What Do ESL Students Need to Learn About Reading?*

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The article examines the cognitive pre-requisites for the acquisition of reading skills and identifies two kinds of conceptual representations of language activities: functional concepts and technical concepts. In addition, specific reference is made to ESL students and reading in order to point out what they should know about reading and what their instructors should determine before working with them on reading.

WHAT DOES *EVERYONE* NEED TO LEARN ABOUT READING?

Reading as a Skill

For a psychologist, literacy behaviour belongs in the category of "skill." Literacy consists in two basic skills—reading and writing. These are intricately related to one another and also to the two basic skills of oracy—listening and speaking, which are also interrelated (Downing & Leong, 1982). Skill acquisition is one of the best researched areas of human behaviour. It is also one of the most useful areas of psychological research for practical applications. For example, driving a car, plumbing, swimming, playing hockey or chess are all skills. To the layperson, these may seem to be quite different kinds of behaviour but, as Whiting (1975) points out, though "verbal, mental, perceptual, social and motor are common adjectives in relation to skills," it would be "wrong . . . to assume that the processes involved in the learning of any of these skill categories [are] essentially different from the learning of another" (p. 6). Whiting and den Brinker (1982) emphasize that all skills, including those that appear to be predominantly motor, have an *essential cognitive basis*.

That reading is a member of the class of behaviour named "skill" in psychology has important implications for educational practice. It means that the findings of psychological research on skill acquisition in general can be applied to the learning of reading in particular. Let us now focus

on some of the research conclusions on skill acquisition which seem to be especially relevant for learning to read.

In everyday life, any skill is acquired through the individual's application of innate learning processes to the perceived task of mastering its performance. Skills certainly are not genetically programmed but some cannibalized behaviours may be more or less determined by genetic factors. Orton (1925, 1937), in his classic neuropsychological studies of disorders of reading and writing, recognized that these written language skills were neither unique nor independent. Individuals who displayed symptoms of dyslexia or dysgraphia, exhibited, in addition, other related disordered behaviours arising from a common underlying handicapped behavioural module cannibalized by the reading or writing skill. Such a handicap may be determined genetically or through environmental experience. This cannibalization process was recognized by Holmes (1970) in his classic psychological theory of reading acquisition:

> In essence, . . . reading is an audio-visual verbal-processing skill of symbolic reasoning, sustained by the interfacilitations of an intricate hierarchy of substrata factors that have been mobilized as a psychological working-system and pressed into service in accordance with the purposes of the reader (pp. 187-188).

Thus, the process of acquiring the skill of reading includes the adaptation or cannibalization of existing behaviour as well as the learning of new behaviour patterns.

Downing's and Leong's (1982) review of the psychological research literature on skill acquisition in general led them to conclude that the most important finding of relevance to learning to read in particular is that there exists a universal pattern of skill development. Each step in the growth of any skill by the addition and development of its subskills passes progressively through three overlapping phases: (1) cognitive; (2) mastering; (3) automaticity.

In the initial cognitive phase, learners try to figure out what they should attempt to do in performing the skill; "Getting in mind just what is to be done" (Cronbach, 1977, p. 396); "Getting a preliminary fix" (Luria, 1976, p. 117). In the mastering phase, as the learner improves his or her comprehension of the task, he or she works to perfect the performance of the skill. Learners practice until they achieve a high level of accuracy with few errors. But mastery is not sufficient for independence and fluency in the practical employment of a skill. Practice must continue beyond mastery until overlearning produces automaticity. Once automaticity has been achieved, a skill does not atrophy even if it is not used for many years. It quickly recovers when called back into use again.

A very common error in literacy education has been for teachers to consider only the mastering phase and to overlook or skimp on the cog-

nitive and automaticity phases. When the cognitive phase is neglected in the teaching program, literacy learners are unable to apply themselves effectively in practicing for mastery because they are floundering in the flood of misunderstood concepts introduced in reading instruction (Downing, 1982, 1984b, 1985). They remain trapped by cognitive confusion and often develop poor self-concepts regarding their own mental ability to comprehend reading tasks. Neglect of the automaticity phase is a well-known problem in literacy campaigns. It produces the phenomenon of exliteracy seen in people who can no longer read although they had previously been awarded literacy certificates. They had not reached automaticity when the literacy instruction ended and no follow-up reading materials had been provided afterwards (Downing, 1979).

