

## SIGN LANGUAGE LITERACY IN THE SIGN LANGUAGE CURRICULUM

Maria Mertzani<sup>1</sup>

**Abstract:** The Sign Language curriculum is a contemporary development which few countries have officially implemented to teach a national standard Sign Language as a first language (L1) and/or mother tongue in the school grades. In these, Sign Language is a mandatory unit, which the deaf child needs to study and develop metalinguistically, as is the case in learning spoken languages as L1. A Sign Language as a metalanguage also means that the curriculum teaches explicit linguistic knowledge for the child to understand gradually how SL functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when attending the language. In other words, the Sign Language curriculum addresses the importance of developing the child's Sign Language literacy. Traditionally, literacy is linked to reading and writing and for its learning the language curriculum sets five essential early literacy components: comprehension, phonological awareness, phonics, print convention knowledge and fluency. The paper discusses these components in support of Sign Language literacy as a verbal (non-print) form of literacy, based on a documental study among the Sign Language and indigenous curriculum.

**Keywords:** Sign Language. Curriculum. Literacy. Early literacy components.

## ALFABETIZAÇÃO NA LÍNGUA DE SINAIS NO CURRÍCULO DE LÍNGUA DE SINAIS

**Resumo:** O desenvolvimento de currículos de línguas de sinais é um acontecimento contemporâneo que poucos países puderam implementar oficialmente para ensinar a Língua de Sinais padrão nacional como primeira língua (L1) e/ou língua materna nas séries escolares. Nestes, a Língua de Sinais figura como uma disciplina obrigatória, que a criança surda precisa estudar e se desenvolver metalinguisticamente, como é o caso do aprendizado de línguas faladas como L1. Uma língua de sinais como metalíngua também significa que o currículo ensina conhecimentos linguísticos explícitos para que a criança compreenda gradualmente como a língua de sinais funciona em diferentes contextos, para que faça escolhas efetivas de significado ou estilo e para que compreenda os conteúdos de forma mais completa ao estudar a língua. Em outras palavras, o currículo de língua de sinais aborda a importância de desenvolver a alfabetização na língua de sinais para a criança. Tradicionalmente, a alfabetização está ligada à leitura e à escrita e, para sua aprendizagem, o currículo de línguas estabelece cinco componentes essenciais da alfabetização inicial: compreensão, consciência fonológica, fonética, conhecimento de convenções de escrita e fluência. O artigo discute esses componentes em apoio à alfabetização na língua de sinais como uma forma de alfabetização verbal (não escrita), a partir de um estudo documental entre o currículo da língua de sinais e o currículo indígena.

**Palavras-chave:** Língua de Sinais. Currículo. Alfabetização. Componentes de alfabetização precoce.

<sup>1</sup> Ph.D. in Applied Linguistics of Sign Languages, Centre for Deaf Studies, University of Bristol, U.K. Visiting Professor, Institute of Education, Federal University of Rio Grande, Rio Grande, RS-Brazil. E-mail: maria.d.mertzani@gmail.com

## ALFABETIZAÇÃO EM LINGUA DE SEÑAS EN EL CURRÍCULO DE LINGUA DE SEÑAS

**Resumen** El currículo de Lengua de Señas es un desarrollo contemporáneo que pocos países han implementado oficialmente para enseñar la Lengua de Señas estándar nacional como primera lengua (L1) y/o lengua materna en los grados escolares. En estos, la Lengua de Señas es una materia obligatoria, que el niño sordo necesita estudiar y desarrollar metalingüísticamente, como es el caso del aprendizaje de lenguas habladas como L1. Un Lengua de Señas como metalenguaje también significa que el currículo enseña habilidades lingüísticas explícitas para que el niño entienda gradualmente cómo funciona la Lengua de Señas en diferentes contextos, tome decisiones efectivas de significado o estilo y comprenda más completamente cuando estudie el idioma. En otras palabras, el currículo de Lengua de Señas aborda la importancia de desarrollar la alfabetización da Lengua de Señas de un niño. Tradicionalmente, la alfabetización está ligada a la lectura y la escritura, y para su aprendizaje, el currículo de lenguas establece cinco componentes esenciales de la alfabetización inicial: comprensión, conciencia fonológica, fonética, conocimiento de las convenciones de escrita y fluidez. El artículo discute estos componentes en apoyo de la alfabetización en Lengua de Señas como una forma de alfabetización verbal (no escrita), basado en un estudio documental entre el currículo de Lengua de Señas y el currículo indígena.

**Palavras-clave:** Lengua de Señas. Currículo. Alfabetización. Componentes de alfabetización temprana.

### Introduction

Throughout this paper, *literacy* is coined to *literate thought*, to our ability to access and interpret (comprehend and apply) learned information (PAUL, 2018). Traditionally, literacy is represented as synonymous to acquiring a written code by developing decoding (reading) and encoding (writing) skills of typographic texts (JACOBS, 2013). Due to this close relationship to reading and writing, sometimes the term *print literacy* is preferred (MCCARTY, 2013). In addition, literacy has been regarded an autonomous, universal skill and its instruction as “culturally neutral” (GARCÍA, FLORES, 2013). Since the 1950s, in the UN and UNESCO definitions, literacy is set as a fundamental human right (and hence, a linguistic one) and the foundation for lifelong learning (BROWNING, 2016).

From the 1980s onwards, literacy is understood to be a socially and historically determined construct rather than a neutral process (STREET, 2005; 2008), and what counts as a text and literate behavior are determined by the community’s socio-cultural, historical, and political context (JACOB, 2013). Literacy then encompasses understanding these contexts in which it is practiced (GARCÍA, FLORES, 2013; C. D. LEE, 2013; J. S. LEE, 2013), and its learning is enabled and/or constrained by power relations that may privilege some of its types

and subjugate others, especially when two (or more) languages are involved (GARCÍA, FLORES, 2013; MCCARTY, 2013).

Literacy as a socio-cultural construct means that education builds on the child's mother tongue (MT), the first language (L1) students learn from birth, identify with (thus they are identified as native users of that language by others), know best, understand, and use comfortably in their communities (GORTER, 2013; SKUTNABB-KANGAS, 1994; 2013; 2014; SKUTNABB-KANGAS, MCCARTY, 2008). For linguistic minorities in particular, a *MT-medium instruction* means that an educational program uses first the students' L1 for early literacy learning to gradually introduce them to the second language (L2) (see UNESCO, 2005), often<sup>2</sup> a national language, and to its literacy.

In this context, most schools adhere to the concept *print literacy* and to the catholic idea that all children learn to read and write (even in the same way) their L1. However, not all languages have a written system and thus, they are characterised mainly by *oral literacy*. Moreover, because language use varies considerably from one context to another, education shifted to teaching language (and hence, literacy) according to such real-life uses. Consequently, new definitions of text appeared (e.g., online chats, video messages, audio files), involving new "semiotic landscapes" with complex meanings of the encoding and decoding act (JACOBS, 2013).

