

Cognition and Instruction

ISSN: 0737-0008 (Print) 1532-690X (Online) Journal homepage: <https://www.tandfonline.com/loi/hcgi20>

Designing Translingual Pedagogies: Exploring Pedagogical Translation through a Classroom Teaching Experiment

Samuel S. David, Mark B. Pacheco & Robert T. Jiménez

To cite this article: Samuel S. David, Mark B. Pacheco & Robert T. Jiménez (2019) Designing Translingual Pedagogies: Exploring Pedagogical Translation through a Classroom Teaching Experiment, *Cognition and Instruction*, 37:2, 252-275, DOI: 10.1080/07370008.2019.1580283

To link to this article: <https://doi.org/10.1080/07370008.2019.1580283>



Published online: 06 Apr 2019.



Submit your article to this journal



Article views: 546



View related articles 



[View Crossmark data](#)



Citing articles: 1 View citing articles



Designing Translingual Pedagogies: Exploring Pedagogical Translation through a Classroom Teaching Experiment

Samuel S. David^a , Mark B. Pacheco^b , and Robert T. Jiménez^c

^aDepartment of Curriculum and Instruction, University of Minnesota, Minneapolis, MN, USA; ^bSchool of Teaching and Learning, University of Florida, Gainesville, FL, USA; ^cDepartment of Teaching and Learning, Vanderbilt University, Nashville, TN, USA

ABSTRACT

This study examined how middle-grades language arts teachers learned to integrate a small-group collaborative translation activity into their teaching practice. We discuss what we call *pedagogical translation* as an emergent social practice, in which translation routines that are familiar to multilingual students may be leveraged toward instructional goals in a mainstream language arts class. The data were drawn from a classroom teaching experiment iteration of a larger design-based research study, whose goal is to create a fully developed instructional protocol useful to all teachers in linguistically diverse language arts classrooms, but especially teachers with limited or emerging proficiencies in languages other than English. We position pedagogical translation as a paradigm case of translingual pedagogy—instructional approaches designed to leverage the full range of emerging bilinguals' linguistic resources—and we focus our analysis on the agentive participation of teachers as they integrate new translingual routines into their instructional practice. Using a conjecture mapping procedure, we describe the evolution of an instructional theory for how pedagogical translation can be leveraged toward literacy learning objectives. We present qualitative narratives describing how participating teachers made locally situated design choices that meshed new routines with existing instructional practice, documenting trajectories of teacher participation as agentive designers of translingual pedagogy.

In recent decades, a wide range of literacy scholars have suggested that students' knowledge of languages other than English ought to be regarded as a resource for literacy learning in linguistically diverse classrooms (August & Shanahan, 2006; Cummins, 2005; González, Moll & Amanti, 2013; Jiménez, García & Pearson, 1996; Malakoff & Hakuta, 1991; Valdés, 2003). More recent work in translanguaging (Canagarajah, 2011b; García & Li, 2014) has emerged as an influential instantiation of this resource orientation, asserting that languages are not stored in the mind as distinct and separate entities, but are part of a single communicative repertoire that individuals strategically access to communicate. From a pedagogical perspective, this understanding suggests that educators should aim to tap into a student's full linguistic repertoire when teaching (through) a new language. Rather than driving an artificial wedge between an individual's multiple and varied linguistic resources, translingual pedagogies encourage active, improvisational, and strategic mixing of linguistic codes in classroom spaces.

However, without professional development opportunities and instructional tools, the average English as a second language (ESL) or content area teacher is likely to find it extremely challenging to leverage students' full linguistic repertoires during instruction (Karathanos, 2010; Pacheco, 2016). The challenges of translingual pedagogy are not merely about transforming the discourse norms of the classroom, "permitting bilinguals to act naturally, using language as they do at

CONTACT Samuel S. David  ssdavid@umn.edu  Curriculum and Instruction, University of Minnesota, Minneapolis, MN 55455, USA.

Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/hcgi.
© 2019 Taylor & Francis Group, LLC

home and in their communities," (MacSwan, 2017, p. 171). Teachers must overcome monolingual orientations toward activity goals (Martínez-Roldán, 2015), and navigate English-centric policy constraints and relationships of prestige between languages (Martínez, Hikida, & Durán, 2015). Most important, teachers must also be able to conceptualize students' translanguaging in ways that make clear the potential connections to academic content.

The purpose of this study was to examine how middle grades language arts teachers learn to integrate one approach to translational pedagogy into their teaching practice. The data were drawn from a classroom teaching experiment (Cobb, 2000) iteration of Project TRANSLATE (Teaching Reading And New Strategic Language Approaches to Emergent bilinguals), whose goal is to create a fully developed instructional intervention that encourages students' to deploy, compare, and mesh varied linguistic resources as they collaboratively and carefully read and translate texts. Translation is not simply the substitution of words from one language to another, but a complex process requiring both communicative and metalinguistic skills (Malakoff & Hakuta, 1991), with great potential for developing both language and literacy skills. When translating, students analyze a source language text for initial understanding, deal with semantic difficulties, contend with issues around word selection, engage in grammatical analysis and reformulation of acceptable syntactic constructions in the target language, and consider many other issues concerning pragmatics, styles, genres, registers, and dialects (Jiménez et al., 2015). This study shows that teachers' routinized teaching practice is a powerful mediator of new pedagogical practices in the classroom, thus highlighting the challenges of bridging classroom literacy practices with students' everyday bilingual activity. At the same time, this study demonstrates how teachers can address these challenges through locally situated design choices that mesh new routines with existing instructional practice.

This work responds to calls in the literature for examining how translational pedagogies can be integrated into diverse classroom contexts. Creese and Blackledge (2010) discussed the need for further research to explore "what 'teachable' pedagogic resources are available in flexible, concurrent approaches to learning and teaching languages bilingually," and specifically "how and why pedagogic bilingual practices come to be legitimated and accepted by participants" (p. 113). Translational pedagogies build on and develop the practices associated with mobilizing and meshing diverse linguistic resources, including language brokering (Reynolds & Orellana, 2014), code-meshing (Canagarajah, 2011a), and interpreting (Borrero, 2011). These translational pedagogies also build on the interactions between bilingual students and their educators, as interlocutors dynamically draw from linguistic repertoires to respond to the communicative context at hand (see Martínez, 2010). In our work, we seek to understand how a specific translational pedagogy, what we refer to as pedagogical translation, is integrated in three different learning contexts.

As a classroom teaching experiment, this study was designed with a dual purpose, aiming toward both pragmatic and theoretical goals (Cobb, 2000). That is, we sought to develop strategies for supporting teachers as they learn to enact translational pedagogies, while also developing our theory about how TRANSLATE and other translational pedagogies can contribute to student learning. In this article, we begin with a description of the TRANSLATE instructional approach and a brief summary of our findings to date around student outcomes. We then ground our understanding of translational pedagogy, and TRANSLATE in particular, in a review of social practice theory, highlighting the contribution we think this perspective can provide for the field of translanguaging theory. In this section, we also discuss the TRANSLATE instructional theory and the research questions that informed this study when we began. We then describe the classroom teaching experiment methods used in this study, including how our research questions and instructional theory evolved through micro- and macro-cycles of analysis. In the findings section, we illustrate our revised instructional theory through a series of qualitative narratives describing how teachers learned to adapt the TRANSLATE protocol into their instructional practice. Finally, we end the article with a discussion of implications for the wider field of translational pedagogy.

Project translate

The TRANSLATE protocol is intended to be useful to all teachers in linguistically diverse classrooms, but especially teachers with limited or emerging proficiencies in languages other than English. It was adapted from guided reading protocols (Fountas & Pinnell, 1996), and refined through a series of design research iterations (Cobb, Confrey, Lehrer, & Schauble, 2003; Reinking & Bradley, 2008; for details on initial design iterations for this project, see Keyes, Puzio & Jiménez, 2014). In each 30–40 min lesson, small groups of (4–5) students who share a language other than English work with a teacher to read and discuss a short grade-level English language text. They then collaboratively create a written translation of a preselected passage from the text, and discuss how the translation process changed their understanding of the passage or the larger text. This protocol calls on students to engage in productive literacy practices (e.g., close reading and negotiation of meaning) and makes visible metalinguistic knowledge that teachers can leverage toward deeper learning of literacy concepts (Jiménez et al., 2015). Orellana and Reynolds (2008) described leveraging as the deliberate attempt "to identify aspects of whole practices that can be examined with students while also drawing their attention to how these practices connect with disciplinary constructs and ways of thinking" (p. 50). In other words, by talking about what students know how to do with translation, and exploring where features of that practice overlap with literacy skills and knowledge, we can help students develop improved reading skills and literate identities. [Figure 1](#) below describes the sequence of instruction within TRANSLATE:

Following the design research approach (Cobb, Confrey, Lehrer, & Schauble, 2003; Reinking & Bradley, 2008), our research has sought to develop conjectures about the affordances and constraints of the TRANSLATE instructional model, to subject these conjectures to systematic analysis, and to then refine the instructional design through an iterative process. Leading up to the study reported on here, we had conducted three separate interventions to gauge student uptake of the TRANSLATE approach in three middle schools, collecting over 70 hr of video footage, extensive field notes, and interviews with Spanish, Kurdish, and Somali speaking students. We found that students participating in these lessons move fluidly in their discussion between word-, sentence-, and text-level features and develop new comprehension strategies that capitalize on their home language resources (Jiménez, David, Keyes, & Cole, 2012). Furthermore, we found that the translation activity made visible a wide range of student linguistic, cognitive, and socio-cultural knowledge (Puzio, Keyes, Cole, & Jiménez, 2013), and provided students opportunities to develop metalinguistic awareness by reflecting on the nature of vocabulary and syntax, and the ways that different languages communicate ideas (Jiménez et al., 2015). These prior iterations of TRANSLATE research were led by members of the research team in isolated, pull-out environments, so the aim of this iteration was to put the instructional model into the hands of classroom teachers.

