From Test Scores to Language Use: What English Learners Do in Real-Time Academic Communication in English

The Common Core State Standards (CCSS) for English Language Arts and Literacy have been adopted by almost all states. The hope is the CCSS will alter classroom instruction as teachers prepare their students to meet the new expectations (Lee, Quinn, & Valdés, 2013). These new standards are advertised as doing more than solely focusing on basic reading and writing skills (Common Core State Standards Initiative, 2014b). That is, in addition to stating basic concepts and facts such as "The story took place in Yosemite National Forest", students will be expected to provide explanations and descriptions grounded in evidence. The new standards are expected to challenge students in ways that the previous standards did not. But what does more rigor and challenge mean for students already struggling to keep up with the previous "less rigorous" standards (Fillmore & Fillmore, 2012; Goldenberg, 2013)? English learners trailed far behind their non-English learner peers in achievement tests and high school graduation rates under the previous standards (Aguila, 2010; Fry, 2007; Genesee, Lindholm-Leary, & Christian, 2006; Goldenberg, 2008; United States Department of Education, 2010). How will they fare in light of more demanding English language arts standards?

This paper is the second installation of a three part series that aims to provide an in depth understanding of how 4th grade English learners use the English language in real-time English language arts communication. By listening to how English learners already use English to accomplish academic tasks in English language arts, this series of papers demonstrates what English learners can do and, with adequate support, may continue to do under the new CCSS. The first paper identified and described the academic speech acts eight focal English learners produced while engaged in authentic English language arts communication with various interlocutors. By academic speech acts I mean what the English learners did with language (e.g., clarify, disagree, request for assistance, agree etc.) while engaged in academic tasks such as identifying the main idea of a story or providing feedback during peer-review writing sessions.

The present paper focuses on two of the academic speech acts found in a previous study. Specifically, this paper focuses on how 4th grade English learners produce two

speech acts particularly salient in the CCSS--explanations and descriptions--while engaged in real-time English language arts communication with the classroom teacher. I focus on English learner explanations and descriptions in communication with the classroom teacher because the language teachers witness the children produce is likely to contribute to teachers' understanding of English learners' English language proficiency. The classroom teachers' understanding of English learners' ability to use English to accomplish academic tasks is likely to have more of an impact on the children's academic experience than peers' or other adults' understanding of their ELP. Classroom teachers, for example, may draw from communication with the children to support their recommendations to retain or exit English learners from English learner services. Directly relevant to the CCSS, the classroom teacher will likely be faced with the task of monitoring her students' progress towards meeting the CCSS. Analyzing how English learners produce explanations and descriptions in communication with the classroom teacher is particularly important because it will provide a glimpse into what the person charged with the children's education for the academic year actually witnesses the children say and do in English.

Why explanations and descriptions?

Why, out of all the academic speech acts English learners produced during English language arts, are explanations and descriptions important? First, the CCSS Reading Standards for literature and informational texts make multiple references to explanations and descriptions. This means that students, including English learners, are expected to explain and describe in English language arts. Literature 4.1, for example, states "Refer to details and examples in a text when *explaining* what the text says explicitly and when drawing inferences from the text (emphasis added)" (Common Core State Standards Initiative, 2014a). Second, Valdés, Capitelli and Alvarez's (Valdés, Capitelli, & Alvarez, 2010) study of receptive and productive proficiencies among Spanish speaking beginning English learners found that explanations were one of the last productive language behavior English learners produced over a three year period. This could suggest that explanations are one of the more difficult productive language behaviors English learners are expected to produce. Another possibility is that English

learners are not frequently afforded opportunities to produce explanations when in naturally occurring conversations.

Finally, recent work has called attention to the misuse of the terms *explanation* and others having to do with academic discourse such as *description* and, in science, *argumentation* (Berland & McNeill, 2012; Osborne & Patterson, 2011). Osborne and Patterson explain the importance of making terms clear, "When two linguistic features are conflated, the outcome is confusion in the mind of the teacher and student. Lacking a well-defined intellectual construct students are in danger of confusing the goals of argument and explanation, omitting vital elements of both, unable to identify these in the arguments of others" (Osborne & Patterson, 2011, p. 636).

Is a similar clarification of *explanation* and *description* in English language arts needed? Perhaps. Standard 4.1 introduced in the previous paper, for example, does not explicitly ask students to *describe*, but a closer look at the standard shows that it may be asking students to both *explain* and *describe.* The first part of Standard 4.1 states, "Refer to details and examples in a text when explaining what the text says explicitly", but do we *explain* what a text says? Or *describe* what a text says? One way to interpret Standard 4.1 is that students are to refer to details when telling or *describing* what the text says and *explain* how reasoning and evidence led them to a conclusion. In other words, students first *describe* what a text says and when answering an explanation-seeking question such as "why do you say that?" they refer to textual evidence to *explain* their reasoning.

Explain and *describe* are commonly used terms in classrooms, state standards documents and curriculum books. Perhaps because they are so commonly used, the exact meaning of the two terms is rarely explored. While English language arts research has not yet explored explanations and descriptions, science education has begun to call attention to what is meant by explanation and description.

I will begin my discussion on explaining and describing by reviewing studies in science education. Then, I will discuss the pragmatic-rhetorical theory of explanation that grounds my understanding of explaining in language arts and introduce the two types of explanations that will be the focus of this study. Finally, I will provide an account of what it means to describe in language arts and introduce the two types of descriptions discussed in this study.

Explaining and describing in science education

Over twenty years ago, Horwood (1988) called attention to how *describe* and *explain* were used in science teaching. Horwood (1988) stated that teachers and students see the terms *describe* and *explain* used interchangeably and loosely in curriculum units and science tests. Sometimes *explain* is used in place of define as in *explain* the term extrinsic and other times it is used in combination with describe as in "describe and explain the depletion region and junction field at a p-n junction" (Horwood, 1988, p. 44). The inconsistent use of the terms explain and describe may confuse children attempting to produce explanations and descriptions in the classroom.