In line with this, the paper discusses the literacy of SL, the language of deaf communities and Sign Language Peoples (BATTERBURY, LADD, GULLIVER, 2007). The aim is to question the traditional definition of literacy, following current scholarly work on *deaf literacy* that is not tied up to the literacy of spoken languages only (to mention a few: CZUBEK, SNODDON, 2016; KUNTZE, 2016b; KUNTZE, GOLOS, ENNS, 2014; PAUL, 2018; SNODDON, 2012). Apart from considering SLs as minority languages in the wider mainstream society (see SKUTNABB-KANGAS, 2014), the paper also considers studies that demonstrate an interdependence between SL knowledge and proficiency and deaf children's development of literacy skills (HRASTINSKI, WILBUR, 2016; NOVOGRODSKY, CALDWELL-HARRIS, FISH, HOFFMEISTER, 2014). Accordingly, it argues that deaf children must be given the

---

<sup>2</sup> English is taught in the national curriculum in the place of the dominant language of a country (UNESCO, 2005).

opportunity to acquire and become literate in a natural SL, in the same way they develop their *spoken language literacy* by acquiring reading and writing.

Back in 2018, during the study of the Brazilian Sign Language (Libras) Curriculum of the city of Rio Grande (MERTZANI, TERRA, DUARTE, 2020), we have conducted an examination of what it means to learn literacy for spoken languages, including for minority languages, especially in the early years of the L1 curriculum. The construction of this curriculum involved, firstly, an examination of the SL competence in the existing SL curricula (some are represented in this volume) from the kindergarten to the final years of elementary education, which demonstrated a developmental approach to SL learning. Hence, it became clear that the SL curriculum aims at the deaf child's "later language development" (RAVID, TOLCHINSKY, 2002, p. 418) and hence, *metalanguage*, through an increase learning of vocabulary and morpho-syntactic structures for various discourse genres and texts. Secondly, it examined the content of the spoken language minority curriculum, the indigenous curriculum in particular, for it represents the teaching and learning of languages with oral literacy and limited use of reading and writing (see BROWNING, 2016). This *through-the-air*<sup>3</sup> (see PAUL, 2018; PAUL, WANG, 2012) element of the indigenous language is comparable to SLs since they do not have a writing system, and, in this sense, are *oral, verbal* languages too. The paper discusses these comparisons.

### **Literacy in the curriculum**

The hearing child, monolingual or bilingual, has access to the morphological and syntactic structures of the language(s) involved before entering school, as she/he has already acquired the linguistic repertoire of his/her MT. During his/her schooling years, this repertoire will be used to consciously access his/her own linguistic knowledge and to view language (L1 and L2) from various perspectives. Thus,

To be 'linguistically literate' means to possess a linguistic repertoire that encompasses a wide range of registers and genres. Once literacy is part of an individual's cognitive system, it interacts with other components of linguistic knowledge to shape the emergence of its key property [...] Developing

<sup>3</sup> The realization of language through the air, captured in the air, and not in writing. This through-the-air realization can be captured in video.

linguistic literacy means gaining increased control over a larger and more flexible linguistic repertoire and simultaneously becoming more aware of one's own spoken and written language systems [...] (RAVID, TOLCHINSKY, 2002, p. 419-420).

Table 1: Early literacy stages.

LITERACY STAGES	SCHOOL YEAR
<p><i>Pre-literacy</i> The child develops a foundation for learning literacy. For example, the child becomes more adept with the phonology of their language system (e.g., what sounds are similar in words). The child develops concepts about writing (e.g., writing goes from left to right and top to bottom), phonemic awareness and knowledge of how to handle a book.</p>	Preschool and Kindergarten
<p><i>Decoding</i> This stage reflects the beginning of formal literacy instruction. The child begins to develop some basic correspondences between letters and sounds and to apply this knowledge to books and other texts. The child usually acquires an understanding of the alphabetic principle and should have ample opportunities to “decode” words.</p>	First year (6 - 7 years old)
<p><i>Confirmation</i> The child confirms the knowledge they learned in earlier stages and becomes more fluent in these skills. It develops what is called automaticity (the automatic reading of words), with less emphasis on decoding. As her reading becomes more fluent, she begins to develop the ability to read in a way that reflects natural conversational rhythms (or prosody). She knows how to use proper phrasing, emphasis and intonation in her reading.</p>	2nd to 3rd year (around 8 years old)

Source: Beers, Beers and Smith (2010, p. 3).

For hearing children, literacy learning officially commences at school, at the age of four (in the kindergarten), and continues up to the first two years of elementary education, around the age of seven. Thus, literacy instruction covers the so called *pre-literacy* and *decoding stages* (see Table 1). By the third year of elementary education, the child must confirm his/her knowledge and fluency in reading and writing by demonstrating capacity in automaticity; that is, his/her skill in reading words automatically, with less emphasis on decoding, and with proper word intonation use. After the eighth year of age, the expectation is that the student becomes more fluent in reading different texts for various information (fiction, non fiction, etc.), and by the fifteen years of age in secondary school, he/she is more able to critically evaluate any

information and synthesize his/her own perspective on a subject (BEERS, BEERS, SMITH, 2010). This literacy process is traditionally integrated in the official curriculum and determines children's academic achievement and progress.

These same stages apply for hearing children of minority communities, where, for instance, the schools either adopt the indigenous writing system (where applicable) and teach it, or directly teach the official, dominant language, thus skipping teaching the child's MT. In the first case, literacy is associated to the learning of the child's minority maternal language, where the child also learns to read and write using the writing system of the minority language. In contrast, in the second case, literacy is linked to the language of the majority, independently of the nature<sup>4</sup> of the bilingual program at school. More often though literacy involves the country's official language, and the minority language is used to serve the child to be proficient and literate in that dominant language (BAKER, 2001; SKUTNABB-KANGAS, 2013). Even though a minority language may appear as an instruction language for the delivery of the curriculum, or in the first year of elementary education as an L1, the formal bilingual program aims at transiting the child to use the dominant language rather than to learn and maintain his/her minority MT (GORTER, 2013; SKUTNABB-KANGAS, 2013). Hence, literacy (especially at the pre-literacy and decoding stages) is equated to the systematic early teaching of the sounds and letters of that official language and to the development of its reading automaticity.

### Essential learning components of early literacy

Whether the teaching refers to a minority or majority spoken language, there are four essential components of early literacy<sup>5</sup> in the curriculum that involve and transcend the four skills: speaking, listening, reading and writing (ALGOZZINE, MARR, MCCLANAHAN, BARNES, 2012; EPSTEIN, 2007). The first is the *comprehension*, "the process of deriving meaning from action, speech and text by connecting what one is learning to what one already knows" (EPSTEIN, 2007, p. 4). In particular, this component involves: (i) vocabulary (e.g., learning new words and concepts); (ii) prediction (e.g., saying what will happen next in a story);

<sup>4</sup> The nature of the bilingual programs is explained by Baker (2001) and Skutnabb-Kangas and McCarty (2008).

<sup>5</sup> All four involve the two first literacy stages in Table 1.

(iii) connection (e.g., relating pictures and text to real life); and (iv) retelling (e.g., recalling actions and events from stories) (p. 142).

The second is the *phonological awareness*, the process of recognising the sounds that make up words, including rhyming (e.g., words that end with the same sounds or syllable), alliteration (e.g., words that begin with the same sound), and segmentation (breaking words into syllables) (ALGOZZINE et al., 2012; EASTERBROOKS, BEAL-ALVAREZ, 2013; EPSTEIN, 2007). The third component is the *phonics* (or the *alphabetic principle* for alphabetic scripts; for ideographs see HO, WONG, YEUNG, CHAN, et al., 2012), which involves systematic instruction of letter-sound relations (e.g., auditory discrimination, letter-sound knowledge; see STALLMAN, PEARSON, p. 15-16) to reading and spelling words accurately and quickly, including name recognition (e.g., identifying one's own printed name), name writing (e.g., writing one's own name), letter recognition (e.g., naming the letters of the alphabet), and letter-sound correspondence (e.g., knowing a letter's sound or a sound's letter) (EASTERBROOKS, BEAL-ALVAREZ, 2013; EPSTEIN, 2007).