Theoretical framework

In this article, we use social practice theory to frame our understanding of translanguaging, translingual pedagogy, and pedagogical translation. Although the translanguaging literature is clearly grounded in the broader "practice turn" in social science research (Schatzki, 2001), we believe that a deeper look at poststructuralist understandings of practices as dynamic phenomena, with underlying logics of routinization and transformation, provides new tools to investigate the mechanisms by which translingual pedagogies are taken up in the classroom. In the following section, we briefly describe central constructs of social practice theory (including routinization, material mediation, production, networking, and reflexivity). Because TRANSLATE builds on students' translanguaging experience, and because translingual practices are inevitably transformed when adapted for pedagogical purposes (Reynolds & Orellana, 2014), we illustrate each construct by

TRANSLATE Instructional Program

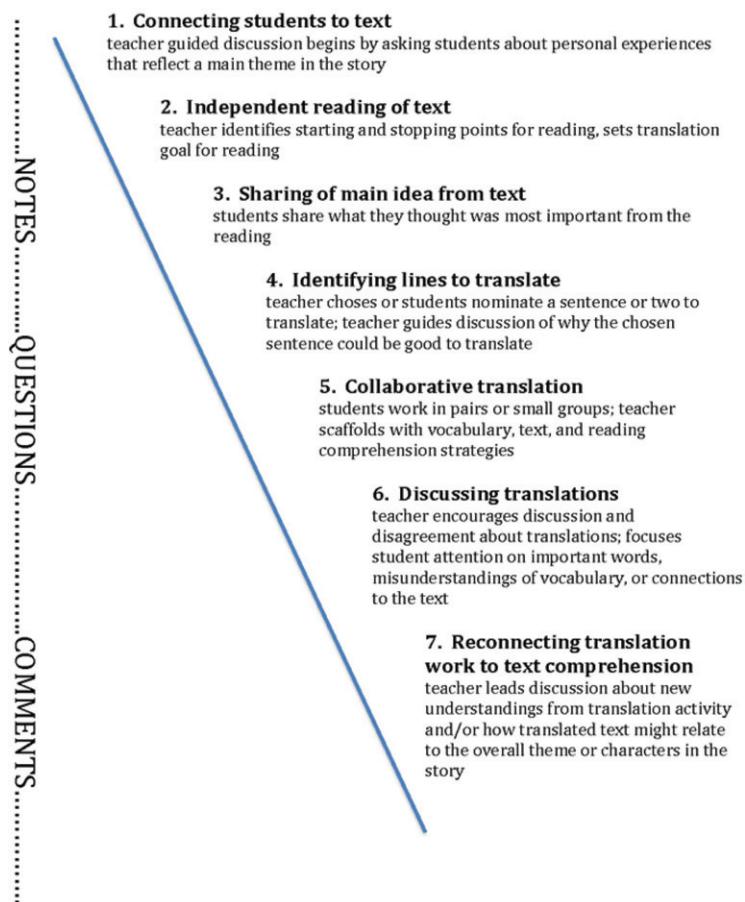


Figure 1. Handout describing steps of the TRANSLATE protocol.

contrasting the TRANSLATE practice with a common translingual practice of immigrant youth: language brokering. Language brokers are persons, often the children of immigrants, who grow up speaking the dominant language, and who regularly interpret for their parents and others. We then describe how this theoretical framework informs our understanding of translanguaging, translingual pedagogy, and pedagogical translation.

Social practice theory

According to Reckwitz (2002), social practice theory puts routinization at the center of an analysis of the social world. Scribner and Cole (1981) described a practice as a recurrent sequence of activities (i.e., routines), “directed to socially recognized goals and [making] use of a shared technology and knowledge system” (p. 236). A central feature of these routines is the coordination of mental and physical activity. As Schatzki (2001) asserted, “The skilled body commands attention in practice theory as the common meeting point of mind and activity and of individual and society” (p. 12). Practice theory eschews the traditional dichotomization of mind and body, in which individuals are understood primarily as minds that use their bodies in particular ways. Within practice theory, mental states and knowledges are not so much possessions of the individual as

they are taken on as part of social practices, and must always be understood as embedded in bodily practice. Knowledge of a language, from this perspective, is inseparable from embodied social participation. Thus, *language* becomes *languaging* (Becker, 1995) in the lexicon of the social practice theorist.

Translingual pedagogy is by nature a hybrid practice, recontextualizing students' translanguaging experiences to accomplish new goals using a hybrid set of routines and resources. In the TRANSLATE approach, we have specified the broad contours of a practice (see Figure 1), but we understand routinization as a process that involves both bottom-up and top-down processes. Within each phase of the protocol there is room for teachers and students to work out specific mental and embodied routines that fruitfully hybridize familiar pedagogical and multilingual practices.

An obvious difference between language brokering and TRANSLATE is that the former is primarily concerned with interpreting (i.e., oral translation); the latter focuses on written translation. However, there is significant overlap in the mental and embodied routines involved in each practice. Because both practices are social and collaborative in nature, they involve noticing unknown words or phrases in the source and/or target language, soliciting help through gesture and other embodied cues, and negotiating understandings of syntax, semantics, and situated discourse norms in the formulation of the target text. Furthermore, both practices involve a range of translingual routines. When translations are accomplished collaboratively, participants are called on to codeswitch, or shift between two or more languages within or between utterances, as they interact with each other and move back and forth between the source text and the evolving translated text. During TRANSLATE, students are also interacting with a teacher who usually does not share their language background, interpreting for him or her the content of their collaborative translation activity. All of these routines involve interaction among human actors, use of textual artifacts, and multilingual utterances. The utterances reflect and embody mental states but each is influenced by the larger array of components.

In addition to the coordination of mental and bodily routines, practices are also "materially mediated" (Schatzki, 2001, p. 2). That is, social practices necessarily involve individuals' embodied interactions with material artifacts, and they take place at particular times and in particular spaces. As Reckwitz (2002) pointed out:

The stable relation between agents (body/minds) and things within certain practices reproduces the social, as does the 'mutually' stable relation between several agents in other practices. Moreover, one can assume that most social practices consist of routinized relations between several agents (body/minds) and objects. (p. 253)

Texts, including the source text selected by the teacher and the translated text created by the students, are the primary materials that mediate TRANSLATE, although the selection and arrangement of other materials can also have a pivotal role in how a local practice evolves (David, 2017b). In a language brokering practice, the texts are more often in the form of spoken utterances than written artifacts, although it is not uncommon for language brokers to also translate school notes, jury summonses, and the like (Orellana, 2009; Perry 2009). A more salient difference in the material mediation of these two practices is in the nature and purpose of those texts. Language brokers encounter texts, both written and oral, that mediate their family's access to social worlds dominated by a majority language. Inside of the school, reading texts is an end unto itself, or a means to developing students' discrete reading skills. Texts are more likely to be fictional, to be targeted to student readers, and to be presented alongside other material tools (dictionaries, graphic organizers, etc.) intended to facilitate comprehension.

We have now explored the notions of routinization and material mediation in social practice theory, which might be a sufficient theoretical framework to investigate how individuals take on and perform practices. But to analyze the emergence of a new classroom practice, we must also understand how practices relate to one another, transform, and evolve. Chouliaraki and

Fairclough (1999) pointed out three characteristics of practices that help us understand stability and change within practices over time. First, they asserted that practices are forms of production, in the sense that "particular people in particular relationships [use] particular resources ... to achieve particular social (economic, political, cultural) effects" (p. 23). The outcome, or goal, of these processes is to make new forms of physical and symbolic resources available. This insight allows us to move beyond the question of how individuals embody practices, to ask what those practices are intended to produce. It also points to one fundamental difference between a family- and community-oriented practice like language brokering and a pedagogical translation practice enacted in the classroom. As noted, despite utilizing similar routines and materials, the end goals of these practices are significantly different. Language brokering mediates the boundary between immigrant communities and the broader society, producing access to vital goods and services (Orellana, 2009). Translingual pedagogies repurpose these routines to produce different kinds of resources, in our case focused primarily on English reading comprehension skills and bilingual reading strategies. On the surface, the aim of the TRANSLATE protocol is to have students produce a translated text, but from a practice perspective the translation itself is but a means to an end. The deeper pedagogical purpose, what TRANSLATE is designed to produce, is student engagement in linguistic problem solving and negotiation, leading to deeper understanding of how writers use language to communicate the full range of human experience.

A second characteristic of practices is that they do not exist in isolation, but are dynamically constructed within larger networks of social relations of power. Practices are located within a network of relationships to other practices that can determine the characteristics of a practice from the outside. Every individual represents a unique crossing point of various practices and exerts agency to participate in practices in ways that contest and potentially transform the nature of those practices. At the same time, however, this overlapping constellation of practices (with associated roles, routines and values) tends to constrain the agency of individuals to contest and transform practices. This contributes to what Chouliaraki and Fairclough (1999) described as the "hardened permanences" of habitualized action:

Networks of practices are held in place by social relations of power, and shifting articulations of practices within and across networks are linked to the shifting dynamics of power and struggles over power. In this sense, the 'permanences' we referred to above are an effect of power over networks of practice, and the tensions within events between permanences (boundaries) and flows are struggles over power. (p. 24)

For the bilingual youth who translates or interprets for one or both of his parents, his language brokering practice is, in part, determined by other practices that structure the family's life, which could include their purchasing behavior, their interaction with government agencies, or their access to medical care (Orellana, 2009). Furthermore, this practice is mediated by the roles and values that govern his family's behavior toward each other in both public and private spaces. These power dynamics that exist within every practice become especially salient in the analysis of a new, emergent practice, one that requires participants to adapt and negotiate, to redefine the goals of activity and the meanings of particular routines.