In clarifying explanation in science education Osborne and Patterson provide the following distinction, "…explanations are driven not by the need to persuade or advance a claim to knowledge but by the desire to answer the question "Why?" (e.g., Why is the sky blue?). Driving the need for explanation is the presupposition that the phenomenon occurred (e.g., that some birds survived, the sky is blue or that it rained yesterday)—none of which are statements in need of evidence to establish their validity (Osborne & Patterson, 2011, p. 631)." Explanations in the science classroom attempt to answer a "why" question about a phenomenon that is not in doubt. Although attempts are being made to clarify what is meant by explanation in science education, there is disagreement about whether a clarification of terms is necessary in k-12 classrooms.

Berland and McNeill (2012) agree that explanation is often conflated with other terms and that the research community should arrive at a common understanding of terms, but they are not convinced that the distinction should be made clear to teachers and students. Berland and McNeill (2012) worry that emphasizing the distinction between explanation and argumentation will convey the message that each practice stands alone and mislead students to thinking that explanations are possible without argumentation. Instead of emphasizing distinctions, Berland and McNeill propose that commonalities be emphasized in order to show students how the terms support each other to build scientific understanding (Berland & McNeill, 2012). In a rebuttal, Osborne and Patterson (2012) maintain that learning how to distinguish between explanation and other scientific terms can still result in students making links between practices.

A study aimed at investigating 5th grade student understanding of explanation, evidence and argumentation across various settings showed that students had very little understanding of what it meant to explain in science class (McNeill, 2011). After instruction on the scientific practice of argumentation, however, the students' understanding of scientific practice, including explaining, became stronger (McNeill, 2011). The study found that 43% of students did not know what it meant to provide an explanation in science class and 39% understood an explanation in science class to be about observation (McNeill, 2011). After seven lessons incorporating scientific argumentation, 52% of students expressed an understanding that explaining in the science classroom was about how or why a phenomenon occurs while 30% viewed it as an exchange between people (McNeill, 2011). Results from this study suggest that students' understanding of explanations may be developed through instruction.

The fifth-graders in McNeill's study were largely Latino and out of 33 students, 27 students spoke a language other than English. Discussion about explanation, description and other often confused terms has traditionally been approached through a general student population lens and has not specifically addressed how English learners might understand and produce these academic speech acts. Although McNeill did not provide information on whether the students were English learners, her study most closely resembles the young English learner population of interest in this paper. If fifth-grade Latino students who spoke a language other than English were unclear on what it meant to explain in the science classroom, fourth-grade Latino English learners may also lack clarity on the meaning of explanations in English language arts.

The Pragmatic-Rhetorical Theory of Explanation

The conception of *explanations* in English language arts undergirding this study is grounded in the pragmatic-rhetorical theory of explanations from the field of philosophy of science. While there are various approaches to understanding scientific explanations, the pragmatic-rhetorical theory is aligned with a comprehensive theory of language as a dynamic meaning making process that shifts according to context. According to Faye (2007), explanations are context-dependent, intentional, and goal-oriented communicative acts that occur in response to a question about a topic for which the interlocutor lacks information. Essential to explanations is that the case to be explained is understood as having in fact occurred and the explanation will serve to supply missing information. Faye also acknowledged two types of explanations: description-giving explanations and reason-giving explanations (2007). In short, description-giving explanations are responses to "how" and "what" questions while reason-giving explanations are in response to "why" questions (Faye, 2007). Description-giving explanations are different from descriptions because description-giving explanations attempt to answer a problem relating to knowledge or fill in the teacher's lack of information. Descriptions are simply accounts of someone or something and do not attempt to solve an epistemic puzzle. In other words, the person asking for the description already has the information. In this study, I address explanations and descriptions together because they appear to be easily confused within the English language arts classroom.

Explaining and describing in English language arts

The construct *explanation* used here is similar to Faye's (2007) and Osborne and Patterson's (2011). According to Faye (2007), to explain is to attempt to answer a question that poses a problem relating to knowledge that typically takes the form of a "why", "what" or "how" question. Based on real-time English language arts classroom talk, however, I found that explanations also occur in the absence of an explicit verbal question. Therefore, I expand previous conceptualizations of explanation to include instances where explanations take place in the absence of an explicit verbal question. As I will later show, students produced explanations in response to sentence starters intended

to elicit student talk. These sentence starters (e.g., I think this because…) worked as indirect vehicles for the question "Why do you think that?" but the teacher did not utter an explanation-seeking question. Sentence starters were typically provided at the beginning of lessons and were posted on the board for students to use. Only rarely were the sentence starters supplied when students faltered. Furthermore, students often used interlocutor silence as an opportunity to explain. Using a narrow definition of *explanation* that only allows answers to explicit verbal questions to count as an *explanation* would ignore young children's ability to read between the lines and deliver explanations when implicitly called on.

Explaining

In order to qualify as explanations within the English language arts classroom context, student talk must attempt to solve an epistemic problem by providing information that is unknown to the teacher. Following Faye (2007), I classified explanations as falling into two categories: description-giving explanations and reason-giving explanations. While Faye defines a description-giving explanation as a response to "How" and "What" questions, I expand description-giving explanations to also include student initiated talk and responses to sentence starters. Simply put, a description-giving explanation gives an account of something (like a description), but the account must be an account of something that the interlocutor does not already know. For example, a student telling their teacher about ideas for an essay she has not yet written is a description-giving explanation. The student is describing ideas for the essay when the teacher does not know what the student will write about. A reason-giving explanation occurs in response to an explicit or implicit "Why" question and must attempt to solve the inquirer's problem relating to knowledge. Following the previous example, the student communicating *why* she has selected the particular topic she plans to write about would be a reason-giving explanation.

