Peer Interaction and Affordances for Language Development

Report to Oakland Unified School District
April 2021

Principal Investigators:
Nora W. Lang, PhD Candidate, University of California, Santa Cruz (nwlang@ucsc.edu; 607-351-0436)
George Bunch, Professor, University of California, Santa Cruz (gbunch@ucsc.edu)

Executive Summary:

This report describes opportunities for language development that emerged through peer interaction in two different schools with programs designed for recently arrived immigrant students, or "newcomers," within the Oakland Unified School District. The study draws on ecological and sociocultural approaches to second language development, which assume that students develop language through participating in social practices, which are always embedded within broader social and historical relationships of power (Firth & Wagner, 1997; Lantolf, 2000; Lantolf, Thorne, & Poehner, 2015). From this perspective, individual students' ability to use language in new ways occurs through engagement with oral language, texts, and other cultural practices. Of particular interest in this report is how peers scaffolded one another's participation in classroom activities and, in doing so, created opportunities for language development.

The study utilized the concept of *affordances* (van Lier, 2004) in order to examine opportunities for language development within four distinct classroom environments. Affordances refer to relationships between a student and some aspect of the classroom environment that the student perceives as relevant and acts upon in a way that leads to language use. Resources in the environment that act as affordances might include a student's home languages, emphatic gestures, an image, or information on a poster on the wall. Rather than look at those resources alone, however, the concept of affordances highlights what students *do* with available resources as they support one another in the classroom. The study examined the following questions:

1. How do recently arrived immigrant students interact with one another to navigate classroom tasks in language and content area classrooms in two different high school newcomer programs?
2. What are the affordances for language development that emerge through those interactions?

This report provides a set of examples that illustrate the kinds of resources that students utilized during peer interactions. The following are a summary of key findings:

1. Students engaged in collective scaffolding in order to support their classmates and negotiate tasks by drawing on a range of communicative resources, including their home languages and English, gestures, and physical engagement with classroom materials.

2. Students consistently sought out ways to make instructional activities more meaningful through their interactions with one another, yet their interactions were constrained when the purpose of the activity was to produce specific linguistic forms in English.

3. The interactions that were the most productive in terms of language development were those in which multiple students were involved and the tasks were challenging enough that students drew on each other's variety of skills, experiences, and perspectives.

These findings reinforce the value of peer interaction as fundamental to all learning. They also highlight the importance of peer interaction for language learning, *even when many of the resources that students use to communicate are not oral production of English*. In other words, students' gestures, translations, drawings, and other actions that facilitate meaningful communication and joint sense-making also create opportunities for language development. Students creativity and ingenuity resulted in the extension of activities that were narrowly focused on English grammar through conversations with their peers. However, far richer opportunities for language learning emerged in the context of activities designed for collaboration that asked students to engage with challenging new concepts and ideas, even if the language that they used to do was "imperfect."

Introduction

This report describes opportunities for language development that emerged through peer interaction in two different schools with programs designed for recently arrived immigrant students, or "newcomers," within the Oakland Unified School District. Building on a wealth of research conducted from a sociocultural perspective, this study is rooted in the understanding that that second (or additional) language development occurs through using language to participate in meaningful social practices (Firth & Wagner, 1997, 2007; Hawkins, 2004; Lantolf, 2000; Lantolf & Thorne, 2006; Lantolf, Thorne, & Poehner, 2015; van Lier, 2004). This perspective stands in stark contrast to the notion that classes for recently arrived immigrant students should focus on mastery of "basic" English language and literacy skills, and instead highlights the importance of maximizing students' opportunities for meaningful interactions with both physical and social aspects of the learning environment. Of particular interest in this report is how peers scaffolded one another's participation in classroom activities and, in doing so, created opportunities for language development.