The understanding of power struggles within networks of practices is especially relevant here, because teachers and students coconstruct new routines in relation to the particular practice network of their school and classroom. When students are asked to translate in the language arts classroom, their previous experiences of multilingual practices influence their perception of the activity and the resources they bring to it. Each teacher, meanwhile, experiences the TRANSLATE protocol as a novel set of routines that must be integrated into an existing network of professional practices. Doing translingual pedagogy not only requires that teachers acquire new skills and/or adapt old routines to a new context, it also disrupts entrenched power dynamics. Translingual pedagogy challenges existing language ideologies that legitimize only English in the formal learning spaces of schools, as well as traditional approaches to reading and literacy instruction that position the teacher—and, in particular, the native English speaking teacher—as

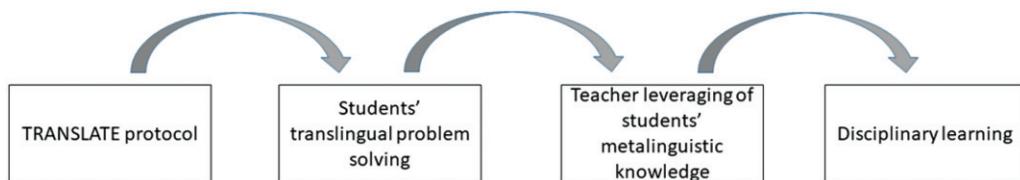


Figure 2. TRANSLATE instructional theory.

the ultimate authority. Translingual approaches transfer some of this authority to students, especially when the teacher does not speak their languages.

The third characteristic of social practices identified by Chouliaraki and Fairclough (1999) is that practices always have a reflexive dimension. That is, "people always generate representations of what they do as part of what they do" (p. 22). Put another way, every practice is intimately tied to a theory of practice, an individual's mental image of what doing the practice entails, why they participate, and who they are within the practice. This reflexive dimension of practices is often instantiated within the practice through the production of discursive resources (texts and speech), and it is usually at this discursive level that contestation and transformation of practices begins. Given the idea that practices are in some sense defined by the networks of practices in which they are nested, having students translate in the classroom could be framed as an attempt to co-opt translingual routines, removing them from the network of practices that shaped them and placing them into a different network of school practices with its own power dynamics and production priorities. If done without sensitivity, translingual pedagogies could fail by removing exactly that which makes them relevant in the lives of students. Leveraging the reflexive aspect of practices to align teacher and student understanding of the goals of translingual pedagogy may be an essential first step to successfully integrating the practice into standards-based language arts instruction.

Returning to the major constructs that inform this study, we understand *translanguaging* within a social practice theory framework as a very broad descriptive category. Some activities described in the translanguaging literature would be properly described as practices (e.g., language brokering), but others (e.g., codeswitching) might be better described as routines used strategically within larger communicative practices. *Translingual pedagogy*, then, describes a class of practices with the socially defined goal of leveraging students' full linguistic repertoires toward specific pedagogical aims. We use the term *pedagogical translation* to describe a type of translingual pedagogy, a practice whose central translingual routine is translation. This term also encompasses the full range of routines involved in the practice, including prereading instructional conversations, post-translation discussion of what was learned from the activity, and everything in between. TRANSLATE is one instantiation of pedagogical translation, and of translingual pedagogy more broadly, with the specific aim of developing students' reading comprehension skills.

Translate instructional theory

Based on previous design iterations, we developed an instructional theory to describe how the TRANSLATE protocol may lead to positive literacy outcomes (see Figure 2). As stated, a central product of TRANSLATE is student engagement in linguistic problem solving. We believe that participation in this sort of metalinguistic interaction has intrinsic benefits for students, and these benefits may be amplified when teachers leverage students' metalinguistic knowledge to develop deeper understanding of literacy concepts.

In light of our understanding of social practice theory, each box, or stage, in Figure 2 may be described as a set of coordinated mental and embodied routines, designed to produce symbolic and/or material resources for the subsequent stage. We find it helpful to refer to these routines as

stages of the instructional theory, although it should be understood that there is often a recursive and non-linear relationship between them in practice. In Stage 1, the TRANSLATE protocol brings together bodies, texts, and other artifacts, as well as mental and embodied resources to make collaborative translation possible (i.e., to help students apply background knowledge, decode and comprehend the texts, negotiate translation choices, identify and work through linguistic problems, etc.). The aim of this routine is to create the necessary interactional conditions for students to step into their roles as language experts.

The students then become the central participants in Stage 2, drawing on interactional routines from any or all of the language mixing practices they may participate in. They share and strategically leverage each other's language and literacy knowledge to achieve the concrete objective of producing a translation, and in the process they demonstrate this knowledge publicly. The teacher's role is to foster and support this conversation, to encourage students' sharing of reflexive understandings about translation routines, and, above all, to listen carefully for connections between the students' understandings about language and literacy and their own understandings about language arts pedagogy. These connections, experienced by students as memories of recent embodied actions and ongoing negotiations of meaning, are the key resource produced in this stage.

Stage 3 indexes another shift from student- to teacher-centered routines, centered on the questions that teachers ask during the final step of the protocol. The teacher identifies salient features of students' activity in Stage 2, bringing these moments to their attention to explore and develop literacy concepts. When introducing the protocol to teachers, we offered examples such as, "How did translating change your understanding of the text?" Although this example is broadly applicable across contexts and potential literacy objectives, a better question would highlight students' own situated problem solving processes and invite further reflection. Some examples drawn from our data include: "When you guys decided that *fue* was a better word to use than *estaba*,¹ how did you make that decision?" "Why was 'my own private Mt. Everest' so hard to translate?" "I saw you guys struggling with the word *gumption*. Can you tell us how you solved that problem?" In addition to responding to specific moments of student interaction in Stage 2, these leveraging routines are intended to connect back to the teacher's goals for the lesson and their intent for putting that particular text in front of their students in the first place.

Stage 4 describes the mental and embodied routines that the teacher hopes students will carry forward into the future. These new routines could include comprehension strategies, insight into the way authors choose language to describe characters or settings, deeper multilingual understandings about particular vocabulary words, or a well-articulated interpretation of the text that they can write about for a future assignment. Because these goals inform the entire instructional practice of pedagogical translation, they also structure and constrain the routines described by the first three boxes. In other words, the teachers' goals for Stage 4 will influence the texts and questions they prepare, the resources they make available to facilitate student translation, and even their in-the-moment responses to student interaction.

This understanding of TRANSLATE as a social practice led us to the following initial research questions:

1. How do teachers adapt the TRANSLATE protocol to develop a locally situated pedagogical translation practice?
2. What are the implications for our instructional theory that derive from teachers' locally situated design choices?

¹*Fue* and *estaba* both translate to *was* in English, albeit with different shades of meaning. It should be noted, however, that an attentive teacher can ask targeted questions like this regardless of whether they know what the words mean, and in doing so elicit students' metalinguistic knowledge that can inform future instructional decisions.

A full exploration of question 1 is beyond the scope of this article and has been addressed elsewhere (see David, 2017a). In this work, the first author found that each teacher had a unique trajectory into the practice as they prioritized features of the protocol that complimented their established pedagogical routines, and as they negotiated the parameters of embodied participation with their students. However, as the teachers supported each other through initial challenges, they began to collaboratively construct a coherent vision for the goals and routines of a pedagogical translation practice rooted in the local context. The analysis presented here describes both general trends and specific examples from the pedagogical translation practices developed by participating teachers and their students, to more fully explore question 2. In addition, we will discuss how question 2 was refined and revised during retrospective analysis in the methodology section below.

Methodology

The classroom teaching experiment methodology was developed in the field of mathematics education to investigate how student learning is affected when new pedagogical approaches are introduced, extending the constructivist teaching experiment (Steffe, 1983; Steffe & Thompson, 2000) into a classroom context in collaboration with a practicing teacher (Cobb, 2000, p. 311). As Cobb (2000) points out, "One of the strengths of the classroom teaching experiment methodology is that it makes it possible to address both pragmatic and highly theoretical issues simultaneously," (p. 314). As such, we have adopted this approach as a means both to investigate how teachers learn to participate in translingual pedagogical practices, and to further develop our instructional theory and design through teacher collaboration.

Cobb (2000) described a teaching experiment as having macro- and micro-level cycles of analysis and design. The micro-level takes place during the experiment, as each day's lesson is digested and reflexively narrated to guide the teacher's plan of action for the next lesson, and as researchers reflect on and refine the instructional sequence. The macro-level describes analysis of the instructional sequence as a whole in a systematic retrospective analysis:

The thought experiment at this level concerns the local instructional theory that underlies the sequence, and the teaching experiment involves the realization of the whole set of instructional activities in the classroom, even as they are being revised continually. This broader cycle builds on the learning process of the research team inherent in the daily microcycles and is complemented by a retrospective analysis of the entire data set generated in the course of the teaching experiment. (Cobb, 2000, p. 315)

As noted, our primary goal in this article is to describe changes to the TRANSLATE instructional theory that arose from our retrospective analysis. However, we include illustrative examples of the micro-cycles of design and analysis throughout. In the data analysis section, we show how our engagement with the practical challenges of instruction led us to refine our second research question for the retrospective analysis. In the results section, we present qualitative narratives of teachers' design choices to illustrate our revised instructional theory in action, and as examples of teacher learning in response to our first research question.