Describing

A description is an account of someone or something. As explained above, a description differs from an explanation (a description-giving explanation, in particular) because a description does not attempt to solve a problem related to knowledge. Based on findings from paper one, I consider two types of descriptions: describe and describe the meaning of a word. In this paper, I use describing the meaning of a word synonymously with defining because I view definitions as providing accounts of words. Describe can be a prompted or unprompted account of someone or something. Describing the meaning of a word is a prompted or unprompted telling of the meaning of a word.

Contributions of the current study

Researchers and educators have not begun to explore what it means to explain and describe in English language arts and how English learners in particular explain and describe in the subject area. With the arrival of the CCSS and increased attention to rigor and challenge, explanations and descriptions have become key academic speech acts that English learners will be expected to produce in the English language arts classroom and on state assessments. Therefore, this study draws upon work on explanations and descriptions from the philosophy of science and science education to better understand explanations and descriptions within the English language arts context. Since English learners are expected to produce explanations and descriptions within English language arts, an analysis of how they are explaining and describing in communication with the classroom teacher during English language arts has the potential to greatly inform our understanding of what English learners can do with the English language in naturally occurring classroom interactions. Furthermore, this paper will serve as first steps to help the English language arts field clarify what is meant by explaining and describing within English language arts. By examining fourth-grade English learner talk over the course of six months, I address the following research question:

> *To what extent do young English Learners produce two types of academic speech acts particularly salient in the CCSS—explanations and descriptions—in academic communication with the teacher during English Language Arts?*

Methods

The School and Classroom

This study was the second part of a three-part study of English learner English language use during English language arts. The study took place over a period of six months at Sage Elementary in the northern California Bay Area. At the time of this study, Sage's 693 students were 67% Latino, 25% Asian, 2% African American, 2% Filipino and 2% White (California Department of Education Dataquest). Approximately 58% of Sage's students were classified as English Learners and 76% of the students were eligible for free or reduced priced meals. These student demographics reflect the school neighborhood where store signs and billboards are just as likely to be seen in Spanish as they are in English. The large number of English learners at the elementary school was the major factor in choosing the school as a research site.

The focal classroom was selected after consultation with the school principal and confirmation of adequate numbers of English learners in the classroom. This was a fourth grade classroom where Ms. Nielson, the classroom teacher, made conscious efforts to design classroom activities conducive to student talk. Out of 32 students in Ms. Nielson's classroom, 19 were designated English Learners, 7 Reclassified Fluent English Proficient, and 4 English Only[1] Given the high number of English learners, nearly all students in Ms. Nielson's classroom spoke a language other than English. Most students were Spanish speakers, but a handful of students spoke Vietnamese. Although the large majority Ms. Nielson's students spoke a language other than English, they overwhelmingly used English during class time.

1 English learner status data was unavailable for two students.

English Language Arts instruction

Six of the eight focal students' English Language Arts instruction took place in Ms. Nielson's classroom. English Language Arts instruction in Ms. Nielson's classroom made use of many of the same activities one could find during English Language Arts instructions in any typical fourth grade classroom. The students worked on vocabulary, used graphic organizers, spent time correcting sentences presented as grammatically incorrect, read chorally from the reading anthology, answered teacher questions and worked on writing.

In addition to typical fourth grade tasks, however, Ms. Nielson took special care to design interactive activities that would increase student talk and participation. As described earlier, this is one reason why the school principal recommended I observe her classroom. Students in her class created questions about the reading selection and participated in question and answer group activities using their own questions. The academic year during which data collection took place, the school was implementing a school wide focus on writing. Rather than simply allot more writing time, Ms. Nielson had students write multiple expository and narrative drafts, share them with a partner, evaluate peers' writing and provide feedback. Students were also encouraged to speak in complete sentences and Ms. Nielson frequently provided sentence starters and sentence frames for students during group discussions and when answering whole class questions.

Two students, Alexandra and Silver did not receive English Language Arts instruction with their home class. Instead, they attended Ms. Yang's reading class for struggling readers for the entire English language arts block. Ms. Yang's class ran from late October to late February[2]. This reading class was half the size of Ms. Nielson's class and used *Inside*, an intensive intervention-reading curriculum. The class was for a combination of fourth and fifth grade students, most of which were English learners. Ms. Yang's smaller class size was designed with the purpose of lowering the teacher to student ratio and increasing the opportunity for students' to interact with the classroom teacher. Students in Ms. Yang's class worked on practice book pages, writing friendly letters, irregular verbs, and exercises aimed at vocabulary building. Vocabulary building

2 Most of Alexandra and Silver's classroom talk is in Ms. Yang's class, but some is taken from Ms. Nielson's class after the intensive reading class ended.

exercises included choral reading of vocabulary words, making of vocabulary cards, and games on the classroom computers.

The Children

Eight fourth grade English Learners were chosen as participants for this study. The criteria for selecting participants were: (1) that they be classified as EL, (2) that they speak Spanish and (3) that they meet the "struggling" or "successful" criteria described below. With the help of the classroom teacher, I identified four "successful" and four "struggling" ELs; two boys and two girls were selected for each "successful" and "struggling" group. "Struggling" ELs were identified by the following criteria: Below Basic or Far Below Basic on the CST English language arts and a score of below average in classroom English language arts assessments. "Successful" ELs were identified by the following criteria: Basic or Proficient on the CST English language arts and a score of average or above average in classroom English language arts assessments. Selecting focal students in such a way helped me capture the English language use of two distinct groups of ELs. The four struggling students were: Alexandra, Silver, Jenny, and Jack. The four successful students in this study were: Olivia, Josey, Tommy and Dominic. I analyze student talk with an eye towards differences between struggling and successful student groups in the first paper of this dissertation, but drawing conclusions from similar analyses in this paper would be unreliable due to the relatively low numbers of explanations and descriptions found in focal student to teacher talk. I briefly mention descriptive differences by student group, but do not present it as a stand alone finding. (See dissertation Introduction for an introduction the eight children who made this study possible.)