Peer interactions have been shown to be essential to both content area learning and second language development (Devos, 2016; Kibler et al., 2020; Philp et al., 2014; Sato & Ballinger, 2016), including among recently arrived immigrant students (Bigelow & King, 2016; Carhill-Poza, 2015, 2018). Peer interactions can be particularly fruitful sites for language development because students often engage in longer and more complex talk with their classmates than with their teachers. This can be attributed to the tendency among peers to ask one another genuine, rather than display questions, and to both contest and build off of each other's contributions. While research has demonstrated that peer interaction provides opportunities for both language and content learning, questions remain about the quality of their interactions, the level of collaboration, and how interlocutors' degrees of experience with the language influences the quality of the language learning (Sato and Ballinger, 2016).

The study utilized the concept of *affordances* (van Lier, 2004) in order to examine peer interaction and opportunities for language development within four distinct classroom environments. Affordances refer to relationships between a student and some aspect of the classroom environment that the student perceives as relevant and acts upon in a way that leads to language use. Resources in the environment that act as affordances might include a student's home language, an image, or information on a poster on the wall. Rather than look at those resources alone, however, the concept of affordances highlights what students *do* with available resources as they support one another in the classroom. The study examined the following questions:
1. How do recently arrived immigrant students interact with one another to navigate classroom tasks in language and content area classrooms in two different high school newcomer programs?
2. What are the affordances for language development that emerge through those interactions?

Design and Methods

In two schools with distinct program models for recently arrived immigrant students, two classes were selected: one in which the primary focus was students' English language and literacy development, and another primarily concerned with core content. Grade levels of the

four classes were as follows: two ninth grade classes, one ninth/tenth grade class, and one eleventh grade class.

Data sources for the study included fieldnotes gathered during weekly classroom observations in each of the four classrooms over the course of seven months, video recordings of student interaction (21 hours), interviews with participating teachers and focal students (N=19), and classroom artifacts such as instructional materials and student work.

Beginning in September 2019, Nora Lang conducted weekly observations in the four classrooms, with attention to students' students' language use and ways of interacting with their classmates. In collaboration with participating teachers, she selected three focal in each classroom. The focal students had diverse educational backgrounds and levels of experience with English. Given that Spanish is the most commonly spoken language among recent immigrant students in the US and given her own Spanish-English bilingualism, she only considered speakers of Spanish, including students who are speakers of Spanish in addition to indigenous languages. She then video recorded between four and six instructional periods in each class, focusing on focal students' interactions with classmates (many of whom were speakers of languages other than Spanish). During video recorded class sessions, a focal student wore a lapel microphone in order to better capture verbal interactions.

Data Analysis

Data analysis was informed by ethnographic microanalysis of social interaction (Erickson, 2004) and multimodal interaction analysis (Norris, 2004) and included multiple rounds of iterative coding. Coding procedures included structural coding and process coding (Charmaz, 2002)**.** Structural codes consisted of conceptual phrases that allowed for quick access to data relevant to a particular research question. Given the focus on what students were actually *doing* as they interacted with one another, process codes, which use gerunds to reflect action, were particularly important (e.g. Translating, Revising explanation, Requesting support). Interview transcripts and two-minute segments of all video data were reviewed and coded. An additional round of open coding was conducted of all video data in order to identify categories of peer interaction. Excerpts of video data that included the most dynamic and extended interactions were then selected for more microanalysis of the kinds of resources students were noticing acting upon—that is, the relationships between students and aspects of the classroom environment that acted as affordances for language development.

Overview of Findings

The following section includes a discussion of three of the most salient findings regarding peer interactions and affordances for language development. In each instance, particular examples of peer interaction are described.

1. Students engaged in collective scaffolding in order to support their classmates and negotiate tasks by drawing on a range of communicative resources, including their home languages and English, gestures, and embodied engagement with classroom materials.

When peers interacted with one another to provide support for a classmate or to jointly make sense of a concept, they often utilized a range of communicative resources simultaneously. Students frequently paired home language resources with gestures and material resources to support their oral explanations or to participate in collective sense-making. The following

example demonstrates how students utilized multiple communicative resources simultaneously in order arrive at a joint solution.

