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Mapping Writing Development in Young Bilingual Learners

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Abstract

The growing interest in Two-Way Bilingual Immersion (TWBI) programs has led to increased attention to reaching the instructional goals of bilingualism, biliteracy, and biculturalism. This article describes the writing development in Spanish and English for 49 kindergarten students in a 50/50 Two-Way Bilingual Immersion program. Writing samples collected were analyzed over the course of an academic year for evidence of cross-linguistic resource sharing. A grounded theoretical approach was used to compare and contrast writing samples to determine patterns of cross-linguistic resource sharing in English and Spanish. We identified four patterns: phonological, syntactic, lexical, and metalinguistic awareness. Findings indicated that emergent writers applied similar strategies as older bilingual students, including lexical level code-switching, applied phonological rules of L1 to their respective L2s, and used experiential and content knowledge to write in their second language. Our data indicate that young bilingual learners demonstrate and apply linguistic resources across languages, and that it is central to biliteracy development and learning to write in a second language.

The majority of the research studies conducted in TWBI assess the acquisition of biliteracy primarily through standardized measures of academic achievement, primarily in English reading, given the focus on standardized testing and the availability of assessments in other languages (Genesee, Lindholm-Leary, Saunders & Christian, 2006). Only a modest number of studies have analyzed biliteracy through the writings of English Learners (ELs) and English-only (EO) students in TWBI settings (Gort, 2012; Serrano & Howard, 2007). Hence, there is a need to learn more about emergent biliteracy in two-way immersion programs, particularly in the area of how both groups of students develop writing across content areas. Much of the research conducted with writing samples from ELs and EO students in TWBI programs analyzed narrative domains of writing, such as journals or writer's workshop approaches where students were free to write about a topic (Gort, 2006; Serrano & Howard, 2007).

Our inquiry focused on the following questions:

What is the evidence of cross-linguistic resource sharing for emerging bilingual kindergarten students (ELs and EOs) in a 50/50 TWBI program? What is cross-linguistic resource sharing?

Cross-linguistic transference was first summarized through the common underlying proficiency theory in which the advancement of the first language facilitates the learning of the second language (Cummins, 1994). Since then, insights from cognitive science and literacy research have further addressed metalinguistic awareness to provide an overall description of cross-linguistic resource sharing (Bialystok, 2001; Koda,

2005; Koda & Zehler, 2008). We defined *cross-linguistic resource sharing* as the metalinguistic skills and abilities that students integrate or transfer during the processes of reading and writing.

An emerging body of research on students' writing in TWBI programs demonstrates that bilingual students (ELs and English Only) increase their writing abilities in both languages over time as they gain skills and transfer concepts in a process defined as *interliteracy* (Gort, 2006). Gort described the phenomenon as "the written language parallel to a developing bilingual's oral inter-language ... may include the application of rules of one language when writing the other" (p. 337). Drawing upon semiotic modalities or "hybridization" during writing Gort (2012, p.92) refers to the sense-making process bilingual students use during literacy events indicating bidirectionality in language learning. Gort (2012) refers to the exchange between two



languages as a natural scaffolding strategy used by students as they negotiate language structures that support their biliteracy development. In addition, current research is demonstrating that ELs and English Only (EO) students in TWBI programs approach writing through slightly distinct patterns, with EOs having a preference for English writing and ELs demonstrating a more balanced bilingualism in the writing samples (Serrano & Howard, 2007). Studies of cross-linguistic transfer in early literacy skills have mainly focused on English Learners (ELs) in bilingual contexts (Cárdenas-Hagan, Carlson & Pollard-Durodola, 2007; Escamilla, 2007; Reyes & Azuara, 2008).

The analysis of the kindergarten bilingual writings in this present study were examined through three related theoretical constructs on biliteracy development: (1) the Universal Grammar of Reading (Perfetti, 2003), (2) the conceptualization of Transfer Facilitation Model (Koda, 2005), and (3) the Continuum of Biliteracy (Hornberger, 2003).