Data Sources

Audio recorded authentic language data

I observed and audio recorded the children for a period of six months two times a week. During my observations, I systematically audio recorded the eight focal students during all subject areas except math. I drafted a recording schedule that permitted three students to each wear an audio recorder on the days of my visits, resulting in

approximately three hours a day (10:15am - 2:15pm, excluding lunch). Focal students placed a small recorder in their pocket and wore a clip-on microphone connected to the recorder. The microphone captured both the focal students' and interlocutors' talk. Having the focal students wear the recording device enabled me to capture their language use as they moved about the classroom and interacted with various class participants. While students were likely highly conscious of being recorded at the beginning of the project, they soon grew accustomed to wearing the recorder and often forgot that they were wearing it. Naturally occurring focal student talk was transcribed using Conversations Analysis. Please see paper one for a full description of how authentic language data was transcribed.

Classroom observation field notes

Each observation day, I focused my field notes on the three ELs with the audio recorders. My field notes alternated between focal students every 30 minutes or so and provided non-verbal information that helped contextualize EL speech act production.

Three interviews and informal conversations with focal students

To better understand EL language use, I conducted three interviews and had frequent informal conversations with the focal students. Through our conversations, I learned about the classroom dynamics and individual personal preferences that help explain their classroom language use.

Four interviews and informal conversations with the classroom teacher

The interviews and informal conversations with the classroom teacher helped me learn her perception of the focal students' academic and language abilities. The first interview helped me identify the focal students that would participate in the study.

Classroom demographic data, focal EL test results and background information

Classroom-wide EL status data and focal student test results were collected as a way to gain a basic understanding of the class population and focal student test performance. I collected focal student CST English Language Arts, CST Math and ELP test results. Focal student background information will provide additional data to inform their language use. I administered the background questionnaire orally.

Data analyses

Findings from this study relied on the initial identification of explanations and descriptions from the first paper of this dissertation. In paper one, I identified all the academic speech acts the focal children produced during English language arts. Explanations and descriptions made up four of the fifty-seven types of academic speech acts found in the authentic English learner talk. Out of the entire English learner talk corpus, description-giving explanations made up less than 1% while reason-giving explanations made up 1% of the corpus. Describe speech acts and describe the meaning of the word each composed 2% of the corpus. As a whole, explanations and descriptions made up only 4% of the entire corpus. Due to the increased attention the CCSS has given to students being able to explain and describe, it is telling that they occurred at such a low frequency.

Starting with the explanations and descriptions from paper one, I proceeded to code the type of teacher talk that elicited explanations and descriptions. I coded questions as: how question, what question, who question, why question, and unspoken question. As I discussed earlier in this paper, I quickly learned that teachers also used commands and sentence starters to elicit explanations and descriptions. I added command and sentence starter to the elicitation codes in order to capture non-question elicitations. Analyzing for what elicited the explanation and description productions highlights the teacher talk signals to English learners that either an explanation or description is necessary.

Next, I added an additional "not informative" code to capture explanations and descriptions that were incomplete and therefore not informative. For example, a student uttering "because um" signaled an attempt at an explanation but because the student did not continue the explanation and stopped at "um" the speech act was coded as not

informative. The "not informative" code was helpful in that I was able to capture all focal student attempts at explanations and descriptions and then identify the not informative speech acts. Using a "not informative" code also allowed me to identify instances where the focal children began explaining or describing and were interrupted by the teacher.

Given that this study is concerned with explanations and descriptions in communication with the English language arts teacher, I pulled all of the explanations and descriptions produced in communication with the teacher from explanations and descriptions with peers and other adults. Finally, I studied the explanations and descriptions the focal children produced while talking with the English language arts teacher for patterns in teacher-student communication that could help explain the children's production of explanations and descriptions.

Findings

In this study, I set out to investigate how English learners produce two academic speech acts salient in the CCSS—explanations and descriptions—in communication with their English language arts teacher. Specifically, I address the question:

To what extent do young English Learners produce two types of academic speech acts particularly salient in the CCSS—explanations and descriptions—in academic communication with the teacher during English Language Arts?

Analysis of communication with the classroom teacher revealed an added layer of complexity to how the children produced explanations and descriptions. When the children appeared to struggle to produce an explanation or description in the expected amount of time, the teacher would often change the question. This question change was presumably an effort to aid the child's response. The change, however, frequently changed the appropriate response, from explanation to description, and occurred in quick sequences. The change in response expectations, stemming from changing questions, could make it more difficult for English learners to identify and produce the expected response instead of aiding their speech production. I will first describe how the young English learners attempted to produce both types of explanations and descriptions. Then,

I will discuss the complex relationship between teacher questions and English learner attempts to produce the expected responses.

Description-giving Explanations

A description-giving explanation is often a response to spoken or unspoken "How" and "What" questions and must attempt to solve an epistemic problem. Out of 3,019 total speech act productions, only three were description-giving explanation speech acts in interaction with the classroom teacher[3]. As reported above, description-giving explanations made up less than 1% of the speech acts in the entire English learner talk corpus. In other words, description-giving explanations almost never occurred. Two description-giving explanations took place during one classroom activity and were produced by one focal student—Dominic. Dominic is considered a successful student in English language arts. Jenny, a student considered struggling in English language arts, produced the other description-giving explanation. Both Dominic and Jenny attempted description-giving explanations without an explicit explanation-seeking question. Dominic attempted two description-giving explanations that were highly scripted by sentence starters and Jenny's attempt at a description-giving explanation was freely provided with no clear prompt. I will discuss Dominic's description-giving explanations below.

