

This article appeared in a journal published by Elsevier. The attached copy is furnished to the author for internal non-commercial research and education use, including for instruction at the authors institution and sharing with colleagues.

Other uses, including reproduction and distribution, or selling or licensing copies, or posting to personal, institutional or third party websites are prohibited.

In most cases authors are permitted to post their version of the article (e.g. in Word or Tex form) to their personal website or institutional repository. Authors requiring further information regarding Elsevier's archiving and manuscript policies are encouraged to visit:

<http://www.elsevier.com/authorsrights>



Contents lists available at ScienceDirect

Linguistics and Education

journal homepage: www.elsevier.com/locate/linged

“Miss, nominalization is a nominalization:” English language learners’ use of SFL metalanguage and their literacy practices

Meg Gebhard^{a,*}, I-An Chen^a, Lynne Britton^b^a University of Massachusetts, 206 Furcolo Hall, Amherst, MA 01003, USA^b Springfield Public Schools, 1550 Main Street, Springfield, MA, USA

ARTICLE INFO

Article history:

Available online 1 March 2014

Keywords:

Academic language
 English language learners
 Systemic functional linguistics
 Genre
 Second language literacy
 Teacher education

ABSTRACT

This study explores how an elementary school teacher in the United States used systemic functional linguistics (SFL) and genre-based pedagogy to design and reflect on academic literacy instruction and how Spanish–English bilinguals took-up SFL metalanguage in learning to read and write historical and scientific explanations about culturally relevant topics. Based on a longitudinal analysis of changes in student writing samples and district and state test scores over an academic year, the findings indicate that instruction in SFL metalanguage helped students recognize and name linguistic patterns within and across disciplinary texts and expand their semiotic resources, especially as these resources relate to realizing meaning in print. The implications of this study relate to the strategic role SFL-based pedagogy can play in supporting teachers and bilinguals in critically navigating English-only mandates and the discourses of standardization and accountability in the United States.

© 2014 Elsevier Inc. All rights reserved.

1. Introduction

At the end of the 2011 school year, Lynne, an elementary teacher and the third author of this study, was preparing a group of English language learners (ELLs) for a mandated exam in science. This exam is challenging for many students, but it is particularly difficult for ELLs because the language through which scientific knowledge is constructed is very different from everyday discourse (e.g., Lemke, 1988). Scientific discourse relies on technical terms and dense clause structures that pack meaning into a single sentence, often using the nominalization of verbs to make claims about abstract phenomena. To help students unpack how language is used in scientific texts, Lynne drew their attention to instances of nominalization, a skill they had been working on over the course of the year. During the discussion, a student said, “You know, Miss, nominalization is a nominalization!” While this ELL still struggled to pass this exam, his remark supports research that suggests providing students with a metalanguage for analyzing how academic discourse works and how it is different from every day discourse gives them some purchase on how disciplinary language constructs meaning in the kinds of texts they routinely encounter in school (e.g., Achugar, Schleppegrell, & Oteíza, 2007; Gebhard, Chen, Graham, & Gunawan, 2013; Macken-Horarik, 2002, 2006, 2008, 2009). To explore the potential of teachers and students using metalanguage to deconstruct, critique, and construct academic texts, this study explores how Lynne used Halliday’s systemic functional linguistics (SFL) and Martin’s genre theory to design curriculum in an urban school in the United States and how her ELLs took-up the metalanguage associated with Halliday and Martin’s theories in learning to read and write disciplinary texts over the course of an academic year.

This study builds on the work of educational linguists who have been using SFL to conceptualize, analyze, and make pedagogical recommendations regarding the teaching and learning of disciplinary literacies since the 1980s. In the inaugural

* Corresponding author.

E-mail addresses: gebhard@educ.umass.edu (M. Gebhard), ichen@educ.umass.edu (I.-A. Chen), brittonl@sps.springfield.ma.us (L. Britton).

issue of *Linguistics and Education*, Lemke (1988) argues, “educators have begun to realize that the mastery of academic subjects is the mastery of their specialized patterns of language use” (p. 81). He adds, “If semantic patterns represent the heart of every academic subject, then we must learn how to describe them, how to embed them in the discourse of teaching and the language of the textbook, and how to identify them in discourse and text wherever they occur (p. 84).” Describing and identifying these semantic patterns necessitates teachers and students developing a metalanguage for noticing, naming, and critically manipulating the disciplinary linguistic patterns they encounter in school. Broadly defined, metalanguage is the use of language to talk about language (Berry, 2005). It is explicit knowledge about language that can be brought to conscious awareness, articulated, and used reflexively as a cognitive tool to construct knowledge about language (see Gánem-Gutiérrez & Roehr, 2011 for a discussion of the use of metalanguage from a Vygotskian perspective). SFL metalanguage provides categories for language analysis that is functional rather than formal or structural. These categories allow for analysis of how language functions to construct ideas or experiences; reflect and enact relationships between speakers and listeners or readers and writers; and manage the flow of information within a text and a communicative context. It is distinct from other kinds of metalanguage that focus on classes of words (e.g., nouns, verbs, prepositions, adverbs) in the absence of how these words construct meaning in context (Gebhard & Martin, 2011).

