

Using Translation to Drive Conceptual Development for Students Becoming Literate in English as an Additional Language

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Literacy research has not yet revealed how bilingual learners develop coherent and robust theories of language. Translation, however, provides emergent bilinguals (EL students) with opportunities to develop metalinguistic awareness, which can lead to a more complete conceptual framework for thinking about language and literacy. This preliminary research study sought to formulate an instructional approach (TRANSLATE: Teaching Reading and New Strategic Language Approaches to English learners) focused on using translation to ultimately improve ELL students' reading comprehension. Using design research methods and qualitative analytical techniques, researchers asked middle school students described as struggling readers to work collaboratively and use various strategies to translate key excerpts from their required English literature curriculum into Spanish. Analysis of students' statements, decision making, and interaction indicated that students' conceptual understandings about language played an important role in their learning. Students reflected on the nature of vocabulary, syntax, and the ways that different languages communicate ideas. These findings extend conversations in literacy studies concerning the unique affordances of bilingualism to increase metacognitive and metalinguistic awareness, known contributors to higher levels of reading comprehension.

Much research on the literacy development of students learning English as a second language has focused on *why* this population struggles to learn English, and how to make English literacy instruction more “accessible and comprehensible” (cf. Goldenberg, 2008, p. 22). Existing research says little about how emergent bilinguals

use their linguistic resources in two languages to support their comprehension of English language texts (for important exceptions, see Cummins, 2000; Orellana & Reynolds, 2008; Orellana, Reynolds, Dorner, & Mesa, 2003; Valdés, 2003). Furthermore, it does not specify how students learning English develop conceptual understandings of literacy, nor does it have much to say about how they learn to reason about text meanings. More focus on *how* bilingual students develop conceptual understandings about language and apply them to the specific task of comprehension of English language texts could point toward new instructional approaches to facilitate literacy achievement among students learning English.

In this paper, we report on an instructional approach (TRANSLATE: Teaching Reading and New Strategic Language Approaches to English learners) in which we asked grade 7 middle school students to translate carefully selected excerpts from grade-appropriate literature. Using sociocultural understandings of how young learners become literate in a second language, we observed how our participating students drew on their cultural and linguistic knowledge to derive meaning and use information found in written text as they engaged in the process of translation. Guided by design research methodology, we analyzed data from our first iterations of the instructional approach and revised and refined our initial instructional theory to better incorporate students' conceptual understandings of language.

Theoretical Framework

Our understanding of the conceptual development of students learning English is influenced by conceptual change paradigms explored in science education, theories that advance bilingualism as an attribute influencing conceptual change, and theories from applied linguistics that frame translation as an activity that requires active engagement with language at a conceptual level.

Conceptual Development in Language and Science

Emergent bilinguals bring many different ideas about language and bilingualism into schools. These ideas are rooted in what they know about their first language as well as what they know about English. They thus bring with them highly context-dependent—or, as Vygotsky (1978) called it, spontaneous—concepts about language, which they reference to complete linguistic and academic tasks. While these spontaneous concepts about language may be highly developed, they tend to be unconscious and unarticulated. That is, while even emergent bilinguals may be capable of extraordinarily complex linguistic tasks across two languages (cf. Valdés, 2003), they may not be able to describe the rules that govern this work. Lee (2007) calls this *tacit* knowledge and recommends that teachers focus on making these understandings more explicit as part of culturally responsive pedagogy. We argue that students use this tacit knowledge to solve problems, and their problem-solving activity can be examined to identify their spontaneous concepts about language. These understandings and problem-solving approaches can then be used as the basis for instruction designed to construct more disciplinary-like understandings of language and literacy. Like science educators, we believe these disciplinary

understandings develop when student thinking shifts to broader, more theoretical conceptualizations of language and its uses.

In science education, learning has become synonymous with conceptual change and growth (Craig, Nersessian, & Catrambone, 2002; Lehrer & Schauble, 2006, p. 371). Students come to school with what science educators call intuitive concepts about natural phenomena that exert a powerful influence on their ability to learn disciplinary scientific concepts. For this reason, researchers have dedicated a great deal of effort toward discovering and theorizing the nature of students' intuitive theories. For example, diSessa, Gillespie, and Easterly (2004) argue that children's uninstructed ideas about physics consist of "hundreds or thousands of inarticulate explanatory primitives, which are activated in specific contexts and, as a whole, exhibit some broad systematicity, but are not deeply systematic enough to be productively described individually or collectively as a theory" (p. 846). In their view, children subconsciously internalize explanatory concepts for natural phenomena. These differ from "scientific theory" in that they are tacit and context-dependent; that is, they have not been abstracted from individual experience and articulated as universal rules or hypotheses.

Science educators view these understandings as the "bits and pieces" of conceptual understanding that, with adequate instruction, appropriate materials, and relevant experiences, can form more disciplinary-like understandings (Clark, D'Angelo, & Schleigh, 2011; diSessa, 1998). Lee (2005) has applied this perspective to bilingual students, recommending that science educators leverage students' cultural and linguistic knowledge. We see the understandings concerning language and literacy held by students learning English as similar to, but not entirely the same as, intuitive concepts about natural phenomena described by science educators.

Notions of conceptual development have not typically been a central focus for the field of literacy research. Though the need for deeper conceptual understanding is recognized in research on metacognition and metalinguistic awareness (e.g., Hacker, Dunlosky, & Graesser, 1998), a significant amount of literacy research has focused on helping novice readers attain higher levels of word recognition ability, larger vocabularies, fluency while reading, and comprehension skills (August & Shanahan, 2006; Snow, Burns, & Griffin, 1998).

While we do not de-emphasize the need for novice readers to acquire specific skills, it seems reasonable that integrating discrete reading skills and strategies into coherent and robust theories of language is also important. For students learning an additional language, deeper and more coherent understandings of how written language operates, how languages function as rule-governed systems, and how bilingualism encompasses possibilities for enhanced understandings are especially worthwhile outcomes. To achieve these outcomes, we begin with basic research into the conceptual understandings about language that students bring into school.