In the excerpt below, Ms. Nielson has told the class that they will be continuing their work on the vocabulary word *analysis*. She has placed different types of rocks on each child's desk and wants the students to analyze their rock. To analyze an object or phenomenon requires careful examination of details and components. A description-giving explanation is one way to arrive at an analysis. Ms. Nielson calls attention to the sentence starters she has posted on the white board to aid the students' analysis. The sentence starters are presented preemptively, before the children have had the opportunity to analyze the rock without the sentence starter scaffold. The sentence starters are the following: "My analysis of this fossil is that it is a…", "I think this because I see…", I think the next step to take is…".

(1)

3 There were seven instances of descriptive giving explanations in the entire dataset, but only Dominic and Jenny produced them in interaction with the classroom teacher. Jenny produced one with the classroom teacher.

Ms. Nielson The sentence fra:me is up he:re so that you ca:n make a goo:d complete a:nalysis of you:r fossil. [Okay.]

Dominic °°[Hey Arturo] lookit what I got °°

Ms. Nielson Remember that the: goa:l here is for you to lea:rn what the word means and to be able to use the word. Okay? You can be as creative as you want with your item okay? Just like I was when I was modeling, how I believed this is a deep, dark ancient writing utensil from the prehistoric days. Right? Okay!
And of course it's not. So be:
I don't care about that part, you can be creative, have fun with it.
But what I do want is for you to use analysis
My: analysis of this fossil is that it is a:-
-I think this because I see:
I think the next step to take i:s.
Can you do that?

Dominic °No°

Ms. Nielson And then you have a completed analysis. Okay. Ea:ch partner takes turns listen to the other one a:ll the way through, and then the other one make an analysis of their object.

After providing instructions, Ms. Nielson begins to assign the student partners.

(2)

Ms. Nielson Comple:te sentences! Use the words! Please use the sentence fra:me!
Use the sentence frames! One person gets started.

Okay Dominic you go first!

As Ms. Nielson stands right next to Dominic, Dominic makes his first attempt at producing a description-giving explanation.

(3)

Dominic **Okay. My: ana:lysis of this fossil is tha:t**
I:t i:s a
hmmm
° Wait. Wait °
>I don't have anything<

Dominic begins his attempt at a description-giving explanation by using the sentence starter Ms. Nielson has asked the students to use. His description-giving explanation, however, is not informative in that he does not complete his utterance and only recites the sentence frame. He attempts to buy some thinking time, but quickly gives up and communicates to Ms. Nielson that he is unable to continue. Ms. Nielson steps in and

attempts to assist Dominic's description-giving explanation by telling him that his object is a green block.

(4)

Ms. Nielson	Co:me o:n! Just make up your- -It's a green block! Oka:y?
Dominic	**My analysis of thi:s fossil is that it is a: gree:n, li:ght gree:n block.**
Ms. Nielson	Oka:y keep going

Dominic picks up Ms. Nielson's assist and makes a second attempt at a description-giving explanation. This time he completes his explanation and Ms. Nielson prompts him to continue on to the next sentence frame he is to use. The next sentence frame, "I think this because I see", calls for a reason-giving explanation and will be discussed in the next section.

Reason-giving Explanations

A reason-giving explanation occurs in response to spoken or unspoken "Why" questions and must attempt to solve the inquirer's problem relating to knowledge. Reason-giving explanations is that they attempt to provide the speaker's reasoning and tend to use the conjunction "because". Out of 3,019 total speech act productions by the focal students, only seven were reason-giving explanation speech acts in interaction with the classroom teacher[4]. Successful students produced all seven reason-giving explanations in interaction with the classroom teacher. Five of the speech acts explicitly used the word "because". One of the speech acts used "maybe" and the other was an incomplete speech act. Speakers use hedges such as "maybe" and "possibly" to qualify statements or explanations that they are uncertain about. Using "maybe" helped the student temper her reason-giving explanation and demonstrates a slightly more sophisticated ability to explain, as we'll see below.

The excerpt below is the exchange following the description-giving explanation shared above. Ms. Nielson has accepted Dominic's description-giving explanation and is now

4 There were thirty-five total reason-giving explanations in the dataset. Both successful and struggling students produced reason-giving explanations, but only successful students produced them in interaction with the classroom teacher.

prompting Dominic to use the sentence frame that calls for an explanation of why he has made the analysis that the fossil is a light green block.

(5)

Ms. Nielson	Oka:y keep going
Dominic	**I think thi:s because I see: like lem- lime green righ' here.**

Dominic's reason for describing the object as a light green block is that he sees lime green on the object. Ms. Nielson does not comment. He immediately moves on to the next sentence starter intended to describe the next step to verify his analysis.

Describe

To describe is to give an account of someone or something. Out of 3,019 total speech act productions by successful and struggling focal students, twenty-three were describe speech acts in interaction with the classroom teacher[5]. Struggling students produced ten of the speech acts and successful students produced thirteen. The children produced describe speech acts in a wide variety of ways. When use of a sentence starter was expected, the children used the sentence starter. In the absence of a sentence starter, the children described freely. Two of the ten describe speech acts produced by struggling students had an unclear message and two were interrupted by peers. Of thirteen describe speech acts produced by successful students none were unclear or interrupted.

The excerpt below immediately follows the above exchange between Dominic and Ms. Nielson. Dominic begins with the sentence starter, but stops and communicates that he doesn't know how to continue the sentence. The description itself is not informative.

(6)

Dominic	**I think the next step to take i:s-**
	->What am I: supposed to say for that?<
Ms. Nielson	Whatever you thi:nk you want to do about the next step to verify what you think it is
Dominic	**The next ste:p to take is >see if you could color stuff<**
Ms. Nielson	Oka:y. ((T rings bell)) Switch partners if you haven't done so already. Give the other person a chance. The sentence frames are right up there. Please use them. Continue please.

5 There were seventy-two describe instances in the dataset, but only twenty-three occurred in interaction with the teacher. Both successful and struggling students produced descriptions.

Ms. Nielson tells Dominic that he's supposed to finish the sentence by saying what the next step will be to verify his analysis of the object. Dominic describes his next step as seeing if he "could color stuff" and Ms. Nielson walks away to close the activity.