The fourth component refers to the *knowledge of print convention*, such as knowing how print is organised on the page and how it is used for reading and writing (EPSTEIN, 2007, p. 5). It involves: identifying book parts (e.g., front and back cover, title page, story pages); orienting books for reading (e.g., recognising front and back, top and bottom, and right side up); distinguishing between pictures and words (e.g., recognising the differences between illustrations and text); and understanding the direction of text (e.g., flowing left to right, returning or "sweeping" left at the end of a line, continuing on the next page) (p. 143).

The National Reading Panel (2000) for the English language adds *fluency* as an essential early literacy component, which refers to reading quickly, accurately, and with appropriate expression. Fluency is an indicator of skilled reading and facilitates rapid integration of concepts in sentences and text. It is measured by having students read a grade level passage aloud for one minute and the number of correct words produced (from the passage) is the oral reading fluency rate (ALGOZZINE et al., 2012, p. 10).

Table 2: Extract of oral communication and oral tradition learning objectives.

	<b>Listening and Speaking</b>	<b>Reading and Viewing</b>
<i>Interacting</i>	Listen and speak formally and informally to Elders, teachers, familiar adults and classmates when learning in school, in the community and on Country.	Read and view with understanding some simple written and visual (picture) texts and the natural environment.
	<p>Listening to and telling stories about experiences at school, at home, in the community and out bush</p> <ul style="list-style-type: none"> <li>• preparing and presenting simple oral presentations, e.g.:               <ul style="list-style-type: none"> <li>- recounting an experience</li> <li>- giving information or explanations</li> <li>- explaining a picture or story, including who it is about, what is happening, where it is, why it might be happening</li> <li>- talking about something they like such as food, characters in stories and films, games and activities (swimming, football, running) and why they like these things.</li> </ul> </li> </ul>	<p>Reading and interpreting simple charts and diagrams, such as family trees, classification charts, maps</p> <ul style="list-style-type: none"> <li>• viewing photos, books or youtube videos to find information about a culture topic, community history or events</li> <li>• showing some understanding of visual texts such as paintings, photos, designs, sand drawings and signs within the natural environment, by retelling and acting out with costumes, props or actions, describing the main characters and key events</li> <li>• talking about the meaning of pictures, posters, paintings and symbols the see in the community</li> <li>• talking about ownership of stories</li> </ul>
	<p>Listening to stories, songs and poems and responding by:</p> <ul style="list-style-type: none"> <li>- remembering and talking about key ideas, new words</li> <li>- drawing pictures</li> <li>- talking about their favourite parts</li> <li>- roleplaying the main characters</li> <li>- answering questions about what they have seen or heard</li> <li>- saying what they think some words might mean</li> </ul>	

Source: The NTILC (2017, p. 10-11).

Of these components, comprehension involves unconstrained skills that develop slowly over the child's schooling and lifetime, whereas the remaining (e.g., print concepts, phonemic awareness, phonics) are constrained and involve the learning of a finite set of items, which the child masters within a relatively short period of time (HARTMAN, NICOLARAKIS, WANG, 2019). In addition, it is the component phonics with the knowledge of the print convention, which strictly apply to the learning of the written form of a spoken language (its reading and



writing), and hence, its print literacy. The remaining, comprehension and phonological awareness, can also refer to oral literacy. The following section discusses how these two components are represented in the indigenous curriculum, as indigenous languages are verbal languages and as such, their curriculum relates to the learning of their oral literacy.

### **Literacy in the indigenous curriculum**

Based on an online search, the following curricula were met and examined qualitatively: the Canada curricula from the provinces of Ontario (East-central Canada), Manitoba (East Canada) and Alberta (Western Canada), and the Northern Territory Indigenous Languages and Cultures Curriculum of Australia - NTILC (2017). Other indigenous curricula were also accessed (like the Samoan and Hawaiian curricula), but a critical reading resulted to the use of the selected ones, for they provide rich and culturally oriented objectives that can be mapped to the components under study. In these, the focus was on the study of their L1 and/or language revitalization pathways for the kindergarten and the first three grades of elementary education, the years that correspond to the early literacy stages (and their essential components). While they have different structures, the curricula prioritize the teaching of oral rather print literacy by focusing on the oral communication and oral traditions (e.g., stories by the Elders, songs, various customs).

In the oral communication objectives, the focus is on listening to the language (especially to the Elders of the community) and speaking it every day, with a particular reference to its use in various social interactions (with the community, family, closest environments, etc.), to language variation (to the differences in language and language changes over time), and to interpreting, translating and transcribing (moving between languages and cultures firstly orally and secondly, in writing, from the fourth grade onwards). An example is presented in Table 2 from the NTILC curriculum, which also displays objectives regarding the reading and viewing the community's *visual texts* (photos, pictures, sand drawings, signs, etc.). The strengthening of children's oral language is seen in the community's need to maintain in the future its language, and for this reason, children are viewed as the future keepers of such knowledge.

The preservation and enhancement of Aboriginal languages is a matter of national pride and honour. Language retention is also critical to the ongoing

existence of the distinctive cultures of Aboriginal peoples. By participating in a First Language Program students are able to maintain and enhance their language and deepen their understanding of Aboriginal cultures. As generations before them have been, these students will be the future Keepers of Knowledge. (Western Canadian Protocol for Collaboration in Basic Education, 2000, p. 65).

In the *Native Languages - The Ontario Curriculum Grades 1-8* (MINISTRY OF EDUCATION, 2001) oral communication is the priority through all eight grades, especially in the first three grades of elementary education, in which the emphasis is on the teaching of listening and speaking skills. It is from the fourth grade onwards that the learning focuses also on print literacy, and hence, on the reading and writing of the indigenous language, using the writing code that the community may have developed.

Table 3: The land as text in the indigenous curriculum.

	Level 1 (K–Gr. 1)	Level 2 (Gr. 2–3)
Students will demonstrate understanding of:	Aboriginal people are the first people of the land.	Aboriginal people have stories about how they came to be the first people on the land.
	<ul style="list-style-type: none"> <li>• Stories of Long Ago—when the world was new and when creatures talked.</li> <li>• Creation stories that introduce place and identity—important natural features, important creatures, important values, first people.</li> <li>• Creation stories as showing the importance of “land” or place to people, and that it is a gift from the Creator.</li> <li>• Places where they feel “at home” or belonging, such as home, grandfather’s place, homeroom, group of friends, community or neighbourhood.</li> </ul>	<ul style="list-style-type: none"> <li>• Family stories about ancestral lands or traditional territories.</li> <li>• Geographical features of ancestral lands that are mentioned in the</li> <li>• Traditional narratives of families/clans, such as mountains, inlets, coulees, valleys.</li> <li>• Flora and fauna of ancestral lands that are mentioned in traditional narratives of families/clans, such as turtles, buffalo, maple trees, berries, bears</li> <li>• Cultural products or practices in the families today that can be tied to the land, such as berry picking, summer travelling, mountain camping.</li> </ul>

Source: Western Canadian Protocol for Collaboration in Basic Education (2000, p. 44).