Conceptual Development and Bilingualism

Some theorists have identified bilingualism as an attribute that enhances conceptual development (Adesope, Lavin, Thompson, & Ungerleider, 2010), especially when students use both their languages to solve problems (Kenner, Gregory, Ruby, & Al-

Azami, 2008). These researchers have also noted that bilingualism makes possible greater metalinguistic and metacognitive development (Bialystok, 2011; Bialystok & Barac, 2012; Tharp & Gallimore, 1988). Metacognition describes what we know about our own thinking processes, and metalinguistic awareness is simply “metacognition that involves language structure” (Nagy, 2007, p. 62). Nagy boldly states that reading comprehension depends on metalinguistic awareness because reading text requires attention to its linguistic form (p. 62). This assertion is supported by studies that show increased metalinguistic awareness—including awareness of phonological, morphological, lexical, and semantic aspects of text—is associated with increased reading achievement (Goodwin, Gilbert, & Cho, 2013; Mokhtari & Thompson, 2006; Zipke, Ehri, & Cairns, 2009).

Beyond the general benefits of bilingualism, translation is an especially important metalinguistic activity because it requires students to compare, reflect on, and manipulate their two languages (Malakoff & Hakuta, 1991). Kern (1994) has found this to be true for native English-speaking college students learning French. His data showed that over time and with practice, students improved their translating ability and developed related metacognitive and metalinguistic understandings, specifically with respect to when and for what purposes translating was useful. Rutherford (2009) taught intermediate-grade and middle school students to translate poetry from English into Spanish as a means of teaching them to write their own poetry. Like the subjects in Kern’s study, Rutherford’s participants made meta-level comments such as “After reading, writing and translating so many poems, I started asking myself, what does this mean? How do I write about this? What do I need to do?” (fifth-grade student; Rutherford, 2009, p. 217). Furthermore, Dimitrova (2005) points out that translating on a regular basis also leads to increased language proficiency in both source and target languages.

Thus, we have hypothesized that when students are asked to engage in translation, they will gain fuller metacognitive and metalinguistic awareness of how language functions. We therefore theorize that translation focuses student attention on English text in ways that facilitate careful, dialogical reading and, thus, greater understanding.

Translation as a Window to Students’ Conceptual Understandings about Language

The ability to translate effectively and accurately is an incredibly complex skill. Nida (1967/2000), an important translation theorist, proposes that “the relationship between receptor and message should be substantially the same as that which existed between the original receptors and the message” (p. 156). Hall, Smith, and Wicaksono (2011) argue that translators need to possess grammatical competence and fluency in the relevant target and source languages; access to vocabulary in relevant professional and cultural domains in both languages; explicit metalinguistic knowledge of both languages’ grammars and areas of grammatical overlap; knowledge of pragmatic routines through which the source and target languages map communicative intention; knowledge of styles, genres, registers, and dialects in both languages; literacy in both languages; and knowledge of translation theory.

If Hall et al.'s (2011) sketch is broadly representative of the disciplinary knowledge necessary to translators, we see bilingual students as potentially having some level of skill in some or even all of these areas. Following Valdés (2003), we believe that “all bilingual individuals possess a ‘rudimentary’ ability to mediate between their two languages . . . [but] *the unfolding of innate capacities is a function of bilingual speakers’ actual practice in translating or interpreting*” (Valdés, 2003, p. 173, emphasis added).

We do not see an exact correspondence between what professional translators do and what language learners do as they translate, since these two groups comprise different populations in different contexts and with different goals. But following Lee (2007), who argues that students should be explicitly taught how their linguistic and cultural understandings are similar to disciplinary practices valued by schools, we see value in assisting ELL students to obtain what many consider to be desirable academic capital.

Because translation is not simply the substitution of words from one language to another, we expect that students will engage in an activity that requires them to analyze source language texts for initial understanding, deal with semantic difficulties, contend with issues requiring word selection, engage in grammatical analysis and reformulation of acceptable syntactic constructions, and consider many of the other issues mentioned by Hall and his colleagues (2011) concerning pragmatics, styles, genres, registers, and dialects. Thus, students in the process of learning English display cultural and linguistic understandings during the activity of translation. They do so by asserting and justifying translation choices in collaborative interaction with other students, and (less frequently) by making metalinguistic and metacognitive comments about translation, bilingualism, and biliteracy.

There are at least two questions that often arise concerning the suitability of translation as an instructional method. First, while the two methods are similar in some ways, we are not advocating a return to the old grammar translation (GT) approach to teaching second languages (McLaughlin, 1985). In GT, students learning foreign languages translated long portions of classical literature into their first languages, making use of complex grammatical rules. No attention was given to learning language for communicative purposes. As a result, GT students seldom learned language well enough for real-world communication. Second, it may be argued that most students are best served by instructors who speak both source and target languages to facilitate a translation activity. While we acknowledge that bilingualism is an asset for teachers of English learners, we argue that teachers who understand language learning can make important contributions to ELL student learning if they are familiar with some instructional methods designed for use in translating (cf. Lucas & Grinberg, 2008).

Considering this, our research questions for this project were:

1. How do emergent bilinguals use their linguistic knowledge in two languages (e.g., lexical, semantic, syntactic) to translate texts and construct meaning?

2. What broader conceptual understandings (including meta-level comments) concerning language and literacy can we identify that emergent bilinguals bring to and/or develop during the activity of translating?

Methodology

Research Design

In this paper, we report the first phase of our plan for a long-term research activity that included piloting our instructional approach. Influenced by design research methodology—which calls for multiple iterations of an approach, with each successive iteration informed by ongoing data collection, analysis, and theorization—here we report data from our second iteration (Gravemeijer & Cobb, 2006). We entered our research site with a local instructional theory about the ways that students in the process of learning English interact with and comprehend written materials in their second language.

Instruction

We worked with four students at a local middle school over the majority of one school year. In small groups, we conducted guided reading sessions (Fountas & Pinnell, 1996), modified to include the translation of conceptually and linguistically rich excerpts from the required English literature curriculum. We asked students to use a set of cognitive strategies (making connections, clarifying, summarizing, determining word meanings, accessing prior knowledge, rereading, predicting, translating strategies, and evaluating) that were chosen to facilitate both translation and comprehension. The two instructors were fluent speakers of both Spanish and English. The following is a very brief outline of the TRANSLATE instructional approach:

- **Connecting students to texts.** Teacher-guided discussion begins with students being asked about personal experiences that reflect a main theme in the story. For example, prior to reading about a character having an argument with his mother over a major life decision, the instructor might ask, “When was the last time you got mad at someone in your family?”
- **Independent reading.** Students are asked to read a section of text (usually two to three pages from a novel) silently and to identify its most important point.
- **Sharing of main idea from text.** Students share (orally or in writing) what they thought was most important from the reading. This step is used to determine how well students comprehend the text before and after the translation activity.
- **Requesting translation.** The teacher identifies a short section of text for students to translate. As they become familiar with the goals of the activity, students may also be asked to select passages to translate.
- **Sharing and critiquing translations.** Students are asked to discuss and explain their translation choices.