Cognitive Prerequisites for the Acquisition of Reading Skill

Let us now return to the question posed in the first main heading of this paper—what does *everyone* need to learn about reading? "Learn about" suggests "knowing" or "knowing how." In other words, our focus is on cognition. The cognitive phase of skill acquisition is, therefore, our prime concern. Let us consider how learners think about literacy skills, how they figure out the tasks put before them in attempting to read and write, how they conceptualize language in relating writing to speech.

During the past twenty years, there has been a rapid growth in research on people's awareness of their own and others' linguistic behaviour. This is the field of metacognition and metalinguistics. Empirical evidence of the existence of language awareness in the development of oracy and literacy has been found in many different cultures and languages. (For reviews, see Downing & Valtin, 1984; Yaden & Templeton, 1985). Language awareness is very important for the cognitive phase of acquiring the many subskills of literacy because, in learning how to perform the tasks of reading and writing, learners need to reflect about features of language that are symbolized in its visible form, and they need to reflect about the functions of language that are served by reading and writing.

Mattingly (1972) has provided a coherent theory of the role of linguistic awareness in the development of both oracy and literacy. He writes that reading is "a deliberately acquired, language-based skill, dependent upon the speaker-hearer's awareness of certain aspects of primary linguistic activity" (p. 145). According to Mattingly (1984), variable development of this linguistic awareness may be one important cause of individual differences in reading achievements. In learning oracy skills, all children everywhere must become linguistically aware to a certain minimum prerequisite level, but some individuals develop a

greater linguistic curiosity and this leads them to continue expanding their language awareness indefinitely. On the other hand, many individuals abandon their linguistic interest once they are sufficiently equipped for the purposes of ordinary communication. When children begin to learn to read and write, those who have maintained their linguistic awareness quickly put it to good use in reflecting about literacy tasks in the cognitive phase of the acquisition of literacy subskills. But beginners whose linguistic awareness has remained at an immature level are less ready for learning how to read and write. For them, the written language seems arbitrary and mysterious.

According to Downing's (1979, 1984a, 1984b, 1985) "Cognitive Clarity Theory" of learning how to read, two kinds of conceptual representation of language activities and objects are essential for the cognitive phase of the acquisition of the subskills of reading and writing: (1) functional concepts—the purposes of these skills; (2) technical concepts—characteristics of speech and writing. Literacy learners have to become curious about the intentions of writers. Why do they make those visible symbols? The answer will have two parts: (1) they intend to communicate some meaning; (2) they intend to code certain features of speech. As Ferreiro and Teberosky (1979) concluded from their study of the stages of literacy development in Argentinian Spanish, "Reading is not deciphering; writing is not copying." The real task of acquiring literacy is the "intelligent construction" of these two skills (pp. 344-345).

Let us consider in turn the two groups of concepts that students need in their reasoning work for constructing the skill of reading and the skill of writing.

Functional Concepts

We will discuss functional concepts first because they are of primary importance. This is true in the learning of all skills. Bruner (1971) put it like this:

> There is a very crucial matter about acquiring a skill—be it chess, political savvy, biology, or skiing. The goal must be plain; one must have a sense of where one is trying to get in any given instance of activity. For the exercise of skill is governed by an intention and feedback on the relation between what one has intended and what one has achieved thus far—"knowledge of results." Without it, the generativeness of skilled operations is lost (pp. 113-114).

This is the first reason why the learner of a skill must conceptualize its purposes. One cannot make progress in learning a skill if one does not understand why one must perform it in a specific manner.

A second reason why the learner of a skill must develop concepts of its functions is that one cannot be motivated to learn a skill if one does not know what motives it may satisfy. Hamers and Blanc (1982) have applied this principle to language learning: "For the child to develop overall language competence, he must valorise language, i.e., attribute a certain positive value to language as a functional tool, that is, as an instrument which will facilitate the fulfillment of social and cognitive functioning" (p. 33). It is this valorisation of a language skill such as reading which provides powerful motivation for improving its perform- ance. But this valorisation and consequent motivation cannot take place if the functions and rewards of performing the skill are unknown.

A third reason why learners must become aware of the functions of the skill to be acquired is that the subskills within the total skill vary with the changing purposes of the moment. Furthermore, the underlying neurological processes vary with the purposes of the skill performer. Purpose in reading is like the gear shift system in an automobile. The total driving (or reading) process cannot be separated from the essential shift system that changes dynamically according to the driver's (or reader's) purpose and the level of difficulty of the road (or text). These facts have been amply demonstrated in empirical research on the reading process (e.g., Gray, 1917; Judd & Buswell, 1922; Buswell, 1926; Tinker, 1965; Postman & Senders, 1946; Rickards & August, 1975).