This interaction occurred in the context of a ninth-grade course focused on English language and literacy development. Students had been instructed to write what a patient might say to a doctor based on an image of an injured man with crutches, a cast on his foot, and a scrape on his leg. Gisela, Saraí and Pedro are all from Guatemala and share a home language of Spanish, although Gisela is also a speaker of Mam, Q'anjob'al, and Akateko.[1] Gisela and Saraí had enrolled in US schools for the first time that fall, while Pedro had spent several months of eighth grade in the US the previous year. Gisela was writing for the group while Saraí and Pedro made suggestions about what the patient should say. Text in brackets refers to non-verbal actions or contextual information and the column on the right includes English translations of utterances in Spanish.

'@' indicate laughter
'?' indicate rising intonation
'[]' indicate non-verbal actions and contextual information
'CAPS' indicate emphasis
'!' indicate emphasis on entire utterance

	Speaker	Actions	English Translation
1	Saraí:	I am hurt? No. I hurt? No! @@@	
2	Pedro:	*Yo dolor* @@@	I to hurt @@@
3	Saraí:	@@@ *yo dolor.* Ok, *me duele*?	@@@ I to hurt. Ok, it hurts?
4	Pedro:	The part-	
5	Saraí	The part of my body hurts-	
6	Pedro:	-IS-	
7	Saraí:	-is my arms [grabs arm] is my legs! [points to legs]	
8	Pedro:	[points to image on the overhead of a person with many injuries] *y la otra pierna la tiene rascada y el pie lo tiene hinchado*	and his other leg is scratched and his foot is swollen
9	Gisela:	*este-este todo mi cuerpo*? [motioning with hands up and down body, looks up at Saraí] *¿cómo se dice?*	this-this my whole body? how do you say?
10	Pedro:	all my body hurts	
11	Gisela:	[erases]	
12	Saraí:	[to self] all my body. [looks at Pedro] No. Ol?	
13	Pedro:	ALL [draws letter 'A' in the air with fingers, looking at Saraí] A-L-L [Spanish alphabet]	
14	Saraí:	A-L-L [looks down at Gisela, repeats spelling using Spanish alphabet]	

---

[1] All student names are pseudonyms

15	Gisela:	[writing] all [pause] my-	
16	Saraí:	-body	
17	Gisela:	[continues writing]	
18	Pedro:	hurts	
19	Gisela:	[continues writing]	
20	Pedro:	*que buen equipo!*	what a good team!
21	Saraí	[nods and shrugs]	

In this example, all three students built on each other's contributions in order to collaboratively construct meaning. Affordances that allowed the interaction to proceed included features of Spanish, English, gestures, and the image of the injured man. In lines 4 through 6, Pedro and Saraí jointly construct the statement "the part of my body hurts is my arms is my legs" in English by literally building on the previous utterances in English. Yet, the triad also draws on features of Spanish. For instance, in line 8, Pedro draws the group's attention to the image of the injured man, explaining "*y la otra pierna la tiene rascada y el pie lo tiene hinchado*" {and his other leg is scratched and his foot is swollen}. Gisela then revises his contribution, asking in Spanish how to say "*todo mi cuerpo*" {my whole body} which Pedro takes up in his response in English "all my body hurts." Although Gisela is responsible for writing the dialogue, Saraí responds under her breath "all my body" and seemingly unsure of the first word, looks up at Pedro and asks "No. Ol?" to which Pedro responds by both spelling out the word A-L-L using the Spanish alphabet, and drawing the letter 'A' in the air with his fingers.

This type of interaction, which has been described as *collective scaffolding* (Donato, 1994), demonstrates how students incorporate pieces of speech that are used in by their peers into their own speech or written text and, in doing so, are able to achieve linguistically what none of them could have achieved individually. As the example above illustrates, however, in addition to their home languages, other meaning-making resources such gestures and the image of the injured man also play central roles in the group's collective sense-making. Video data from all four classrooms revealed that multiple communicative resources function simultaneously during interactions involving peer scaffolding. Given its prevalence across all four classrooms and within interactions in each classroom, this pattern is also evident within all of the examples included in this report.

2. Students consistently sought out ways to make instructional activities meaningful through their interactions with one another, yet these interactions were relatively constrained when the purpose of the activity was to produce specific linguistic forms in English.