Since Lemke’s call for a more functional approach to developing academic literacy practices, *Linguistics and Education* has published a number of studies that have explored the relationship between learning academic subjects and developing academic language in three general ways. The first centers on documenting how language and other semiotic systems construct knowledge in the disciplines of science, math, social studies, and subject English in schools (e.g., Arkoudis, 2005; Achugar & Schleppegrell, 2005; Davison, 2005; Haneda, 1999; Hood, 2008; O’Halloran, 2000; Schleppegrell, 2001; Unsworth, 1998; see also Christie & Derewianka, 2008; Mohan, Leung, & Davison, 2001; Martin & Rose, 2008). The second centers on tracing changes in students’ literacy practices over time as students initially develop the grammatical resources needed to realize meaning in print in the primary grades, and then in the upper grades expand and further develop these resources as they learn to read and write increasingly challenging texts, which are realized by increasingly complex and discipline-specific grammatical patterns (e.g., Christie’s 2012 analysis of subject matter English). Last, the third line centers on providing educators with a pedagogical model of literacy development to support the design, implementation, and analysis of literacy instruction in schools (e.g., Rose & Martin, 2012 for a review of the development of an SFL-based approach to academic literacy instruction). This model provides teachers, teacher educators, and literacy researchers with a functional metalanguage for understanding how language and other semiotic systems (e.g., graphs, images, formulas) work to make disciplinary meanings and how students and teachers can use this metalanguage explicitly and critically to support the development of academic literacy practices in schools in ways that are responsive to changing demographics and issues of equity (e.g., New London Group, 1996; Rose & Martin, 2012).

However, to date, fewer studies have explored how teachers use SFL metalanguage with students in classroom interactions and how students take up this metalanguage while participating in literacy events. To address the need for analyses of how teachers introduce SFL metalanguage to students, how students make sense of SFL metalanguage, and the implications of using SFL metalanguage as a tool to support students’ academic literacy development over time, this study poses three questions: (1) How did Lynne use SFL metalanguage in designing disciplinary literacy instruction? (2) How did Lynne’s students use SFL metalanguage (or not) while engaging in reading and writing activities? (3) How was the use of SFL metalanguage implicated in ELLs’ literacy gains over the course of an academic year, if at all?

To explore these questions, we begin by articulating the conceptual framework informing this study. We briefly outline Halliday’s SFL, Martin’s genre-based pedagogy, and Macken-Horarik’s call for the use of SFL metalanguage in literacy instruction. Next, we provide a brief description of the context for a case study of how ELLs used SFL metalanguage in learning to read and write historical and scientific explanations in Lynne’s third-grade ESL class over an academic year. The findings suggest that instruction in SFL metalanguage provided students with concrete tools for deconstructing and constructing disciplinary texts in ways that supported their ability to write longer, more coherent texts and to read increasingly challenging texts over the course of the study. We conclude with a discussion of the implications of this study for ELLs’ literacy development and teachers’ professional development.

2. Conceptual framework

2.1. Halliday’s systemic functional linguistics

Halliday’s SFL attempts to explain how humans learn to exploit the semiotic resources available to them in the immediate and broader cultural contexts in which they participate. In articulating “a language based theory of learning,” Halliday (1993) maintains that as children learn to use language orally in the home and then in print in elementary and secondary school, they are “learning language,” “learning through language” and “learning about language” in ways that expand the system of semiotic resources available to them (Halliday, 1993, p. 113). He explains how the meaning potential of this system increases through three *metafunctions* that work simultaneously to construct meanings sensitive to the contexts in which they are used. The ideational metafunction represents experience; the interpersonal metafunction enacts self/other dynamics; and the textual metafunction manages the flow of information to make discourse coherent. Halliday and Matthiessen (2004) explain this trinocular conception of meaning making by stating, “every message is both about something and addressing

someone” and that the flow of information in messages is organized to create “cohesion and continuity as it moves along” (Halliday & Matthiessen, 2004, p. 30).

Applied to understanding the language development of children entering school, this perspective maintains that not only do learners physically and cognitively mature, but also the cultural contexts in which they interact expand and become more diverse (e.g., family, neighborhood, school, clubs, recreational activities, religious organization, and work). As these contexts expand, the ideational, interpersonal, and textual metafunctions realized through language and other semiotic means also expand and become more syntagmatically and paradigmatically diverse, creating more meaning potential and choice within the system. This diversification drives the development of the individual's semiotic resources in regard to phonology/graphology, lexicogrammar, and discourse semantics as well as the evolution of the system as a whole (Halliday, 1993, pp. 107–108).

Central to Halliday's theory of learning to mean is the dynamic way texts and contexts are socially constructed by people through interactions within the cultural contexts in which they participate. Therefore, to capture text/context dynamics, Halliday proposes that any instance of language must be understood both in the broader context of culture and in the immediate context of situation (Halliday, 1999, p. 4). The context of culture refers to the socially constructed semiotic potential of the system as a whole. The context of situation refers to the immediate context in which the system's potential is instantiated through the choice of particular phonological, lexicogrammatical, and discourse semantic features realized in that specific context. To capture the nature of linguistic choice at the level of text realization in a specific situation or instance of language use, Halliday proposes three register variables: field, tenor, and mode. The field of a text accounts for the realization of ideational meanings; the tenor corresponds with the realization of interpersonal meanings; and the mode corresponds with the realization of textual meanings.

2.2. *Martin's genre theory: learning disciplinary knowledge through language*

The expanding social contexts and associated semiotic activities in which language learners participate construct what Martin calls different genres. Martin (1992, p. 505) defines genres as “staged, goal-oriented social process[es].” Following Halliday, Martin (2009) maintains that as students participate in expanding social networks in which different genres are used, they are also apprenticed to a hierarchy of knowledge and to participating in specialized activities that push on the nature of the semiotic resources available to them. However, Martin maintains that as students transition from primary to secondary school and eventually to the university, access to robust forms of academic apprenticeship becomes more and more limited as schools offer a differentiated curriculum that breaks down along race, class, and gender lines. Martin and Rose (2008) argue that this differentiation recreates class structures and economic realities, particularly for students whose home and community language practices differ greatly from the language of schooling. This argument is not based on a belief that home and community literacy practices are in any way less complex or sophisticated. Rather, the point is that discipline-specific semiotic systems in math, science, social studies, and literature studies, like home and community literacy practices, have evolved socially over time to construe specific kinds of meanings and that schools play a role in stigmatizing non-dominant literacy practices while valorizing and legitimating inequitable access to learning disciplinary ones.