- **Reconnecting translations to larger text.** Students are asked to discuss or write down how the passage might relate to the overall theme or characters in the story, and what new understandings they gained from the translation activity.

Local Demographics

Our research took place in a major metropolitan public school district in the South. The population of students learning English within the district had nearly doubled in the past 5 years to comprise 22% of the total student population, more or less the same as the national average. At the time of the study, the school district provided language support services to close to 10,000 students who came from 120 counties and 95 language backgrounds. Within this district, 109 schools served students learning English.

School Site

To date, we have worked in three different middle schools with 30 students. These schools all serve racially and ethnically diverse populations. In this paper, we report on data collected at one, Palmyra Middle School.¹ We selected this site because we had sufficient time allocated for prolonged instruction. This school was located in a section of town known for its recent growth in population—which had more than doubled in the past 20 years—and for its ethnic, linguistic, and racial diversity. Although close to 22% of the students (98 total) were mandated to receive ESL language services, this number fails to fully capture the linguistic diversity of the school's population. Of 448 students, 352 were born in the United States but 189 spoke Spanish as their primary language, while 197 spoke English as a primary language. In addition, 62 students were primary speakers of other languages (See Table 1), including Arabic, Kurdish, Somali, Lao, and Burmese. In other words, 251 students spoke a primary language other than English.

TABLE 1. Palmyra Middle School Demographics, 2010–2011

Demographic	Percentage of total enrollment ^a
Female	46.7
Male	53.3
Asian	3.6
Black	27.0
Hispanic	45.3
White	24.1
Free and reduced-price lunch program	88.6
Limited English proficient	21.7

^aTotal enrollment was 448 students.

Participants

Our focal participants were four middle school youths ranging in age from 12 to 14 years who were identified by their classroom teachers as native speakers of Spanish and “struggling readers.” All of our students had *provisionally* tested out of ESL classes, meaning that they had passed the state English proficiency exam but still received accommodations in the mainstream ELA classroom. They were conversationally fluent in English, and their levels of Spanish literacy ranged from rudimentary to expected grade level. Informal observations and formal language testing revealed that native language proficiency, both oral and literate, varied considerably.

Students’ Spanish and English reading abilities were measured using the Basic Reading Inventory (Johns, 2010) and the Spanish Reading Inventory (Johns & Daniel, 2010). The Basic Reading Inventory was administered by the students’ teachers in September 2010 and May 2011, and the Spanish Reading Inventory by our research team in March 2011. Both assessments measure phonemic awareness, phonics, fluency, vocabulary, and comprehension using leveled word lists and text passages. Once students’ reading levels were established by reading word lists, they read an appropriate leveled text while the test administrator created a running record and performed a miscue analysis. Students then retold the text and answered comprehension questions. Their reading levels were computed, and the results are reported in Table 2.

Data Sources

Data sources for this paper consisted primarily of videotaped instructional interactions between instructors and participating students. These videotaped sessions were then transcribed and analyzed for evidence of how students interacted with the texts to make sense of them. Sessions were first transcribed for all English utterances, and then a second transcriber went through and added all utterances spoken in Spanish. Then a certified professional bilingual transcriber checked all the transcriptions by comparing them with the video data. Finally, these transcriptions were reviewed and refined by two of this paper’s authors. To the extent possible, verbatim transcriptions were created. On rare occasions, because of overlapping speech, unclear pronunciation, or softly spoken statements, a word or phrase was not captured.

TABLE 2. Participating Students’ Spanish and English Reading Levels

Student	Spanish reading level, by grade	English reading level, by grade (September 2010)	English reading level, by grade (May 2011)
JOYCE	Pre-primer	6th	4th
CELINA	Primer	6th	7th
KARLA	7th	6th	7th
RONNIE	4th	2nd	5th

We met with our student participants at Palmyra Middle School for a total of 30 half-hour sessions over a period of 6 months. These sessions comprised a total of 15 hours. In addition, we created field notes of our time with the students and conducted 2 semistructured interviews with the group. Written translation artifacts were also collected and used to triangulate our understandings of interaction data.

Data Analysis

We constructed our analysis by drawing elements from qualitative data analysis, design research, and translation theory. Our qualitative data analysis was ongoing throughout the study, using a constant comparative method (Strauss & Corbin, 1998). We followed an iterative process of reading and rereading the instructional and interview transcripts and our field notes. During our analysis, we met weekly as a research team, engaging in a recursive process to revisit and refine codes we generated. In these meetings, we presented data and our interpretations of these data, inviting critique and additional analysis. This process helped us identify and resolve ambiguities in the data. For example, a research team member would present data with accompanying codes and interpretation. Other team members would then generate alternative interpretations. In some cases, we would revisit the raw data until we achieved a consensus interpretation. Possible patterns and themes across the data sources were recorded as theoretical notes that were used to guide the direction of further rounds of data coding.

We began our analysis by conducting open coding to identify how students used their knowledge of two languages to comprehend and translate text. During this initial phase of analysis, we found that students revealed the most about their thinking when they faced a comprehension or translation obstacle. This led us to isolate and recode all instances where students experienced comprehension or translation problems. We then applied axial coding for a more focused analysis of students' use of linguistic and informational cues to resolve their comprehension or translation difficulties.