For these reasons, awareness of the purposes of literacy needs to be developed from the earliest stages of instruction (Malmquist, 1973) and further extension of this awareness is essential right through the secondary school and university levels (Russell, 1970; Burmeister, 1974).

Technical Concepts

The learner of any skill also needs a second group of concepts for use in the cognitive phase of its acquisition. These are the technical concepts employed in thinking about the actions and objects involved in a skill. The vocabulary for these concepts is essential for understand- ing the skill instructor's commands and explanations. In learning lan- guage skills this technical linguistic vocabulary has been termed the "language instruction register" (DeStefano, 1972). For the most part, the underlying concepts may be referred to as "featural concepts" of language or "metalinguistic awareness."

An extensive body of empirical research has established the existence of these featural concepts and how they develop before and during schooling. They are highly correlated with reading achievement and it seems almost certain that, under normal educational circumstances, the development of featural concepts and the related language instruction register are essential for success in learning how to perform the skill of

reading and the skill of writing. How can students comprehend the teacher's talk about "word," "sound," "sentence," etc., if they do not know these technical terms and the related concepts? For reviews of research on the technical concepts of literacy and their significance in learning how to read and how to write, see Dopstadt, Laubscher & Ruperez (1980), Downing (1984a, 1985), Templeton & Spivey (1980). Note that the findings summarized above have come from research in several different languages, e.g., English, French, Russian, Spanish and Swedish.

In summary, the process of learning the skill of reading consists fundamentally of discovering the functions and features of writing and how they are related to speech. The skill acquisition process is the same in all languages. Reading is a skill that can be developed in any language or any writing system. Some of the detailed functional and technical concepts may vary from one language to another, but these differences are of minor importance even when one considers writing systems as different as English, Chinese and Japanese. The basic metalinguistic concepts are similar. The skill of literacy like the skill of oracy is learned only once in an individual's lifetime though he or she may transfer those skills to other specific languages.

WHAT DO *ESL* STUDENTS NEED TO LEARN ABOUT READING?

Individual Differences

In view of our conclusion to the preceding section of the paper, our response must be that it depends on what level of reading skill in any language students bring with them to the ESL task. For example, one of us (Downing) is currently conducting a research project on reading in multilingual situations in Papua New Guinea. At the time of writing this paper, he is collecting data in the Buin area at the southern tip of Bougainville Island where most students are exposed to three languages—Telei (their mother tongue), Tok Pisin (a frequently used lingua franca), and English (less common). Two types of instruction are being compared: (1) where the students are taught literacy from the beginning in English (L3), and (2) where the students are introduced to literacy for the first two years of school in their mother tongue, Telei (L1), and then transfer to instruction in English. Neither group of students has been taught how to read in Tok Pisin, although they are exposed to written or printed Tok Pisin in their environment (posters, newspapers, comics, hymn sheets, etc.).

Preliminary results have interesting implications for our paper. The students, now in their fourth year of schooling, show remarkably differ-

ent levels of reading skill in the contrasted types of instruction. The children taught to read from the beginning in English are slow readers in English. The children taught to read for the first two years in their L1, Telei, have similar scores in English to those who were taught in English from the beginning, although, of course, the latter group has had four years of English instruction instead of only two. Furthermore, the students who began in L1 are very much more rapid readers in English than those who began in English. Also the L1-taught students are near-perfect and rapid in reading both Telei and Tok Pisin, whereas the students who have been instructed in English from the beginning are poor readers in both Telei and Tok Pisin.

These preliminary results suggest that the students who received their initial instruction in their mother tongue have made excellent progress in acquiring the skill of reading and can apply it in all three languages (even in one in which they have received no instruction—Tok Pisin). They really know *how to read*. In contrast, the students introduced to reading in a third and little used language, English, have not comprehended their instruction. They don't know *how to read* and consequently cannot do so in any language. The reading needs of these two groups of Papua New Guinea students in their English classes are obviously very different. To treat them all in the same way could be a boring waste of time for those who began to read in their L1, or a painfully confusing experience for those who have been struggling to understand what reading is and what it's for over the past three or four years.