Setting and participants

This research took place in a new destination city (Singer, 2004) in the United States' South. The population of students learning English in the district has more than doubled over the past 10 years, representing 14.7% of the student population at the time of the study. Currently, the school district provides language support services to more than 12,000 students, who come from at least 120 countries and 95 language backgrounds.

We recruited four teachers from an area middle school with a large ELL student population. Nearly 25% of the school's students were classified as ELLs, and about 90% received free or

Table 1. School demographics.

	African American	Asian/Pacific Islander	Hispanic	White	ESL	Low SES
Number	231	57	367	219	214	779
Percent	26.4	6.5	41.9	25.0	24.4	91.3

Note. ESL = English as a second language. SES = socioeconomic status.

Table 2. Teacher participants.

Name	Years Teaching Experience	Language Proficiency	Students' Languages
Rachel	8	English, German	Bahdini, Sorani (Kurdish)
Tom	5	English	Spanish
Zara	7	English, Arabic	Spanish
Elizabeth	2 (ESL)	English, Spanish	Spanish

Note. Participating students had varying levels of proficiency in English and other languages. ESL = English as a second language.

reduced-price lunch (see [Table 1](#)), although these blunt measures do not fully capture the linguistic and cultural diversity of the school's student population.

The initial criterion for study participation was that participating teachers work with bilingual students to some degree, and have an interest in improving their instruction of linguistically diverse students. Our first teacher participant (Rachel) helped us to recruit all of the teachers on her 8th-grade language arts team (see [Table 2](#)). This team consisted of Rachel, Tom, Zara, and Elizabeth (all pseudonyms).

Each teacher selected 4–5 students from one of their classes to participate in the study. These groups all had to share some fluency in a language other than English, but otherwise teachers had discretion to form groups based on their knowledge of students and their own instructional priorities. Information about students is presented in [Table 3](#).

Professional development and data collection methods

The teaching experiment methodology, as well as broader understandings about teaching and learning within a social practice framework (e.g., Holland & Lave, 2009; Lave & Wenger, 1991), demanded that our approach to facilitating teacher understandings of the TRANSLATE protocol be organized around agentive co-participation. In addition, a review of literature on professional development (PD) for teachers of English language learners specifically (González & Darling-Hammond, 1997; Lucas & Grinberg, 2008; Walqui, 2000), as well as research on PD in literacy more generally (L'Allier, Elish-Piper & Bean, 2010; Risko et al., 2008), suggest a set of practices organized around principles of *collaborative involvement* and *guided learning*. These forms of PD focus on local needs and conditions and recognize teachers as intellectual beings. They have been found to promote teachers' enhanced reflection on their practice, improved understanding of and ability to differentiate and modify instruction for ELLs, increased ability to communicate with students across cultures, increased knowledge about students' cultural backgrounds and their prior knowledge, and more positive perceptions of their students (Levy, Shafer, & Dunlap, 2002; Lucas, 2005; Lucas & Grinberg, 2008).

Using these guiding principles, we elaborated a multiphase approach to support both teacher learning and data collection ([Figure 3](#)). The first phase of PD included two 40-min meetings with teachers during their communal planning period on two consecutive days. The first PD session included *explicit instruction* of the TRANSLATE approach, as well as discussion of video from previous research as *examples of the instructional model*. In the second meeting, teachers then had *guided practice* in planning TRANSLATE lessons for use in the classroom.

Table 3. Student data.

Student ^a	Gender	LOTE ^b	EL Status	Assessed reading ability ^c	Language Broker? ^d	Enjoys reading? ^e	Birthplace	Years of Schooling Outside the United States
Teacher: Zara								
Mello	F	Spanish	NA ^f	NA	Y	N	U.S.	0
Niky	F	Spanish	NA	NA	Y	N	U.S.	0
Guasón	M	Spanish	NA	NA	Y	N	Mexico	0
Papito	M	Spanish	NA	NA	N	N	Mexico	5
Lanudo	M	Spanish, Japanese	NA	NA	Y	Y	Doesn't know	0
Teacher: Tom								
Boom	M	Spanish	Exited	Basic	Y	Y	Mexico	0
John	M	Spanish	Exited	Basic	Y	N	Guatemala	0
Henry	M	Spanish	Exited	Basic	Y	Y	U.S.	0
Julissa	F	Spanish	Exited	NA	N	N	Mexico	0
Teacher: Elizabeth								
Isaac	M	Spanish	IV	Basic	Y	N	Mexico	0
Joker	M	Spanish	IV	Below Basic	Y	NA	Mexico	2
Cookies	M	Spanish	III	Below Basic	Y	N	Mexico	1
Shorty	M	Spanish	III	Below Basic	N	Y	U.S.	0
Teacher: Rachel								
Leman	F	Bahdini, Arabic	None	Proficient	Y	Y	Iraq	5
Nijdar	M	Sorani, Arabic	Exited	Basic	Y	N	Iraq	7
Rona	F	Sorani, Turkish	None	Basic	Y	Y	U.S.	0
Berwan	F	Sorani, Arabic	I	NA	NA	NA	NA	NA
Ajda	F	Bahdini, Arabic	I	NA	NA	NA	NA	NA

^aStudents were given the opportunity to pick a pseudonym. Those who declined to choose an appropriate pseudonym were assigned names by the first author.

^bLanguage(s) other than English – as claimed on the student survey and/or demonstrated during lessons.

^cBased on previous year's state reading assessment.

^dStudent indicated that he/she translates for parents or other family members on a daily or weekly basis.

^eStudent indicated that he/she enjoys reading a lot or a little.

^fData not available.

Data collection

Each teacher taught three lessons using the TRANSLATE protocol, and all lessons were audio- and video-recorded using a camera and tripod set up a short distance away from the group. During each lesson, the researcher took field notes in the form of a running record, to which he added methodological and theoretical notes later in the day. In addition, the facilitators collected lesson artifacts, including teacher handouts and photos of student work. Immediately after each session, the facilitator had an audio-recorded debrief session with the teacher that focused on what teachers noticed that went well or poorly during the lesson, as well as any specific moments the facilitator noticed and wanted to praise or ask questions about. Teachers were also asked to post a reflection on a blog after each lesson. These data collection methods were used to create multiple perspectives on the same phenomena to triangulate and confirm findings.

After each teacher had conducted one TRANSLATE lesson, we brought the whole group together to share successes and challenges, and to collaborate around planning the next two lessons. After the final lesson, we brought them together again to discuss their experience learning and implementing TRANSLATE. Planning for both sessions was informed by facilitators' observations of the lessons and teacher reflections. All four PD sessions (two initial sessions and two mid-study focus group sessions) were video- and audio-recorded.

In the final phase of data collection, researchers conducted one-on-one semistructured interviews with each teacher participant after the last week of instruction. All teachers were asked to comment on the process of learning the TRANSLATE protocol, their experience implementing

Phase #	Guiding Principles	Activity	Data collected
Phase I	explicit instruction, examples of the instructional model, guided practice	Initial PD sessions	Video record
Phase II	Guided application	First practice lessons	Video & audio records, field notes, teacher written reflections and comments
Phase III		Focus group debrief #1	Video record
Phase IV		2 nd & 3 rd practice lessons	Video & audio records, field notes, teacher written reflections and comments
Phase V		2 nd focus group debrief	Video record
Phase VI	N/A	Individual interviews	Audio record Student surveys

Figure 3. Phases of the teaching experiment.

the lessons, and how their thinking about the activity changed over time. Teachers were also asked questions aimed to probe specific events from the previous weeks and aspects of their identities as teachers and language users.

Data analysis

As noted, the teaching experiment method involves in-process analysis of the evolving design, as well as retrospective analysis of the entire instructional sequence. These two cycles inform each other. As Cobb (2000) noted, “The concerns and issues discussed by the research team while the experiment is in progress are frequently highly pragmatic. … As a consequence, initial conjectures typically emerge while addressing specific practical issues. These conjectures later orient a retrospective analysis of data sources” (p. 308).

During the teaching experiment, we took expanded field notes on each teacher group meeting and practice lesson, and documented initial observations and theoretical notes, noting emergent themes and codes. We discovered, for instance, that our group of teachers had very different approaches to language arts pedagogy, and each teacher focused on a distinct set of conceptual, material, or embodied resources made available during PD. These observations then became a focus of later focus group sessions and exit interviews, so that teachers could participate as core-researchers in thinking through the design implications of their interactions. In the course of the micro-level analysis, it became clear that the step from one stage of our instructional theory to the next was not automatic and required locally situated forms of facilitation.

As we prepared for macro-level analysis after the study ended, this insight led us to reframe our instructional theory using a conjecture mapping procedure (Sandoval, 2014). Sandoval proposed conjecture mapping as a way to “specify theoretically salient features of a learning environment design” and “guide the systematic test of particular conjectures about learning and instruction in specific contexts” (p. 19). He distinguished the embodied aspects of an instructional design (the tasks, tools, and participation structures specified in the instructional design) from mediating processes that ultimately lead to expected outcomes:

Designs do not lead directly to outcomes. An airplane produces flight as an outcome to the extent that it generates sufficient lift, a mediating process required to produce the outcome. In learning environments, the use of particular tools for specific tasks enacted in specific ways is intended to produce certain kinds of activity and interaction that are hypothesized to produce intended outcomes. These hypothesized interactions mediate the production of those outcomes. (Sandoval, 2014, p. 23).

