in Verb CL:V – man climbing up pole	Verb Chain CL:3 – car driving forward, up hill, turn left, park
2. Verb Modification		Emphasis; Time; Manner WALK - stroll; WALK- long time; WALK - quickly	Number; Distribution FALL – singular; FALL – plural; FALL - random	
3. Noun Modification			Emphasis; Size; Quality BOWL – big	Spatial Arrangement TREE+++ - in row

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STRUCTURE	Stage 1	Stage 2	Stage 3	Stage 4
<u>Sentences:</u> 1. Length	One/two-sign phrases	Three/four-sign sentences		
2. Negation	HS only; HS w/ neg sign <u>HS</u> CAN'T	HS w/ non-negative sign <u>HS</u> ME WANT MILK		
3. Questions	YES/NO; WH – (2h) 5 <u>^^</u> <u>frown</u> MINE (2h)5	Y/N; WHY; WHERE; WHAT <u>frown</u> GO HOME WHY?	FOR-FOR; WHICH	WH-bracket <u>frown</u> WHY GO WHY?
4. Complex			Topicalization <u>t</u> MY ROOM, PAINT TOMORROW Rhetorical ? <u>rh?</u> DOG RUN, WHO WIN DOG	Topic Continuation One hand hold sign, other continues Conditionals <u>cond</u> IF RAIN, GAME CANCEL
<u>Storytelling:</u> 1. Spatial Reference	Real World	Semi-real World	Inconsistent Abstract	Full Abstract
2. Role Play	Copying expressions	Unclear character id. & role shifting	Beginning body shift, eye gaze, facial expression	Clear and Consistent

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Creative Use of Signs:

Comments:

1. General Behaviour (facial expression, gestures, participation)

2. Conversational Skills (eye contact, turn taking, staying on topic, responding to questions)

3. Overall Communication (areas of weakness, language development stage)

Appendix C

Vocabulary Building Activities

General Teaching Strategies:

- a) Feedback – explain, expand and revise to help students understand the words you are using or they are encountering in print
- b) Nonlinguistic representations – pictures, shapes, models, graphic organizers
- c) Multi-sensory approaches – using all the senses to see, feel, move, dance, draw, act out, etc. to express meaning
- d) Word awareness – show what words can do through poems, jokes, rhymes (visual patterns), and structural analysis
- e) Opportunities to practice – learning in stages, lots of repetition, adding new contexts, increasing complexity
- f) Themes – organize new words around a topic; summarize and review often

Writing “Cinquains”

A cinquain is a five line, non-rhyming poem and can be used to help students build and organize their understanding of a particular topic.

The structure of a cinquain is as follows:

Line 1 – One word (noun) which names the topic

Line 2 – Two words (adjectives) which describe the topic

Line 3 – Three words to express action of the noun (verbs)

Line 4 – Four words to express feelings or make an observation

Line 5 – Repeat topic word (or another word that is a synonym)

Word Log/Journal

Students keep a list of new words they come across. These are shared with the class or teacher regularly for a discussion of the meaning.

This can be used during individual or group reading activities. Words can be recorded alphabetically, chronologically, by themes, in grammar categories, or any other method that works. Words can also be transferred to the class word wall (see below).

Advertisements

Advertisements from newspapers or magazines can be a good source of figurative or creative language. Get students to bring in examples and discuss them in class. These can also be posted or kept in a notebook.

Jokes

Humour is often based on double meanings or figurative language. Starting every morning with the “joke of the day” can be an excellent vocabulary building activity (and lots of fun, too!).

Word Wall

A word wall provides students in a classroom with a readily accessible customized dictionary. Printed words are organized alphabetically in a large display, usually covering an entire classroom wall. Words can be added to this display anytime throughout the year by either the teacher or the students. Lots of creativity can be used to develop these displays – colour coding the word cards, adding stickers or symbols to words related to a similar theme, organizing the display around a larger class theme (each letter of the alphabet can be a circular “planet” or the shape of a “building”). The words should be referred to often and read and reviewed as a whole class regularly.

Highlighting Words

As students come across new words they can highlight them – this will remind them the next time they read that passage. Teachers can also highlight words prior to reading to help draw the students’ attention to words they need to know.

Word/Picture Dictionary

Students can create their own personal dictionaries by adding letters, in alphabetical order, to the upper right-hand corner of the pages in a notebook. As the students learn new words they enter them in the notebook, as well as drawing a picture, and, if possible, writing the word in a sentence. Children will benefit from seeing how many words they know and having a resource to look up words they forget.

Bingo or Lotto Games

Teacher-made (or commercially available) bingo and lotto games are fun for children to play and are excellent activities for reinforcing high-frequency word recognition. Bingo games involve matching printed words/pictures to spoken words (or with Deaf students – words that are signed), and lotto games involve visually matching pictures or printed words.

