What are Speech, Language and Literacy?

Sharynne McLeod and Jane McCormack

Objectives

In this chapter, you will learn about:
- speech, language and literacy
- the languages of the world
- Australia’s and New Zealand’s linguistic landscapes
- indigenous languages of Australia and New Zealand
- the role and importance of speech, language and literacy in society
- difficulties associated with speech, language and literacy
- professionals who focus on communication: educators, speech pathologists and linguists
- how to use this book
- the children and adults who are profiled throughout this book as video case studies
- resources to extend your understanding of speech, language and literacy.

Communication is part of everyone’s daily life and having the opportunity and means to communicate is a basic human right (International Communication Project, 2014). Communication may be in written, spoken, symbolic or gestural form, but is always deeply connected to how we perceive ourselves and how we share this perception.
with others. Through successful communicative interactions, we experience a sense of empowerment and dignity, and we express our identity and connect with others. Think of instances when you may have lost your voice due to a health condition, been unable to write/type messages because of an injured hand or been in an environment where you haven’t spoken the same language as those around you. How did you feel? What impact did it have? Oftentimes, it’s not until we are unable to communicate that we recognise the essential role communication has in enabling us to work, play and socialise with others in our environment.

In this chapter, we describe three components of communication: speech, language and literacy. We identify features of each that are unique to the Australian and New Zealand contexts and outline ways that our unique style of communication has developed over time. We also discuss the importance of communication in society, including the role that it plays in our development of other skills and participation in life activities, and the impact that communication difficulties may have on development and participation. Next, we introduce three professional groups that work in the field of communication—educators, speech pathologists and linguists—and list resources for further information about communication development and use. Finally, we describe how this book works and introduce you to the children, adolescents and adults who have participated in the video case studies that accompany this book.

Definitions of speech, language and literacy

Communication is a process that involves us being able to perceive and understand the messages expressed by others, as well as being able to plan and produce our own messages. **Speech** is the means by which we communicate messages orally; however, we can communicate messages in other forms, including via written text. **Language** refers to the content that we communicate in our messages and the rules governing how we do so. **Literacy** refers to reading and creating written messages.

Models of speech and language processing are useful for helping us to conceptualise the steps involved in understanding and producing spoken and written communication, as these models detail the components of the speech, language and literacy systems and the ways that these interact in order to enable effective communication (Ellis & Young, 1996; Kay, Lesser & Coltheart, 1996; Stackhouse & Wells, 1997). An example of a cognitive neuropsychological model of speech and language processing from McCormack, Jacobs and Washington (2012) is presented in Figure 1.1.
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Models of speech and language processing, such as the one presented in Figure 1.1, recognise not only the steps involved in communication, but also the multiple modes of communication that exist. In the sections that follow, we describe speech, language and literacy in more detail, guided by the cognitive neuropsychological framework presented in Figure 1.1.

Phonetics refers to the production and perception of speech sounds. This linguistic science also includes study of articulation, aerodynamics, acoustics, sociophonetics and neurophonetics.

Phonology is the study of the rules or systems of speech sounds within languages.

Form refers to the knowledge and skills required to produce and understand grammatical sentences and includes phonology (sound combinations), morphology (grammatical units) and syntax (sentence structure).

Morphology refers to grammatical units.

Syntax refers to sentence structure.

Content refers to the knowledge and skills required to use and understand meaningful and appropriate vocabulary and includes semantics (vocabulary).

Speech

Speech refers to the perception, planning and production of speech sounds and has two elements: phonetics and phonology. Phonetics comprises the knowledge and skills required for the perception and production of speech sounds, while phonology comprises the knowledge and skills required to understand and use linguistically appropriate speech sound rules.

Speech perception involves auditory phonological analysis. That is, we need to discriminate between sensory information (e.g. an auditory signal) that potentially communicates language meaning and other, non-language sensory information (e.g. environmental sounds). Stackhouse and Wells (1997) refer to this as speech/non-speech discrimination. In order to understand this spoken input, we also need to determine whether or not the speech sounds are familiar. Stackhouse and Wells refer to this as phonological recognition. In other words, can we recognise the spoken language that we can hear (based on the sounds, words and grammatical rules being used)? A monolingual English speaker might hear a speaker of another language talking and recognise that the sounds are communicating meaning, but be unable to understand the meaning being expressed. If we are familiar with the phonology (patterns of speech sounds), we can then attach meaning to the information we hear through accessing our speech input lexicon and semantic system. We draw on our knowledge of the sound combinations that we have heard (e.g. d-o-g) and our prior experiences of hearing that combination of sounds while playing with pets, viewing animal pictures and so on, in order to recognise the meaning associated with that sound combination. Stackhouse and Wells (1997) refer to this as accessing the phonological and semantic representations of the words.