As a way of responding to educational inequities reproduced in schools, Martin and his colleagues collaborated with teachers to develop a genre-based approach to designing curriculum and instruction (Martin, 2009; Rose & Martin, 2012). Beginning in the 1980s, this approach, known as “teaching/learning cycle,” was developed to apprentice students to reading and writing the genres they are likely to encounter across grade levels and in specific subject areas (Martin, 2009, p. 16). In the primary grades, the approach builds on students' uses of everyday genres realized through a congruent grammar (e.g., recounting events and narratives using straightforward grammatical structures and concrete everyday lexis). As students move from elementary to secondary school, the focus is on teaching disciplinary genres that realize meaning through an increasingly dense grammar by simultaneously building students' content knowledge and knowledge of genres used within specific fields (e.g., explanations, arguments, and discussions in science, mathematics, history, and English that require nominalization, forms of embedding, and abstract and technical lexis; see Christie, 2012).

The goal of this approach is to apprentice all students to a critical understanding of disciplinary bodies of knowledge and the social semiotic practices that construct them. The phases of this cycle include building students' background knowledge through various types of hands-on, dialogic experiences to prepare for specific reading and/or writing tasks; deconstructing meaning in model texts using SFL metalanguage to name genre moves and register features; jointly constructing a text with students to make semiotic knowhow visible and the nature of linguistic choices available to students explicit; and gradually supporting students in reading and writing texts more independently by providing less scaffolding as students become more able readers and writers of a particular genre over time (Gibbons, 2002; Rose & Martin, 2012).

2.3. *Macken-Horarik's grammatics: teachers and students learning about language*

Halliday's language-based theory of learning and Martin's genre-based pedagogy both maintain that teachers and students benefit greatly from developing a metalanguage or “grammatics” for critical deconstruction and construction of subject matter texts in school (Halliday, 2002, p. 365; Macken-Horarik, 2006; Williams, 2005). As described by Macken-Horarik, this metalanguage provides teachers and students with a way of naming genre stages and talking about the clause-level linguistic choices authors make in constructing disciplinary meanings, thus helping students engage with, comprehend, critique,

and produce the kinds of texts they will encounter in learning disciplinary knowledge in school (Macken-Horarik, 2002, 2006, 2008, 2009; Macken-Horarik, Love, & Unsworth, 2011). This metalanguage builds over time as teachers and students engage in the teaching/learning cycle described above and as students engage with a greater variety of disciplinary texts. A pedagogy that attends to functional as opposed to a formal metalanguage draws students' attention to and names the generalizable ways in which the semiotic system as a whole realizes different genres. It involves teaching students how to analyze texts such as narratives using functional terms such as "orientation," "complication," and "resolution" as opposed to structural ones such as "beginning," "middle," and "end." It also draws attention to and names register features that help realize discipline specific genres at the clause level to support students in analyzing, for example, how authors choose specific verbal processes to construct characters' dispositions in a particular scene in a novel (e.g., *whispered*, versus *ranted*) or how tenor resources contribute to the construction of power dynamics between characters as the narrative unfolds (e.g., the distribution of commands, imperatives, and declarative statements)

In making a case for the use of SFL metalanguage in designing, implementing, and reflecting on curriculum, Macken-Horarik (2008) argues that it can support students in recognizing patterns within and across texts, expands their semiotic repertoires, and helps teachers track students' development over time as this meaning potential grows. She writes:

We are now in a position to draw on all we have learned in educational linguistics to fashion a powerful navigational toolkit for teachers of English – one that will enable us to move forward rather than backward, to engage with complex social-semiotic practices, to diagnose strengths and weaknesses in students' texts, relating them in a principled way to the relevant meaning potentials on which they draw. (Macken-Horarik, 2008, p. 46)

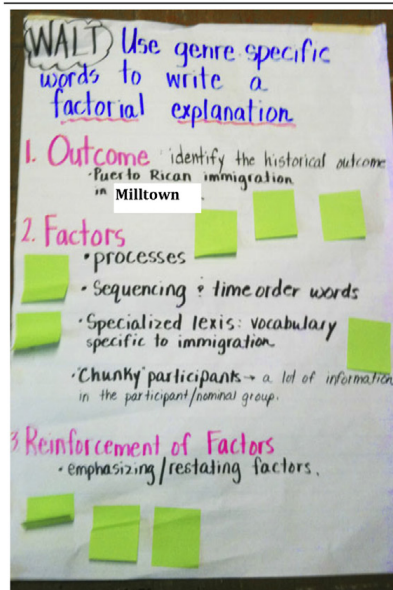
Research regarding the benefits of Macken-Horarik's proposal for both teachers' professional development and ELLs' academic language learning across content areas has been encouraging (e.g., Achugar et al., 2007; Aguirre-Muñoz, Park, Amabisca, & Boscardin, 2008; Brisk & Zisselsberger, 2010; Gebhard et al., 2013; Harman, 2013). While a comprehensive review of these studies is beyond the scope of this paper, the findings suggest that the use of SFL metalanguage in designing curriculum and instruction supports ESL teachers in developing a deeper understanding of both disciplinary knowledge and how language constructs this knowledge. In addition, teachers who have participated in SFL-based teacher professional development initiatives report feeling more confident about their abilities to teach ELLs to read and write disciplinary texts and to design instruction that links an analysis of the kinds of texts students are asked to read with an analysis of the kinds of texts they are asked to write, thus creating more synergistic links between L2 reading and writing activities. Last, these studies suggest that ESL teachers gained confidence in providing students with targeted, meaning-based feedback on their writing rather than attending exclusively to spelling and traditional grammatical errors.