Students in all four classrooms extended activities through interactions with one another in order to make them more meaningful. Like the previous example, the following interaction occurred in a ninth-grade classroom focused primarily on students' development of English. The activity asked that students rewrite a list of unrelated present tense sentences in the past tense. This activity was highly constrained in that there was only one correct answer and meaning-making was not required (students could use a formula to conjugate the verb without attending to meaning). Students had also been instructed by the teacher to focus exclusively on the verb in the sentence. In spite of this narrow focus, however, the example below illustrates how students creatively extended the activity in order to make it more meaningful. Gisela and Jesús worked together to translate the list of statements. Both students are form Guatemala and share a home

language of Spanish although, as I mentioned above, Gisela also speaks Mam, Q'anjob'al, and Akateko. Below, Gisela and Jesús negotiated the meaning of the statement 'I answer the phone after school.'

	Speaker	Verbal / non-verbal actions	English Translation
1	Gisela:	I answer [reading quietly to self] *Qué-este-'mi respuesta?'* [pause] *aquí mi respuesta,* 'answer' *es respuesta verdad?*	I answer [reading quietly to self] What-this-'my answer?' [pause] here my answer, 'answer' is answer [*noun form] right?
2	Jesús:	I answered	I answered
3	Gisela:	*YO respuesta*?	I answer? [*noun form]
4	Jesús:	I answer	I answer
5	Gisela:	*yo respondí el teléfono*	I answered the phone
6	Jesús:	*le respondí?*	I answered him/her?
7	Gisela:	*yo respondí el teléfono? Entonces es el-cómo se llama? Es este verdad?* 'answer'	I answered the phone? Then it's the-what's it called? It's this right? 'answer'
8	Jesús:	mmm hmm	mm hmm
9	Gisela:	*va a pasar al pasado? Yo respondo el teléfono-*	it becomes past. I answer the phone-
10	Jesús:	-uh huh	-uh huh
11	Gisela:	*entonces yo respondí,* 'I answer-ed' [writes 'I answered the phone after school.']	then I answered, 'I answer-ed' [writes 'I answered the phone after school.']

   This interaction illustrates how students were able to make even highly constrained, grammar-based activities meaningful opportunities for language development by drawing on their home language resources in interaction with peers. In line 1, Gisela begins to make sense of the statement 'I answer the phone after school,' but pauses at 'answer' and checks with Jesús regarding the meaning of the word. Gisela's suggestion, '*respuesta*,' while incorrect in this instance, is an accurate translation of the *noun* form of 'answer.' In line 2, Jesús offers the correct past tense conjugation ('answered'), yet Gisela continues to work to translate in order to make sense of the sentence. Eventually, the pair moves from the noun '*respuesta*' to the verb, '*responder*,' and arrives at the following response: 'I answered the phone after school.' Gisela and Jesús used Spanish for much of this interaction, however, they generated a far richer opportunity for English language development by making the activity meaningful through joint translation than if they had followed the instruction to simply conjugate each verb in the past tense.
   Although students expanded this activity beyond its design, activities such as this one that were designed for use of target language forms without a non-linguistic goal ultimately constrained students' opportunities for interaction. As in the case of the example above, in the context of activities focused on language forms, the interaction concluded once students reached the correct answer, and there were limited opportunities for negotiation. The following interactions, however, occurred in the context of instructional activities in which students had opportunities to voice their ideas, experiences, and developing understanding of concepts, even if

the language the language they used to do so was "imperfect." These activities led to the kinds of dynamic interactions that maximize opportunities for both content area learning and English language development.

3. The interactions that were the most productive in terms of language development were those in which multiple students were involved and the tasks were challenging enough that students had to leverage a variety of skills, experiences, and perspectives.

These interactions, which generally involved three or more students, involved actively building on one another's contributions and revising and elaborating explanations offered by their peers in order to collectively arrive at deeper understanding. Unsurprisingly, in the classrooms in which much of the instructional time was spent on pair and small group work activities, students had more opportunities for peer interaction. However, students also negotiated tasks collaboratively during activities that not been designed explicitly for collaboration. Often these interactions were relatively brief (e.g. requests for the translation of an individual word or comparing answers). However, f the activity was challenging and students were engaged, they sought out each other's support and participated in extended meaningful interactions in which they built on each other's contributions and ultimately arrived at a more complex and nuanced understanding of the material. The first example of a particularly dynamic instance of peer scaffolding occurred during an activity that had not been designed for peer interaction, while the second occurred in the context of an activity meant for collaboration.