The NTILC (2017) and the *Common Curriculum Framework for Aboriginal Language and Culture Programs* - CCFALCP (2000) consider the land as text and as such, necessary the learning on country and its natural environment mainly from the Elders. For this purpose, the curriculum sets objectives for students to experience visits on country, identify different environmental features, explore ways to talk about location and directions, and to identify clan totems, Dreamings, body designs and dances (see Table 3). In this context, oral literacy learning is bound to the stories of the community's past, in which ancestral lands, identities and cultural practices are presented. Thus, the curriculum involves language skills to "understand and use language required to be sustained by nature, physically and spiritually" (Western Canadian Protocol for Collaboration in Basic Education, 2000, p. 21).

Knowing an indigenous language entails using the language in ways and for purposes valued by the community, in close relationship to strict cultural knowledge, whose scope and content students learn gradually. In the *Kindergarten to Grade 12 Aboriginal languages and cultures Manitoba Curriculum Framework of Outcomes* (2007), the indigenous language is explicitly stated to be a cultural skill.

In the *Framework*, Aboriginal language use is considered to be a cultural skill. All languages are used for basic communication. Beyond that, certain skills and knowledge of a language enable a person to engage more fully in a given culture. Each culture values and emphasizes different language skills. This is apparent when people make what seem to be social blunders in another culture (e.g., speaking too loudly, speaking too softly, speaking too much), when they are actually incorporating a valued component of their language into another. Knowing a language is more than knowing vocabulary, grammar, and culturally relevant topics. It includes using language in ways and for purposes valued by the cultural community. (Manitoba Education, Citizenship and Youth, 2007, p. 9).

Such knowledge is not entirely entrusted to the school, it is private, and is passed down by the Elders, the *Keepers of Knowledge* of each community. In this sense, certain objectives are presented as *discretionary* (e.g., objectives concerning ceremonial texts).

Most of the Aboriginal cultures practice a very strict code with respect to who should be the carriers of this kind of knowledge. Considering that the cultures have had to survive through intense assimilative pressures and, in many cases, government banning of practices, it is likely that not all cultural practices will be passed down through the school system. Trusting the wisdom of their Keepers of Knowledge, developers should be sensitive to the balance that

needs to be kept between what is public and what is private so that a helpful partnership can be created and maintained between the school and the people it is meant to serve. (Western Canadian Protocol for Collaboration in Basic Education, 2000, p. 24).

As already seen above, certain indigenous traditional symbolism and/or hand gestures/signs are part of the community's heritage and literacy, and thus, the objectives require the child to learn their use in the oral telling of stories, such as in the sand stories, and to talk about their meanings (see NTILC, 2017). From the second grade onwards, children learn to understand how these symbols associate with the community's oral traditions (songs, dance, music, etc.) and social practice (e.g., hunting, sorry business).

The correct use of the indigenous language (orally and in writing) is also defined, and for this purpose, the curriculum teaches grammar, vocabulary and pronunciation. There are objectives for understanding different intonation patterns (especially with regards the articulation of oral traditions) and for different kinds of utterances (statements, questions, commands, etc.). Moreover, the curriculum explicitly states that it is the members of each community (and not the teachers themselves) that determine the dialect and orthography to be used in the L1 programs. It is in the first grade of elementary education that the objectives concern the phonemic awareness of the indigenous language, and hence, the recognition of its sounds and sound patterns of the words, and of the syllables and their separation in the words. In this same grade, the child is required to show awareness that speech and/or parts of it can be written down using the community's cultural symbols (including the conventional orthography). Thus, the phonological and morphological awareness of the indigenous language is taught primarily verbally, although it can employ other visual modes.

### **Early literacy in the SL curriculum**

After studying the indigenous curriculum, the focus was on investigating whether and how the literacy components exist in the SL curriculum, especially those associating with oral literacy. For this purpose, an online search was conducted and located seven SL curricula, from which the following four were chosen and examined: the Greek Sign Language (GSL) Curriculum (Ministry of Education - Pedagogical Institute, 2004); the ASL Content Standards (2018), the Australian Sign Language (Auslan) Curriculum (ACARA, 2017) and the New

Zealand Sign Language (NZSL) Curriculum (Ministry of Education, 2006). Similarly to the indigenous curriculum, the communication skill is emphasized in all curricula. Thus, the aim is the deaf student to use the SL, to communicate with his/her immediate environment and develop social and communicative skills. In fact, SL communication is to be taught while the child acquires language, a SL.

The majority of deaf children grows with hearing parents who do not know SL, prefer their child to be implanted and hear, and thus, focus, since his/her birth, on speech training (SNODDON, 2012; 2014). When the deaf child enters school, he/she is not fluent in SL, does not have a language and/or has a delayed language (both a SL and spoken language), a reality that complicates the definition of objectives in the language curriculum (L1, L2, etc.). There is only a small number of deaf children who comes from deaf families<sup>6</sup> and whose SL is a maternal language. The Auslan Curriculum may be the only curriculum so far that provides SL learning *pathways*, considering the different learner profiles of deaf students (see Carty, Bontempo e de Beuzeville in this volume). Independently though of this language heterogeneity (see also Carmo e Carvalho in this volume), the SL curriculum sets its objectives following the developmental stages of the native deaf population, assuming that the child arrives at school with age-appropriate SL. For example, in the ASL Content Standards (2018, p. 8) it is clearly stated:

The Standards are not remedial. It is beyond the scope of the Standards to address all that is important in educating deaf or hard of hearing students (e.g., social, emotional, physical development) and the Standards also do not—indeed cannot—encompass the potential range of content areas into which ASL may be integrated. Deaf and hard of hearing children entering kindergarten are expected to arrive at school with age-appropriate ASL fluency; the standards are not intended to provide remedial ASL for non-signing deaf children or deaf children beginning to learn ASL. The starting point for the Standards is the assumption that children have arrived with grade-level fluency in ASL.

Regarding the comprehension component, learning vocabulary objectives are met across the curricula, although the ASL Content Standards (2018) appear to have a richer content, following the structure and strands of the Common Core State Standards for English Language

<sup>6</sup> These children are the native users of SLs.

Arts and Literacy<sup>7</sup> (CCSTELAL) (2010). In this, the objectives also involve the multiple uses of fingerspelling in the production of signs (see Table 4). Moreover, comprehending different genres of signed texts is also the aim. Hence, the SL curriculum has objectives that require the student to learn to ask and answer questions about key details in signed texts, retell their content (including their key details), demonstrate understanding of central messages and/or lessons, and describe characters, settings, and major events.

Table 4: Vocabulary learning objectives.