School Context

The school is located in a predominantly agricultural area in California where socio-economic levels reflected parents of EO students who owned land with groves or other property in the area and were identified as middle/middle-upper class. Parents of EL students worked the groves around the school area and provided service jobs within the community. These parents were identified as living at poverty level/low-income, including four migrant families. School demographics included 44% Hispanic/Latino population with 31% of the students identified as ELs. White/non-Hispanic population reflected 41% of the student body with the remainder of the population identified as 12% American Indian, 1% African American, 1% Asian and less than 1% Pacific Islander. The two teachers involved in the study held California

teaching credentials, bilingual certification, and advanced degrees in education.

The 49 kindergarten students enrolled in a 50/50 Two-Way Bilingual Immersion (TWBI) represented native Spanish speakers (N=29) and native English speakers (N=20). The ELs scored 3-5 points on the Language Assessment Scales (LAS) in oral Spanish skills, while the EO participants scored a 1 (beginning level) on the Spanish LAS. The EL participants scored level 1 (beginning) on the California English Language Development Test (CELDT). The participants did not include any Initial Fluent English Proficient (IFEP) students.

TWBI Instructional Sequence

Kindergarten students participated in a team teaching situation with one teacher providing language arts instruction in the primary language and a second teacher providing second language instruction. Students then received thematic content instruction, wherein math, science, social studies, physical education, art and music are taught in an integrated approach with ELs and EO classmates. The language of instruction for content and language development (Spanish and English) alternated depending on the thematic unit, since languages were separated for instructional purposes, not used simultaneously for concurrent translation of subject matter. Teachers received district wide training/planning on transferability of skills from the county office during the school year.

The thematic approach incorporated the California kindergarten content standards related to the seasons and weather unit. The curriculum included state-adopted textbooks, supplementary materials, and teacher created resources. Teachers included language development standards for the various levels of language acquisition. Instruction included the use of visuals, songs, art, poems, read-alouds, guided reading groups, modeled/guided writing, student interactions through paired/ group work, and the teaching of sentence frames with content vocabulary.

At the end of the unit, the students were asked to draw a picture about the topic and describe their drawings by writing one or more sentences about the theme in their primary language. After the native language writing samples were completed, the students were asked to draw and translate their writing. Students were allowed to reference the classroom learning environment for content vocabulary, sight words, and the alphabet.



The authors examined 49 ELs and EO kindergarten students' writing samples in both languages. Writing in the students' first languages were collected and analyzed three times during the year (beginning, middle, and end of each reporting period) and pre and post writing samples to examine cross-linguistic resource sharing between English and Spanish. Two representative students (EL and EO) sample writings in their primary and second language are shown here in Figures 1 and 2.

Figure 1

English Learner, Kindergarten Sample in primary and second language



Figure 2

English-only Student, Kindergarten Sample in primary and second language



Inquiry Process

A descriptive/observational approach was used to gain an understanding of, or to give an explanation of a situation or event, an individual or a group of individuals (McMillan & Schumacher, 2006). This qualitative approach explored the phenomenon young bilingual learners used to understand and use two systems of writing. Grounded Theory, a systematic procedure to explain a process (Creswell, 2008), was used to analyze data based on our theoretical constructs of biliteracy and cross-linguistic resource sharing. Hutchinson's (1988) constant comparative method, the fundamental process of grounded theory, was used to qualitatively analyze writing samples to locate evidence of metalinguistic transference, language mapping, and specific evidence of cross-linguistic resource sharing in language features. The constant comparative method allowed the development of the categories through theoretical sampling, as a significant feature of grounded theory. Themes emerged for both groups of students (ELs and EOs) related to cross-linguistic resource evidence (see Table 1 and 2).

Table 1: Spanish to English Cross-Linguistic Resource Sharing for English Learners