Translation theory, as well as research on reading comprehension instruction for English learners, helped us group initial codes into relevant categories. The language domains identified by Hall et al. (2011) include grammatical competence, explicit metalinguistic knowledge of both languages' grammars and areas of grammatical overlap (e.g., recognition of changes in syntactic structures across the two languages), access to vocabulary in both languages and related metalinguistic understandings (e.g., determining meanings of cognates), and knowledge of pragmatic routines through which the source and target languages map communicative intention (e.g., using contextual information to derive meaning of text phrases). The first two broad categories represent students' syntactic knowledge in two languages, while the last two represent students' use of lexical and semantic information to derive text meanings. We see these broad descriptions as parallel to what literacy researchers and second-language researchers describe as influential in terms of reading comprehension, particularly with respect to the importance of metalinguistic awareness (August & Shanahan, 2006; Bialystok & Barac, 2012; Mokhtari & Thompson, 2006; Nagy, 2007; Zipke, Ehri, & Cairns, 2009). We

therefore have organized our findings to represent bilingual lexical knowledge, syntactic knowledge, and semantic understandings of both languages. See Table 3 for examples of the grounded codes. We believe that this organizational structure best addresses our two research questions, which focus on students’ use of linguistic resources and represent their movement toward more disciplinary (or conceptual) understandings of language.

Findings

Throughout our reporting of findings, we discuss how students drew on their two languages to reason about the texts they read. As we demonstrate, they employed

TABLE 3. Linguistic and Metalevel Codes

Categories	Examples of Grounded Codes
Language Domain 1: Use of lexical knowledge	<ul style="list-style-type: none"> • Students discuss the translation of specific words (e.g., “How do you say <i>managed?</i>”) • A student challenges or offers an alternative for a specific word translation (e.g., “No, that doesn’t make sense”) • Students consider multiple meanings of words (e.g., homeboys = casaniños, compadres, hermanos, batos) • Students consider explicit relationships between words in both languages (e.g., identifying cognates) • Students comment on what to do when they don’t know a word (“You can describe it, you can find a synonym”)
Language Domain 2: Use of syntactic knowledge	<ul style="list-style-type: none"> • Students focus attention on verb conjugation (e.g., <i>hace</i> vs. <i>hiciera</i>) • Students identify components of language (e.g., simile vs. metaphor, past vs. present tense) • Students discuss word agreement (e.g., <i>uno</i> vs. <i>un costal</i>) • Students comment on the appropriateness of a syntactic construction (e.g., “That doesn’t make sense”)
Language Domain 3: Use of semantic knowledge	<ul style="list-style-type: none"> • Students focus on ideas found in idiomatic expressions (e.g., <i>swept away, over my head</i>) • Students attempt to capture a larger idea vs. literal translation (e.g., “It just said ‘took out,’ I just put ‘quitó la vida’”) • Students comment on the need to capture a larger idea (e.g., “Sometimes you change the words so that things sound right in the other language”)

their conceptual understandings about lexicon, syntax, and semantics to comprehend source texts and to create their target texts, and in the process, they signaled broader conceptual understandings about language and literacy.

The Role of a Bilingual Lexicon in Translation

In this excerpt,² the students have just read a chapter from Sandra Cisneros's *The House on Mango Street* (1991), and the teacher is leading a discussion focused on their initial understanding of the text.

- 1 INSTRUCTOR 2: So her great-grandmother was wild, didn't want to stay in the house and wanted to be free. What happened to her?
- 2 CELINA: She got married.
- 3 INSTRUCTOR 2: She got married. And how'd that happen?
- 4 RONNIE: Well, the only reason she got married is because the guy hit her in the head and took her home, or something like that.
- 5 INSTRUCTOR 2: Something like that.
- 6 KARLA: And they fall in love.
- 7 RONNIE: Nuh-uh. She never forgave him.
- 8 INSTRUCTOR 2: She didn't say they fell in love.
- 9 RONNIE: See look. The story goes she never forgave him.
- 10 INSTRUCTOR 2: Let's listen to this line, "Until my great-grandfather threw a sack over her head and carried her off. Just like that, as if she were a fancy chandelier. That's the way he did it."
- 11 RONNIE: See.
- 12 KARLA: Oh.
- 13 INSTRUCTOR 2: So what did he do?
- 14 KARLA: <Makes an "I don't know" face>
- 15 RONNIE: Hit her in the head with a-
- 16 JOYCE: Sack.
- 17 RONNIE: Sack.
- 18 INSTRUCTOR 2: A sack. OK. You seem confused. Can you tell me what's going on, Karla? Did she get hit in the head?
- 19 KARLA: <Unsure voice> Yes.
- 20 INSTRUCTOR 2: Let's translate this line, "Until my great-grandfather . . ."

This translation event clearly depicts students' misunderstanding of a key part of the Sandra Cisneros vignette, "My Name." Both Ronnie and Karla seem convinced that the great-grandfather hit the great-grandmother in the head. Hitting someone is much more destructive than throwing something over that person and represents an important misunderstanding.

In the following segment, students work through their translation of a single word, *sack*, and in the process, they access a pair of synonyms from their first language alongside a pair of synonyms in English.

- 1 **KARLA:** <Talking out loud to herself> Un que . . . uno sack . . . una bolsa . . . una . . . (A what . . . a sack . . . a bag . . . a . . .)
- 2 **INSTRUCTOR 2:** Yeah.
- 3 **KARLA:** Una, como . . .
- 4 **RONNIE:** <To Karla> ¿Una que? (A what?)
- 5 **KARLA:** Un sack, un . . .
- 6 **RONNIE:** Porque tiene la *sack*. Solamente una. (Because it has the sack. Just one.)
- 7 **KARLA:** <Decisively> Una bolsa. (A bag.) <Continues writing>
- 8 <Students work silently for 40 seconds>
- 9 **JOYCE:** How do you say sack?
- 10 **RONNIE:** Una bolsa.
- 11 **KARLA:** Carried her out, like.
- 12 **RONNIE:** Y la cargó afuera. (And carried her out.) Or like, like, afuera, like out, okay. <Karla laughs> I'm so confused.
- 13 **KARLA:** ¿La cargó? Se la llevó. (He carried her? He took her away.)
- 14 **RONNIE:** Yeah, porque se la llevó. (Yeah, because he took her away.)
- 15 **KARLA:** <Writing> Y- (And-)
- 16 **RONNIE:** Se la llevó. (He took her away.)
- 17 **INSTRUCTOR 2:** So did you figure out sack? What word did you guys use for sack?
- 18 **JOYCE:** Bolsa.
- 19 **KARLA:** Bolsa.
- 20 **INSTRUCTOR 2:** Bolsa?
- 21 **KARLA:** No, es este, un . . . (No, it's this, a . . .)
- 22 **RONNIE:** Un costal. (A sack.)
- 23 **KARLA:** Costal! (Sack!)
- 24 **INSTRUCTOR 2:** Costan. What's the difference between costan and bolsa?
- 25 **RONNIE:** Like a purse. Una bolsa es una purse. Un costal es like something small. Or it can be big too.
- 26 **KARLA:** No. Un costal es something kind of big.
- 27 **RONNIE:** Not *big* big. It depends on how big the bags are.
- 28 **INSTRUCTOR 3:** ¿Qué se lleva en un costal? (What gets carried in a sack?)
- 29 **KARLA:** I think like this. <She draws something on her paper.> Es un costal. (It's a sack.)
- 30 **INSTRUCTOR 2:** And the bolsa would be more like purse?
- 31 **RONNIE:** Yeah.
- 32 **KARLA:** ¡O! Un costal no tiene uno gente y la bolsa sí. (Oh! A sack does not have people and a bag does.)
- 33 **RONNIE:** Yeah.
- 34 **JOYCE:** Carried . . . how do you say carried off?
- 35 **RONNIE:** Y se la llevó. (And he carried her away.)

