Principles and practices of literacy development for deaf learners: A historical overview

Des Power, PhD
Centre for Deafness Studies and Research
Griffith University

Greg Leigh, PhD
Renwick College
University of Newcastle

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Abstract

Since the very beginning of formal approaches to deaf education, the development of literacy has been a priority issue. The history of educational initiatives in this area is entwined with the history of prevailing attitudes and practices toward the impact of deafness on the development of deaf children more generally. In particular, arguments about whether a visual input (reading) can take the place of diminished auditory input and whether educators should accommodate or seek to ameliorate the effects of the special linguistic characteristics of deaf learner-readers have resulted in a wide variety of practices and perspectives. These varied practices and perspectives continue to have impacts on current educational debate and practice. This article provides a brief historical overview of these educational endeavours, noting the enduring questions and issues that remain for the field to address.

Principles and practices of literacy development for deaf learners: A historical overview

Beliefs of educators of the deaf about literacy development for deaf learners have historically been an amalgam of the theory and practice of literacy education prevailing at any given time and the beliefs about the impact that deafness has upon an individual’s ability to acquire literacy skills. This has been particularly true of theory and practice at school level (where education of the deaf has been concentrated); continuing education for deaf adults, especially outside formal programs in colleges and universities, being a relatively recent phenomenon which has been relatively little discussed in the professional or research literature.
Since the very beginning of education of the deaf, a strong view has been held that reading and writing can substitute for the diminished capacity to hear and speak. One of the very earliest educators, Girolamo Cardano (a Spaniard, 1501-1576, quoted by Bender, 1960) held that:

we can accomplish that a mute hear by reading and speak by writing. For by thinking his memory understands that bread, for example, means that thing which is eaten. He thus reads, by reason, even as in a picture; for by this means, although nothing is referred to voices, not only things, but actions and results are made known, and as from a picture the meaning of another picture is formed, so that by reasoning it may be understood, so also in letters. (p. 32)

A century later George Dalgarno, an early British educator was of a similar view: “I do not doubt but the words, hand, foot, dog, cat, hat, etc., written fair, and ... often presented to the deaf child’s eye, pointing from the words to the things, and vice versa, ... would be known and remembered ... (1680; reprinted in American Annals of the Deaf, Vol. 9, 1857)”.

In modern times, these views have not altered greatly. Ervin (1926) is fairly typical of early twentieth century views.

Reading is of the utmost importance as a means of acquiring language. If sufficient time is given to it, many of the language problems with which we now struggle will solve themselves and the pupils will learn language naturally as hearing children do. (p. 697)
One of the most influential figures in education of the deaf early this century, the inventor of the telephone Alexander Graham Bell (1929), held similar views.

I would introduce into the very youngest classes the practice of reading, regardless of the fact that children may not understand the meaning of the words on the printed page before them. By this practice a repetition of words to the eye would be secured, which could not probably be obtained in any other way, and reading would co-operate with the regular instruction of the schoolroom to bring about a gradual comprehension of language. ... To express the theory in a single sentence: I would have a deaf child read books in order to learn the language, instead of learning in order to read books. ... I believe that in the acquisition of language by the deaf, reading will perform the function that hearing does for the ordinary child. (pp. 193-195)

Other, more recent, commentators generally agree. Pugh (1945), for example, says that, “it seems logical that reading should become the basis for the development of language usage instead of language instruction being the basis for a reading program” (p. 182). Van Uden (1977), one of the most influential recent commentators is of the view that for deaf learners, “the enormous arrears of frequency in receiving language [because of deafness] can only be made up by reading. Reading must give them [deaf learners] the fund and ground from which expressive language [both oral and written] can grow” (p. 151).

It is of interest that all of Bell, Pugh, and Van Uden are advocates of a purely oral education for deaf learners, disallowing the use of signs for communication. There is an underlying (but not acknowledged) awareness that purely oral methods of communication leave a lot to be desired for deaf learners accessing
an auditory-oral language via listening and speechreading and the lack engendered by these methods must be made up for by the more stable access to print.