<i>Kindergarten</i>	<b>CCSTELAL</b>	<b>ASL STANDARDS</b>
Vocabulary Acquisition and Use:	Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on kindergarten reading and content.	Determine or clarify the meaning of unknown and multiple-meaning signs, fingerspelled words, and phrases based on kindergarten viewing and content.
	<ul style="list-style-type: none"> <li>- Identify new meanings for familiar words and apply them accurately (e.g., knowing duck is a bird and learning the verb to duck).</li> <li>- Use the most frequently occurring inflections and affixes (e.g., -ed, -s, re-, un-, pre-, -ful, -less) as a clue to the meaning of an unknown word.</li> </ul>	<ul style="list-style-type: none"> <li>a. Use context to identify the meaning of unknown signs, fingerspelled words, and phrases.</li> <li>b. Identify new meanings for similar signs and apply them accurately (e.g., SAME vs. LIKE, BUT vs. DIFFERENT).</li> <li>c. Use the most frequently occurring inflections (e.g., SIT-FOR- A-LONG-TIME, SHE-GIVES-HIM) as a clue to the meaning of an unknown sign.</li> <li>d. Use the most frequently occurring affixes and compound words (e.g., LAW-PERSON, WOOD+CUT-PERSON, TREE+HOUSE) as a clue to the meaning of an unknown sign.</li> </ul>

Source: CCSTELAL (2010), ASL Content Standards (2018, p. 44).

The verbal and visual nature of SLs introduces a new concept of text, the signed text, based on past and modern uses by its native signers (deaf and hearing) (CHRISTIE, WILKINS,

<sup>7</sup> The CCSTELAL can be accessed at: <<http://www.corestandards.org/ELA-Literacy/>>.

1997; CZUBEK, 2006; BYRNE, 2016): video recorded (without physical contact) or live (with physical contact) (e.g., in face-to-face settings, online, films) as well as static, such as SL in printed books, drawings and other. In these texts, SL turns into an academic subject and as such, its literacy involves the comprehension of their linguistic and conceptual aspects and demands (see: KANEKO, MESCH, 2013; LOEFLER, 2014; MIRZOEFF, 1995; SUTTON-SPENCE 2005; 2014; SUTTON-SPENCE, NAPOLI, 2010) and the ability to use it in an accurate and coherent way<sup>8</sup>. The act of reading diverse signed texts depends on both sign decoding and linguistic comprehension (the semantic processing of SL).

Current research with native signers (deaf and hearing) demonstrates that phonology is not exclusively sound-based. Instead, sign phonology is processed in the identical brain tissue as spoken phonology, even though SLs have evolved in the absence of sound (PETITTO, 2014; 2016). Thus, as in the spoken language curriculum, SL phonology has its place in the SL curriculum and phonological awareness is taught in the first years, partially in the kindergarten, and fully in the first and second grade of elementary education. Thus, sign phonology is an early constrained skill to be learned and as such, it does not appear in the third year of elementary education. The comparison shows that the learning objectives concern mainly the phonological parameters of the signs. For example, the Auslan curriculum (ACARA, 2017) sets the objective under the Auslan L1 learner pathway: “Recognise the main formational elements of handshape, movement and location in Auslan signs, and understand that a sign is the same as a spoken or written word even though it can be iconic”. Similarly, in the GSL curriculum: “to understand all basic handshapes used in GSL” and “to produce, when asked, examples from any phonological feature of GSL meanings: handshape, location, movement, palm orientation, non-manual markers” (Ministry of Education, 2004, p. 43).

In the first grade, the child learns to identify and distinguish the phonological parameters as well as to segment signs into their syllables. These are clear (de)coding skills, similar to those involved in the literacy of spoken languages, involving the segmental (e.g., syllable manipulation, rime, phonemes) and suprasegmental (e.g., intonation patterns, stress placement,

<sup>8</sup> For spoken languages, the ability to express oneself fluently and grammatically in speech is called *oracy*. Equivalent is suggested the term *signacy* (GARCIA, COLE, 2014), which some SL curricula also use (e.g., the ASL Standards, the Libras curriculum of the city of Rio Grande in Brasil).

rhythm) phonological awareness of a SL. As the child progresses at school, he/she is expected to consciously and rapidly recognise and produce proper signing, to confirm his/her phonological knowledge acquired in the first years, and to demonstrate proper phrasing and intonation.

SLs are polymorphic languages and the SL curriculum aims at teaching explicitly their structure. This teaching begins in the first grade of elementary education, which, through a spiraling approach (following the child's developmental stages), increases in content as the child progresses to the final years of elementary education. For example, in the first years the child learns to recognise that signs are articulated in the signed space, using personal pronouns and basic directional verbs to indicate spatial relationships. From the third grade onwards, grammar teaching is systematic, involving the learning of classifier constructions, compounding, derivation, verbal and nominal inflection, and syntax (e.g., sentence types, clause structure, coordination and subordination). As soon as the child starts learning the spoken language, SL structures are taught through a contrastive approach to spoken language. This latter particularly appears in the objectives of SL interpreting and translating in the Ausland Curriculum as in the examples: “comparing Auslan expressions used in everyday interactions such as greetings with equivalent English expressions, for example, HOW-ARE-YOU? compared to How are you?”.

Among the examined curricula, the ASL Content Standards appear to involve to a greater extent objectives (based on the structure of CCSTELAL) about the fourth component and the conventions of signed texts (printed, video-based, etc.) (see Table 5). Therefore, the aim is to teach to identify their parts (e.g., the play or stop buttons in the videos), distinguish signing from other visuals (e.g., from other symbols, illustrations), and at understanding the direction of signing (e.g., reading the flowing of signing in a book). Thus, SL reading refers not only to the act of watching a signed video (live and/or recorded), but also to the reading of printed signed texts (e.g., from SL dictionaries, SL picture books). In these, the child needs to learn how signing is organized (on a page of a book; in a video sequence, etc.), to ask questions about their content, to identify their structure, to retell their information, and discuss about it.



Table 5: Objectives about the signed text conventions.

<i>Kindergarten</i>	<b>CCSTELAL</b>	<b>ASL STANDARDS</b>
Craft and Structure:	With prompting and support, ask and answer questions about unknown words in a text.	1. With prompting and support, ask and answer questions about unknown signs and fingerspelled words.
	Identify the front cover, back cover, and title page of a book.	2. Identify the beginning, body, and ending of a text.
	Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.	3. Name the author and signer of a text and define the role of each in presenting the ideas or information.

Source: CCSTELAL (2010), ASL Content Standards (2018, p. 18).

Moreover, the ASL Content Standards also involve the fluency component throughout the grades in Kindergarten and elementary education. For the first three years of schooling, fluency refers to the production of signed texts with purpose, sufficient accuracy and appropriate rate and expressions. Recitation is also included when literary texts are involved (e.g., prose, poetry), as well as using context to confirm or self-correct sign recognition and understanding.

## Discussion

SL curriculum is a relatively new development, and very few countries have officially published one for the teaching and learning of SL as an L1. Discussing, then, about SL literacy within this curriculum is an even more recent affair for the additional reason: literacy is traditionally connected to the reading and writing of spoken languages. SLs are not written languages - at least not under this classic sense of having a written code - and as such, can be compared with those spoken languages whose literate activity is not confined to a written system (see BROWNING, 2016). Due to this verbal similarity then, the paper sought to examine how literacy is represented in this language minority curriculum, and to discuss its realization through, primarily, a “through the air” mode (see PAUL, 2006; 2018; PAUL, WANG, 2012). Since literacy for spoken languages is taught in the first three years of schooling, the focus was on the established five components that the curriculum sets for children to become literate and under which their literacy performance is measured

(ALGOZZINE et al., 2012; COOPER, 2008; HARP, 1996). Of these, comprehension and phonological awareness are present in both curricula through this verbal mode.