- 36 KARLA: <Reading Ronnie's translations> Hasta que *me*? (Until I?)
 37 RONNIE: Wait, oh! <Erasing and rewriting>
 38 KARLA: <Laughing>
 39 RONNIE: <Laughing> It's [. . .]
 40 KARLA: It's in español (Spanish).
 41 KARLA: <Pointing at Ronnie's paper> *Una* costal?
 42 RONNIE: That's [what it] is.
 43 KARLA: Es *un* costal.
 44 RONNIE: O, me faltó la "o." (Oh, I forgot the "o.")
 45 KARLA: *Uno* costal? No, es *un* costal. (An sack? No, it's a sack.)

Students clearly focus their efforts here on lexical issues, while also giving some attention to matters of syntax. Their discussion includes thinking about whether *costal* and *bolsa* include a distinction in terms of the size of the bag referred to in the text. *Costal*, in Spanish, usually refers to a gunnysack of the type used to transport agricultural products. The students are correct to think of *costal* as typically referring to a large sack, and the fact that they select this word is revealing in terms of their visualization. *Bolsa* can be translated as the word *sack* or *bag*, and it also would have been an acceptable choice for this purpose.

Once they resolve how to translate *sack* and complete their translations, the instructor checks to see if their understanding of the scene has changed:

- 1 INSTRUCTOR 2: OK. Would one of you read please?
- 2 KARLA: Come on Ronnie.
- 3 RONNIE: Hasta que mi bisabuelo se la lle- (Until my great grandfather carry-)
- 4 KARLA: Tatarabuelo. (Great-great-grandfather.)
- 5 RONNIE: Oh. <Hits her forehead> Hasta que mi tatarabuelo le aventó un costal arriba de su cabeza y se la llevó. (Until my great-great-grandfather tossed a sack over her head and carried her away.) Doesn't even make sense.
- 6 <Instructor asks Joyce and Celina to read theirs out loud, but they don't want to. Ronnie takes Joyce's paper and reads it to herself.>
- 7 RONNIE: <Pointing at the paper> Ella tambien le puso eso. (She also put that.)
- 8 KARLA: <Reading Joyce's paper> Hasta que mi tatarabuelo le aventó una costal . . . *una* costal <Ronnie and Karla laugh, Ronnie erases and rewrites> arriba sobre su cabeza y se la llevó. (Until my great-great-grandfather tossed a sack over her . . . *a* sack over her head and carried her away.)
- 9 RONNIE: I like hers, <hands the paper back to Joyce> except una.
- 10 INSTRUCTOR 2: When we were first talking about this sentence-
- 11 JOYCE: Oh, una! (Oh, a!)
- 12 INSTRUCTOR 2: Will you listen for a minute? When we were first talking about this sentence, you were saying that her great-grandfather hit her in the head.
- 13 JOYCE: Yeah.

- 14 INSTRUCTOR 2: Is that what your translations say or is it a little different?
- 15 KARLA: Hasta que mi tatarabuelo . . . le tiró? (Until my great-great-grandfather . . . threw?)
- 16 RONNIE: Yeah, le tiró.
- 17 KARLA: Un costal arriba de su cabeza. ¿Le tiró en su arriba? ¿Cabeza arriba? ¿Le tiró, aventó? (A sack over her head. He threw it on her over? Head up? He threw it, tossed it?)
- 18 JOYCE: It's kind of the same anyways.
- 19 RONNIE: Yeah. It's the same thing.
- 20 INSTRUCTOR 2: It's kind of the same?
- 21 RONNIE: Yeah.
- 22 INSTRUCTOR 2: You think he hit her <gestures like swinging a bat> or what?
- 23 RONNIE: Le aventó (he threw it over her), <gestures like dunking a basketball> like she hit. <Gestures like hitting something with a hammer>
- 24 KARLA: Cause it says *threw*.
- 25 JOYCE: He threw.
- 26 KARLA: *Threw*. <Gestures like throwing a ball>
- 27 INSTRUCTOR 2: He threw?
- 28 KARLA: Not *hit* her. <Gestures like she's hitting Ronnie>
- 29 RONNIE: Oh I get it. It's . . . oh my gosh.
- 30 KARLA: That's what I said.
- 31 INSTRUCTOR 2: And what about this part, "threw a sack *over* her head?"
- 32 JOYCE: Le tiró . . . (He threw . . .)
- 33 RONNIE: Un costal arri . . . ba . . . (A sack ov . . . er . . .)
- 34 JOYCE: Arriba de . . . (Over her . . .)
- 35 KARLA: Le aventó un costal arriba de su cabeza. (He tossed a sack over her head.)
- 36 RONNIE: No, it's over, <waving her palm over her head> like arriba (up, over).
- 37 CELINA: Por eso, arriba. (That's why, up, over.)
- 38 JOYCE: Aventó. (Tossed.)