Few writers on this topic in recent years have opposed this line of thought. Groht (1955) is one of the relatively few who demur and see reading (and presumably writing) as needing to be built upon a foundation of oral language.

Before reading must come knowledge of the value and meaning of words in the daily life of the child just as, before the child can *use* language, he must comprehend it. There is no use in teaching the deaf child to pronounce words or recognise them in print if these words have no meaning for him and no interest. We are none of us interested in reading what we do not understand. (p. 296)

Groht’s view marks the emergence of the influence of current theories of literacy development upon commentators on deaf learners’ literacy development. The earlier views cited above may be characterized as “deafness driven”: determined by the writer’s view of the impact of deafness upon literacy development rather than by the then prevailing views of the literacy process.

Other commentators adopt a middle ground on whether reading and writing should be used to develop language (spoken and written) or vice versa (Hart, 1969; Power, 1985; Streng, 1964). Hart sums up much of the feeling of teachers of the deaf, “There probably is not a teacher of the deaf anywhere who does not think that reading can be the salvation of the deaf. There probably is not a teacher of the deaf anywhere who has not experienced deep discouragement in his attempt to lead deaf children to such salvation” (p. 1).
Power examined the perennial issue of whether to “fit the child to the book or the book to the child”; that is, whether specially simplified reading materials should be provided to meet the “lower language skills” of deaf readers, or whether deaf readers’ language skills can be improved by exposing them to “normal” reading materials. Power examined a long tradition of adapting existing reading materials and of writing materials specially adapted to the perceived special needs of deaf learners. This debate would appear to have had its origins in the very beginnings of education of the deaf in the United States. We find Hutton (1862a) writing in the *Annals* in, “some [instructors] regard ... a complete series of books ... especially adapted to the Deaf and Dumb ... as desirable or necessary—others deem ... special textbooks only needful for the preliminary stages of the course, ... after which the ordinary text-books used for hearing and speaking children should be introduced” (p. 211). Later (1862b), he seems to have firmed up his own views, “special text-books are necessary from the nature of the case. The condition and wants of the uneducated deaf-mutes are altogether peculiar, and must therefore, *a priori*, require peculiar treatment” (p. 2).¹

The most recent and probably most extensive and research-based example of special texts is Quigley and King’s (1982), “Reading Milestones”, a whole series of readers based upon deaf students’ syntactic development as outlined by an extensive research project (Quigley, Wilbur, Power, Montanelli, & Steinkamp, 1976), and said to be keyed to their linguistic skills at a number of developmental stages.

¹ In passing, for those who consider there to have been a “golden age” in education of the deaf in the mid-1800s, Edgar Allan Fay’s words in 1862 may provide a salutary pause for thought,

> We are none of use satisfied with the attainments in language ordinarily made by the deaf and dumb. The great majority of pupils born deaf graduate from our institutions without the ability to express their ideas in correct idiomatic language, or to understand readily the language of books (p. 194).
Ewoldt (1984) and Israelite and Helfrich (1988), among others, have argued against “tailoring” texts or writing special texts such as “Reading Milestones” to meet the lower linguistic skills of deaf students. Ewoldt demonstrated that supposed “simplification” of a story to meet deaf readers’ needs in fact makes comprehension more difficult because the rewriting destroys the textual coherence of the story and the natural redundancy of written English, effectively reducing the textual cues available to the deaf reader in “natural” text. Israelite and Helfrich confirmed this view in finding that deaf readers scored less well on tests of comprehension of revised materials than they did on the originals, “efforts to control readability through stringent syntactic guidelines [for simplification] may result in texts that are more difficult, rather than less difficult, for hearing impaired readers to understand” (p. 261). This is not a new view: Gillett in 1863 had stated that, “the pupil is to be educated for the world as he finds it, and should learn, as early as he may, to handle the materials in general use” (p. 242).