Sight Word Hopscotch

Words can be added to each section of a hopscotch grid and students must read them as they hop on each square. Alternatively, students can also toss bean bags onto the grid and read the word it lands on. This game can be played outside with chalk markings or inside by writing with markers on a vinyl tablecloth. This activity is good for kinesthetic learners.

Word Substitution Games

This is also known as “cloze technique” and involves omitting a word in a sentence. Students are required to use the context of the sentence to figure out what the missing word is. This can be used daily in the “Morning Message” written to students on the board – as they enter the classroom and get settled, they can figure out the missing word (or words). Students can take turns filling in the missing words on the board (or overhead projector).

Parts of Word

Students need to learn that words have spelling patterns or contain root words. Encourage students to look for familiar parts within words and help them learn to use this knowledge to understand and read new words.

Multiple Meanings

Focus on teaching words that have more than one meaning. Demonstrate the different meanings of words within the context of sentences and stories. (In working with Deaf students, different signs can often be used effectively to distinguish the multiple meanings of English words.)

Appendix D

Book Lists

Books with Figurative Language:

Eight Ate	Marvin Terbin
Quick as a Cricket	Audrey Wood
Mad as a Wet Hen	Mara Terban
You Can't Judge a Book by its Cover	Judith Scheinlin
Aesop's Fables	Aesop
More Parts	Tedd Arnold
Squids Will Be Squids	Jon Scieszka
The King Who Rained	Fred Gwynne
Chocolate Moose for Dinner	Fred Gwynne
How to Lose all of Your Friends	Nancy Carlson
The Three Little Wolves and the Big, Bad Pig	Helen Oxbury
What Do You Say, Dear?	Mercer Mayer
Gilbert de la Frogponde	Jennifer Rae
Peg and the Whale	Kenneth Oppel
Who Wants a Cheap Rhinoceros?	Shel Silverstein
Monkey Business	Wallace Edwards

Books for Older Children/Reluctant Readers:

Tuesday (wordless)	David Weisner
Animals Should Definitely Not Wear Clothing	Judi Barrett
Freefall (wordless)	David Weisner
The Silver Pony (wordless)	Lynd Ward
The Silly, Slimy, Smelly, Hairy Book	Babette Cole
The Jolly Postman	Janet Ahlberg
A Porcupine Named Fluffy	Helen Lester
Parts (and More Parts)	Tedd Arnold
Green Wilma	Tedd Arnold
Tacky the Penguin	Helen Lester
Cinder Edna	Ellen Jackson

Books for Older Children/Reluctant Readers (Continued):

The Stinky Cheeseman and Other Fairly Stupid Tales	Jon Scieszka
The Three Pigs	David Weisner
Olive, the Other Reindeer	J. Otto Seibold
Stand Back, Said the Elephant	Patricia Thomas
The Adventures of Hank the Cowdog CDB	John Erickson
June 29, 1999	William Stieg
The Cow Who Wouldn't Come Down	David Weisner
Sitting Ducks	Paul Brett Johnson
Kiss the Cow	Michael Bedard
Click Clack Moo	Phyllis Root
	Doreen Cronin

Wordless Books:

Good Dog, Carl (series)	Alexandra Day
Good Night, Gorilla	Emily Arnold McCully
Picnic (series)	Emily Arnold McCully
Deep in the Forest	Brindon Turkle
Pancakes for Breakfast	Tomie DePaola
Anno's Counting Book	Mitsumasa Anno
The Snowman	Raymond Briggs
Changes, Changes	Pat Hutchins
Will's Mammoth	Rafe Martin
A Boy, a Dog, and a Frog	Mercer Mayer
Why?	Nicolai Popov

Books to Encourage Asking Questions and Making Predictions:

Mary Wore Her Red Dress	Merle Peek
Is Your Mama a Llama	Deborah Guarino
Look	Ana Hoban
Bark, George	Jules Feiffer
Do's and Don'ts	Todd Parr
Says Who?	David Carter

Books to Encourage Asking Questions and Making Predictions (Continued):

The Little Mouse, the Red Ripe Strawberry, And the Big Hungry Bear	Don Wood
Spot (series)	David Hill
To Market, to Market	Anne Miranda
Stephanie's Ponytail	Robert Munsch
Q is for Duck	Tedd Arnold
Tomorrow's Alphabet	George Shannon
The Mitten (and The Hat)	Jan Brett
The Very Busy Spider, The Very Quiet Cricket	
The Very Hungry Caterpillar,	
The Very Lonely Firefly (etc.)	Eric Carle
In a Napping House	Audrey Wood

Books for Visual Learners:

