

THE RELATIONSHIPS BETWEEN BILINGUAL CHILDREN'S READING AND WRITING IN THEIR TWO LANGUAGES

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Abstract. In this explorative study, we discuss the links between language, reading and writing variables in the two languages of 26 fourth-grade Spanish-English bilingual children who have just been transitioned to all – English classrooms. Word recognition and spelling proficiencies were correlated both within- and across-languages, but they did not correlate with oral proficiency measures. The form ratings of the writing samples correlated with word recognition and spelling measures, but the content rating of writing samples did not correlate with oral proficiency measures. A qualitative analysis of the writing samples yielded cross-language transfer effects (in both directions) at the level of graphophonic, syntactic and vocabulary knowledge as well as in terms of story structure.

Keywords: bilingualism, reading, writing, cross-language transfer, literacy development.

1 INTRODUCTION

Language and literacy (reading and writing) development are closely intertwined processes. In addition, there is a strong link between reading and writing development. Traditionally literacy instruction in elementary grades had focused on developing reading proficiency and delaying writing practices until later. Thanks to the emergent literacy research (see Garton & Pratt, 1989 for a review), we now know that writing is an important part of literacy development (e.g., Clay, 1988). Writing and reading facilitate each other's development because as Fitzgerald and Shanahan (2000) summarized in their review, reading and writing are 'constellations of cognitive processes that depend on knowledge representations at various linguistic levels' (p. 40). In the last 30 years, the cognitive processes of reading development have

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been identified with considerable success (see Adams, 1990 for a review). However, the cognitive processes of writing development in young children have not been studied as thoroughly (for exceptions, see Abbott & Berninger, 1993; Bereiter & Scardamalia, 1987). In reading and writing, identical or similar knowledge representations, cognitive processes and contexts are likely to be used since both tasks involve representing the oral language symbolically.

Many contemporary models of literacy development recognize two semi-autonomous cognitive components of skilled reading: (a) linguistic competence as operationalized by listening comprehension and (b) decoding. Thus, to become literate, children need to understand both the spoken language and how it is represented in its written form (Gough & Tunmer, 1986; Hoover & Tunmer, 1993; Juel, Griffith, & Gough, 1986). These processes constitute the 'building blocks' of reading development (Durgunoğlu & Öney, 1999; Öney & Durgunoğlu, 1997). Difficulties in these processes, especially in decoding lead to slow or inaccurate word recognition which in turn results in comprehension failure (Shankweiler, 1989). These two cognitive processes – understanding the spoken language and knowing how it is represented in its written form – can also be assumed to operate in writing development. These cognitive processes operating in both reading and writing are described in more detail in a recent model by Fitzgerald and Shanahan (2000).

Fitzgerald and Shanahan (2000) highlight four categories of knowledge shared between reading and writing. The first category, metaknowledge includes factors such as knowing about functions and purposes of reading and writing, as well as monitoring one's meaning making. A second category is prior knowledge, domain knowledge and vocabulary that are used in both tasks. A third category is knowledge about text attributes. These include a) graphophonics: knowledge about graphemes, phonemes and how they match, including factors such as letter knowledge, phonological awareness that affect word recognition and spelling (Ehri, 1997), b) syntax: rules of grammar and punctuation and c) text format: knowing the attributes of larger units of text, such as the knowledge of story grammar or text organization. Finally the fourth category of shared information is procedural knowledge, knowing how to access and use the information in the previous categories.

Of course as literacy develops, the impact of these shared knowledge categories evolve and change as well. For instance, in younger students, the graphophonic knowledge has a great impact in both reading and writing development. As students reach middle school years, other variables, for example, understanding complex morphology, knowing about text format as well as prior knowledge and vocabulary gain prominence and the impact of the now-relatively-automatic graphophonic processes are reduced.

In this chapter our focus is on the third category described above because the role of these factors in the development of reading has been studied closely (Adams, 1990) and our goal is to investigate how the same factors play a role in the development of writing. Writing development can be analyzed using different criteria. In this chapter we are focusing on two criteria: the form ratings including mechanics, spelling, syntactic structure, and content ratings including the quality of content, such as the richness of information, development of a story line in writing a story, or considering the recipient's perspective in writing a letter.

Most of the research on reading and writing development has been conducted on monolingual students. However, around the world as well as in the United States, a very common phenomenon is for individuals to speak more than one language. In this chapter we will call these individuals 'bilingual' for ease of discussion. However, we do acknowledge that individuals may have varying levels of proficiency in their first (L1) and second (L2) languages. In addition, they may have completed varying degrees of formal instruction in L1 and L2.

When it comes to literacy development of bilinguals, we are now beginning to understand their reading development (see August & Hakuta, 1997, for an overview), but research on bilingual writing development is still not very extensive. Most of the research on writing development of bilinguals is conducted on adult EFL learners with well-established first languages and who are learning a second language by choice, for example for academic or job purposes. However, as Roca de Larios, Murphy and Marin summarized in their chapter, ESL and EFL learners have many different characteristics. Hence, there is a gap in our knowledge when it comes to young ESL students who are becoming literate in their L1, L2 or both. Given that reading and writing share a large number of knowledge representations at different linguistic levels, the reading and writing development of bilingual children becomes even more interesting. An important educational issue is how reading and writing proficiencies develop in the two languages of a bilingual child and affect each other across languages, namely cross-language transfer. To state it more specifically, if a child has developed an understanding of a process in L1, will that insight be also available in L2?