The evidence for deaf readers’ ability to make better sense of “real text” than uncontextualised reading test materials is now substantial and there seems little doubt that, with real texts, deaf readers do better than has traditionally been supposed. One must consider, however, that deaf readers still have difficulty interpreting the nuances of complex syntax. They do better “up to a point”: up to a point where the complexity of syntax may foil deaf readers’ attempts to interpret a syntactically complex message, particularly if it is not well contextualised with “real world” support. The fact that deaf readers do better in actual reading than traditional reading tests does not mean they have no problems. Indeed, the situation for deaf people in regard to the development of literacy remains one which is far from desirable.
Several major studies investigating school achievement have reported significantly lower levels of attainment in literacy in deaf school-leavers when compared with the general population. Conrad (1979) reported on the reading levels of an entire cohort of deaf school-leavers in England and Wales. The 468 students (aged 15 to 16 years) had a mean reading level equivalent to an average nine-year-old with only five students achieving age-appropriate levels. Conrad also cited studies in Denmark, Sweden, and New Zealand that reported performances of deaf school-leavers at levels less than that of an average ten-year-old. More recent studies (Allen 1986) indicated some improvement in these levels over time but continued to show that deaf school-leavers do not perform at age-appropriate levels on tests of ability to read or write the spoken language of the society. Power (1985) reported the results of a survey of ten- and eleven-year-old Australian children. He found that less than 3% of students in schools for the deaf got within two years of age-appropriate levels of literacy as opposed to 50% of hearing-impaired students in regular classes. Conversely, 58% of deaf school students were found to be achieving below a six year age level in literacy while only 8% of the hearing-impaired group fell into this category.

The current situation, where a disproportionate percentage of deaf learners experience difficulties in achieving normative standards of literacy, is not new. However, the consequences of poor literacy skills for deaf people in the latter half of the 20th century are arguably far more grave than at any other time in history. In 1998 we have access to, and a requirement to read, printed materials with a magnitude and diversity unmatched at any point in the past. High levels of literacy achievement are clearly important in this context. The pool of available jobs for people with poor literacy skills—the jobs often sought and gained by deaf people in the past—has all but disappeared. The literacy skills required for life in the latter part of the 20th century are of an extremely high order. Perhaps more importantly, however, the skills
required to achieve social, economic, or political access vary enormously across the range of social, residential, and employment contexts.

Ironically, at a time when alternative communication technologies mean that, for many people, access to recreational and interpersonal communication is less dependent on literacy skills, specific literacy skills have become even more salient for deaf people. Indeed, literacy skills have become central to the daily information and recreation requirements of this group. Leigh and Cummins (1992) noted that, for most deaf people, access to standard telephone communication is via Telephone Typewriters (TTY’s or TDD’s). In these situations, communication is totally dependent upon their literacy skills and the literacy skills of their communication partners who, in a large percentage of cases are themselves deaf (Leigh & Smith, 1989).

Similarly, in regard to news and information on public affairs, a strong dependence on literacy skills is again evident. Leigh and Cummins found that, for the majority of deaf people in an Australian sample, the most used and preferred sources of current affairs information were newspapers, news magazines, and/or text based information systems such as teletext. In a society where so much news and current affairs information is conveyed through the electronic media this represents an extremely high degree of reliance upon print-based media, particularly for a group who are known to experience considerable difficulties with literacy. Even among deaf people who identified television as their most used/preferred source of current affairs information, the vast majority reported that they required another print-based medium, captions (subtitles), to access this medium.
It has been suggested that the reasons for deaf students failing to achieve literacy levels commensurate with their hearing (or even hard of hearing) counterparts relate to inappropriate educational practices—or at least to poor teaching. As in the field of regular education, there remains a diversity of views about the best approaches to teaching. Some models of literacy and literacy teaching offered by theorists and practitioners in recent years have been limited in their practical results and not well-supported by research and yet continue to be widely used.