In sum, Halliday's SFL, Martin's genre-based pedagogy, and Macken-Horarik's call for the use of SFL metalanguage in literacy instruction inform the conceptual framework of this study. The contribution of these scholars also informs, in part, the conceptual framework and practices of the inquiry-based professional development initiative in which Lynne was a participant.

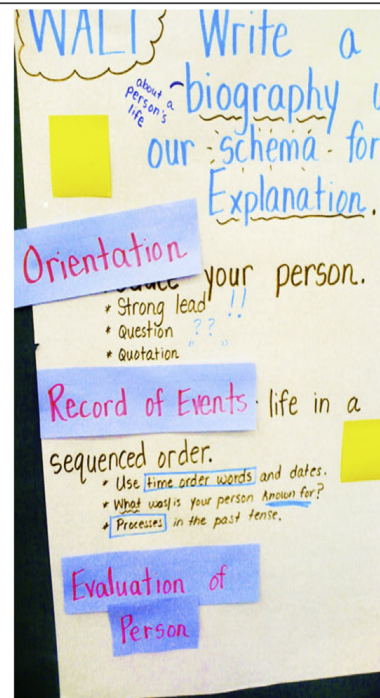
3. The ACCELA partnership

At the time of data collection, Lynne was in her second year of a master's degree program called the ACCELA Alliance (Access to Critical Content and English Language Acquisition). ACCELA, a partnership between the University of Massachusetts, Amherst, and two urban school districts, supports teachers in earning a graduate degree in education and a license to teach ESL and/or reading by conducting research in their classrooms (Gebhard, Willett, Jimenez, & Piedra, 2010). Like most U.S. graduate programs leading to a state license, ACCELA is aligned with state, national, and professional standards. The difference between ACCELA and other degree programs, however, is that courses are offered on site in the schools and the conceptual framework informing the program is grounded in sociocultural theory and an explicit commitment to critically supporting students' multiliteracies (e.g., Dyson, 1993; Haneda & Wells, 2008; New London Group, 1996). For example, Lynne drew on a number of concepts introduced through ACCELA coursework in designing the curricular and instructional practices analyzed in this study. These conceptions included drawing on students' cultural and linguistic resources to design what Dyson refers to as a "permeable curriculum"—a negotiated curriculum that builds on the genres students use in their home and peer worlds to give them a semiotic foothold in genres that are part of the official school curriculum (Dyson, 1993, p. 30). Lynne did this by inviting students to use their home language in discussing concepts in class and in completing homework assignments that involved interviewing family members in Spanish. In addition, Lynne fused her understanding of the teaching/learning cycle (Martin, 2009, p. 16) with Wiggins and McTighe's (2004) concept of "backwards design" to identify both content and language goals to guide the development of each unit of study. Similar to Schleppegrell's work in the California History Project (Achugar et al., 2007), Lynne identified content objectives and targeted genres by reviewing state and national standards (e.g., Common Core standards). These characteristics are evident in the curricular units Lynne designed, as evidenced by posters she was required to display in her classroom. These posters, called "WALT Charts" ("We Are Learning to..."), made visible for students and administrators the focus of her lesson plans. As shown in Fig. 1, these lesson plans centered on teaching students SFL metalanguage for analyzing how meaning is made in texts. Lynne did this in Unit One by teaching her students, who were from Puerto Rico, how to analyze the genre and register features of historical explanations of why Puerto Ricans relocated to the United States; biographical explanations of the life of Sonia Sotomayor,

1.1 Historical explanation



1.2 Biographic explanation



1.3 Scientific explanation

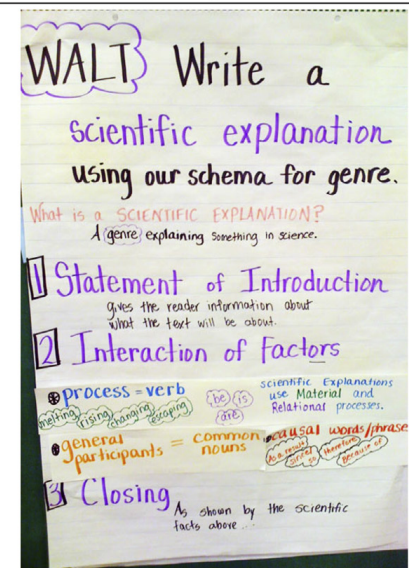


Fig. 1. Lynne's WALT charts.

the first Puerto Rican Supreme Court Judge, in Unit Two; and scientific explanations regarding climate change and differences between the climate in Puerto Rico and Massachusetts in Unit Three.

4. The study

4.1. School and participants

At the time of this study, Lynne was an ESL teacher in Milltown (pseudonym), Massachusetts. Lynne, a white woman in her 30s, grew up not far from Milltown and had some beginning oral proficiency in Spanish. She had four years of ESL teaching experience and was working full time while completing her degree through ACELA. Lynne taught at Buchanan Elementary School (also a pseudonym), a school that served 500 students in pre-kindergarten through fifth grade. These students came from linguistically and culturally diverse families who were struggling to find work in a city with double-digit unemployment (e.g., 70% were eligible for a free or reduced priced school lunch; 50% identified as Latino, 20% as African American, 25% as White, and 5% as Asian). In addition, almost a quarter of the students were officially designated as ELLs and were not passing state exams given in a language they were just beginning to use for academic purpose, as evidenced by 89% of ELLs failing the state exam in math and 97% failing in English Language Arts the year before this study was conducted.