2 THE CURRENT STUDY

In this chapter, we discuss an exploratory study on language and literacy development of a group of fourth grade children who have just been transitioned to English instruction after being in a Spanish-English bilingual education program in the previous years. Spanish-speaking students constitute the largest group of language-minority students in the United States (73%, August & Hakuta, 1997), so it is important to understand their literacy development.

We selected students who were transitioned to all-English classrooms, because after receiving instruction in both Spanish and English, they were assumed to have enough English proficiency. This way, we could assess the students' proficiency in both of their languages. We measured several different types of literacy and language proficiencies, especially knowledge about text attributes described above as the third category of shared knowledge between reading and writing. We were interested in the following questions:

When it comes to basic reading processes, how are the task performances related within and across languages? As discussed in the introduction, understanding the oral language and how it is represented in print are the two basic processes of reading development. Our goal was to assess decoding knowledge in both languages through word recognition and spelling tests and also assess linguistic knowledge in

both languages through measures of syntax and oral proficiency. Correlating these measures within and across languages gives an indication of overlaps in the reading processes within and across-languages.

How are reading and writing measures related both within and across languages?

The quality of writing can be assessed using both form and content ratings as discussed above. The question is how these writing measures are related to basic reading processes in both languages. Graphophonic knowledge is assumed to be shared across reading and writing. Hence it can be expected that word recognition and spelling measures should be related. In addition, the form ratings of the writing samples are expected to be related to independent measures of word recognition and spelling. Syntactic knowledge is also assumed to be shared between reading and writing. Hence, syntactic knowledge is also expected to be correlated with the form ratings of writing samples. Content ratings reflect the richness of content and these ratings are expected to correlate with linguistic proficiency as assessed by oral proficiency. If the insights gained in one language transfer to the second language, then the predicted correlations are expected to occur not only within – but also between-languages.

How do the writing samples reflect the different levels of linguistic knowledge in both Spanish and in English?

The writing samples can be analyzed qualitatively to identify instances of the influence of one language on the other, at the level of spelling, vocabulary as well as syntax. In addition, knowledge about text format--for example, how a story is structured or how a letter is written--can operate across the two languages of a child. Hence we can expect that children who have high quality writings in one language, can also show the same pattern in the other language.

2.1 Method

2.1.1 Participants

Participants were 26 fourth-grade students (8 boys and 18 girls) from a school in a suburb of a large midwestern city in the United States. All students had Spanish-speaking parents (18 from Mexico, and the rest from El Salvador, Puerto Rico and Colombia), with blue-collar jobs either in the service industry or in the factories around town. As summarized in Table 1, when asked about how much Spanish they knew, the majority said 'a lot'. Except for one child who reported using only English, all children used Spanish (solely or in combination with English) when they spoke to their parents. However they were more likely to use English with friends and teachers. Except for the five who had attended kindergarten in Mexico, all children were attending school in the USA and they had been in bilingual education classrooms. However, currently they were in all-English classrooms. In these classrooms, although several teachers understood and spoke Spanish, they only used English. In their self-reports, the majority of the children rated their reading proficiency in both Spanish and English as 'good' or 'very good'.

Table 1. Self-reports of children on language proficiency: Number of children who chose that response.

1. How much Spanish do you know?			
A lot	Some	A little bit	None
19	5	2	0

2. Which language do you use to speak to ...			
	Spanish	English	Both
Parents	15	1	10
Friends	1	15	10
Teachers	1	21	4

3. How well do you read in.....				
	Very good	Good	Average	Poor
Spanish	7	9	8	2
English	1	15	10	0

2.1.2 Materials and procedure

The following eight tests were given at the beginning of the school year. Children were tested individually (except where noted) by testers fluent in both English and Spanish. English tests were given in one day, and Spanish in another day.

English word recognition (maximum score possible: 126): Two different tasks were used to determine the level of English word recognition: The first was the word identification subtest of Woodcock. In this open-ended task of 106 words, children attempt to read progressively more difficult words and can continue until they make 6 consecutive errors. The second task included 20 exception words (*e.g.*, ocean, island) which cannot be pronounced using spelling-sound correspondences (Adams, & Huggins, 1985). The two word recognition measures were highly correlated ($r = .84$), hence in the following analyses, the two tasks were combined into a single word recognition measure. The score was the total number correct in both tasks.

English spelling (maximum score possible: 161): In this task, the students were given a sheet of paper with numbers on it and asked to spell the 15 words that the experimenters pronounced (hat, dress, lost, duck, date, cheat, rice, shop, huge, mail, elephant, blank, spin, food, nothing). The experimenters first pronounced the word, then used it in a sentence and finally repeated the word. When scoring, both the number of correct letters irrespective of location, and then the location of the sounds were considered. The letters representing initial and final sounds received 2 points, and the sounds in the middle received 1 point. For example, the word 'shop' spelled

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