Many approaches to developing literacy skills, particularly those used with older children and adults, have, as already indicated, focused on an historical preoccupation by the field with the remediation of deaf learners’ weaknesses (or perceived weaknesses) in English syntax. This preoccupation has often lead to confusion about the aim of literacy teaching and the types of pedagogies pursued. Howarth, Wood, Griffiths, and Howarth (1981; see also Wood, Wood, Griffiths, & Howarth, 1986) undertook a detailed examination of the reading lessons of both deaf and hearing children reading the same books and found significant differences between the approaches of the teachers of the deaf and the teachers of the hearing children. Compared with hearing children’s lessons, reading lessons for deaf children

... became a language lesson and speech-training exercise. The overall result was a slow disjointed lesson punctuated by long periods of questioning, story telling and demonstration. … We were left in considerable doubt how such a lesson could leave the child with a sense of any “story” or even of phrases and sentences in reading. What exactly, we wondered, does the deaf child think reading is? (Wood et al. p. 106)

The emphasis on the remediation of English syntactic abilities and the development of syntactic processing strategies typically had a dual thrust. First, as noted in the example from Wood et al., there
was much effort directed at improving student's syntactic abilities through oral language (or signed representations of oral language) and/or written activities. Second (and perhaps most commonly), there was, as already discussed, extensive use of what Ewoldt (1984) and Moores (1987) have called "textual control"—the practice of rewriting reading materials in "simplified" syntax and withholding more complex materials from the students until the syntax has been mastered in other contexts (see Ewoldt, 1982 and 1984 for a detailed critique of these approaches). As already noted, this practice has frequently been extended to the production of syntactically controlled reading schemes (King & Quigley, 1985) for young deaf children.

Researchers such as Ewoldt (1984), Yurkowski and Ewoldt (1986), and Schleper (19xx) have argued that approaches which emphasise the development of syntactic abilities are inappropriate for developing literacy skills in deaf people. These authors have argued that it is possible for deaf readers to by-pass both phonological decoding strategies and syntactic cueing systems and to process print on the basis of meaning—through the use of so-called semantic processing strategies. Numerous authors have argued that syntactic cues, like phonological cues, are secondary to semantic cues and direct lexical access (known words) for deaf readers. The reading process for this population, it has been argued, can then be seen to involve some reference to graphic and syntactic cues but depends heavily on an extensive word knowledge and the ability to bring sufficient background knowledge and semantic awareness to the text to allow the processing of novel lexical items. Hence, Yurkowski and Ewoldt have argued, given appropriate strategies and sufficient background knowledge and experience, it is possible for deaf readers to handle the complexities of reading without reference to phonological recoding and without complete facility with English syntax.
There is compelling logic in the argument against the need to develop English syntax skills as a prerequisite for developing the literacy skills of deaf learners given that many deaf people have great difficulty with syntax and that many of this same group do have highly developed reading comprehension skills. Proponents of the semantic processing route argue that there is clear evidence (viz., Yurkowski & Ewoldt, 1986) of the effectiveness with which many deaf readers use their world knowledge and a range of metacognitive strategies “...to predict the (written) message with minimal attention to print” (Ewoldt, 1993). Debate continues, however, about the extent to which such higher order processing strategies can be expected to completely compensate for the absence of a well-developed “sub-lexical” route to word identification (i.e., the ability to use letter-sound generalisations to decode unknown words).

It is the latter point that is the most significant point of division between proponents of a whole language philosophy and those approaches which emphasise the use of basal reading schemes and/or the direct teaching of skills. Whole language proponents have advocated the provision of an environment in which deaf students will develop a range of top-down processing strategies (e.g., semantic processing and prediction). In contrast, advocates of more traditional direct-teaching approaches have emphasised the active development of bottom-up skills such as the use of lexical and sub-lexical processing through the use of teaching techniques such as sight-word drills, phonics, and reading materials (basal reading books) which are controlled for syntactic and phonological complexity.