The pressure to improve test scores was something Lynne felt acutely in her classroom, which was not a room so much as a designated area in a large open space that was divided by bookcases and partitions to serve her colleague's ESL class, a special education class, and two second-grade classrooms. In regard to improving test scores, Lynne was required to use mandated teaching materials to support ELLs in developing important phonemic awareness and word recognition skills by working through leveled reading books.

The three focal students who participated in this study were in third grade at the beginning of the study in Spring 2010. They were selected for no other reason than we received consent from their families. As shown in Table 1, all spoke Spanish at home and were beginning English language learners. They had developed some ability to communicate orally about here-and-now topics in the classroom with support from Lynne, but were new to using print in English. In basing our findings on an analysis of the textual practices of these students, we are not making claims that they are representative of ELLs at Lynne's school, although they were in no way atypical students. It is also important to note that we are not making causal claims regarding the relationship between Lynne's teaching of SFL metalanguage and gains in students' literacy development. Clearly other factors may have contributed to changes in their literacy practices over the course of the year, including students' general cognitive development; participation in literacy practices outside of the study; and aspects of Lynne's instruction besides SFL metalanguage such as her use of students' home language and scaffolding techniques. Rather, our

Table 1

Focal students' background data.

Name	Age of arrival	L1 literacy based on bilingual teachers' assessment	L2 proficiency in June, 2010, as assessed by Massachusetts English Proficiency Assessment (Levels 1–5) and teacher observation
Damaris	Age 9 (9/2009)	"Strong" reading and writing abilities in Spanish	Level 3: "Communicates in basic English; errors interfere with communication; reads and understands many common words and most letters of the alphabet; writes commonly used words and simple sentences with some error" (Massachusetts Department of Elementary and Secondary Education, 2011 , p. 4) Teacher: able to comprehend English in class, but reluctant to participate orally or in writing in English
Juan	Age 9 (9/2009)	"Not able to read and write in Spanish"	Level 2: "Speaks English using basic words and short phrases; recognizes many letters of the alphabet and reads a few simple words, with help; writes some letters of the alphabet and a few basic words, with frequent errors" (DESE, 2011, p. 4) Teacher: Able to participate orally in English, but not through print (e.g., difficulties with phonemic awareness, recognizing word boundaries, and handwriting; tends to make lists or write isolated words in completing writing task)
Raquel	Age 8 (9/2009)	"Beginning reader in Spanish (e.g., sight words, simple sentences). No data regarding writing	Level 3: "Communicates in basic English; errors interfere with communication; reads and understands many common words and most letters of the alphabet; writes commonly used words and simple sentences with some errors" (DESE, 2011, p. 4) Teacher assessment: Actively participates in class in English and able to read simple texts, but writing is often incoherent (e.g., topic shifts, no punctuation)

Department of Elementary and Secondary Education (DESE) guide to interpreting Massachusetts English proficiency assessment scores.

analysis of Lynne's approach to designing instruction and students' subsequent use of SFL metalanguage is more exploratory and intended to inform other professional development initiatives and the design of future large scale studies of the potential of teachers use of SFL metalanguage with students.

4.2. Design, data collection, and analysis

The methods of data collection and analysis combined qualitative inquiry with SFL text analysis to analyze both process and product data related to how Lynne and her students participated in instructional activities, as well as how these interactions shaped how students produced and interpreted disciplinary texts over time ([Dyson, 1993](#); [Kamberelis, 1999](#)). To capture process and product data, the unit of analysis guiding the design of this study was the "curricular unit." Data collection for each unit comprised the activities of planning each unit with Lynne; the process of teaching the unit and how students participated in classroom activities related to the unit; and the written texts produced by ELLs over the course of the unit. These texts include freewrites or "cold drafts" written at the beginning of each unit to provide a baseline regarding students' content knowledge and ability to construct this knowledge in writing. Texts also included worksheets, reading notes, subsequent drafts, and revision guides.

Data collection began in April 2010 when Meg, the first author, asked if she could visit Lynne's class based on work Lynne presented in an ACCELA seminar on SFL. Data collection continued the following year between September 2010 and June 2011 during three units, the first focused on factorial explanations in history, the second, biographical explanations, and the third, scientific explanations. In sum, the data set included the documents produced in planning and implementing the three units as well as end-of-the-year student writing samples produced with no assistance. These data included approximately 85 h of videotaping, 42 student writing samples, and students' district and state test scores. Before collecting any student data, we received signed consent from parents using forms that were written in English and Spanish.

Data analysis activities proceeded through three phases with the assistance of the second author, I An Chen. The first phase focused on analyzing the process data for each curricular unit including the method of literacy instruction, the norms of classroom interaction, and how students received feedback on their writing. The second phase focused on product data. Using SFL, we analyzed the genre and register features of each focal student's written texts. Each text ($n=42$) was typed exactly as written and then divided into clauses following Halliday ([Halliday, 1985](#), p. 67). The codes used to analyze these texts were generated based on a review of the SFL literature and studies of elementary students' emergent genre and register knowledge ([Christie & Derewianka, 2008](#); [Coffin, 2006](#); [Fang, 1998](#); [Kamberelis, 1999](#); [Schleppegrell, 2004](#)). Last, in the third phase, we reviewed the data again and selected what we termed "metalinguistic instructional events" following Heath's concept of literacy events. Heath characterizes a "literacy event" as "any occasion in which a piece of writing is integral to the nature of the participants' interactions and their interpretative processes" ([Heath, 1983](#), p. 93). Thus, we define a

“metalinguistic instructional event” as any teaching/learning event in which the use of SFL metalanguage was fundamental to the task. Collectively, these three phases of data analysis allowed us to account for changes in Lynne’s teaching practices, including her use of SFL metalanguage, and to follow evidence regarding how these teaching practices influenced ELLs’ textual practices, and their use of SFL metalanguage, over the course of a school year.