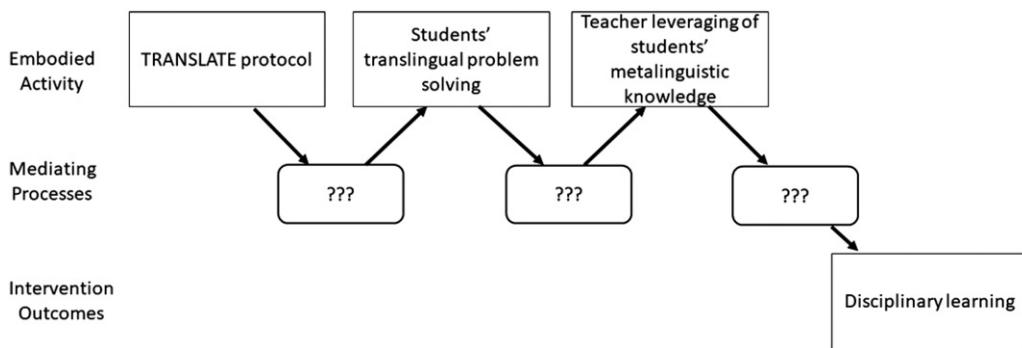


Figure 4. Conjecture map with hypothesized mediating processes.

Thus, we addressed our second research question (“What are the implications for our instructional theory that derive from teachers’ locally situated design choices?”) by identifying the need to specify mediating processes focusing on how participants in pedagogical translation move from one stage of the instructional model to the next (see Figure 4). This led us to reformulate the research questions for our retrospective analysis to focus on mediating processes, while still maintaining the dual focus on theoretical and pragmatic concerns.

1. What mediating processes are required to move between the stages conceptualized in the TRANSLATE instructional theory?
2. How did teachers bring about these mediating processes in their local practice?

We explored our revised research questions through three phases of analysis described below:

Phase 1: analysis of teacher reflective data

We began our analysis by reviewing the full set of teacher reflective data (audio, video, and transcripts of the focus group sessions, postlesson debriefs, blog entries, and exit interviews) and coding the embodied and mental routines that teachers highlighted as especially salient to their emergent understanding of the practice. Through axial coding procedures (Corbin & Strauss, 2008), we first grouped these codes into thematic categories, and then identified whether they addressed an embodied activity or a mediating process described in our conjecture map (Figure 4).

Phase 2: analysis of lesson data

After completing the analysis of teacher reflective data, we reviewed video and transcripts/translations of the practice lessons, both to triangulate themes established in coding task 1, and to identify new themes related to teacher participation in pedagogical translation. We began this analysis by having lesson videos transcribed and, for the Kurdish group, translated by a community member who shared all four languages of the students (Sorani, Bahdini, Arabic, and English). All of the coauthors speak Spanish, and the first author is a licensed Spanish-English bilingual teacher, so Spanish language data was not translated prior to analysis.

We then coded all lesson videos and transcripts three times. The aim of the first review was to create expanded field notes of each lesson, focused on labeling major phases of interaction and identifying shifts between them. The second review was focused on triangulating from coding task 1, connecting moments of interaction that teachers had described to the direct record of those events, and adding any salient details to our notes from coding task 1. In the third review, we identified student metalinguistic and reflexive statements, and coded teacher responses. This

review confirmed our previous findings that students tended to make their metalinguistic knowledge visible when problem solving difficult words or phrases (Jiménez et al., 2015).

At this point we had a long list of themes describing teachers' reflexive understandings about specific features of pedagogical translation, linked to descriptive memos with added contextual information from lesson videos, and mapped onto the embodied activities and mediational processes described in our instructional theory. Finally, we reviewed and synthesized the themes related to each of our hypothesized mediating processes in order to construct conjectures about how these processes operated to facilitate movement through the instructional sequence.

Phase 3: trustworthiness

The final phase of data analysis was designed to strengthen our findings using Lincoln and Guba's trustworthiness criteria (Lincoln & Guba, 1985). We reviewed all ancillary data (images and artifacts collected on site, surveys, etc.), to triangulate primary data (e.g., looking at translation artifacts to confirm inferences based on watching videos of the interactional moves of study participants in response to those artifacts). As noted, our understanding of the Kurdish students' conversations and written translations was qualitatively different from the Spanish groups, filtered as it was through a third party's translation. Despite this limitation, we found that this data set helped to discipline our analytical focus during coding. As a bilingual researcher who shares a language with the students, it is tempting to center analysis on how much the teacher does or does not perceive of the students' rich interaction. The Kurdish data forced us to center the teacher's interpretive process, and to develop codes that, we feel, improved our analysis across the entire data set. We attempted to limit bias by periodically engaging in peer debriefing with colleagues (Corbin & Strauss, 2008) and member checking with participating teachers to ensure the validity of major findings.

Findings

Based on our retrospective analysis, we articulated conjectures about each of the mediating processes in our conjecture map. These conjectures include:

1. Student engagement in linguistic problem solving through TRANSLATE requires that it be enacted in ways that respond to students' linguistic and affective needs.
2. For teachers to effectively leverage students' metalinguistic knowledge toward curricular objectives, they must first recognize metalinguistic statements and categorize them in ways that connect to their literacy pedagogy.
3. Teachers must conceptualize appropriate literacy goals for students to connect understandings generated during the translation activity to literacy concepts.

We use the labels *engaging*, *coding*, and *connecting* as a shorthand to describe what we believe are the pivotal characteristics of these conjectures (see Figure 5). *Engaging* and *connecting* are in vivo codes (Saldaña, 2015): descriptive labels drawn directly from teacher interviews. Teachers regularly discussed how to *connect* the TRANSLATE practice to the sanctioned objectives and practices of language arts instruction, while *engaging* brings together a range of challenges described by our participating teachers using terms and phrases such as buy-in, haggling, (not) acting the fool, and of course, engagement. The *coding* construct was generated through researcher inference—we noted the central role of what teachers attended to (and what they did not attend to) during students' linguistic problem solving, although the teachers themselves did not specifically identify this as a central issue. Adapted from Goodwin's (1994) work on professional vision, *coding* involves the establishment of conceptual categories through which

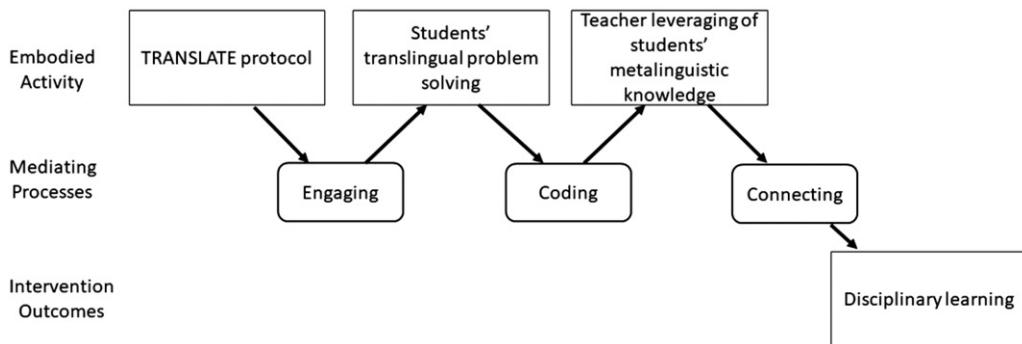


Figure 5. Conjecture map of TRANSLATE instructional theory.

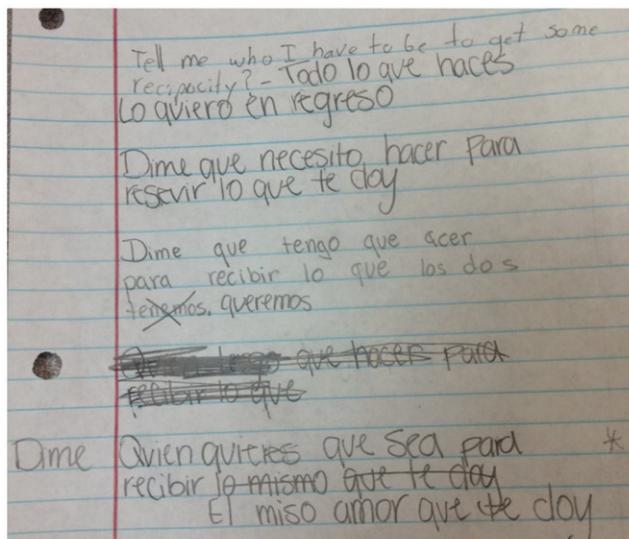


Figure 6. Translation artifact, showing the English line selected by students, an initial Spanish gloss, alternative translations created by two partner groups working independently, and a final consensus translation.

phenomena are understood. These categories function to circumscribe and delineate the world so that professionals know which phenomena are relevant to their work. For example, one participating teacher who did not speak a language other than English tended to code every disagreement his students had over translation choices as a debate about using formal language versus slang. Although his intent was to validate both language registers, in overgeneralizing this code he seemed unable to attend to student explanations related to grammatical and meaning, explanations that could have been leveraged to develop students' understanding of English language arts.

It should be noted that the bulk of teachers' reflections on the practice were focused on how to successfully encourage student-centered linguistic problem solving during translation. Of the four teachers, two spent much of the three lessons problem solving this aspect of their instructional approach, and only in their exit interviews began to consider what specific learning objectives pedagogical translation might be good for. The other two teachers were able to draw on familiar constructivist teaching routines to foster student-centered linguistic problem solving from the first day of instruction, and spent more time reflecting on what students might have learned (or be able to learn under revised conditions) from the practice.

Engaging, coding and connecting in the data

In the following section, we present qualitative narratives describing the mediating process facilitated by some of our teachers to engage students in student-centered metalinguistic talk, code students' translingual interaction to inform their instructional moves, and connect the practice to larger curricular goals. Our data contain many examples of teachers' successful and less successful routines for engaging, coding, and connecting, but one of the more interesting narratives that emerged in our group centered on routines of text selection and line selection (i.e., the identification of a text segment to have students translate). We present these as examples of locally situated enactments of our conjectured mediating processes, and as a document of trajectories of teacher participation as agentive designers of translingual pedagogy.