Phonemic awareness is a component that does not need writing to be acquired. It involves listening and viewing alone. It does not involve recognition of letters or names of letters, and even when visual tools are used (including printed letters), these are for display reasons (to help students see what it is demonstrated) with no intent to teach alphabetic knowledge (EASTERBROOKS, BEAL-ALVAREZ, 2013, p. 118). It refers to the the ability to notice, think about, and work with the individual phonemes of spoken/signed words through detection, discrimination, and identification of individual phonemes. Its importance in the SL curriculum is research-based since deaf children's levels of SL phonemic awareness is positively correlated with SL proficiency, which, in turn, is used metalinguistically when they acquire spoken literacy skills (SNODDON, 2014, p. 81).

The comprehension component also relates to the understanding of verbal texts. Regardless of its format (e.g., live, recorded), like the written text, it can be an important source of information through which the child can expand his/her knowledge, skills, and experience. In both curricula, students learn how to comprehend a verbal text and are called to become familiar with its various genres, to develop the ability to interpret them and to make connections to prior and/or present knowledge. In this sense then, literacy "pertains not only to written language but also to oral/signed discourse" (KUNTZE, 2014, p. 658). As these texts have differentiated forms, the objectives set also different conventions for reading them. For example, the indigenous curriculum prioritises the traditional narrative in its verbal literacy, which has a different function and structure (e.g., uses rhythm) from an informative text (e.g., oral presentation) (PAUL, WANG, 2012, p. 8).

Thus, similar to the print convention component of the spoken language curriculum, the SL curriculum sets objectives that require the child to get to know the various forms of signed texts, especially the video-based ones, since their reading implies different cognitive procedures (e.g., controlling eye movement, perceiving visual information, processing linguistic information; see BOSWORTH, STONE, HWANG, 2020; ROSENBERG, LIEBERMAN, CASELLI, HOFFMEISTER, 2020). Photos, images, and videos show most often a frontal view of a signer, requiring the child to rotate 180° the displayed signing and perform a *visual*

*perspective shift* (EMMOREY et al., 2009). Moreover, children base their SL acquisition in various imitating strategies, and while reading these material, they may produce incorrect signing. For example, they may produce what they see from their perspective (when using a visual matching strategy), or they may produce a mirror image of the modeled signing (through a mirroring strategy) (SHIELD, MEIER, 2018).

In the indigenous curriculum, literacy is strongly bound to the community practice. Thus, the curriculum contains objectives that allow its realization in and outside school, with a direct contact with and/or interference of community members (such as the Elders), especially when discretionary cultural knowledge is involved. The SL curriculum involves objectives that motivate the deaf child's contact with the local deaf communities, the learning of their culture and history, though it does not set objectives that could invite their greater participation in such learning.

SL literacy is tied up to the recognition of SLs as languages (SNODDON, 2012). Although there is plethora of sign linguistics studies (see updated research in QUER, PFAU, HERRMANN, 2021), there are still negative attitudes from a considerable number of educators and policy makers who do not embrace SL competencies as learning goals for deaf children (KRAUSNEKER et al., 2020). Such attitudes also affect what we consider literacy at schools. As mentioned previously, print literacy is the only form that is associated with children's schooling. However, it is the proficiency in the verbal form of a language that contributes significantly to the development of print literacy in that same language. This form "is the *real engine* for thought and communication" upon which the print literacy (reading and writing) is based (PAUL, WANG, 2012; PAUL, 2018). In fact, "it is doubtful that individuals can reach a competent level of literate thought" in the secondary, captured mode (e.g., reading, writing), "without also having competence in the primary or through-the-air mode [the verbal]" (PAUL, WANG, 2012, p. 2).

This present examination demonstrates that elements of the essential literacy components appear in the indigenous and SL curriculum. In these, reading the textual compositions of these languages can provide similar benefits as the print literacy. Thus, new vocabulary can be learned, content can be predicted, reciting and retellings can be practiced and connections can be made to real-life events, all abilities that involve the comprehension component of spoken

language literacy (see also GOLOS, 2010a; 2010b). There are set objectives that cover basic language skills (e.g., identifying phonemes, words, parsing sentences) and higher-order skills (e.g., reasoning, problem solving), following the child's developmental stages. It is worth noting that, by stressing the significance of SL literacy, the intention is not to promote a dichotomy on the deaf child's overall literacy. The paper emphasizes the need to develop literate thought in a natural language as SL is for the deaf child (with/without a cochlear implant).

## Conclusion

This documental analysis aimed at discussing literacy as an all-encompassing term for language, spoken and signed, and in doing so, presented how literacy components appear in two language curricula that represent non-print, verbal languages. The SL curriculum is a new development, coming after the widespread acceptance of SLs as true languages with linguistic properties. However, there is still resistance for its integration in the official curriculum, and when it appears, there is little discussion about what constitutes the learning of a SL as an L1 and hence, its literacy. Based on both "oral" and visual signed texts, the deaf child needs the formal study of a natural SL, of its grammar, vocabulary, pragmatics and discourse genres, including the stylistic and register forms found in SL literature, to think about SL and to reason, to reflect specific information, to organize knowledge and communicate it in his/her immediate environment. In doing so, the child becomes literate in a SL too.

## References

ALGOZZINE, B.; MARR, M. B.; MCCLANAHAN, T.; BARNES, E. **Strategies and lessons for improving basic early literacy skills**. New York: Skyhorse Pub., 2012.

Australian Curriculum, Assessment and Reporting Authority - ACARA. **Auslan**. Sydney, 2017. Available at: <<https://www.australiancurriculum.edu.au/f-10-curriculum/languages/auslan/>>.

**ASL Content Standards, Kindergarten - Grade 12**. Washington, D.C.: Gallaudet University Laurent Clerc National Deaf Education Center and California School for the Deaf-Riverside. 2018.

BAKER, C. **Foundations of bilingual education and bilingualism**. Clevedon: Multilingual Matters, 2001.

BATTERBURY, S. C. E.; LADD, P.; GULLIVER, M. Sign Language Peoples as Indigenous Minorities: Implications for Research and Policy. **Environment and Planning A**, v.39, n.12, p. 2899–2915, 2007.

BEERS, C. S.; BEERS, J. W.; SMITH, J. O. **A principal's guide to literacy instruction**. New York: The Guilford Press, 2010.

BOSWORTH, R.; STONE, A.; HWANG, S. O. Effects of Video Reversal on Gaze Patterns during Signed Narrative Comprehension. **Journal of Deaf Studies and Deaf Education**, p. 283–297, 2020.

BROWNING, P. C. The problem of defining 'indigenous literacy': lessons from the Andes. **Íkala, Revista de Lenguaje y Cultura**, v.21, n.3, p. 301-312, 2016.

BYRNE, A. Definition of Signed Language Literacy. *In*: GERTZ, G.; BOUDREAULT, P. (Eds.). **The SAGE Deaf Studies Encyclopedia**. Volume 1. Thousand oaks, CA.: SAGE, 2016. p. 876-877.

CHRISTIE, K.; WILKINS, D. M. A Feast for the Eyes: ASL Literacy and ASL Literature. **Journal of Deaf Studies and Deaf Education**, v.2, n.1, p. 57-59, 1997.

**Common Curriculum Framework for Aboriginal Language and Culture Programs**. Western Canadian protocol for collaboration in Basic Education, 2000. Available at: <<https://open.alberta.ca/dataset/5a61711d-af3f-40d6-ba6f-bc5c3b37b5d0/resource/de544b72-4015-47d6-8166-c83c2fa6120b/download/abor.pdf>>.