I Spy (several books in this series)	Walter Wick
Cross Sections (series)	Stephen Biesty
Fun With Hand Shadows	Sati Achath
Two Bad Ants	Chris Van Allsberg
Look-Alikes	Joan Steiner
King Bidgood's in the Bathtub	Audrey Wood
Optical Tricks	Walter Wick
Something's Not Quite Right	Guy Billout
Zoom (and Re-Zoom)	Istvan Banyal
The Grey Lady and the Strawberry Snatcher	Molly Bang

Books to Emphasize Grammatical Structures:

Present Progressive

I Went Visiting	Sue Williams
Captain Abdul's Pirate School	Colin McNaughton
Canoe Days	Gary Paulson
Alligator Baby	Robert Munsch
Avocado Baby	John Burningham
Grampa's Visit	Richard Keens-Douglas

Books to Emphasize Grammatical Structures (Continued):

Past Tense

The Wind Blew	Pat Hutchins
Where the Wild Things Are	Maurice Sendak
The Strongest Man This Side of Cremona	Georgia Graham
Diary of a Wombat	Jackie French
Sneakers the Seaside Cat	Margaret Wise Brown
Pussycats Everywhere	Sheila McGraw
Noguchi, the Samurai	Burt Konzak
The Watermelon Seed	Celia Barker Lottridge
Little Wynne's Giggly Thing	Laurel Dee Gugler
The Big Sneeze	Ruth Brown
Happy Birthday Sam	Pat Hutchins
Dinosaur Days	Linda Manning
Mmm Cookies	Robert Munsch

Adverbs

Dearly, Nearly, Insincerely	Brian Cleary
Belle's Journey	Marilynn Reynolds
Rhinos for Lunch and Elephants for Dinner	Tololwa M. Mollel
Raising a Little Stink	Colleen Sydor
The Frog Princess	Rosalind Allchin
Maple Moon	Connie Brummel Crook

Adjectives

Hairy, Scary, Ordinary	Brian Cleary
Goodnight Moon	Margaret Wise Brown
The Foot Book	Dr. Seuss
The Memory Stone	Anne Louise MacDonald
The Best Figure Skater in the Whole Wide World	Linda Bailey
Jessie's Island	Sheryl McFarlane
Kipper	Mick Inkpen
The Legend of the Panda	Lind Granfield
Just Stay Put	Gary Clement
Happy Birthday Biscuit	Alyssa Satin Capucilli
The Night the Moon Blew Kisses	Lynn Manuel
Dinosaurs, Dinosaurs	Byron Barton

Books to Emphasize Grammatical Structures (Continued):

Possessives

Thomas' Snowsuit	Robert Munsch
If You Had a Nose Like an Elephant's Trunk	Marian Dane Bauer

Phonological Awareness (Spelling Patterns)

There's an Ant in Anthony	Bernard Most
Ape in a Cape	Fritz Eichenberg
The War Between the Consonants and the Vowels	Priscilla Turner
Drat that Fat Cat	Pat Thmpson
Word Wizard	Cathryn Falwell
A Mink, a Fink, a Skating Rink	Brian Cleary
The Pig in the Spigot	Richard Wilbur
Tales about Tails	Jacqueline Mack

Prepositions

Where's Spot/ Who's There Spot/ Spot's Birthday	Eric Hill
Each Peach Pear Plum	Janet & Allan Ahlberg
Whose Under that Hat?	David A. Carter
Under the Bed	David Wood
Proud to be a Poopini	David Sindrey
The Greedy Python	R. Buckley & E. Carle
Nanny – Mac's Cat	Anne Louise MacDonald
Farmer Joe Goes to the City	Nancy Wilcox Richards
Miffy in a Tent	Dick Bruna

Questions

The Very Busy Spider	Eric Carle
What's That Awful Smell?	Heather Tekavec
Whose Mouse are You?	Robert Kraus
Dinosaur Days	Linda Manning
Farmer Joe's Hot Day	Nancy Wilcox Richards
Barn Cat	Carol Saul
Tap, Tap, Tap	Keith Faulkner
What if the Bus Doesn't Come?	Ginette Lamont Clarke

Books to Emphasize Grammatical Structures (Continued):

Modals

Big Trucks, Big Wheels	Petrina Gentile
Polar Bear's Gift	Jeanne Bushey
I Can Do It	Jana Novotny Hunter
From Head to Toe	Eric Carle
Mr. Brown Can Moo. Can You?	Dr. Seuss

Dialogue

Something for Nothing	Phoebe Gilman
The Salamander's Room	Anne Mazer
Hansel and Gretel	Paul O. Zelinsky
Velveteen Rabbit	Margery Williams
The Frog Princess Continued	Jon Scieszka
Little Fern's First Winter	Jane Simmons
Tiger's New Cowboy Boots	Irene Morck