Engaging students through culturally relevant text selection

One of the design principles during TRANSLATE development was that the protocol should be adaptable to a wide range of teaching contexts. Although we believe in the efficacy of culturally relevant text selection, we were aware that teachers are often constrained in their choice of texts by school and district policies. As such, we gave teachers limited guidance on text selection. We found it all the more striking, therefore, that several participating teachers found culturally relevant text selection to be an important factor to successfully engage students in the translation practice. In addition to using texts with culturally familiar content, teachers also made linguistically responsive choices to produce the right amount of frustration to maintain student engagement in the task. In the following section, we highlight the journeys of two teachers as they thought about culturally relevant text selection for their TRANSLATE groups. This was a fluent routine for one of these teachers and a new idea for the other, but both of them demonstrate how reflective practice can lead to robust student engagement with culturally relevant texts.

"What I think is culturally relevant may not be, because it isn't my culture." Rachel, an 8th grade language arts teacher proficient in German, was working with a group of 4 Kurdish students. For the first lesson with her group of Kurdish students, Rachel used "Appointment in Samarra" (adapted from Maugham, 1933), a short story, set in Baghdad, that included a simple map of Iraq printed at the bottom. Students were immediately interested in the map, leading to an impromptu exploration of their background knowledge about where they were born and where different languages are spoken in Iraq. Rachel responded to this interest by asking students to elaborate and mark on the map where different languages are spoken. After a few minutes, Rachel pivoted back to the text, asking, "What does that make you think about the story we're about to read?" before directing them to read the story silently. The inclusion of the map, and the students' interest in it, was not explicitly planned into the lesson. Rachel did, however, pick the text in part because she knew her students might make those kinds of connections, and she was ready to give them room to have those kinds of conversations. As she said in her exit interview "It was really easy for me to connect to their lives and access the background knowledge, but that's also part of text selection, I did that on purpose, I made that easy on myself, asking them to connect, that was really easy."

This observation was borne out in Rachel's second two lessons, for which she chose the book *Bestest. Ramadan. Ever.* (Sharif, 2011). This novel is narrated by a 15-year-old girl from a Muslim American family who is obsessed with boys and body image, but who also acutely feels the cultural expectations of her family, in particular her previous failure to fast during the month of Ramadan. As Rachel told us after her second lesson:

I chose this text because it was something they can relate to. When you say Ramadan, they're there. Like, I didn't have to explain to them, like I didn't need to explain to them the challenge of Ramadan. They just needed to work with the language.

Rachel read just a few pages of the first chapter with her group, and students made unsolicited personal connections to their own successes and failures at observing Ramadan, and to their love of the Kurdish homeland and culture. They were also critical of the characters in the book for their failures to be good Muslims, leading Rachel to reevaluate her own positionality with regard to cultural representations in literature. In her lesson 3 blog entry, she wrote:

Interestingly, the students were somewhat offended by the grandmother's superficial Muslim practices. It was written to be funny, but they didn't think it was funny. ... This was a little bit frustrating for me, but I understand that what I think is "culturally relevant" may not be, because it isn't my culture.

"Next time I'll pick something simple." Elizabeth, the ESL teacher who spoke Spanish as a second language, was working with a group of Hispanic students. In her exit interview, Elizabeth reflected that, going into her first lesson, she had assumed that text selection was a relatively uncomplicated issue:

I would say that I expected them to totally latch on to the idea and be completely engaged because I was providing what they liked to do most, which is to speak in Spanish ... and I initially discovered that with the text that I provided. I guess I thought, "If I let you speak in Spanish, and I gave you the text, it didn't matter what the text was." But it did matter.

In her first lesson, she also used "Appointment in Samarra," but her Spanish-speaking students were markedly disengaged. Afterward, she felt the lack of engagement was partially the fault of using a text that students could not easily relate to. In her debrief after lesson one she reflected, "I think I felt also a disconnect, it wasn't a story they could relate to. ... It was a little too figurative. I think maybe something with some more literal, some more literal stuff." In her second lesson, Elizabeth chose a passage from a text we had used in a previous iteration of TRANSLATE and discussed during the PD. Elizabeth asked her students to translate the line,² "I shrugged off his words when he said them. But now I'm hoping they're true, 'cause I feel like I'm being swept away. I'm over my head." As the reader may notice, deciphering this line requires quite a bit of background knowledge about the larger narrative, and although Elizabeth's students had the benefit of reading a few pages of the surrounding text, they still struggled to comprehend and, therefore, to translate the passage. In her postlesson debrief, she noted the linguistic complexity of the text that she had overlooked before seeing her students struggle with it:

Next time, I'll pick something simple, with no pronouns. THAT was a big lesson to me. SMACKED me on the face! 20 million pronouns and what do they refer to? Which is difficult in any language. So, simplify. Have my back up (line) and not so much front load them with stuff. I think that was too overwhelming.

For her final lesson, Elizabeth followed Rachel's suggestion that *Mexican White Boy* (de la Peña, 2008) might be a culturally relevant text for her students. The line she chose contained a simile ("He's Mexican because his family's Mexican but not, he's not really Mexican. His skin is dark like his grandma's sweet coffee but his insides are as pale as the cream she mixes in." (ibid, p. 90)), but otherwise was less linguistically challenging than the line used in lesson two. Furthermore, the description of a boy negotiating the complexities of cross-cultural identity, mediated by skin tone as well as experiences with family and language, proved to be very relatable to her students. In addition to greater engagement in reading and translating, students spontaneously made connections to their own lives, as in the following excerpt in which students shared with peers their answer to the question, "What did you learn about the character?"

J: Ok, so me and Shorty learned about our character that, we like, almost every single Mexican family is connected to this book because that's what it's like. People who really-

²In this article, and during the PD, we used the term *line* to refer to any short text selection, usually 1–3 sentences long, that students or teachers selected to translate.

S: In our families.

J: Yeah, in our Mexican families.

Elizabeth's search for a just-right text for her students reveals how important text selection is for engaging students with the TRANSLATE protocol. This challenges our initial assumption that, because we see our intervention as adaptable to different texts and different groups of students, we need not directly address text selection during professional development. Both Rachel and Elizabeth's narratives suggest that the cultural relevance of different texts seems to facilitate, at least to some degree, students' successful meaning making and comprehension. Students needed not only linguistic support, but the opportunity to see their own lives in a text, in order to invest and experience success in this reading practice.

Coding and connecting through strategic line selection

Elizabeth's experience in lesson 2 points to the importance of the mental routines involved in picking a line to have students translate. Across the hall, Rachel and Zara addressed issues of line selection in ways that were never envisioned by the TRANSLATE team. They both had students select lines to translate, a routine we had tried with limited success in previous iterations of TRANSLATE. But they were able to embed the routine in scaffolds that either supported students to be more ambitious, or constrained their choices to focus on specific literacy content objectives.

“Do you feel like you could describe her?” In her second two lessons, Rachel gave students permission to pick any line they wanted to translate, so long as it met criteria informed by the instructional objective of the day (reading for character and setting details in lessons 2 and 3, respectively). Because she had chosen the larger text carefully, this criteria had the effect of restricting student choice to just one or two defensible chunks of text, all of which Rachel had already identified as sufficiently complex to demand collaborative problem solving. The sentences she drew students to select included previously taught vocabulary (“gumption”), academic language (“religious fervor”), and figurative language (“My own private Mount Everest”, “A typical Miami mama”).

During translation and discussion Rachel took opportunities to think aloud about connections to character and setting, and she ended the lessons by asking students to make similar connections. In lesson 2 she asked “If we were to come back to this Almairah girl, do you feel like you could describe her ... if you were to explain to a friend in English or Kurdish?” In lesson 3, Rachel's request for a summary of the setting elicited both physical (“hot”) and cultural insights (“wild,” “out of control,” “they have forgotten how Islam is”). Students then connected this to their own experiences, describing their parents' fears about language loss and the belief that “kids speak too much English and they forget their Kurdish.” They compared their individual histories of Arabic study, their plans to travel to Kurdistan, their love of country and their dreams to return there and never come back.

Rachel also attended closely to students' translation work, despite the fact that she could not understand any of their spoken language. Instead, she was able to code their embodied interactions and step in to offer just-in-time feedback. Although this feedback was improvised in the moment as a response to student needs, it was also the result of Rachel's instructional design, as she had purposefully selected text with linguistic challenges that aligned to her learning objectives. So when she saw one group of students arguing and acting frustrated, she guessed correctly that they were struggling with the metaphor, “my own private Mt. Everest,” and used questioning in English to guide them to an understanding of the underlying meaning. When another group finished early, Rachel asked how they had translated a key vocabulary word *gumption*. Discovering that the students' had omitted the word, she suggested a series of strategies to help them come up with a more complete translation that would connect with her instructional goals, ultimately

introducing to new material artifact to facilitate the translation: a laptop with an online Kurdish-English dictionary. At the end of the lesson, Rachel was able to leverage students' reflections on these translation challenges to connect to the reading skill of inferring information about a character from details in the text.

Despite her successes, Rachel was never entirely satisfied with her instruction because, despite her ability to engage students multilingually in standards-based discussion of text, she never felt that it connected meaningfully with the rest of her instructional practice, as she described in her blog entry after lesson 2:

It is tricky to make sure that the translating process is the *tool* being used to reach a learning goal, and that the learning goal is not, "The students will translate successfully." It needs to be more content based than that to bring the learning forward. So, I'm working on how to improve that step so the session has a smooth, meaningful finish with a take-away that I can assess in English. I need to work on the final question ... something like, "Now that you have translated this piece of text, how has your understanding of the metaphor (metaphors in general?) changed?"