Interestingly, although their translations did not contain any reference to hitting, the students were reluctant to let go of their original interpretation. However, having students read their translations aloud seemed to shift their attention from word-level problem solving to sentence-level meaning. Notice, for example, how in Turn 17 Karla tries out several possible ways to translate *He threw it over her head*. This in turn led students to revisit several words in their translations, struggling to revise both their comprehension and their translation to bring the two into alignment and create a syntactically correct translation.

Vocalizing seems to have been a productive method for comparing and contrasting possible translations. Such activity also makes the different linguistic

components of a translation more salient and thus, in sociocultural terms, potentially more available as tools to enhance thinking, particularly metalinguistic awareness. Nagy (2007) points out that young readers spend a lot of their time focused on monitoring their comprehension of individual words. Translating intensifies this focus and facilitates meta-understandings as these readers reflect on their linguistic and cognitive activity.

In the process of reading and reevaluating their translation, these students appear to let go of the misconception that the grandfather hit his future wife in the head, and focus their attention on the words *threw* and *over*. Karla questions whether the better translation of *threw* would be *tiró* (to throw) or *aventó* (to throw). At times, the students seem to struggle with the conceptual understanding that different words can mean the same thing. They do note, however, that *tiró* and *aventó* can mean “the same thing.” Again, this understanding is a meta-level statement dealing with the lexicon.

A few turns after the above excerpt, the students use gesture to clarify that the sentence makes more sense if they envision the grandfather *putting* the sack *onto* her head rather than *tossing* it *above* her head. Of interest is that through translation and interaction, the students realize that the great-grandfather threw the sack over the great-grandmother’s head rather than hitting her. Both Ronnie and Celina seem quite surprised when they realize how their own comprehension has changed as they translate this portion of text. Ronnie signals a metacognitive reflection on her comprehension when she says, “Oh I get it. It’s . . . oh my gosh.” Translating seems to be pivotal as it requires the students to engage in a rather careful reading of the source text.

The Role of Syntax in Translation

In the next excerpt, the students have just read a passage from the book *Brothers in Arms* (Langan & Alirez, 2004) and picked out sentences that they think are especially important to understanding the story. The teacher has asked them to work in pairs to translate two sentences chosen by one of the students, from a paragraph in which the narrator describes the pictures of his dead brother that he sees around his house: “One of them was a tiny photo of Huero in his Little League uniform. I loved that kid.” Students have begun by working individually to write down a translation, calling out questions to the group as needed. The excerpt below shows how they foreground their understanding of syntax as they work through one such challenge.

- 1 **RONNIE:** Una de ellos (One of them) . . . Wait. What? How do you start it? Dice . . . (It says . . .)
- 2 **KARLA:** That’s what I wrote. Uno de ellos estaba una foto pequeña de Huero. (One of them was a small photo of Huero.)
- 3 **JOYCE:** Era una (*There* was).
- 4 **RONNIE:** Era una foto. (There was a photo.) <Nods>
- 5 **JOYCE:** Una era (One of them was). Because estaba (was), that’s just like- <shrugs>

- 6 RONNIE: I don't know, it was like in the past, pero en esa <pointing at the text> está pusiendo presente (but in this it is putting present).
- 7 KARLA: Pero es una foto. (But it's a photo.)
- 8 RONNIE: Pero es en el presente porque dice (but it is in the present because it says): "One of them was a tiny photo of Huero in his little . . ."
- 9 KARLA: Was. Oh yeah.
- 10 JOYCE: Guess I'm smart.
- 11 KARLA: Estaba, estaba es pasado (Was, was is the past).
- 12 CELINA: Was is past.
- 13 KARLA: Por eso estaba. (That's why *estaba*.)
- 14 RONNIE: Oh, so you were right, because [. . .], my bad.
- 15 JOYCE: Estaba?
- 16 INSTRUCTOR 3: ¿Cual es la diferencia entre estaba y era? (What is the difference between *estaba* and *era*?)
- 17 KARLA: Era.
- 18 RONNIE: Era es el pasado y estaba (Era is the past and *estaba*) . . .
- 19 KARLA: También (Also).
- 20 INSTRUCTOR 3: También. ¿Pero son distintos, sí? (Also. But they are different, right?)
- 21 RONNIE: Sí. (Yes.)
- 22 KARLA: Uh huh, *palabras* (words).
- 23 RONNIE: It just depends how you use it.
- 24 KARLA: Yeah.
- 25 JOYCE: So is it *estaba* ó *era*?
- 26 KARLA: Whatever you want. Same thing.
- 27 JOYCE: Era.

As might be inferred, Spanish provides two different ways to express the English verb *to be*. Their use depends on the user's intent and some syntactic constraints such as location, temporality, or permanence. Which is to say, *estaba* would denote the location or condition of an object (e.g., the photo *was* on the wall; the photo *was* dirty), whereas *era* would denote an essential characteristic of an object (e.g., it *was* a photo), so in this case the use of *era* is the more correct choice. In this excerpt, Karla begins by reading her translation of the first part of the sentence (Turn 2), using the word *estaba* to translate the English word *was*. Joyce (Turn 3) suggests that *era* would be the better translation, leading to a series of meta-level statements (linguistic and cognitive) as the students try to determine the correctly conjugated verb. Ronnie (Turn 6) asserts, incorrectly, that the important distinction between *era* and *estaba* has to do with past and present tense. Karla challenges the idea that *estaba* is present tense (Turn 11), which leads Ronnie to reverse her position and agree, rather unreflectively, that Karla is right. In response, the instructor probes further on the difference between *era* and *estaba* (Turn 16), which elicits a vague but accurate conceptual statement (Turn 23) and the assertion that word

choice in this instance is up to the translator's preference (Turn 26). It is worth noting that, despite this assertion, three of the four students used *era* in their final written translations.

It is not clear why Karla chooses the word *estaba* as her translation of the English word *was*. The students most certainly brought a wealth of situational experiences of when to use one or the other, but perhaps little metalinguistic knowledge of the reasons behind such choices. Of interest, looking across our data we saw students struggle with how to translate a form of the English verb *to be* on at least five different occasions. In addition to the *ser* and *estar* distinction, Spanish provides two forms of the past tense to choose from, either the imperfect or preterite tense. Imperfect tense signals that an action did not have either a definite beginning or end. Preterite refers to completed past actions. Our participants discussed both which verb to use and whether it should be in the imperfect or preterite form. They seemed to use what they learned in their English language arts classes to label and think about how to go about creating their translation; but of course, English provides no parallel for thinking about these distinctions. It is very possible that, given a few more examples with *ser* and *estar*, these students would have begun to formulate more explicit rules to distinguish between the two.