Cross-Linguistic Evidence in L1 Features	Phonological Awareness	Syntactic Awareness	Lexical Awareness	Metalinguistic Awareness
Encoding through <u>syllabication and alphabetic principle</u> (verano, familia)	<u>Partial transference</u> : Using knowledge of how words are put together in Spanish to sound out words in English	<u>Substitution of word</u> in English when they cannot think of the word in Spanish or word was first learned in English (Summer for verano, Fall for otoño)	<u>Association</u> of words by their sounds and written form in both languages. Knowledge that these words are similar in English & Spanish (famili/familia, basbo/béisbol)	<u>Making connections</u> between the similarities of both languages or substituting functional words that hold a place in their sentence structure
<u>Overgeneralization</u> (y for i) dya, (friyo for frío)	<u>Partial transference</u> : Phonological (bey for day; hat for hot; san for sun; wi for we; da for the; Uchw for watch	<u>Switching sounds</u> heard in one language for sounds missing in the other language (llip for jump) (use of LL for J)	None found in samples	<u>Applying knowledge</u> from one language to the other; <u>overgeneralization</u> is used as a strategy in emergent writers
<u>Emerging knowledge of diphthongs</u> (caliente=calete; calete ; neve for nieve juegue, jjo=juge	<u>Partial transference</u> : emerging resource sharing of diphthongs (becas/because, pleid/played)	<u>Inserting sounds</u> in Spanish for English sounds (snou/snow)	None found in samples	<u>Approximating diphthongs</u> in written symbols; beginning to understand sound/symbol relationships
<u>Use of sight words</u> (gusta, yo, el/la)	<u>Full transference</u> : Use of sight words in both languages (like, I, the)	<u>Using sounds</u> from Spanish to spell sight words (da or de for the; wi for we)	None found in samples	<u>Application of sight words</u> learned throughout the school year
<u>No long vowels</u> sounds in Spanish	<u>No transference</u>	<u>Inserting long vowel sounds</u> in English (slaed/ slide)	None found in samples	<u>Understanding of a long vowel sounds</u> in some words; students inserts 2 vowels

Table 2: English to Spanish Cross-Linguistic Resource Sharing for English-Only Students

Cross-Linguistic Evidence in L1 Features	Phonological Awareness	Syntactic Awareness	Lexical Awareness	Metalinguistic Awareness
None found in the samples	<u>No transference</u> : Overgeneralization for concordancia; agreement is inconsistent Muchas colores (for ambiguous nouns) (Mi estastson faborreta es verrana.)	<u>Emerging understanding</u> for the word "good" in Spanish and overgeneralizing the use between (bien/buena) Yo me gusta mi maestro porce agea es moe beyen.	<u>Overgeneralization</u> of the "r" in Spanish when using cognates Favorreta/favorite. Students aware that the "r" in Spanish has a more pronounced sound than in English	<u>Emerging knowledge</u> of gender in Spanish words; Inconsistent use of agreements in sentence structure. Use of punctuation in both languages, but reversal of question marks in Spanish.
<u>Use of invented and standard spelling</u> when writing in L1 (mene/many, ckulrs/colors)	<u>Partial transference</u> : Phonological (ldo for ito); (Feborreta, Faborito for favorite); (Agwa, aga for agua); (Ckolors for colores Ckalavasas for calabazas)	<u>Use of invented spelling</u> with code switching sounds (agea/ella) (moe/muy)	<u>Use of invented spelling</u> with cognate (heafa/jirafa) (clasee/clase)	<u>Application of invented spelling</u> in both languages as temporary scaffolds that are functional in sentence structure and students can read back
<u>Using correct word order</u> (subject, predicate)	<u>Partial transference</u> : Reflexive pronoun (Yo me gusta for "a mi me gusta")	<u>Syntax</u> – word order Yo veo carr roho I see car reb	None found in samples	<u>Understanding of word order</u> in L1, but some students applying reversals in word order in the L2

Mapping Writing Development in Young Bilingual Learners

Data for ELs reflected writings from Spanish to English from end-of year writing prompts for the thematic unit. EL students received instruction about the seasons in their primary language and in English as part of their English Language Development (ELD) program.

Both ELs and EO students constructed approximations about language use in their second language by applying their knowledge of their first language and making generalizations or overgeneralizations of the rules between the two systems of writing, such as the examples provided by our selected case study students (Cárdenas-Hagan, Carlson & Pollard-Durodola, 2007; Escamilla, 2007; Reyes & Azuara, 2008). Students demonstrated abilities to “map language systems” at a very early age by: (1) applying knowledge of directionality of writing (left to right) and from top and bottom, (2) spaces between words, (3) phonological awareness in encoding, (4) lexical awareness through expression of thought/word knowledge in written form, (5) orthographic awareness through invented spelling and conventions of writing, (6) syntactical awareness of form and function across languages, and (7) use of metalinguistic awareness to reflect how language systems work independently and/or interconnected. Similarities included understanding the principles of sentence construction and experimenting with word order and subject verb/noun agreements.