Describe the meaning of a word

Describe the meaning of a word is a prompted or unprompted account of the meaning of a word. In this paper, I understand describe the meaning of a word as synonymous to defining a word. Out of 3,019 total speech act productions by successful and struggling focal students, fifteen were describe the meaning of a word speech acts in interaction with the classroom teacher[6]. Struggling students produced thirteen of these speech acts and successful students produced two.

Using examples to describe the meaning of a word

The children most frequently used examples (ten out of fifteen times) to describe the meaning of a word. In the excerpt below, for example, Alexandra uses two examples to describe the meaning of the word spoil. Ms. Yang has asked Alexandra to *explain* the word spoil.

(7)

Ms. Yang	Alright spoi:l. How do you explain spoil?
Alexandra	**There's two differe:nt wa:ys.** **No:. spoi:l is something that you spoi:l. Something that doesn't work and spoil the other one.**
Student 1	Spoil, like you spoil this sto:ry!
Alexandra	° Yeah °
Student 2	It could be like, it's nasty and expi:red.
Alexandra	There's two different wa:ys!
Student 3	No it's like your parents get you everything you want, [you're spoiled].
Alexandra	[NOO:!] Spoi:l means, that you spoi:l a book! You know what that means?
Student 1	Or the movie
Alexandra	Yeah

6 Across interlocutors, the children produced sixty-one total describe the meaning of a word speech acts.

First, Alexandra states that spoil is something that you do. In this way, she alludes to spoil being a verb. Then, she continues by stating a characteristic of something being spoiled –something that doesn't work. Alexandra communicates that she understands spoil to be something that is done (a verb) and she grasps that when something is spoiled it no longer works. Furthermore, Alexandra communicates a clear understanding of the multiple meanings of spoiled. She begins to describe the word by explicitly saying that there's two different ways to describe spoil. By using examples and characteristics of the word, the children were able to provide partial descriptions of words.

Ms. Yang's use of *explain* in her exchange with Alexandra highlights the confusion expressed by researchers in science education surrounding the term *explain*. Ms. Yang used *explain* when she was really asking for the meaning of a word and not for an explanation of how or why food spoils. Alexandra and her peers, however, appeared to understand that Ms. Yang was asking for the meaning of the word and not an explanation. I found three instances where *explain* was used by both Ms. Yang and Ms. Nielson to cue a description of the meaning of a word. Like in the exchange above, the children appeared to understand that the teacher expected the meaning of a word and not an explanation.

Using examples to describe the meaning of the word did not always meet the teacher's expectations. For example, Olivia produced the following description of the word "introduce" when prompted by Ms. Nielson, "Introduced means where, when you go to a museum, they introduce you to someone?" Ms. Nielson, replied with "Okay, that's a good example of introduce" and moved on to seek a description of introduce that better fit her expectations. Ms. Nielson's reluctance to accept Olivia's example and continuing to seek a "better" description communicates that there is a better way to describe the meaning of words than using examples. It is unclear if Olivia understood the mismatch between the description Ms. Nielson was seeking and the example she provided.

Using type of word and dictionary like definition to describe the meaning of a word

In addition to using examples, the children also used the type of word (e.g., that's a nasty word), a rhyming word (e.g., boil and spoil) and dictionary like definitions (e.g.,

vote, to choose a leader). Calling upon the type of word to convey meaning can be illustrative of the child's awareness of appropriate communication with the classroom teacher. Consider the exchange below.

(8)

Silver	Why: do you want more books:
Student 1	The ones they have in the library are so boring
Ms. Yang	What do you mean boring
	What do you mean boring
Student 2	They're ga:y
Ms. Yang	I'm sorry Chris?
Student 2	I don't like them
Silver	°He said that they're °°ga:y°°
Ms. Yang	What does a mean
Students	((Laughing))
Silver	I- I- I- I know how-
Ms. Yang	-I don't understand it
Silver	I know how to explain °it°
Ms. Yang	You need to the language [sic], I have no clue
	What do you mean not good
Student 1	It means not good
Ms. Yang	Not good well what do you mean not goo:d
Silver	**Like that wo:rd**
	That word that he said ((other students crosstalk))
	That's u:h like
	°A nasty word°
Ms. Yang	Huh?
Silver	**That's a- the word that he said**
	°That's a nasty word°

It is clear that Silver recognized that using the word "gay" to describe the boring books in the library was not appropriate language to use in a classroom discussion with the teacher. Given Silver's perceived inappropriateness of the term, an example to describe the meaning of "gay" as the student used it would not suit. Instead, Silver opted to describe "gay" to his teacher as a type of word that is "nasty". The excerpt above also suggests Silver's awareness of the use of "gay" as a derogatory adjective. Given Silver's score of Early Intermediate (the second lowest score possible) on California's English language proficiency test, his knowledge of common American language use and ability to navigate a delicate discussion about the meaning of a highly provocative term may be surprising. According to the California Department of Education, a score of Early

Intermediate indicates that English learners' "oral productions are usually limited to phrases and memorized statements and questions" (California Department of Education, 2013, p. 28).

Use of a rhyming word to describe the meaning of a word only occurred once and could have been more of a word play than an actual attempt to describe the meaning of the word. The dictionary type definitions occurred twice during a highly structured activity designed by Ms. Yang, the reading intervention teacher. The children worked in pairs where they would each take turns defining terms using vocabulary cards. One child would show the side of the card with the vocabulary term and the other would attempt to define the term. While one side of the card showed the vocabulary term, the other side displayed the dictionary definition of the term. For instance, a card had the word "vote" on one side and "to choose a leader" on the other. Within the context of this activity, the "correct" definition was "to choose a leader" and deviations were incorrect. When a child would produce a definition other that what was on the card, the partner would read the definition on the card and the children would switch roles. Silver and Alexandra both produced dictionary type definitions (that closely matched the format on the cards) during this activity and this activity alone. Some definitions were accurate but others were not. It is important to note, that interactions during this activity seemed strained and the children often permitted partners to look at the back of the card in a way that is typically viewed as cheating. The children would also overhear their neighbors' descriptions of words and produce the exact description even when the target vocabulary words were different.