Although the students could create grammatical Spanish sentences with a fair amount of accuracy, they had trouble evaluating different translation choices when the applicable Spanish syntactic or lexical rules did not have English equivalents. On only one occasion did a student use Spanish to label a grammatical category, *tiempo pasado*, or past tense. We inferred that students were transferring their knowledge of English grammar to Spanish. These differences between the two languages provide interesting opportunities for instruction designed to help students better understand their two languages, as well as language in general.

Another interesting issue in this excerpt is that Ronnie makes explicit references to past and present tense, thus signaling her awareness of the importance of parsing the source text correctly. She also returns to the source text when she notes, "Pero es en el presente porque dice (but it is in the present because it says): 'One of them was a tiny photo of Huero in his little . . .'" Clearly, the task of translating has foregrounded the importance of syntax for the students. They identify it, struggle with it, and despite the fact that their focus on past versus present tense is initially incorrect, they arguably develop better understandings of the text and potentially deeper insight into the importance of grammar. In this excerpt, students recognize the role of tense within grammatical structure and the importance of returning to the source text in order to problem-solve.

The Role of Semantics in Translation

Here the instructor asks students to translate a passage containing idiomatic expressions ("Cause I feel like I'm being swept away. I'm over my head."). In choosing texts for translation, we were especially interested in sentences that students might have misunderstood on their first reading, as well as sentences that could not be translated in a direct, word-for-word fashion. The following example shows how

emergent bilinguals in the process of translating address the issue of conceptually opaque idiomatic expressions.

- 1 **RONNIE:** I'm over my mind. What?
- 2 **INSTRUCTOR 2:** I'm over my head. What on earth is he saying?
- 3 **KARLA:** I'm over my head. Estoy arriba de mi cabeza. (I'm up above my head.) <Celina, Karla, and Ronnie laugh>
- 4 **INSTRUCTOR 2:** Does that make sense?
- 5 **KARLA:** No.
- 6 **INSTRUCTOR 2:** ¿Estoy arriba de mi cabeza? (I'm up above my head?)
- 7 **RONNIE:** I mean, that's what it says.
- 8 **KARLA:** I know.
- 9 **INSTRUCTOR 2:** How would you say that idea? What idea do you think he's trying to say? And how would you say that in Spanish?
- 10 **KARLA:** Like, estoy al tope de mi cabeza. (Like, I'm at the limit of my head.)
- 11 **RONNIE:** Oh! Sí, porque cuando te cansas de algo dices, "Estoy hasta el tope." (Oh! Yes, because when you get tired of something you say, "I'm at my limit.")
- 12 **KARLA:** ¿Ya me tienes hasta el tope, verdad? (You've tired me out, right?)
- 13 **RONNIE:** Yeah.
- 14 **INSTRUCTOR 2:** So how would you say that in Spanish? How would you make your translation say *that* idea? Have you ever felt like that? You're over your head?
- 15 **RONNIE:** Yeah, like I'm tired.
- 16 **KARLA:** You're tired of something, and then you're like [. . .].
- 17 **RONNIE:** ¡Estás arriba de mi cabeza! (You're on my mind!)
- 18 **INSTRUCTOR 2:** So how would you say that in Spanish? Or how would your mom say that if she's just so tired of everything and . . .
- 19 **RONNIE:** Se me tienes más arriba de la cabeza. (You've got me up over the top of my head.)
- 20 **INSTRUCTOR 2:** . . . she's over her head and doesn't know what to do?
- 21 **RONNIE:** Well my mommy says it in English, so I don't know.
- 22 **KARLA:** Estoy harta de mi cabeza. (I've had it with my head.) <Laughs>
- 23 **JOYCE:** ¿Harta? (Had it?)
- 24 **RONNIE:** But you need it!
- 25 **KARLA:** I know! Estoy . . . (I am . . .)
- 26 **JOYCE:** Arriba de mi cabeza. (Above my head.)
- 27 **KARLA:** <Laughs> That doesn't make sense.

The students begin by attempting a word-for-word translation, which results in a laughably nonsensical sentence in Spanish (Turn 3). Interestingly, the students agree that this nonsensical translation is technically correct when Ronnie states,

“I mean, that’s what it says.” This moment is key, as it is a signal to the second-language user that he or she is dealing with an idiomatic expression. During a different session, Karla had described a character as “dandole el avión a su mamá” (giving the airplane to his mother). In other words, at least some of these students were familiar with idiomatic expressions in Spanish, but it is unknown whether students had the metalinguistic awareness to make these connections. Translating provided the students with opportunities for recognizing these relationships.

It seems reasonable to believe that Karla recognized *I’m over my head* as an idiomatic expression. Earlier, in response to an instructor prompt, she came up with an idiomatic expression to translate the source language. Her choice of “Estoy hasta el tope” in this excerpt would probably better correspond to something in English like, “I’ve had it up to here,” or “I can’t take any more.” The students could stop there, deciding as they did in previous translation episodes that they had come up with a sentence that “made sense” (i.e., was grammatically correct and semantically coherent in the context of the passage). Instead, they continue to play with the language, combining their original word-for-word translation with the Spanish expression, and trying out other words with similar meanings. It’s possible that these students have not yet developed the concept that two expressions can be equivalent without having any of the same words, or that the instructor’s questions in Turns 14 and 18 have led them to reject their first (and best) idea for translating the expression. Even so, as they debriefed after this exchange, Ronnie made the meta-level statement that “there’s a lot of ways you can do it [the translation] that makes sense.” In this meta-level statement, Ronnie was in agreement with professional translators concerning the notion that there is never only one possible translation of any text (Kelly & Zetzsche, 2012).

Although idiomatic expressions were uniquely problematic for students to translate, they were particularly fruitful for providing insight into student thinking. Working on idiomatic expressions, students recognized semantic problems with a direct translation, thought about alternate meanings of words and word synonyms in English, made inferences about what the passage might be saying, related the English phrase to idioms in Spanish, and assessed the resulting translations for syntactic correctness and semantic fit. As such, these episodes made visible the cultural and linguistic understandings that students either brought with them or developed during the activity of translating.