Controversies about literacy pedagogy (e.g., whole language vs. phonics), including the associated concern about poor standards of literacy performance, are not isolated to the field of education of deaf students and are certainly not new. Indeed, the arguments in the field of education of the deaf today are largely the same as those found within the field of literacy education generally where many of the claims
for the value of current alternatives (particularly the “phonic method”) were advanced over a century ago (Christie, 1997). In the case of the deaf learner, however, teachers’ attitudes toward one of the alternative approaches are frequently linked to their theoretical position on a range of other issues associated with developing language and communication skills for deaf learners. For example, the teaching of phonological decoding strategies and/or the use of textual (syntax) control are still frequently (but not exclusively) linked to approaches which emphasise speech teaching and/or those that emphasis the development of English language structural features (syntax). To this extent, issues associated with literacy pedagogy frequently become part of a much larger, and often quite acrimonious, debate about the appropriateness of the various communication methods and language development approaches used with deaf people.

The time available for this presentation does not permit an exhaustive treatment of the centuries of division about the appropriateness of the various permutations and combinations of spoken and signed communication systems and languages used by teachers with their deaf students. Rather, it is perhaps sufficient to note that there has been, and remains, division between those who would advocate the early and exclusive development of speech and spoken language and those that would argue for the development of a child’s skills in either a sign language (e.g., ASL or Auslan) or a sign system (a signed analogue of the spoken language such as Signing Exact English [SEE 2] in North America or Australasian Signed English in Australia)².

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² It is important to note at this point that there are fundamental and important differences between sign languages (the naturally occurring languages used by deaf people within discrete cultural and linguistic communities) and sign systems (the manual codes developed for educational purposes to represent spoken languages in a signed form) (see Bornstein, 1990, for a more complete treatment of the differences). The latter have been used extensively in education for more than a century. The former, although used at certain points in the history of education of the deaf, have only recently again been used in educational contexts.
The most recent chapter in the debate about the various languages and communication approaches used with deaf students has resulted from the recognition of, and increased understanding about, native sign languages. The seminal work of sign linguists such as William Stokoe in the 1960s and ‘70s laid the foundations for understandings about sign languages as real and complete languages. These understandings have fundamentally altered the status of sign languages in education and have provided the basis for a reevaluation of their role. For many deaf people, their first language is indeed a sign language (e.g., American Sign Language in North America, Auslan in Australia). This recognition has resulted in an increasing call to establish bilingual and/or second-language programs for deaf students (Johnson, Liddell, & Erting, 1989, Luetke-Stahlman, 1983, Paul & Quigley, 1994a, 1994b).

There have been a number of major reasons for the recent and sustained advocacy for bilingual programs for deaf students. In multi-cultural and linguistically diverse societies such as Australia and the countries of North America, a fundamental reason has been the need to recognize the bilingual status of many (some would say most) deaf individuals. The reason more often cited, however, is the persistently low level of literacy achieved by deaf people (i.e., as already discussed). Paul (1996) has noted that there are also many other reasons advanced for providing a bilingual education for deaf learners. Many of these are sociopolitical reasons that relate to empowerment and accessibility and a reevaluation of the notion of “literacy” as it applies to individuals whose first (often only) language is visual-gestural rather than auditory-oral in nature. From a critical literacy perspective in particular, these are important reasons indeed and warrant further consideration. However, adequate discussion of these reasons is beyond the scope of this presentation.
The nature of bilingual programs that have been proposed, or implemented in recent times present the next major issue facing the field of literacy education for deaf learners. Essentially, the fundamental premise of bilingual education for deaf learners is that, if a natural sign language is well established as the learner’s L1, then English (or other spoken language) literacy can be achieved by means of reading and writing without exposure to English through speech or English-based sign systems (Israelite, et al., 1992). The rationale for this approach is the linguistic interdependence model developed by Cummins (1991). This model advances the notion of a common underlying proficiency for users of more than one language. It is argued that the cognitive and academic skills available in a first language (in this case a sign language) can be used as the basis for learning the related skills in a second language (in this case English—or other spoken language). Simply stated, it is argued that the acquisition of a sign language will directly benefit (if not facilitate) the learning of a spoken language (Strong & Prinz, 1997).