The example below illustrates how students engaged in a dynamic interaction that created opportunities for both English language development and science learning in in a combined ninth and tenth grade science classroom. The students pictured were at the "individual work" station where they had been instructed to watch several video clips on a laptop and respond to a set of questions about the causes of climate change on a google doc assignment. In the following segment of the interaction Feliciano, a tenth-grade speaker of Spanish and Mam, commented to Semira, a tenth grade speaker of Tigrinya, that he had not understood the description of climate change provided in the video clip. Semira began by providing an oral explanation in English of how heat gets trapped in the atmosphere while simultaneously pointing at the text and image of the video on her laptop screen to illustrate key points. She got stuck at one point during her explanation and clasped her hands together, commenting aloud to herself "How to explain?". At this moment, Semira noticed a purple folder sitting on the table beside her and reached out to pick it up. She then provided the following description of how carbon dioxide absorbs heat the atmosphere, utilizing the folder and gestures in conjunction with her oral explanation in English:

	Actor	Verbal Action	Other Actions	
44	Semira:	Absorb means like-	points to the word 'absorb' on the screen, then picks up a folder on the table	

8

45	Semira:	this is the-this is the earth?	holds the folder with left hand and moves her fist on the right side of the folder to signal the earth	
46	Semira	So THIS is the carbon dioxide	taps the folder to signal the carbon dioxide	
47	Semira	and THIS is the sun-	switches hands to hold the folder with right hand and motions left hand tapping the folder	
48	Feliciano	-The sun	nods	
49	Semira	-And it can't go in	switches to hold folder in her left hand and motions with right hand toward the folder	
50	Feliciano	OHHH yeah yeah!		

Following this interaction, which involved a combination of a verbal explanation in English, gestures, and material resources, Feliciano turned to Paulina, a student with less experience using English, and translated Semira's explanation into Spanish. His translation,

however, provided another opportunity for negotiation. Below, Paulina summarizes what she had gleaned from their explanation: that carbon dioxide "protects" the earth.

57	Paulina	[Overlapping] *Osea que –* {In other words-}	points to Semira's screen	
58	Feliciano	[Overlapping] Like the sun is protecting?	turns to look at Semira and makes sphere motion with hands	
59	Semira	[Overlapping] Yeah	makes spere motion with hands	
60	Paulina	*Osea que el dióxido de carbono protege el mundo, no?* {So the carbon dioxide protects the planet, no?}	points to the words 'carbon dioxide' on Semira's screen, and then image of the earth	
61	Feliciano	Uh huh		

| 62 | Semira | Yeah, so it can- | makes sphere motion with hands |

Notably, the students' conclusion above that carbon dioxide "protects the earth" reveals some significant misconceptions. Although their understanding of carbon dioxide was still developing, all three students were actively engaged in making sense of new concepts and grappling with how to best communicate their understanding in order to complete the task and to support their peers. Later in the lesson there would be opportunities to clarify students' misconceptions. However, after continuing their discussion for several minutes, Semira revised the description of carbon dioxide as "protecting" the earth from the sun, returning to the more precise description that carbon dioxide "absorbs" the sun's heat. Shortly afterwards, Paulina commented to Feliciano that carbon dioxide "*absorbe el calor*" [absorbs heat], utilizing the expertise that Semira had brought into the interaction and demonstrating a deeper understanding of the concept.