COOPER, J. D. **Literacy assessment: helping teachers plan instruction**. Boston: Houghton Mifflin Co., 2008.

CZUBEK, T. Blue Listerine, Parochialism, and ASL Literacy. **Journal of Deaf Studies and Deaf Education**, v.11, n.3, p. 373 - 381, 2006.

CZUBEK, T. A.; SNODDON, K. Philosophy and models of Bilingualism. *In*: GERTZ, G.; BOUDREAULT, P. (Eds.). **The SAGE Deaf Studies Encyclopedia**. Volume 1. Thousand oaks, CA.: SAGE, 2016. p. 76-82.

EASTERBROOKS, S.R.; BEAL-ALVAREZ, J. **Literacy Instruction for Students Who Are Deaf and Hard of Hearing**. Oxford: Oxford University Press, 2013.

EMMOREY, K.; BOSWORTH, R.; KRALJIC, T. Visual feedback and self-monitoring of sign language. **Journal of Memory and Language**, v.61, p. 398–411, 2009.

EPSTEIN, A. S. What is early literacy? *In*: HOHMANN, M.; TANGORRA, J. (Eds.). **Let's talk literacy: practical readings for preschool teachers**. Ypsilanti, Michigan: High/Scope Press, 2007, p. 4-14.

GARCÍA, O.; FLORES, N. Literacy in Multilingual Classrooms. *In*: CHAPPELLE, C. A. (Ed.). **The Encyclopedia of Applied Linguistics**. Blackwell Publishing Ltd., 2013. DOI: 10.1002/9781405198431.wbeal0735.

GARCÍA, O.; COLE, D. Deaf gains in the study of bilingualism and bilingual education. *In*: BAUMAN, H. D. L.; MURRAY, J. J. (Eds.), **Deaf gain: raising the stakes for human diversity**. Minneapolis, MN: University of Minnesota Press, 2014, p. 95 - 111.

GOLOS, D. Deaf Children's Engagement in Educational Video in American Sign Language. **American Annals of the Deaf**, v.155, n.5, p. 360-68, 2010a.

GOLOS, D. Literacy Behaviors of Deaf Preschoolers during Video Viewing. **Sign Language Studies** v.11, n.1, p. 76-99, 2010b.

GORTER, D. Minority Languages in Education. *In*: CHAPPELLE, C. A. (Ed.). **The Encyclopedia of Applied Linguistics**. Blackwell Publishing Ltd., 2013. DOI: 10.1002/9781405198431.wbeal0765.

HARP, B. **Handbook of literacy assessment and evaluation**. Norwood, MA: Christopher-Gordon, 1996.

HARTMAN, M. C.; NICOLARAKIS, O. D.; WANG, Y. Language and Literacy: Issues and Considerations. **Education Sciences**, Special Issue: The Education of d/Deaf and Hard of Hearing Children: Perspectives on Language and Literacy Development, v.9, n.3, 2019. Available at: <<https://www.mdpi.com/2227-7102/9/3/180/html>>.

HO, C. S-H.; WONG, Y-K.; YEUNG, P-S.; CHAN, D. W.; CHUNG, K. K-H.; LO, S-C.; LUAN, H. The core components of reading instruction in Chinese. **Reading and Writing**, v. 25, p. 857-886, 2012.

HRASTINSKI, I.; WILBUR, R. B. Academic Achievement of Deaf and Hard-of-Hearing Students in an ASL/English Bilingual Program. **Journal of Deaf Studies and Deaf Education**, v.21, p. 156-170, 2016.

JACOBS, G. E. Literacy Practices in Virtual Environments. *In*: CHAPPELLE, C. A. (Ed.). **The Encyclopedia of Applied Linguistics**. Blackwell Publishing Ltd., 2013. DOI: 10.1002/9781405198431.wbeal0737.

KANEKO, M.; MESCH, J. Eye Gaze in Creative Sign Language. **Sign Language Studies**, v.13, n.3, p. 372-400, 2013.

LOEFLER, S. Deaf Music: Embodying Language and Rhythm. *In*: BAUMAN, H. D. L.; MURRAY, J. J. (Eds.), **Deaf gain: raising the stakes for human diversity**. Minneapolis, MN: University of Minnesota Press, 2014, p. 436 - 456.

Manitoba Education, Citizenship and Youth - School Programs Division. **Kindergarten to Grade 12 Aboriginal Languages and Cultures**. Manitoba Curriculum Framework of Outcomes. Winnipeg, Manitoba, Canada: Manitoba Education, Citizenship and Youth, School Programs Division, 2007. Available at: <[https://www.edu.gov.mb.ca/k12/abedu/framework/k-12\\_ab\\_lang.pdf](https://www.edu.gov.mb.ca/k12/abedu/framework/k-12_ab_lang.pdf)>.

KRAUSNEKER, V.; BECKER, C.; AUDEOUD, M.; TARCSIOVA, D. Bilingual school education with spoken and signed languages in Europe. **International Journal of Bilingual Education and Bilingualism**, 2020. Available at: <<https://www.tandfonline.com/doi/full/10.1080/13670050.2020.1799325>>. Accessed: 30 October 2021.

KRENTZ, C. B. The Camera as Printing Press: How Film Has Influenced ASL Literature. *In*: BAUMAN, H. D. L.; NELSON, J. L.; ROSE, H. M. (Eds.), **Signing the Body Poetic: Essays on American Sign Language Literature**. Berkley: University of California Press, 2006, p. 51-70.

KUNTZE, M. Literacy. *In*: GERTZ, G.; BOUDREAU, P. (Eds.). **The SAGE Deaf Studies Encyclopedia**: volume 1. California: Sage Publications, 2016. p. 656 - 660.

KUNTZE, M.; GOLOS, D.; ENNS, C. Rethinking Literacy: Broadening Opportunities for Visual Learners. **Sign Language Studies**, v.14, n.2, p. 203-224, 2014.

LEE, C. D. Literacy and Bidialectalism. *In*: CHAPELLE, C. A. (Ed.). **The Encyclopedia of Applied Linguistics**. Blackwell Publishing Ltd., 2013. DOI: 10.1002/9781405198431.wbeal0726.

LEE, J. S. Literacy and Heritage Language Maintenance. *In*: CHAPELLE, C. A. (Ed.). **The Encyclopedia of Applied Linguistics**. Blackwell Publishing Ltd., 2013. DOI: 10.1002/9781405198431.wbeal0728.

LOEFLER, S. Deaf Music: Embodying Language and Rhythm. *In*: BAUMAN, H. D. L.; MURRAY, J. J. (Eds.), **Deaf gain: raising the stakes for human diversity**. Minneapolis, MN: University of Minnesota Press, 2014, p. 436 - 456.

MCCARTY, T. L. Literacy and Language Revitalization. *In*: CHAPELLE, C. A. (Ed.). **The Encyclopedia of Applied Linguistics**. Blackwell Publishing Ltd., 2013. DOI: 10.1002/9781405198431.wbeal0730.

MERTZANI, M.; TERRA, C. L.; DUARTE, M. A. T. **Currículo da Língua Brasileira de Sinais LIBRAS: componente curricular como primeira língua**. 1. ed. Rio Grande: Editora da FURG, 2020.