As indicated, the main theoretical support for bilingual educational approaches with deaf children is drawn from the literature on spoken-language bilingualism—particularly the work of Cummins (1991). Support has, however, also been drawn from a body of research evidence that demonstrates that deaf children of deaf parents (i.e., those who acquire a sign language naturally as a first language) outperform deaf children of hearing parents in regard to literacy (Strong & Prinz, 1997). Both sources of support offer compelling logic for pursuing a bilingual approach and have lead to a rapid expansion of such approaches in many parts of the world. Recently, however, these fundamentals have been questioned, as have aspects of the most common form of the bilingual educational program—a model under which children are exposed to sign language for instruction and receive input in English exclusively (or almost exclusively) through reading and writing.
As already noted, a major issue that separates literacy theorists in the area of education of the Deaf is the question of whether high-level literacy skills can be achieved in the absence of a well-developed system of processing at a sub-lexical level (i.e., a system of processing based on phonological features and letter-sound relationships). Clearly, this is also an issue of particular interest in regard to the prevailing model of bilingual education. Specifically, the question is whether, if the only access to the spoken language is through its orthography, a deaf learner can be expected to develop any sense of the alphabetic principles that underpin that orthography. As in the more general case of literacy acquisition for all deaf learners, this issue has not been adequately resolved.

The second issue which currently divides opinion about the prevailing bilingual educational model relates to the extent to which the language-learning situation of deaf “sign language/spoken language” bilinguals (or potential bilinguals) is truly analogous to that of “spoken language bilinguals”. The question that has most recently been raised (Mayer & Wells, 1996; Paul, 1996) is whether a deaf learner can effectively use literacy skills as a basis for learning a spoken language without having primary access to that language through either a spoken or some signed form. It has been argued that the analogy with spoken-language bilingualism is a false one and that “...the situation in deaf education does not match the conditions assumed by the linguistic interdependence model” of Cummins (1991) (Mayer & Wells, 1996, p. 93).

According to the Cummins (1989, 1991) model, the “interdependence” assumption clearly includes the notion that a person learning a first language in a literate culture will inevitably be exposed to both the spoken and written forms of that language. Given appropriate conditions for the learning of a second language, the model predicts that proficiency in the written form can provide a basis for the transfer of cognate skills to the second language. As most commentators acknowledge, a natural sign language is
equivalent to any other first language in terms of its learnability—given appropriate conditions for acquisition. This similarity does not, however, include the presence of any literacy knowledge or skills because natural sign languages do not have a written form (Mayer & Wells, 1992).

It is the case that, in the light of such concerns, other authors (Israelite, et al., 1992; Strong & Prinz, 1997) remain committed to the applicability of the interdependence principles to the case of signed/spoken language bilingualism. Indeed, Strong and Prinz concluded that “Deaf children’s learning of English appears to benefit from the acquisition of even a moderate fluency in ASL” (i.e., a natural sign language). Although not in direct response to recent criticisms, advocates of the existing model have argued elsewhere that the alternative processing strategies used by deaf readers (i.e., semantic processing and direct lexical access) mean that the lack of transfer of phonological encoding and other literacy skills from their first language does not present an insurmountable hurdle for deaf learners (Ewoldt, 1993; Israelite et al., 1992).

In summary, it should be noted that there is relatively little claim that can be made for any current position on these issues on the basis of formal research evidence. Most bilingual programs for deaf students are relatively new and/or have collected or analysed little data under well-controlled experimental conditions. Clearly, at this point in the history of educational efforts to develop the literacy skills of deaf students, we require much more research. Specifically, there is a need for research that goes beyond consideration of loosely controlled correlations between sign language skills and the development of English literacy skills.
The continuing development of these issues and the accommodation of new evidence about the relative efficacy of the different models and approaches to literacy acquisition for deaf people will be extremely interesting to observe in the near future. From our perspective, it is to be earnestly desired that progress from this point can be based on dispassionate synthesis and interpretation of empirical data. We acknowledge, however, that the history of educational endeavours to this point give us some cause for pessimism in this regard.

References