While the previous dynamic interaction occurred in the context of an activity that had been intended for students to work individually, this type of interaction was more common during activities that had been designed for collaboration. The following interaction occurred in an eleventh-grade class focused on English literacy development during a small group activity. This course had been created to support students' development as readers, however, instructional activities called on students to engage with complex social topics surrounding religion, disability, and gender and sexuality, often in collaboration with their classmates. And while there was explicit attention to students' language use and efforts to improve their accuracy, most instructional activities in this class prioritized students' ability to communicate their ideas and develop understanding of new concepts. In the interaction below, students had just begun a new unit examining gender and sexuality. Students were sitting in table groups of four or five when their teacher projected the following riddle at the front of the classroom:

"A father and his son are in a car accident. The father dies instantly, and the son is taken to the nearest hospital. The doctor comes in and exclaims

'I can't operate on this boy.'

'Why not?' the nurse asks.

'Because he's my son.' the doctor responds.

How is this possible?"

Groups had already come up with the first and most common answer to this popular riddle often used to highlight assumptions about gender identity: that the doctor was a woman. Their teacher pointed out that most students had *assumed* that the doctor was a man even though nothing about the riddle indicated that this was the case. She then asked students to work with their group members to come up with another possible solution to the riddle.

Jéssica, Labibah, Nicanor, and Esmat were sitting around a table at the front of the room. Jéssica, a Spanish speaker from Mexico, was seated across from Labibah, an Urdu speaker from Pakistan. Nicanor, who is from Guatemala and speaks Spanish and Mam at home, was seated across form Esmat, who is from Afghanistan and speaks Farsi at home. In the interaction below,

Labibah offered a possible solution to the riddle: "What if they are gay?" and then proceeded to provide a more detailed explanation, looking across the table at Jéssica.

	Actor	Verbal action	Other actions	Images
1	Labibah:	What if they are gay?	looks at Jéssica	
		Like the boy has married the boy	brings two palms together	
		The one father died and-		
2	Jéssica:	-OOOOHHHH!		
3	Labibah:	And the other father is here		
4	Jéssica:	Yeah yeah yeah!	smiles	

Jéssica then began writing their response on the whiteboard. Without being prompted, she looked up at Nicanor and asked if he understood the solution and Labibah immediately followed with the same question for Esmat. In response to their inquiries, Nicanor read aloud what Jéssica was writing on the whiteboard, "The boy have two" at which point Esmat finished his statement "two fathers." Both Nicanor and Esmat were reading what Jéssica had written, and perhaps also expressing an accurate understanding of the proposed solution—that prior to the accident, the boy had two gay fathers. However, Labibah's response of "Wait, no!" indicates that she felt they had misinterpreted the solution. Jéssica began to provide an explanation in Spanish to Nicanor, who was looking at her and listening attentively. Labibah, however, interrupted the description in Spanish to provide an explanation to Esmat in English, perhaps recognizing that Nicanor could follow the English narrative, while Esmat could not understand Jéssica's account in Spanish. Looking directly at Esmat, Labibah explained "In the United States, here, boys and boys can marry" and "girls and girls can marry" again using iconic gestures, joining her index and middle fingers together as she spoke to indicate two people marrying. Esmat responded with nods and several "yeah." Nicanor was also clearly tracking this explanation, which is evident from his eye contact and reaction in line 27, in which he looked momentarily wide-eyed, then put his head down and banged his pencil against the table in apparent discomfort at the idea of two gay men having a child.
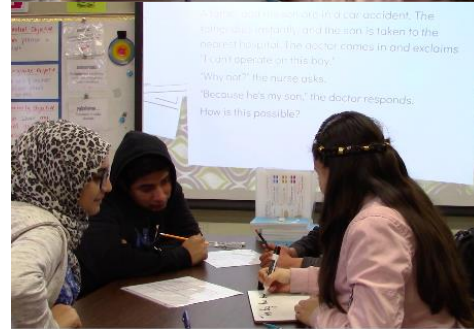
12	Jéssica:	Do you understand?	looks across table at Nicanor
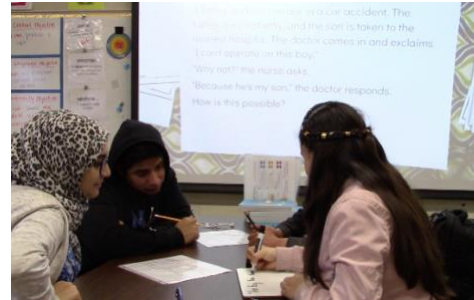
13	Labibah:	Do you understand?	looks across table at Esmat
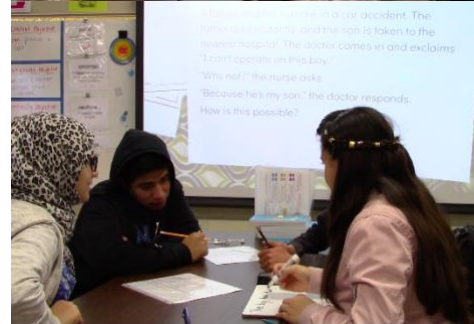
14	Jéssica:		writes on whiteboard: 'The boy have two fathers'