Students used content vocabulary and sight words in sentence structures and knew the proper use/ placement for parts of speech. Both groups of bilingual learners (ELs and EOs) showed evidence of cross-linguistic resource sharing in the phonological, lexical and syntactical development in their writing from their primary language to new learnings in their second language writing system. This is consistent with the findings of August, Calderon and Carlo (2002).

Although kindergarten students in this study seemed to develop a mapping system for each language with phonology, syntactic and lexical awareness, they also knew how to reference and transfer specific linguistic characteristics across both languages. Students appeared to convey meaning in the writings by making conscious decisions about metalinguistic choices pertaining to language functions, such as ELs placing a word they learned in their second language to complete a sentence in their primary language by using “summer” for “*verano*” and “fall” for “*otoño*” (see Table 1).

EOs applied knowledge of word order in Spanish to English grammar such as “Yo veo carr [carro] roho [rojo].” (I see a red car.) to indicate “I see car reb [red]”

in English (see Table 2). This is an indication of how students use bidirectionality between writing systems as they explore their metalinguistic awareness. They also selected phonemes and orthographic symbols from their own languages to insert or substitute approximations of unknown writing conventions. Here ELs approximated diphthongs in English to understand sound-symbol relationship in “snou” for “snow” (see Table 1) and EO students used invented spelling as temporary scaffolding strategies represented by “heafa” for “jirafa” (see Table 2).

ELs and EO students used similar encoding principles as strategies to map the linguistic structures unique to each language. Findings indicated students’ ability to manipulate phonological awareness through sound-symbol relationships across languages, such as “pleid” for “played” (see Table 1) and “faborreta” for “favorita” (see Table 2). Students used knowledge of words in English and Spanish to fulfill functions in writing, particularly when students translated their texts into their second language, such as use of cognates, Spanish syllabication or rules of consonant-vowel-consonant (cvc) words in English. They appeared to select sounds and graphemes that were closely related to their primary language, instead of random guesses. An example of this cross-linguistic resource sharing among ELs is the awareness of long vowel sounds in English for the word “slide” in which the student used “slaed” to approximate the long /i/ sound by inserting the two vowels in Spanish that closely represented the sound in English (see Table 1). In a similar situation, EO students used “agwa” to represent the word and sounds in the Spanish word “agua” [water] (see Table 2).

The writing samples represented knowledge of writing conventions and fluency in both languages at an early age. Students employed cross-linguistic resource sharing strategies through their knowledge of the Universal Grammar of systems (Perfetti, 2003), that provided awareness in construction of sentences. The students also demonstrated evidence of bidirectional transfer as an automatic activation of



Learning from our students

While this study was limited to the 49 participating students, we had several important outcomes regarding the writing abilities of young bilingual learners:

- 1) There are both similarities and differences among these two groups of student's phonemic, lexical, syntactic, and metalinguistic awareness during language processing.
- 2) As teachers of young bilingual learners, we must be aware of the language-specific aspects of addressing their first and second language learning. This means that we must have deep knowledge of both languages of instruction in order to maximize cross-linguistic resource sharing for students.
- 3) Our examination of students' writing reveals that young bilingual learners *do acquire and use* cross-linguistic resource sharing in their writings. Since the research indicates that language mapping can have both positive and negative influence, these must be explicitly addressed in instruction so that negative transfer does not become permanent and lead to fossilization.

well-rehearsed first language mapping processes (Koda, 2005), such as the use of punctuation in both languages, but yet reversing questions marks when writing in Spanish. The advancement towards the Continua of Biliteracy (Hornberger, 2003) showed language learning as a backtracking procedure that students used to progress towards biliteracy. Studies on cross-linguistic transfer in early literacy skills have mainly emphasized how English Learners in bilingual contexts interact with dual language systems of writing (Cárdenas-Hagan, Carlson & Pollard-Durodola, 2007; Garcia et al., 2008; Escamilla, 2007; Reyes & Azuara, 2008). This study presented important instructional implications for TWBI programs for both ELs and native English speakers as they simultaneously develop reading and writing strategies across language systems. The growing body of work developing internationally in the area of biliteracy and on emerging bilingual learners requires us to continue to learn from our students as we concurrently improve our TWBI programs and practices.

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