5. Findings

An analysis of the data indicates that instruction in SFL metalanguage appears to have provided students with concrete tools for deconstructing and constructing disciplinary texts in ways that supported their literacy development. These text analytic tools appear to have helped students recognize and name patterns within and across texts and expand their semiotic repertoires, especially as these resources related to realizing meaning in print. Students were able to name genre moves in published and self-authored texts. They were also able to talk about clause-level linguistic choices authors, including themselves, made in constructing disciplinary meanings. Students’ close functional analysis of assigned texts also appears to have supported them in making progress in their ability to produce longer, more coherent texts, but these advances were uneven across the three focal students. However, in regard to general language proficiency and reading comprehension, all students made strong gains, as evidenced by higher scores on a district assessment of reading administered five times over the course of the study (see Fig. 13) and a state assessment of English language proficiency administered at the end of each academic year.

In presenting these findings, we briefly describe how Lynne introduced bilingual learners to the use of SFL metalanguage to deconstruct grade-level disciplinary texts; how students used SFL metalanguage in analyzing assigned readings and constructing texts; and how knowledge of SFL metalanguage played a role in their emergent literacy practices over the school year. Data displays include analyses of student writing samples produced in the context of each unit with attention paid to each of the three focus students and each of the three curricular units to provide a detailed portrait of what Lynne’s curriculum looked like and how all three students participated in SFL based instruction. These data displays show how students’ ability to read and write disciplinary texts changed (or not) over time. Our discussion is organized around each unit of study and begins with an analysis of how Lynne and her students used SFL tools to analyze how meaning is made in historical explanations.

5.1. *The metalanguage of historical explanations*

The first unit focused on the Puerto Rican migration¹ experience and the genre and register features of historical factorial explanations (Coffin, 2006, p. 68). This unit began in April and lasted approximately six weeks. It required students to interview their families in English and/or Spanish and take notes regarding their reasons for moving to Massachusetts. Students then deconstructed a grade-level textbook passage regarding Puerto Rican migration and a second text on Chinese immigration to support them in writing historical explanations of their own. As illustrated in Figure 1.1, Lynne drew students’ attention to the genre moves in assigned readings (e.g., “outcome,” “factors,” and “reinforcement of factors”) and register features such as “process types,” “generalized participants,” and “chunky participants.”

In regard to register features, Lynne’s charts reflected her plans for using SFL metalanguage with students to deconstruct register-level features of selected texts and construct explanations of their own over the course of each unit; however, these plans often needed to be modified in response to how students made sense of SFL metalanguage (or not). For example, on the chart for this unit, Lynne listed “chunky participants,” a term that grew out of an ACCELA collaborative planning meeting in which teachers recognized that one of the difficulties ELLs have in passing high-stakes exams is that they confront long nominal groups in reading passages. Lynne initially intended to highlight this feature of academic discourse in the texts her students were going to read to support them in expanding how they used nominals in their own writing. However, students demonstrated that they first needed a better understanding of the terms “processes” and “participants.” Therefore, Lynne began providing instruction in SFL metalanguage in mini-lessons that lasted approximately 10 min. During these mini-lessons, she typically posted a short, easy-to-read text on a large sheet of paper on an easel around which students sat in a tight semi-circle. Using different colors markers and sticky notes, Lynne guided students in conducting various kinds of linguistic analyses of these texts. For example, as shown in the following transcript in Fig. 2, students analyze a sentence from a short story they had read about names and how people get their names. A student, Angel, notices that a word “name” can be realized as either a participant or a process (e.g., *my name* versus *to name*). As the discussion unfolds, another student, Amy, makes a similar connection between the participant *a stamp* and the process *to stamp*.

In a second example, shown in Fig. 3, Lynne supports students in identifying and tracking participants in a one-line poem about butterflies. In this example, the students’ ability to identify and “track participants” (e.g., lines 6, 33, and 39) gives them purchase on how the text works as a poem in line 29, “butterflies have the same colors as flowers,” and in line 37, with the identification of the lexical chain, “we, butterflies, and flowers.”

¹ Given that Puerto Rico is a territory of the U.S. and Puerto Ricans are U.S. citizens, the preferred term for Puerto Ricans moving to the U.S. is “migration” rather than “immigration.” We thank Sylvia Sanchez for making this distinction, which was discussed with students.

-
- 1 Teacher: This is interesting because this links back to what Angel did the other day... she
 2 (Amy) said that stamp was a process. And you can stamp something. That can be a process.
 3 But you can also find a stamp that is a participant. So, Angel can you come over here for a
 4 second?... So that's very interesting, Amy, that you brought this up. I didn't even anticipate
 5 that. But like, good thinking. [Looking at Angel] Because look what you found yesterday.
 6 Yesterday when we worked, he found that this word... what does that say [pointing to a
 7 word on Angel's paper]?
 8 Angel: Name
 9 Teacher: Name is a ...?
 10 Angel: Process
 11 Teacher: A process. He found that name is a process. But look at the first sentence.... Look
 12 at the first sentence and what does that say?
 13 Angel: [Reading] My-name-is-important-to-who-I-am-for-many-reasons.
 14 Teacher: For many reasons... So, do you see this same word here?
 15 Angel: No
 16 Teacher: Do you see this word in the first sentence?
 17 [Angel nods.]
 18 Teacher: You do. OK. And here is a process. What is it up here [points to sentence
 19 written on butcher paper]?
 20 Angel: A noun.
 21 Teacher: A noun. And what is the other word for noun that we are learning? Do you
 22 remember?
 23 [Angel shakes his head]
 24 Teacher: A par... Can anybody help him?
 25 Angel and other students: Participant
 26 Teacher: Participant.... So... if it's a process here, and it's a participant here, it's the same
 27 word, right, that we used differently, right? Do you remember that Angel explained that to us
 28 yesterday? Here it's a process, and where is it a participant? [Angel points] And there it's a
 29 noun. Right. So it's the same word with different meanings. Does that make sense? Thank
 30 you, Angel. Amy, can you sit down please... Thank you....
-

Fig. 2. Class discussion about processes and participants (transcript).