The student talk excerpts above show that English learners are able to produce explanations and descriptions but they produce these speech acts at very low rates. Explanations and descriptions made up just 4% of all of the academic speech acts in the corpus. It could be said that explanations and descriptions almost never occurred. Given the very low frequency of explanations and descriptions, it is extremely difficult to generalize about differences found between successful and struggling student productions. Keeping that in mind, I found that successful students produced all but one of the explanations in communication with the classroom teacher. It is difficult to know whether further research on struggling and successful student differences on explaining and describing would find this to be a real difference or simply a chance incident.

A complex relationship: teacher questions and English learner responses

I have shown that there were very few explanations and descriptions produced in communication with the classroom teacher. And, when explanations and descriptions were produced, they were not particularly rich. The low rate at which explanations and descriptions were produced and lack of richness could suggest that teachers should create more opportunities for explaining and describing and support English learners in producing these academic speech acts. The real-time classroom talk in Ms. Nielson's classroom suggests that supporting English learner explanations and descriptions in the classroom may call for more than often-recommended scaffolding strategies (e.g., differentiating questions and sentence starters). Supporting the use of explanations and descriptions while engaged in real-time classroom talk with the classroom teacher may require that we think carefully about the complex relationship between teacher questions and student responses.

The children in Ms. Nielson's class sometimes stumbled on words and used academic delays such as "umm" and stretching of words to buy thinking time while engaged in real-time communication. When English learners appear to stumble, it is difficult for teachers to gauge whether the children are having difficulty with the concepts, the language they're to use to deliver their ideas or both. In the communicative exchanges that follow, Ms. Nielson might be facing a similar challenge with Olivia. In an effort to support Olivia's response, Ms. Nielson attempts multiple question types. By changing her questions, however, Ms. Nielson is simultaneously changing the appropriate response types thereby making it increasingly challenging for Olivia to identify the question she is to answer. Olivia is considered a successful English language arts student.

For the last 20 minutes prior to the following excerpt, Ms. Nielson and her 4th grade class had been reading *The Case of the Gasping Garbage* by Michelle Torrey aloud as a group. The young detectives in the story had just landed a new case where they are investigating why a garbage can is making gasping sounds. The client thinks there might be a monster inside the garbage can. Ms. Nielson pauses the choral reading and begins to question the class about what they think is going on with garbage can.

(9)

Ms. Nielson	What do you guys think is wrong with the garbage can? Do you think there's a monster inside of it?
Students	[Noo.]
	[Yes!]
Ms. Nielson	Who thinks so, raise your hand
Olivia	((giggles))
Ms. Nielson	How many of you don't think there's a monster inside
Olivia	((raises her hand))
Ms. Nielson	Why DON'T you think that there's a monster inside Olivia

By asking *why*, Ms. Nielson is asking for the reason Olivia does not think there is a monster inside the garbage can. Why questions are questions that seek reason-giving explanations. An appropriate response would be to provide an explanation where Olivia communicates her reasoning. Olivia's use of because in her reply to Ms. Nielson in the excerpt below signals directly that she will provide a **reason-giving explanation**. After a two second pause Olivia begins.

(10)

Olivia	°Be:cau:se u:m°
Ms. Nielson	=Why do you think the garbage can is making all the: gurgling noises

Olivia's response begins with *because* and demonstrates her intention to provide a reason-giving explanation. She uses the conversational device *um* commonly used to buy thinking time. Ms. Nielson quickly latches onto the beginning of her explanation and changes the question from "why don't you think there's a monster inside" to "why do you think the garbage can is making all the gurgling noises". An appropriate response to "why don't you think there's a monster inside" would explain why Olivia does *not* think there is a monster inside the garbage. When the question changes to "why do you think the garbage can is making all the gurgling noises", the appropriate response changes to an explanation of why the garbage can is making all the gurgling noises. Simply put, the fitting response changes from why something *is not* to why something *is*. However, the appropriate response *type* remains the same. Ms. Nielson is still seeking a **reason-giving explanation**.

After a generous eight second pause, Ms. Nielson changes her question again, presumably in an effort to help Olivia respond. This time the question changes from a "why" question to a "what" question.

(11)

Ms. Nielson	What do you think is going on in the garbage can What's your prediction I think

Ms. Nielson asks Olivia to **describe** what might be happening inside the garbage can and quickly follows up with a request for Olivia's prediction. By asking "What's your prediction?" Ms. Nielson is now asking Olivia for a description-giving explanation of what she thinks will happen next. The question has changed the appropriate response from a pure description to a description-giving explanation because Ms. Nielson does not know what Olivia's prediction is. Not only has the appropriate response changed from a description to a description-giving explanation, but Olivia's response now requires a shift from telling what she thinks *is* happening inside the garbage can to telling what she thinks *will* happen in the story. Ms. Nielson provides a sentence starter to assist Olivia's response.

(12)

Olivia	°I th[ink°]
Ms. Nielson	I [think] the garbage can's gasping because

Ms. Nielson then expands on the sentence starter and provides Olivia with more pieces to help her construct an appropriate response. The scaffold, however, changes the appropriate and expected response once more. Instead of supporting a response communicating a prediction, Ms. Nielson's sentence starter is now setting the stage for a **reason-giving explanation** response that provides the reason why the garbage can is making gasping noises.