Regardless of whether our spoken language consists of real or nonsense words, the production of speech requires a number of steps, just as the perception of speech does. Initially we need to conceptualise the message, then access and retrieve stored representations of the conceptualised information necessary to convey the message (e.g. the words and sound combinations present in our output lexicon). We then need to plan and implement the motor movements required to produce the sound combinations that will enable our chosen message to be expressed. The success of our motor plan and production requires that our articulators (e.g. tongue, lips, palate, teeth) are functional.

Language

Understanding and producing messages (communication) requires language. Language is the set of symbols (e.g. sounds, letters, words, gestures) and the rules for combining those symbols (e.g. syntax/sentence structure, pragmatics) that we
use to communicate with others in our environment. We can think of language as being comprised of three key areas: form, content and use (Bloom & Lahey, 1978). **Form** comprises the knowledge and skills required to produce and understand grammatical sentences. It includes knowledge and skills related to how sounds can be combined to form words, which is referred to as phonology, and how words are structured (e.g. prefixes, suffixes, plurals, past tense), which is referred to as **morphology**, as well as knowledge and skills related to sentence structure (e.g. phrases, clauses), which is referred to as **syntax**. **Content** comprises the knowledge and skills required to use and understand meaningful and appropriate vocabulary. It includes the knowledge and skills required to retain and retrieve words to make sense of what we hear and to generate intentional and successful messages. This is referred to as **semantics**. Finally, **use** refers to the knowledge and skills required for producing and understanding language appropriate to the context. This is referred to as **pragmatics**. In order for communication to be successful, speakers and listeners need to draw on each of these areas (form, content and use) as well as other skills including memory, attention, general knowledge and experience.

Language may be communicated in spoken, written, manual (sign language) or symbolic (gestural, pictorial) formats. Regardless of the mode of communication, the process of understanding and producing messages requires multiple steps. That is, in order for us to understand the spoken or written messages of someone else, we need to receive the message, analyse the information it contains (the form, content and use) and assign meaning to it. In order to produce a message for others, we need to determine what meaning we want to express, select a mode of communication, and establish and carry out the motor plan. To do so requires us to select appropriate vocabulary (from within our semantic system) and to determine how to combine the vocabulary into a meaningful structure. This in turn requires us to understand the rules governing the language that we are using (our syntactic knowledge). For instance, in English, our sentences must contain one main **clause** (a group of words including a **verb** e.g. ‘the people in the audience are laughing’) and often contain **phrases** (meaningful groups of words e.g. ‘the people in the audience’) as part of that clause.

**Literacy**

Literacy (or **literacies**) involves processes involved in **reading** (decoding and understanding written material) and **writing** (creating and producing written material). As shown in Figure 1.1, the first step in reading involves visual analysis. That is, we need to discriminate between written information that potentially communicates language meaning and other, non-language written material.
The term **literacies** refers to contemporary approaches and understandings of literacy learning and teaching that reflect understandings of the multiple sets of abilities required to create and interpret meaning in the 21st century.

**Reading** refers to the ability to decode, recognise and draw meaning from the printed word and symbols.

**Writing** refers to creating and producing written text in order to store and share information.

(e.g. scribble). The next step involves determining whether or not the written symbols that we can see are familiar. For instance, people from Australia use different orthography to communicate in comparison to many people from Chinese, Arabic and Indian nations (see Table 1.1). If we are familiar with the orthography that we see, we can attempt to read it using one of two processes (Coltheart, 2006). The first process is used when we recognise the combination of letters within the written word. In this process, we access a store of previously identified written words, referred to as mental orthographic representations, to assist our decoding and comprehension of the written material. The second process is used when we do not recognise the letter combinations and it requires us to use our knowledge of letter–sound relationships to decode the unfamiliar words. We attach meaning to the written material through accessing our written input lexicon.