In moving from learning SFL metalanguage to using it to deconstruct and construct factorial explanations, students used their analyses of assigned readings and interview notes to create graphic representations of their families' reasons for coming to Milltown. Using these multimodal representations, they compared their reasons to those of their classmates and those identified in the reading, using abstract lexical items introduced in the texts (e.g., *economic, educational, social, political, and religious factors*). In comparing their graphs, they also expanded the list of factors to include insights gained from their interview data (e.g., access to medical care or *doctors*).

Next, students drafted their own factorial explanations using their graphed data, the textbook passage, and an additional model essay Lynne wrote on Chinese immigration as resources for writing. As shown in Fig. 4, students developed the ability to highlight and name parts of the model as a way of developing genre knowledge. For example, Juan accurately marked the three genre moves discussed and named the first, "outcome," under Lynne's direction. Next, he circled and highlighted the targeted concepts discussed in the reading and displayed in students' graphs. Last, in a self-initiated way, he drew lines between the participants identified in the "outcome" paragraph and the topic sentences of each subsequent paragraph, thus demonstrating an understanding of the structure of this text.

Next, students attempted to produce explanations of their own. For example, Raquel drew on her graph, assorted notes, and class discussions to produce the text shown in Fig. 5. This first draft begins with an identifiable outcome *the people come to move to Milltown because they were looking for work and a safe place to live, like Milltown, like New York, like Florida, like Santo Domingo*. Using this more oral register (e.g., *like, like, like*), Raquel does not further develop the topic of work or safety in a way that makes sense without some closer analysis of what she is trying to communicate.

In this text, which has almost no punctuation marks, she drops the topic of work, but returns to trying to explain a safety issue related to guns in a series of clauses realized with the participant *thing* and the conjunction *and*. In this attempt, she keeps the lexical chain steadily focused on the participant *thing* in trying to make her point as illustrated in a clause break analysis of an excerpt from her text in Fig. 6.

In an oral whole class sharing of her draft (and in our subsequent clause analysis), it became clear that Raquel was in need of the lexical items *bullet, shoot, and ricochet* to explain that sometimes people shoot guns in the air and that shooting guns is dangerous because the bullets can ricochet and hit people resulting in them having to go to the hospital. However, to realize this meaning in writing, she would need to learn more than just new vocabulary. She would also need to expand the nature of the lexicogrammatical resources at her disposal to build coherence, construe possibility, and construct causal relationships. At the register level, this would require developing the ability to nominalize (e.g., *shooting*), use modals (e.g., *can*), and show causality (e.g., *as a result*).

-
- 1 *Teacher*: Let's look at this one. What does this title say?
 2 *Students*: Butterflies
 3 *Teacher*: Butterflies. And so butterflies is the what, Angel? The?
 4 *Student 1*: The noun.
 5 *Teacher*: The noun or ...?
 6 *Students*: Participant.
 7 *Teacher*: Awesome. You guys are so smart. Right after lunch, you're fueled up and ready.
 8 So, it's the noun, or participant. Does it say "butterflies" again in the poem?
 9 *Student 2*: No
 10 *Teacher*: [Agrees] It doesn't. [Juana raises hand]
 11 *Teacher*: [To S3.] What are you thinking?
 12 *Student 3*: It's "we."
 13 *Teacher*: Oh, we. We refers to the butterflies? Ok, so do we think that ...
 14 *Student 1*: [sits up and points, interrupting] Flowers.
 15 *Teacher*: Oh, hold on...we is a...?
 16 *Students*: Noun
 17 *Teacher*: Noun or participant.
 18 *Student 3*: Cuz it's the butterflies.
 19 *Teacher*: Great, so let's read the whole thing.
 20 *All*: We are the multicolored flowers of the air.
 21 *Teacher*: Hmmm. "We" is the noun. And is there... what is this over here?
 22 *Student 1*: I know, I know!
 23 *Teacher*: It's talking about flowers?
 24 *Student 1*: No, butterflies.
 25 *Teacher*: What is butterflies? What's referring to the butterflies?
 26 *Student 1*: [Quiet] Flowers
 27 *Teacher*: Flowers. That's right. And how do we know? How do we know that?
 28 *Student 3*: You talked about that.
 29 *Student 4*: Yup...Flowers um have the same... the butterflies have the same colors as the
 30 flowers.
 31 *Teacher*: Right, OK, so it's making a comparison. So here in this poem how many
 32 participants do we see, if we include the title?
 33 *All count*: one, two, three
 34 *Teacher*: And is it all the same thing? It's all butterflies, right?
 35 *Juana*: Yeah
 36 *Teacher*: And how many different ways does it say butterflies?
 37 *Juana*: We, butterflies, and flowers.
 38 *Teacher*: Three...so you guys are really smart because you figured out how to track the
 39 participants even when the word isn't the same. It would be easy if it said "butterflies,
 40 butterflies, butterflies." You would know that in an instant, right?
-

Fig. 3. Class discussion about tracking participants in a poem (transcript).