In addition, the students made several meta-level statements during their translating work that reflected their prior or developing understandings of the nature of translating, bilingualism, and biliteracy. These understandings are an ideal basis for constructing more robust theories about language. In essence, the students were moving toward the generation of rules and hypotheses concerning language, translation, and bilingualism. All of this activity is metalinguistic in nature.

As part of this work, students negotiated over words, grammatical choices, and idiomatic expressions, noting as they did so that their choices depended on what they most wanted to communicate. Issues of lexical equivalence and polysemy, as well as grammatical differences across languages, were frequently raised because

the activity of translating necessitates such decision making. Finally, students often commented on their decision making as they reflected on, manipulated, and constructed their translations of English text into Spanish.

Discussion

While students' bilingualism has been theorized as a resource for supporting literacy and for developing understandings about language, there is little work that points to specific ways that two languages can be leveraged to drive conceptual development. Goldenberg (2006) argues that while emergent bilinguals might benefit from using the full range of their linguistic resources in literacy, there are few empirical studies that validate this claim. Our findings show that translation provides opportunities for students to deepen their understandings about language and texts at the lexical, syntactic, and semantic levels. An important limitation of our work is that we have not yet tested these ideas with large numbers of English learners to see how they might improve their reading achievement. This paper also focuses on students' knowledge of language and literacy rather than the full range of activity during translating and reading. For example, we do not focus on students' co-construction of their translations, although such activity is clearly important (Canagarajah, 2013).

Our findings also highlight the parallel between the strategies that emerging bilinguals use during translation and comprehension strategies used by highly proficient readers. To be clear, we believe that teachers in mainstream classrooms do this kind of work—drawing on students' spontaneous knowledge to build disciplinary conceptual understandings of language and literacy—but they generally do so using only monolingual tools. TRANSLATE invites students to use their full bilingual tool kits (Gutiérrez, Baquedano-López, & Tejada, 1999) during literacy instruction.

Our analysis convinced us that our participating students either developed, or had opportunities to develop, deeper and more coherent understandings of how written language operates, how languages function as rule-governed systems, and how bilingualism encompasses possibilities for enhanced comprehension. First, our student participants experienced multiple opportunities to compare and contrast their two languages. They did this when translating specific vocabulary items. For example, as they thought about how to translate the word *sack*, they brought up the possibilities of *bolsa* and *costal*. These occasions provided students with a chance to reflect on the nature of vocabulary, specifically in terms of how the range of lexical meaning can be more or less equivalent between words in Spanish and English. As students read their translated texts aloud, their attention was drawn to larger text-level understandings, and thus to the important insight that words matter, but only as part of larger efforts at communication. Students typically abandoned word-for-word translations as they read their work aloud, and that pushed them toward more coherent understandings of their source text. Similar to the translanguaging activities described by García and Sylvan (2011), this allowed them to think about how bilingualism is valuable for comprehension.

Second, we saw that as a result of translating, our participating students focused their attention on matters of syntax. They recognized its importance, and they attempted to define and analyze it. Bilingual individuals often perform these activities in everyday life spontaneously, but when our participants were asked to translate in a school setting, the importance of syntactic elements such as verb tense became a topic of group discussion. Students also could not help but focus their attention on those instances where English and Spanish grammar differ. These differences provided opportunities for asking questions about language in general, such as “Are there different kinds of past events?” and “Can one of my two languages express ideas in more complex ways?” Such activity pushed our participants to compare and contrast their translated text with the source text, and they began to experience the notion that translation, and by extension comprehension, consists of multiple cognitive operations. This last realization, of course, needed to be identified and verbalized, but all of the elements for doing so were available and fresh in participants’ minds.

Our participants also made use of their bilingualism to try out various ways to reformulate the source texts they read, and in the process they came to deeper understandings of how written language functions. For example, they made a variety of metacognitive and metalinguistic statements as they worked through the source texts, such as “It just depends how you use it” and you “Sometimes you change the words so that things sound right in the other language.” Other statements, such as “There’s a lot of ways you can do it that makes sense,” showed that as students revoiced the English-language texts into Spanish, they became more aware of the structural elements of their two languages. By playing with language, as they did when trying to translate the idiom *I’m over my head*, our participants enlarged their capacity to understand how different languages function and, as a result, how to better comprehend written texts.

Conclusion

Until recently, children’s first languages have been viewed as merely a temporary support for attaining second-language proficiency. This understanding has recently been challenged on both theoretical and empirical grounds (Gullifer, Kroll, & Dussias, 2013), with mounting evidence that “L2 users have the L1 permanently present in their minds” (Cook, 1999, p. 202). These views suggest that, rather than requiring the strict separation of languages, instructional approaches for students learning another language should encourage them to make as many connections as possible between the two.

We see value in recognizing, affirming, and recruiting all of students’ language resources as they make sense of text. In fact, we designed TRANSLATE in part for teachers who must deal with the political realities of state laws that prohibit them from speaking their students’ languages (Cole, Puzio, Keyes, Jiménez, Pray, & David, 2012,). While such laws constrain teachers’ language use in the classroom, they do not, however, prohibit children’s use of non-English languages. And because language is “the tool of tools” (Dewey, 1929/1958, p. 168) with respect to

thought and all human activity, we see great value in helping students learning English to think about and use it in ways that help them develop deeper insights into its nature. Finally, we plan to continue development of TRANSLATE as an instructional approach so that teachers in a wide variety of settings will be able to employ it, including teachers with multiple language groups in their classrooms, and teachers who do not share their students' languages.

NOTES

1. All names are pseudonyms.
2. The excerpts in this paper have been edited for clarity, primarily by removing indications of overlapping talk. Transcription conventions include the following:
 - () Parentheses indicate the authors' translation of Spanish utterances.
 - <> Carats indicate descriptions of interactionally significant actions.
 - [. . .] Brackets with ellipses indicate unclear speech; words inside brackets indicate the transcriber's educated guess.
 - . . . Ellipses indicate pauses.
 - Hyphens at the end of utterances indicate an interruption.
 - Italics* Italics indicate words that were said with particular emphasis.

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