Similarly, in Canada, students are likely to come to their ESL classes with differing levels of development in acquiring the skill of reading. Let us consider some examples of the differences we may find in our ESL students.

Level of Skill Development

As we have noted above, ESL students may differ in the level of skill development that they have reached. A review of the literature on individual differences in reading achievement in L1 led Downing (1976) to conclude:

> In a comprehensive secondary school one can anticipate that twelve-year-olds will have a range in reading age from eight years to sixteen years. By age fifteen the range will be from ten to the adult level of reading ages (p. 68).

Reading is a developmental skill which can continue to improve and expand from the preschool to the adult level. This broad range of individual differences will occur in all languages. The ESL teacher always has to face this problem, although its seriousness may be somewhat

reduced by the selection of students for a more or less homogeneous class.

Within this range of individual differences in reading skill development, variability in concept development for metacognitive and metalinguistic awareness is a special problem. Functional and technical concepts continue to develop through the secondary school years and beyond. Many older students have problems in reading because they have not understood these concepts and the linguistic jargon used by their content area teachers. Teaching methods such as those used in the ERICA program (Effective Reading in Content Areas, consisting of preparing, thinking through, extracting and organizing, and translating) can overcome this problem (Downing & Morris, 1984).

Our chief point here is that it cannot be assumed that ESL students all need the same instruction in reading. As Krashen and Terrell (1983) state, "some readers do not require intervention, while others require quite a bit" (p. 131). They propose that, "intervention programs may range from mild to heavy" in accordance with the ESL students' individual needs (p. 138).

Valorisation of Reading

Individual differences in students' valorisation of reading is a well known problem in L1 classrooms. With ESL students, it may be more difficult to overcome in some classes where their cultural values are quite different. Cultures vary in the value that they accord to reading. They also vary in where they place reading in the hierarchy of cultural priorities. Furthermore, the functions of reading can differ from one culture to another. (For a cross-cultural study of these valorisation differences, see Downing, 1973.)

A typical problem of this type often encountered with foreign language students is described by Nelson (1984):

> Their reading often seems to be confined to those set texts which they know they will be tested on. Thus, the tendency is to read intensively, virtually learning a key text, rather than reading extensively to gain a broad understanding of the subject. Their pleasure reading is often limited to the sports page of the occasional newspaper. With such students, the assumptions about motivation which underlie a typical reading course are unlikely to be correct (p. 189).

These students need to be led to discover the rewards that can be gained from reading. In this way, valorisation of reading may be attached to existing cultural drives or to the perceived rewards of the new culture that the second language student desires to adopt (at least

in part). To this end, it is essential that "the purposes of reading should be the same in class as they are in real life" (Clarke & Silberstein, 1977, p. 138).

Orthographic Differences

We have proposed that there exists a universal basic metalinguistic awareness underlying progress in acquiring the skill of reading, no matter what the language. For example, Luria's (1946) "glass window theory" points out that language is transparent to the preschool child, but it must become opaque before he or she can comprehend that speech can be segmented into such units as sentences, words and phonemes. However, there are significant differences between the orthographies of different languages and these need to be taken into account by ESL teachers.

Widely differing examples are in the basic unit of language coded in written Chinese, Japanese and English. There may be a mismatch between metalinguistic awareness of L1 technical concepts in an ideographic or syllabic system of writing and what is required to understand the alphabetic principle of English orthography. Even with other European languages, the orthography may depend on some coding principles which are different from those involved in English. There will be many common concepts which provide links to English, but there will also be some mismatches which may confuse the ESL student. Even the student who arrives in the ESL class with a high level of skill development in his or her L1 can profit from some guidance in the basic principles of English orthography.

One of the reasons that understanding English orthographic principles might be difficult is because of the double focus in second language teaching on linguistic content and metalinguistic content. Attention will not always focus on phoneme-grapheme correspondence but also, and especially in early stages, on the technical concepts for talking about writing. Smith (1984) outlines the advantages of an alphabetic writing system in acquiring literacy. These are largely organizational and not phonemic. This facility in organizing may account for how seeming exceptions in English spelling can be easily remembered and retained through a process of organizational systematizing—spotting similarities and grouping classes of words together on the basis of spelling. Historical spellings such as "knight" and "knife" fall into orthographic categories which are kept open for new entries. Instead of being phonemic-graphemic exceptions, they become organizational regularities. Orthographic considerations, therefore, play a partial role in learning to read. The major accomplishment in literacy is the awareness of the functional and technical concepts surrounding the task. Sound-let-

ter correspondences are present, but a major advantage of the writing system of English is in organizing how to remember and communicate material in written form.