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>DIRECTION OF WRITING</th>
<th>DO YOU UNDERSTAND YOUR CHILD?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assyrian</td>
<td>Right to left</td>
<td>ְתָנַבְתָּ לְךָ רָאִיתָ שֶׁשָּׁתִּי?</td>
</tr>
<tr>
<td>Arabic</td>
<td>Right to left</td>
<td>هل تفهم طفلك؟</td>
</tr>
<tr>
<td>Bulgarian</td>
<td>Left to right</td>
<td>Вие разбираете ли говора на вашето дете?</td>
</tr>
<tr>
<td>English</td>
<td>Left to right</td>
<td>Do you understand your child?</td>
</tr>
<tr>
<td>Chinese (Simplified)</td>
<td>Left to right</td>
<td>您能明白孩子的说话吗?</td>
</tr>
<tr>
<td>Chinese (Traditional)</td>
<td>Left to right</td>
<td>您能明白孩子的话嗎?</td>
</tr>
<tr>
<td>Danish</td>
<td>Left to right</td>
<td>Forstår du dit barn?</td>
</tr>
<tr>
<td>Dari</td>
<td>Right to left</td>
<td>ایا شما گفتار فرزندتان را می فهمید؟</td>
</tr>
<tr>
<td>Farsi</td>
<td>Right to left</td>
<td>ایاحرفهای فرزند خود را می فهمید؟</td>
</tr>
<tr>
<td>Greek</td>
<td>Left to right</td>
<td>Η ομιλία του παιδίου σας είναι καταλήπτη από εσάς;</td>
</tr>
<tr>
<td>Hebrew</td>
<td>Right to left</td>
<td>קא רב און ראני בוריפא/און ראני בוריפאamina יאני און ראני בוריפא?</td>
</tr>
<tr>
<td>Hindi</td>
<td>Left to right</td>
<td>क्या आप अपने बच्चे/अपनी बच्छी को समझते/समझती हैं?</td>
</tr>
<tr>
<td>Hmong</td>
<td>Left to right</td>
<td>Koj puas to taub koj tus menyuam?</td>
</tr>
<tr>
<td>Icelandic</td>
<td>Left to right</td>
<td>Skilur þú tal bamsins þíns?</td>
</tr>
<tr>
<td>Indonesian</td>
<td>Left to right</td>
<td>Apakah Anda sendiri mengerti anak Anda?</td>
</tr>
<tr>
<td>Irish</td>
<td>Left to right</td>
<td>An duigeann tusa do pháiste?</td>
</tr>
<tr>
<td>Japanese</td>
<td>Left to right</td>
<td>あなたは、お子さんの話す言葉を理解していますか？</td>
</tr>
</tbody>
</table>

**Table 1.1** The phrase ‘Do you understand your child?’ written in 30 different languages.
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The process of writing requires us to conceptualise the message, then access and retrieve stored representations of the conceptualised information necessary to convey the message (e.g. the words and letters present in our output lexicon). We then need to plan and implement the motor movements required to write the letters that enable our chosen message to be expressed.

Speech, language and literacy over the lifespan

Successful communication includes the production and comprehension of messages in spoken, gestural or written form. The first communicative interactions occur when babies’ cries are responded to by their parents with hugs and attention. Cooing, babbling and sound play transform into first words around a child’s first birthday. Words (which are not necessarily pronounced correctly) are added until children begin to make two-word sentences around their second birthdays. Throughout the preschool and school years, there is an expansion of children’s ability to produce
speech sounds, vocabulary, grammatical structures, sentences and discourse of increasing length and complexity. Simultaneously, their competence in literacies moves from looking at pictures, turning pages in books and scribbling to reading and writing sophisticated texts. Completion of schooling and moving into the workforce, raising a family, engaging in leisure activities and travelling throughout the world provide the impetus for adults’ continued vocabulary expansion and increasing sophistication in speech, language and literacy skills. These occur within the first language(s) and can also include the acquisition of skills in speech, language and literacy of additional languages. The important interaction between speech, language and literacy is discussed in Chapter 13 and Table 13.1 from that chapter summarises the key developmental stages of speech, language, reading and writing.

Speech, language and literacy: a world view

There are 7106 known living languages in the world (Lewis, Simons & Fennig, 2014a). While some of these languages exist in both spoken and written forms, many only exist in spoken forms and some only in manual forms (e.g. Australian Sign Language, known as Auslan). The five most commonly spoken first languages (L1) are:

1. Chinese: 33 countries, 1197 million speakers
2. Spanish: 31 countries, 414 million speakers
3. English: 99 countries, 335 million speakers
4. Hindi: 4 countries, 260 million speakers
5. Arabic: 60 countries, 237 million speakers (Lewis, Simons & Fennig, 2014b).

It is important to note that Modern Chinese is divided into 13 language/dialect groups including Mandarin/Putonghua, Wu, Xiang, Gan, Min, Hakka and Yue (including Cantonese). Similarly, Arabic is divided into 18 language/dialect groups including Algerian, Egyptian, Moroccan, Sudanese and Tunisian (Lewis et al., 2014b). The next most commonly spoken languages are, in order, Portuguese, Bengali, Russian, Japanese, Javanese, Lahnda (including Punjabi), German, Korean, French, Telugu, Marathi, Turkish, Tamil, Vietnamese, Urdu, Italian, Malay and Persian.

Although there are over 7000 languages in the world, only a few languages (0.1%) are considered to be international languages that are used in trade, knowledge exchange and policy (Lewis, Simons & Fennig, 2014c). For example, the official languages of the United Nations are Arabic, Chinese, English, French, Russian and Spanish (United Nations, 2014). Some languages are used in spoken and written forms at a national or provincial level in government and education (e.g. Turkish in Turkey). A large group of languages are considered to be vigorous (35.9%),