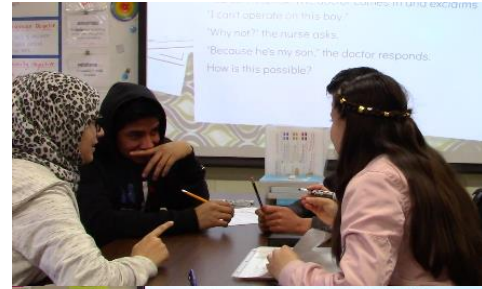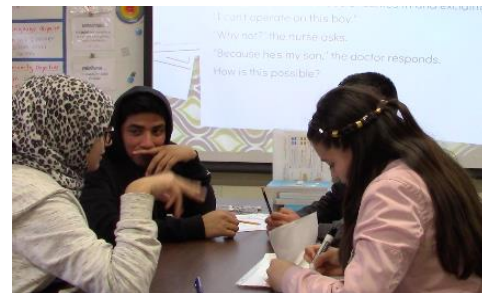| 15	Nicanor:	'The boy have two' - [reading what Jéssica has written on the whiteboard]
16	Esmat:	'Two father' [reading what Jéssica has written on the whiteboard]
17	Labibah:	Wait, no! @@
18	Nicanor:	@@ puts head down on hands, laughs
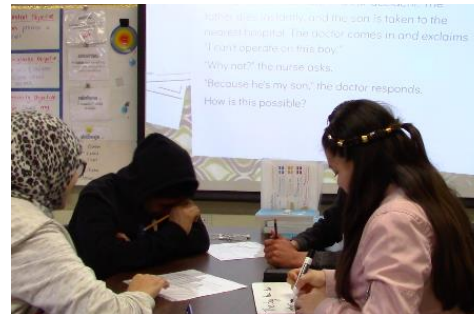
22	Labibah:	-Do you understand?	looks up at Esmat, points at him	
23	Labibah:	In the United States, here, boys and boys can marry-	draws index and middle fingers together	
24	Esmat: Labibah:	Yeah girls and girls can marry	draws index and middle fingers together	
25 26	Esmat: Labibah:	Yeah So if he had-the boys and boys had married	nods, presses palms together	
		and they have a kid,	twists hands toward each other and downward	
27	Nicanor:		looks wide eyed, then covers head with hand and hits pencil against the table	

28	Labibah:	But the kid, one father died, but the other father is alive. You understand?	holds up one hand to indicate each father	
29	Esmat:	Yeah yeah, now I understand.		

It is unsurprising that Jéssica offered a verbal explanation in Spanish to Nicanor, given that the two share a home language of Spanish. Labibah and Esmat, however, do not share a home language, thus she provided her explanation entirely in English accompanied by metaphoric gestures to illustrate key actions such as "married" and "have a kid." Labibah's decision to direct her explanation at Esmat and her mention "In the United States, *here*. . ." before going to describe same-sex marriage perhaps indicate a shared cultural understanding that that same-sex marriage is not a common practice in either of their home countries. When Labibah checked whether or not Esmat understood her explanation, he confirmed orally "Yeah yeah, now I understand." Esmat's use of 'now' suggests that he had not previously understood but that Labibah's explanation was effective. As I mentioned above, Nicanor's embodied response and apparent discomfort make clear that he was making sense of the solution for the first time as he was listening to Labibah's explanation. This interaction illustrates how when students were presented with challenging and engaging tasks, they drew on a range of resources from multiple group members in order to negotiate the task and ensure that all members were able to participate meaningfully.