MINISTRY OF EDUCATION; PEDAGOGICAL INSTITUTE. **Curriculum of the Greek Sign Language for the Basic Education** (Υπουργείο Παιδείας και Θρησκευμάτων-ΥΠΠΕΠΘ; Παιδαγωγικό Ινστιτούτο-ΠΙ. Πρόγραμμα Σπουδών Ελληνικής Νοηματικής Γλώσσας για την Υποχρεωτική Εκπαίδευση). Athens, 2004.

MINISTRY OF EDUCATION. **New Zealand Sign Language in the New Zealand Curriculum**. Wellington, New Zealand: Learning Media Wellington, 2006.

MINISTRY OF EDUCATION. **The Ontario Curriculum Grades 1-8. Native Languages**. 2001. Available at:  
<<http://www.edu.gov.on.ca/eng/curriculum/elementary/nativelang18curr.pdf>>.

MIRZOEFF, N. **Silent poetry: deafness, sign, and visual culture in modern France**. Princeton, N.J.: Princeton University Press, 1995.

NATIONAL READING PANEL. **Teaching children to read: An evidence based assessment of the scientific research literature on reading and its implications for reading instruction**. Bethesda, MD: National Reading Panel, National Institute of Child Health and Human Development, 2000.

NOVOGRODSKY, R.; CALDWELL-HARRIS, C.; FISH, S.; HOFFMEISTER, R. J. The Development of Antonym Knowledge in American Sign Language (ASL) and Its Relationship to Reading Comprehension in English. **Language Learning**, v.64, n.4, p. 749–770, 2014.

PAUL, P.V.; WANG, A. Y. **Literate Thought. Understanding comprehension and literacy**. Subbury, MA: Jones & Bartlett Learning, 2012.

PAUL, P. V. Literacy, literate thought, and deafness. **American Annals of the Deaf**, v.163, n.1, p. 78–86, 2018.

PETITTO, L. A. Three Revolutions: Language, Culture, and Biology. In: Bauman, H. D. L.; Murray, J. J. (Eds.), **Deaf gain: raising the stakes for human diversity**. Minneapolis, MN: University of Minnesota Press, 2014, p. 65 - 76.

PETITTO, L. A. Visual sign phonology: insights into human reading and language from a natural soundless phonology. **WIREs Cognitive Science**, v.7, n.6, p. 366-381, 2016.

QUER, J.; PFAU, R.; HERRMANN, A. **The Routledge Handbook of Theoretical and Experimental Sign Language Research**. Oxon: Routledge, 2021.



RAVID, D.; TOLCHINSKY, L. Developing linguistic literacy: a comprehensive model. **J. Child Lang.** v.29, p. 417–447, 2002.

ROSENBERG, P.; LIEBERMAN, A. M.; CASELLI, N.; HOFFMEISTER, R. The Development and Evaluation of a New ASL Text Comprehension Task. **Frontiers in communication**, v.5, Article 25, 2020. Available at: <<https://www.frontiersin.org/articles/10.3389/fcomm.2020.00025/full>>.

SHIELD, A.; MEIER, R. P. Learning an Embodied Visual Language: Four Imitation Strategies Available to Sign Learners. **Frontiers in Psychology**, v.9, Article 811, 2018.

SKUTNABB-KANGAS, T.; MCCARTY, T. Clarification, ideological/epistemological underpinnings and implications of some concepts in bilingual education. *In*: CUMMINS, J.; HORNBERGER, N. H. (Eds.), **Encyclopedia of language and education**. Vol. 5: Bilingual education. 2nd ed. New York, NY: Springer, 2008, p. 3–17.

SKUTNABB-KANGAS, T. Afterword. Implications of Deaf Gain: Linguistic Human Rights for Deaf Citizens. *In*: BAUMAN, H. D. L.; MURRAY, J. J. (Eds.), **Deaf gain: raising the stakes for human diversity**. Minneapolis, MN: University of Minnesota Press, 2014, p. 492 - 502.

SKUTNABB-KANGAS, T. Linguistic Human Rights: A prerequisite for bilingualism. *In*: AHLGREN, I.; HYLTENSTAM, K. (Ed.). **Bilingualism in deaf education**. Hamburg: Signum Press, 1994.

SKUTNABB-KANGAS, T. Mother-Tongue-Medium Education. *In*: CHAPELLE, C. A. (Ed.). **The Encyclopedia of Applied Linguistics**. Blackwell Publishing Ltd., 2013. DOI: 10.1002/9781405198431.wbeal0776.

SNODDON, K. Baby Sign as Deaf Gain. *In*: BAUMAN, H. D. L.; MURRAY, J. J. (Eds.), **Deaf gain: raising the stakes for human diversity**. Minneapolis, MN: University of Minnesota Press, 2014, p. 146 - 158.

SNODDON, K. **American Sign Language and early literacy: a model parent-child program**. Washington, DC: Gallaudet University Press.

STALLMAN, A.; PEARSON, P. D. Formal measures of early literacy. *In*: MORROW, L. M.; SMITH, J. K. **Assessment for instruction in early literacy**. Englewood Cliffs, N.J.: Prentice Hall, 1990. p. 7-44.

STREET, B. V. (2008). New literacies, new times: Developments in literacy studies. *In*: STREET, B. V.; HORNBERGER, N. H. (Eds.), **Encyclopedia of language and education**. Vol. 2: Literacy. 2nd ed. New York, NY: Springer, 2008, p. 3–14.

STREET, B. V. (Ed.), **Literacies across educational contexts: Mediating, learning and teaching**. Philadelphia, PA: Caslon Press, 2005.

STRONG, M.; PRINZ, P. A study of the relationship between American Sign Language and English literacy. **Journal of Deaf Studies and Deaf Education**, v.2, p. 37–46, 1997.

SUTTON-SPENCE, R. **Analysing Sign Language Poetry**. Basingstoke: Palgrave Macmillan, 2005.

SUTTON-SPENCE, R. Deaf Gain and Creativity in Signed Literature. *In*: BAUMAN, H. D. L.; MURRAY, J. J. (Eds.), **Deaf gain: raising the stakes for human diversity**. Minneapolis, MN: University of Minnesota Press, 2014, p. 457 - 477.

**The Common Core State Standards for English Language Arts & Literacy**. Washington, D.C.: The National Governors Association Center for Best Practices - NGA Center; the Council of Chief State School Officers - CCSSO, 2010. Available at: <<http://www.corestandards.org/ELA-Literacy/>>.

**The Northern Territory Indigenous Languages and Cultures Curriculum of Australia - NTILC**, 2017. Available at: <<https://education.nt.gov.au/policies/curriculum/indigenous-languages-and-cultures>>.

UNESCO. **First language first: Community-based Literacy Programmes for Minority Language Contexts in Asia**. Bangkok: UNESCO Asia and Pacific Regional Bureau for Education, 2005.

Western Canadian Protocol for Collaboration in Basic Education. **The common curriculum framework for aboriginal language and culture programs: kindergarten to Grade 12**. Available at: <<https://open.alberta.ca/dataset/5a61711d-af3f-40d6-ba6f-bc5c3b37b5d0/resource/de544b72-4015-47d6-8166-c83c2fa6120b/download/abor.pdf>>.

Submitted in: 20/05/2022

Accepted in: 07/06/2022

Citations and references  
according to the rules of:



AMERICAN  
PSYCHOLOGICAL  
ASSOCIATION