We have suggested that there will be predominantly common concepts in the skill acquisition process which provide a link between L1 and L2 reading for literate students, commensurate with their level of reading proficiency. The student who brings a high level of skill development to the L2 class may require that explicit attention to orthographic "rules" be given. This type of learner may even learn best with techniques that address orthographic coding principles explicitly. The student who arrives in the ESL class with a low level of skill development in L1 reading may not require explicit teaching by conventional rules but more attention to the meaningful content of experience both in L2 reading enterprises and, even more essentially, in continued reading practice in the L1. (For a description of the psycholinguistics of written English, see Chapter 4 of Downing & Leong, 1982. Treatments of English orthographic principles are found in Venezky, 1970; and Vachek, 1973).

Teaching Methods

Downing's (1973) cross-cultural comparisons of methods of teaching reading in fourteen countries indicated that there is no necessary connection between a particular teaching method and a specific language. Sound pedagogy is based on universal human learning processes in all languages.

Nevertheless, the ESL teacher has to be aware that students from other countries may have had quite different school experiences from those that are common in the ESL teacher's own background. For example, although the Language-Experience Approach remains the best teaching method at the elementary level for implementing the very well-established conclusion from psychological research on verbal skills—i.e., the more meaningful the materials, the more rapid the learning (Underwood, 1964)—ESL teachers may at first find that their students fail to respond because of ingrained habits and expectations resulting from schooling in their homeland. In many countries, teachers employ rote learning methods that prevent the development of functional concepts of literacy so that the students become brainwashed into believing that reading is merely a school ritual. ESL teachers need great patience to overcome these attitudes in their students. (For useful practical guides to the Language-Experience Approach to reading instruction, see Allen, 1976; Goddard, 1974; Hall, 1976; McCracken & McCracken, 1979. Useful techniques in ESL reading instruction are found in Clarke & Silberstein, 1977; Krashen & Terrell, 1983; and Carrell, 1984. A fas-

cinating format for bilingual readers is illustrated by Trân & Trân, 1982.)

CONCLUSIONS

Our assessment of the process of acquiring the skill of reading has important ramifications for ESL reading instruction. The first is that by developing aspects of task awareness (functional concepts) and metalinguistic awareness (technical concepts), especially in the L1, ESL students can be led to transfer these concepts to L2 literacy. This finding is an assertion in support of the principles of bilingual education.

The second conclusion we reach is that, because of minor differences in technical concepts between L1 and L2, there needs to be some attention given to the orthographic coding principles of English. At the same time, the organizational basis of (English) alphabetic orthography should not be neglected. These organizational advantages can be conveyed and exploited through content areas of language experience (see Mohan, 1986, for example). Productive activities include those which (a) require a combined endeavour on the part of a group of students (for example, editing a class newspaper), (b) establish a pattern of discourse within the group (assigning responsibilities or jobs to the members of the group), (c) develop a project or system that relies on conventional English language format for its operation (the assembling or compiling phase of the newspaper), and (d) complete a task or generate a product that results from that organizational system (the final copy). In addition, we must realize that not all ESL students will need the same level of reading instruction. And finally, ESL teachers need to be aware of the degree of teaching register that they are using, and the fact that ESL students may not understand the jargon of our specialized professional vocabulary.

Our review of L1 reading development suggests that teachers need to assess their ESL students' motives to determine the perceived rewards that their students find in reading. It also suggests that the Language-Experience Approach bears many similarities to adult second language instruction using the Natural Approach, and should be examined by ESL teachers of all levels. Reading activities need to represent the type of organizational enterprises that we usually use our language for in communication. It is also clear that students need to be read to, especially in their L1, if their native language literacy is not automatic. Literate adults can be taught using organized tasks in content areas that require the manipulation of written language. Neither group should be made to read aloud until their cooperative classroom endeavours require it.

Reading is not decoding; it is interpreting. It involves both the discovery of creativity and the rediscovery of creativity.

> In other words, beginners [in reading] have to rediscover those same basic functional and featural [technical] concepts that led to the invention of the writing system used in their language (Downing, 1982, p. 141).

This sense of discovery is part of the fascination of acquiring a second language and culture, and contributes positively to the development of the skill of literacy.

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