Discussion and Future Directions

This report has focused on peer interactions among recently arrived immigrant students with particular attention to the affordances for language development that emerge through those interactions. The examples from students above, with their rich array of communicative resources, illustrate the power of dynamic peer interaction—especially when instructional activities required students to navigate complex problems and to share their experiences and perspectives. Students were thoughtful in seeking out ways to make all activities more meaningful, however, activities focused on target language forms limited students' opportunities for interaction.

Insights gleaned from this study also highlight that the range of resources students employed, such as features of their home languages, gestures, and embodied engagement with materials, created opportunities for language development by furthering multiple students' understanding of the material at hand. This finding indicates that is worth considering how communicative resources that extend beyond oral and written language (whether in English or students' home languages) can also serve as resources for the development of English. Additionally**,** these findings suggest that in order to maximize meaningful student interaction, students need a range of structured opportunities for peer interaction. Students did engage in dynamic and productive interactions across participant structures, but these interactions occurred far more frequently during activities explicitly designed for collaboration.

References

Bigelow, M., & King, K. (2016). Peer interaction while learning to read in a new language. In M. Sato & S. Ballinger (Eds.), *Peer Interaction and Second Language Learning: Pedagogical potential and research agenda* (pp. 349–375). John Benjamins Publishing Company.

Carhill–Poza, A. (2015). Opportunities and outcomes: The role of peers in developing the oral academic English proficiency of adolescent English learners. *The Modern Language Journal*, *99*(4), 678–695.

Carhill–Poza, A. (2018). Silenced partners: Language learning and the role of bilingual peers in high school. *Teachers College Record*, *120*, 1–28.

Charmaz, K. (2002). Qualitative interviewing in grounded theory analysis. In J. F. Gubrium & J. A. Holstein (Eds.), *Handbook of interview research: Context & method* (p. 679-695). Sage.

Devos, N. J. (2016). *Peer Interactions in New Content and Language Integrated Settings* (Vol. 24). Springer International Publishing.

Donato, R. (1994). Collective scaffolding in second language learning. In *Vygotskian approaches to second language research* (pp. 33–56). Ablex Publishing Corporation.

Erickson, F. (2004). *Talk and social theory: Ecologies of speaking and listening in everyday life*. Polity Press.

Firth, A., & Wagner, J. (1997). On discourse, communication, and (some) fundamental concepts in SLA research. *The Modern Language Journal*, *91*, 757–772.

Firth, A., & Wagner, J. (2007). Second/Foreign Language Learning as a Social Accomplishment: Elaborations on a Reconceptualized SLA. *The Modern Language Journal*, *91*, 800–819.

Hawkins, M. R. (2004). Researching English Language and Literacy Development in Schools. *Educational Researcher*, *33*(3), 14–25.

Kibler, A., Valdés, G., & Walqui, A. (2020). *Reconceptualizing the role of critical dialogue in American classrooms: Promoting equity through dialogic education*. Routledge.

Lantolf, J. P. (Ed.). (2000). *Sociocultural theory and second language learning*. Oxford University Press.

Lantolf, J. P., & Thorne, S. L. (2006). *Sociocultural theory and the genesis of second language development*. Oxford University Press.

Lantolf, J.P., Thorne, S. L., & Poehner, M. (2015). Sociocultural Theory and Second Language Development. In B. van Patten & J. Williams (Eds.), Theories in Second Language Acquisition (pp. 207-226). Routledge.

Norris, S. (2004). *Analyzing Multimodal Interaction: A Methodological Framework*. Routledge.

Philp, J., Adams, R., & Iwashita, N. (2014). Peer interaction and second language learning. New York, NY: Routledge.

Sato, M., & Ballinger, S. (2016). *Peer Interaction and Second Language Learning: Pedagogical potential and research agenda*. John Benjamins Publishing Company.

van Lier, L. (2004). *The ecology and semiotics of language learning: A sociocultural perspective*. Kluwer Academic.