After her third lesson, she began to draw a distinction between the idea of content objectives as a planning routine that might connect the TRANSLATE lesson to language arts standards, and more embodied ways of tying the translation activity to other pedagogical routines:

I still feel there's a next step still needed, and I don't know what it is. Maybe it's not in the question or the take away, maybe it's in the "now what?". Like there needs to be, "now that we've done this, so what?" kind of thing. Like what you kind of said when we were talking beforehand, like they need to write a paragraph describing, they need to DO something. Now that they have done THIS, now do this.

Rachel suggests that the way to connect TRANSLATE to her pedagogical practice is not merely to direct it to the same goals, but also to merge it more seamlessly with the embodied routines of the language arts classroom.

"Choose something that stands out to you." This idea was not a revelation to Zara. Zara's normal pedagogical routines, before we ever walked into her classroom, involved having students select lines from poetry and songs to analyze in small groups. She would spend a full week on each selected text, involving students in a series of tasks aimed toward the development of an interpretative essay. Zara integrated TRANSLATE as a one-day activity within this weekly routine (see [Figure 6](#)), with the idea that students could write about what they learned through translating the text as part of their weekly writing assignment. Because we only attended the TRANSLATE sessions we never got to observe how students chose their lines, but Zara described to us how she pushed students to think beyond the translation itself:

Usually with songs anyway I tell them, choose something that stands out to you. Maybe it's something that you don't understand, or maybe it's something like, "I like that line," or maybe there's a wording and you're like I have no clue what that means. But choose something that stands out to you.

These planning decisions simultaneously pushed and supported students to engage in deep ways with complex text. Her focus on songs and poetry guaranteed that students would have many examples of figurative language to choose from, and it seems likely that their familiarity with the routine gave them the confidence to choose more challenging text. Furthermore, extended engagement with one text across a full week positioned the translation activity as a resource for drawing out meaning and generating interpretive statements to be incorporated into the final written assignment. As a result, starting with her first lesson Zara was able to generate rich discussions, as she described during the focus group session:

Z: I'm still shocked they chose the most difficult line in the entire song to translate. ... "Tell me who I have to be to get some reciprocity."³ What? Yeah. I know, they chose it.

³From the Lauren Hill song, *Ex Factor*.

M: How did they do that word, *reciprocity*?

Z: Well first they translated it as “what do I have to do.” And then they realized, wait (she) didn’t say, “what do I have to do,” it’s “who do I have to be” and that changed everything. So then they got everything except *reciprocity*, and *reciprocate* was one of our (vocabulary) words last week, so I just kind of went back to *reciprocate* and *reciprocals*, and “what’s that mean?” And then they had to look it up (in the dictionary), and they did that and got like “mutual exchange” or something. And then (they connected) “mutual” with the Facebook and “mutual friends” and that meant “the same.” And then, “that’s the same what?” Ok, so she doesn’t want the same everything, she wants the same what, based on the song? So it was love, so then it was the same love.

Zara’s narrative shows her understanding of the process by which her students noticed and debated specific choices made by the author, and tried various strategies to clarify the meaning at both word and sentence levels. She coded this student activity, not by watching them translate as Rachel did, but through a routine of asking students’ to describe their activity to her in English. Her participation during the extended problem solving process she describes involved dropping in on the group every 5–8 min, asking for a summary of their work, and suggesting strategies and tools to help them stay engaged in the task. For Zara, the pedagogical goal was to help students become conscious of the interpretive routines involved in reading poetry, so these summaries not only facilitated her coding of students’ ongoing activity (informing her in-the-moment choices such as prompting students to use a dictionary), they also represented the key mental and embodied routines she wanted students to apply to future interpretive tasks. By routinizing student production of metacognitive statements about their work, highlighting these insights in subsequent statements, and suggesting that students include them in their final essays, Zara connected the translation work to her larger pedagogical goals.

Discussion and implications

An important limitation of our work is that our data are drawn from a relatively small number of participants at a single site, and our findings do not necessarily generalize to other settings or participants. In fact, the idea that local context dramatically impacts the take up of new pedagogical practices is a central assumption of our work. Research of this kind, that aims to develop culturally and linguistically responsive instructional tools, must constantly grapple with the tension between providing too much structure to be adaptable to local needs and providing too little structure to be useful for teachers or convincing to other researchers. It is for this reason that we believe our revised instructional theory, and more generally the call to situate translational pedagogies theoretically within a larger social practice framework, are important contributions to the field. We look forward to conducting future iterations of this research to test how consistent and useful our findings may be across multiple diverse contexts.

One aim of the classroom teaching experiment, in addition to the simultaneous refinement of design elements and theoretical conjectures related to the specific learning activity, is “to place classroom events in a broader theoretical context, thereby framing them as paradigmatic cases of more encompassing phenomena” (Cobb, 2000, pp. 325–326). We suggest that the instructional theory elaborated here could contribute to a broader understanding of translational pedagogy that addresses some of the challenges that the field is currently grappling with. Translational pedagogy faces a challenge similar to one that has been identified in the field of culturally responsive pedagogy, in that the local and sometimes unpredictable nature of the student practices that are the focus of these pedagogies make it challenging to specify for teachers exactly how to do it in an a priori way (Jiménez, 2013; Ladson-Billings, 2008). The TRANSLATE instructional theory suggests a way for designers to specify aspects of instructional practice while simultaneously guiding teachers to make locally responsive design choices. As Canagarajah (2013) reminds us, the resources leveraged to inform these practices are, by nature, “mobile” (pp. 21–22). As communicative

contexts change, so do the meanings and uses attached to these resources. Our study points to ways that teachers recognize and build on these mobile and emergent linguistic resources by meshing new routines with existing instructional practice.

This research also points to a set of objectives that could be the focus of professional development for translingual pedagogies. Future research in this area should elaborate strategies for engaging students in translingual activity (including culturally relevant text selection), investigate ways to develop teachers' coding routines during students' translingual interaction, and analyze how different kinds of metalinguistic knowledge map onto common objectives of language arts instruction (e.g., Orellana, Reynolds, Dorner, & Meza, 2003). The reflexive characteristic of social practices also points to the importance of having teachers share and discuss their evolving understandings about translingual pedagogies during professional development, as these insights may be pivotal discursive resources for the transformation of instructional practice.

At the same time, we must acknowledge the important role of students as agentive participants in pedagogy, and the danger of reifying the power imbalances that already exist in the classroom through an exclusive focus on teacher learning. Focusing on teacher participation is important, because it allows us to describe the kind of embodied and mental routines that we might want other teachers to take on in their pedagogical practice. But all participants contribute in particular ways to the instantiation of practices, generating and sharing their own reflexive understandings of their activity as they go. Moreover, translingual pedagogies create an opportunity for students to exert greater agency within practices, and it is likely that teachers will perceive these interactions differently than will students (and researchers). This suggests that soliciting students' reflexive understandings about their own translanguaging practices should be an explicit focus for teachers and researchers. This study suggests that schools and districts that want to more effectively build on students' bilingual resources should design instructional approaches that bring students' experience with translanguaging practices and the school's standards-based pedagogical practices into productive dialog.

Acknowledgements

We thank the students and teachers who participated in the study, as well as Mark Gonzales for his support and insight during data collection.

Funding

This research was made possible through funding from Vanderbilt University's Peabody College.

ORCID

Samuel S. David  <http://orcid.org/0000-0002-2085-0526>
Mark B. Pacheco  <http://orcid.org/0000-0002-9706-2704>

References

August, D. E., & Shanahan, T. E. (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on Language-Minority Children and Youth*. Mahwah, NJ: Lawrence Erlbaum Associates.

Becker, A. L. (1995). *Beyond translation: Essays towards a modern philology*. Ann Arbor, MI: University of Michigan Press.

Borrero, N. (2011). Nurturing students' strengths: The impact of a school-based student interpreter program on Latino/a students' reading comprehension and English language development. *Urban Education*, 46(4), 663–688. doi:10.1177/0042085911400333

Canagarajah, S. (2011a). Codemeshing in academic writing: Identifying teachable strategies of translanguaging. *The Modern Language Journal*, 95(3), 401–417. doi:10.1111/j.1540-4781.2011.01207.x

Canagarajah, S. (2011b). Translanguaging in the classroom: Emerging issues for research and pedagogy. *Applied Linguistics Review*, 2(1), 1–28. doi:10.1515/9783110239331.1

Canagarajah, S. (2013). *Translingual practice: Global Englishes and cosmopolitan relations*. London, UK and New York, NY: Routledge.

Chouliarakis, L., & Fairclough, N. (1999). *Discourse in late modernity*. Edinburgh, Scotland: Edinburgh University Press.

Cobb, P. (2000). Conducting teaching experiments in collaboration with teachers. In A. Kelly & R. Lesh (Eds.) *Handbook of research design in mathematics and science education*. Mahwah, NJ: Lawrence Erlbaum Associates.

Cobb, P., Confrey, J., Disessa, A., Lehrer, R., & Schauble, L. (2003). Design experiments in educational research. *Educational Researcher*, 32(1), 9. doi:10.3102/0013189X032001009

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Los Angeles, CA: Sage Publications.

Creese, A., & Blackledge, A. (2010). Translanguaging in the bilingual classroom: A pedagogy for learning and teaching. *The Modern Language Journal*, 94(1), 103–115. doi:10.1111/j.1540-4781.2009.00986.x

Cummins, J. (2005). A proposal for action: Strategies for recognizing heritage language competence as a learning resource within the mainstream classroom. *The Modern Language Journal*, 89(4), 585–592.

David, S. (2017a). *Emergent practices in translational pedagogy: Teachers learning to facilitate collaborative translation* (doctoral dissertation). Nashville, TN: Vanderbilt University.