(13)

Olivia	°I think the garbage ca:n is gasping becau:se u:m° ((2 sec pause)) ((Clears throat))
	°U:m°
Ms. Nielson	Complete your sentence
	What do you think
	What do you think's going on
Olivia	°Maybe the:re- there's a:°
	°A:°

Despite several attempts by Ms. Nielson and Olivia, Olivia fails to provide an informative response. After a four second pause, Ms. Nielson moves on to another student. The entire exchange lasted just a little more than a minute. The excerpt above shows how Ms. Nielson misfires as she makes sincere attempts to scaffold an explanation from Olivia.

Discussion and Implications

This analysis adds to prior research in science education that suggests a misunderstanding by the research and k-12 community of what it means to *explain*. While prior discussion about *explanations* inside the classroom centered on science education, this study suggests that the misunderstanding may extend to English language arts. The term *explain* is used loosely in both the English language arts classroom (e.g., explain the meaning of spoil) and CCSS English language arts and Literacy standards. Furthermore, as was demonstrated by Ms. Nielson's interaction with Olivia, teacher attempts to scaffold English learner responses may be unintentionally creating more challenges for English learner talk instead of supports. Like many conscientious teachers, Ms. Nielson worked to alter her question to help Olivia's response. What Ms. Nielson didn't realize, however, is that by changing the questions she was simultaneously changing the appropriate response. Not only was the change in question causing a change in appropriate response, but also changing the questions was altering the response from explanation to description and back to explanation again.

Given that sentence starters are being used to cue academic speech acts such as explanations and descriptions, it is important that we begin to consider their effect on student language use. Do sentence starters help students struggling with the English

language expected in the classroom? Or, do sentence starters, particularly when used without preceding questions, impede the production of the expected speech acts? For example, do students acquiring English recognize the implicit question embedded in the sentence starter or do they have to work harder to identify the question, arrive at a response and then attempt to fit their response within the sentence starter?

The use of sentence starters and sentence frames to aid English learner talk appears to be quite popular among teachers and professional development programs today (E.L. Achieve: Creating Effective Systems for English Learners, 2014; Echevarria, Vogt, & Short, 2008; Kinsella, 2013). Kinsella's *Academic Vocabulary Toolkit* explicitly recommends sentence frames by stating "Actively engage students with verbal practice using sentence frames that ensure competent academic interactions" (Kinsella, 2013, p. 2). Results from this study show that sentence starters can and are used to cue appropriate English learner responses. Sentence starters, however, should be used cautiously with special attention to exactly the type of question and response they are cuing. Asking a question of any student and then requiring that they use a sentence starter that doesn't quite address the question type could confuse children and hinder their responses. Using sentence starters in this way could be especially detrimental to English learners as they are acquiring English while they accomplish academic tasks and communicate in the classroom.

As teachers, we are required to think on our feet and try different strategies and techniques to help our struggling students. I have no doubt that during my time in the elementary classroom I tried to help my language learners in a similar way as Ms. Nielson and Ms. Yang. If one question doesn't work, try another one. Results from this study highlight the importance of paying close attention to what we are asking our students to do through their responses. Might our students, particularly our English learners, be struggling to respond because they are unclear which question or sentence starter to respond to rather than because they don't know *how* to craft a response? Or, might students be confused because the question or sentence starter *is* confusing and would confuse even the most eloquent and fluent English speakers?

As a whole, the children produced far more *describe* speech acts than *explain* speech acts. What could explain the lower presence of explanations compared to

descriptions? One possible explanation is that English learners are not yet able to produce explanations at the same rate as descriptions. An alternative explanation is that English learners do not have as many opportunities to produce explanations as descriptions. That is to say, teacher communication with English learners may elicit more descriptions than explanations.

Valdés, Capitelli and Alvarez's (2010) three year study of English learners with beginning English proficiencies found that explanations were among the last productive language behavior the students produced. While the present study was not set up to measure academic speech act development over time, findings do support that explanations are not as present in English learners' academic speech act production as other academic speech acts. It is unclear, however, if this is the case because explanations are more difficult to produce or if there are not as many opportunities that call upon explanations in typical 4th grade classroom interactions, particularly in communication with the teacher.

On the question of how English learners will fare in light of more demanding English language arts standards, results from this study show that supporting English learners to meet the new expectations will require us to refine our current understanding of what we mean by explaining and describing and pay close attention to teacher language use. Communication does not happen in a vacuum. English learners communicate *with* others inside the classroom. By investigating how English learners produced explanations and descriptions when talking with the classroom teacher, analysis revealed that cues to explain and describe are used loosely inside the classroom. The quick changes in teacher cues suggest that teachers may not recognize the change in response their change in question or sentence starter signals. Furthermore, teachers may not recognize the added challenge rapidly changing questions add to English learners' attempts to provide an appropriate response. Teacher self-study of language use in real-time classroom interactions with English learners might help teachers understand the inextricable relationship between teacher talk and English learner talk. From there, we can begin to have deeper conversations about what it means to explain and describe in English language arts and how we can increase opportunities for their production inside the classroom.

Limitations

This study had several limitations that should be considered when interpreting the findings. In addition to the limitations discussed in paper 1 of this dissertation, it is important to note that explanations and descriptions were coded as English learner *attempts* to explain and describe and were not necessarily "informative" or "successful" explanations and descriptions. Coding English learner attempts to explain and describe permitted the analysis that led to finding the complex relationship between teacher and student talk (e.g., teacher interruptions). Because not all explanations and descriptions presented in this study were informatively completed, findings should not be interpreted to mean that all English learner explanations and descriptions were informative and therefore successful. Also, I did not analyze explanations and descriptions for complexity or richness. Most explanations and descriptions, however, appeared to be lower level. This suggests that explaining and describing occurs on a continuum and not all explanations and descriptions are of equal academic complexity. Lastly, findings from this study occurred in a very specific classroom context. Individual student and teacher characteristics should be considered when interpreting how the children explained and described when talking with the classroom teacher. The explanations and descriptions the children produced with the classroom teacher should not be taken to represent explanations and descriptions with peers or other adults.

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