David, S. (2017b). *Horizontes de Observación: Using linguistic and spatial resources to teach across language difference*. San Antonio, TX: Paper presented at the annual conference of the American Educational Research Association (AERA).

de la Peña, M. (2008). *Mexican Whiteboy*. New York, NY: Random House.

Fountas, I. C., & Pinnell, G. S. (1996). *Guided reading: Good first teaching for all children*. Portsmouth, NH: Heinemann Press.

García, O., & Li, W. (2014). Translanguaging and Education. In *Translanguaging: Language, bilingualism and education* (pp. 63–77). Basingstoke, UK: Palgrave Macmillan.

González, J., & Darling-Hammond, L. (1997). *New concepts for new challenges: Professional development for teachers of immigrant youth*. Washington, DC: Center for Applied Linguistics.

González, N., Moll, L. C., & Amanti, C. (2013). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. New York, NY: Routledge.

Goodwin, C. (1994). Professional vision. *American Anthropologist*, 96(3), 606–633. doi:10.1525/aa.1994.96.3.02a00100

Holland, D., & Lave, J. (2009). Social practice theory and the historical production of persons. *Actio: An International Journal of Human Activity Theory*, 2, 1–15.

Jiménez, R. T. (2013). Optimal outfitting: The need for culturally responsive instruction. In P. J. Dunston, S. K. Fullerton, C. C. Bates, P. M. Stacker, M. W. Cole, A. H. Hall, D. Herro & K. N. Headly (Eds.), *62nd Yearbook of the Literacy Research Association* (pp. 1–19). Altamonte Springs, FL: Literacy Research Association.

Jiménez, R., David, S., Fagan, K., Risko, V., Pacheco, M., Pray, L., & Gonzalez, M. (2015). Using translation to drive conceptual development for students becoming literate in English as an additional language. *Research in the Teaching of English*, 49(3), 248–271.

Jiménez, R., David, S., Keyes, C., & Cole, M. (2012). *Better Comprehension through Translation*. Vancouver, BC: Paper presented at the annual conference of the American Educational Research Association (AERA).

Jiménez, R., García, G., & Pearson, P. D. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly*, 31(1), 90–112. doi:10.1598/RRQ.31.1.5

Karathanos, K. A. (2010). Teaching English language learner students in US mainstream schools: intersections of language, pedagogy, and power. *International Journal of Inclusive Education*, 14(1), 49–65. doi:10.1080/13603110802504127

Keyes, C., Puzio, K., & Jiménez, R. T. (2014). Collaborative translation: designing bilingual instructional tools. *Journal of Education*, 194(2), 17–24. doi:10.1177/002205741419400203

Ladson-Billings, G. (2008). Yes, but how do we do it? In W. Ayers, G. Ladson-Billings, G. Michie, & P. A. Noguera (Eds.). *City kids, city schools: More reports from the front row* (pp. 162–177). New York, NY: The New Press.

L'Allier, S., Elish-Piper, L., & Bean, R. M. (2010). What matters for elementary literacy coaching? Guiding principles for instructional improvement and student achievement. *The Reading Teacher*, 63(7), 544–554. doi:10.1598/RT.63.7.2

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Levy, J., Shafer, L., & Dunlap, K. (2002). Advancing the professional development of beginning teachers through mentoring and action research. In L. Minaya-Rowe (Ed.), *Teaching training and effective pedagogy in the context of student diversity* (pp. 269–296). Greenwich, CT: Information Age Publishing.

Lincoln, Y., & Guba, E. (1985). *Naturalistic Inquiry*. Los Angeles, CA: Sage Publications.

Lucas, T. (2005, April). *The Bilingual/ESL Teacher Leadership Academy (BETLA): Evaluation results*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Canada.

Lucas, T., & Grinberg, J. (2008). Responding to the linguistic reality of mainstream classrooms: Preparing all teachers to teach English language learners. In M. Cochran-Smith, S. Feiman-Nemser, & J. McIntyre (Eds.), *Handbook of research on teacher education: Enduring issues in changing contexts* (pp. 606–636). Mahwah, NJ: Lawrence Erlbaum.

MacSwan, J. (2017). A multilingual perspective on translanguaging. *American Educational Research Journal*, 54(1), 167–201. doi:[10.3102/0002831216683935](https://doi.org/10.3102/0002831216683935)

Malakoff, M., & Hakuta, K. (1991). Translation skill and metalinguistic awareness in bilinguals. In E. Bialystock (Ed.), *Language Processing in Bilingual Children*. Cambridge, UK: Cambridge University Press.

Martínez, R. A. (2010). "Spanglish." as literacy tool: Toward an understanding of the potential role of Spanish-English Code-switching in the development of academic literacy. *Research in the Teaching of English*, 45(2), 124–149.

Martínez, R. A., Hikida, M., & Durán, L. (2015). Unpacking ideologies of linguistic purism: How dual language teachers make sense of everyday translanguaging. *International Multilingual Research Journal*, 9(1), 26–42. doi:[10.1080/19313152.2014.977712](https://doi.org/10.1080/19313152.2014.977712)

Martínez-Roldán, C. M. (2015). Translanguaging practices as mobilization of linguistic resources in a Spanish/English bilingual after-school program: An analysis of contradictions. *International Multilingual Research Journal*, 9(1), 43–58. doi:[10.1080/19313152.2014.982442](https://doi.org/10.1080/19313152.2014.982442)

Maughan, W. S. (1933). *Sheppety: A play in three acts*. London: W. Heinemann, Ltd.

Orellana, M. F. (2009). *Translating childhoods: Immigrant youth, language, and culture*. New Brunswick, NJ: Rutgers University Press.

Orellana, M. F., & Reynolds, J. F. (2008). Cultural modeling: Leveraging bilingual skills for school paraphrasing tasks. *Reading Research Quarterly*, 43(1), 48–65. doi:[10.1598/RRQ.43.1.4](https://doi.org/10.1598/RRQ.43.1.4)

Orellana, M. F., Reynolds, J., Dorner, L., & Meza, M. (2003). In other words: Translating or "para-phrasing" as a family literacy practice in immigrant households. *Reading Research Quarterly*, 38(1), 12–34. doi:[10.1598/RRQ.38.1.2](https://doi.org/10.1598/RRQ.38.1.2)

Pacheco, M. (2016). *Translanguaging in the English-Centric classroom: A communities of practice perspective (doctoral dissertation)*. Nashville, TN: Vanderbilt University.

Perry, K. H. (2009). Genres, contexts, and literacy practices: Literacy brokering among Sudanese refugee families. *Reading Research Quarterly*, 44(3), 256–276. doi:[10.1598/RRQ.44.3.2](https://doi.org/10.1598/RRQ.44.3.2)

Puzio, K., Keyes, C. S., Cole, M. W., & Jiménez, R. T. (2013). Language differentiation: Collaborative translation to support bilingual reading. *Bilingual Research Journal*, 36(3), 329–349. doi:[10.1080/15235882.2013.845118](https://doi.org/10.1080/15235882.2013.845118)

Reckwitz, A. (2002). Toward a theory of social practices a development in culturalist theorizing. *European Journal of Social Theory*, 5(2), 243–263. doi:[10.1177/13684310222225432](https://doi.org/10.1177/13684310222225432)

Reinking, D., & Bradley, B. (2008). *On formative and design experiments*. New York, NY: Teachers College Press/NCRL.

Reynolds, J. F., & Faulstich Orellana, M. (2014). Translanguaging within enactments of quotidian interpreter-mediated interactions. *Journal of Linguistic Anthropology*, 24(3), 315–338. doi:[10.1111/jola.12057](https://doi.org/10.1111/jola.12057)

Risko, V. J., Roller, C. M., Cummins, C., Bean, R. M., Block, C. C., Anders, P. L., & Flood, J. (2008). A critical analysis of research on reading teacher education. *Reading Research Quarterly*, 43(3), 252–288. doi:[10.1598/RRQ.43.3.3](https://doi.org/10.1598/RRQ.43.3.3)

Saldaña, J. (2015). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Sandoval, W. (2014). Conjecture mapping: An approach to systematic educational design research. *Journal of the Learning Sciences*, 23(1), 18–36. doi:[10.1080/10508406.2013.778204](https://doi.org/10.1080/10508406.2013.778204)

Schatzki, T. R. (2001). Introduction: Practice theory. In T. R. Schatzki, K. K. Cetina & E. von Savigny (Eds.), *The practice turn in contemporary theory* (pp. 10–23). New York, NY: Routledge.

Scribner, S., & Cole, M. (1981). *The psychology of literacy* (Vol. 198, No. 1). Cambridge, MA: Harvard University Press.

Sharif, M. (2011). *Bestest. Ramadan. Ever*. Woodbury, MA: Flux.

Singer, A. (2004). The rise of new immigrant gateways (pp. 1–36). Washington, DC: Center on Urban and Metropolitan Policy, the Brookings Institution.

Steffe, L. P. (1983). The teaching experiment methodology in a constructivist research program. In *Proceedings of the fourth international congress on mathematical education* (Vol. 1, pp. 469–471). Boston, MA: Birkhäuser.

Steffe, L. P., & Thompson, P. W. (2000). Teaching experiment methodology: Underlying principles and essential elements. In A. E. Kelly & R. Lesh (Eds.), *Handbook of research design in mathematics and science education* (pp. 267–307). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Valdés, G. (2003). *Expanding definitions of giftedness: The case of young interpreters from immigrant communities*. Mahwah, NJ: Laurence Earlbaum.

Walqui, A. (2000). *Access and engagement: Program design and instructional approaches for immigrant students in secondary schools*. McHenry, IL and Washington, DC: Delta Systems and Center for Applied Linguistics.