Naturally, attending to all of these aspects of academic discourse was beyond the scope of a single introductory unit in using SFL metalanguage. However, this analysis provided the research team with insights into the sophisticated nature of students developing semiotic resources as emergent writers and how Lynne might plan future units to support students in developing the grammatical resources required for reading and writing more structured and propositionally packed texts as they move from third to fourth grade, where reading and writing demands tend to intensify as student transition from "learning to read" to "reading to learn" (cited in Fang, 2008, p. 476). In other words, our analysis of students' texts, along with reading SFL literature, gave us insights into designing an SFL-based curriculum that might support students in expanding the congruent grammar they were developing to construct everyday experiences in English to developing an increasingly incongruent grammar required to construct abstract disciplinary knowledge in disciplinary texts that realize meanings through the use of nominalization, particular theme/rheme patterns, and logical relations. These insights informed the planning and implementation of each of the next two units.

5.2. The metalanguage of biographical explanations

The second unit focused on teaching students how to read and write "biographical explanations" (Coffin, 2006, p. 54). This unit was the first of the 2010 academic year and lasted approximately six weeks. The centerpiece, as shown in Figure 1.2, was reading the bilingual version of the biography, *Sonia Sotomayor: A Judge Grows in the Bronx/La Juez que Crecio en el Bronx*, written by Jonah Winter and illustrated by Edel Rodriguez. The class read this book, which has a narrative structure, to build background knowledge (the field), but focused their analysis on the appendix called "Author's Note," which provides an un-illustrated historical account of Sotomayor's life (see Fig. 7).

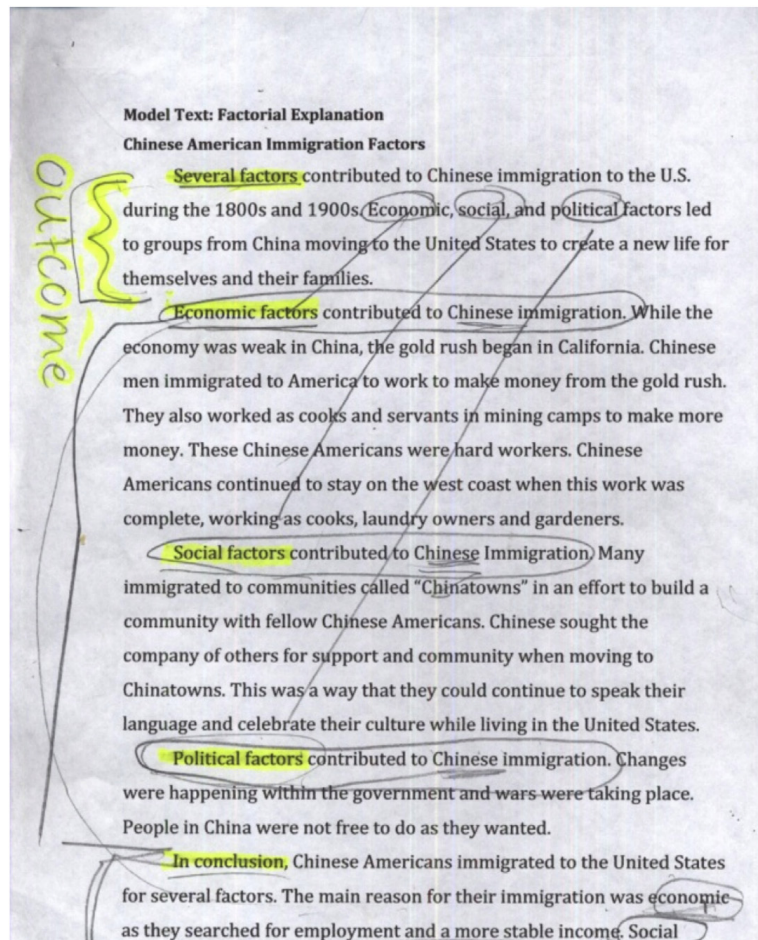


Fig. 4. Juan's text analysis of immigration text.

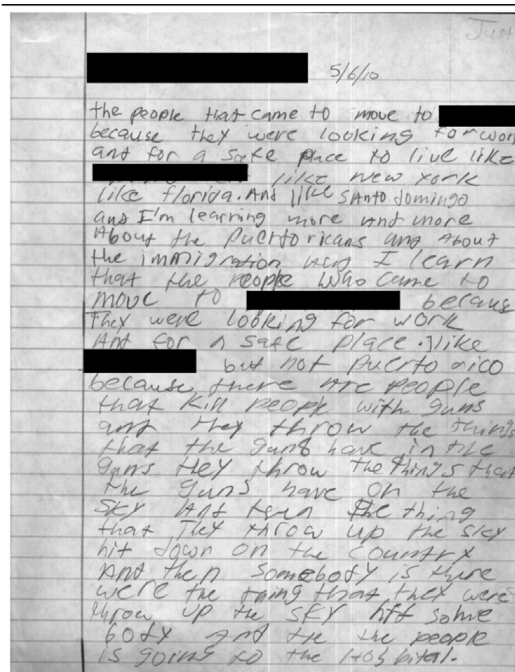


Fig. 5. Raquel's first draft of a historical explanation.

- 1 I like Milltown but not Puerto rico
- 2 because there Are people that Kill people with guns
- 3 and they throw the **things** that the guns have in the guns
- 4 they throw the **things** that the guns have on the Sky
- 5 And then the **thing** that They throw up the sky hit down on the country
- 6 And then somebody is there
- 7 were (where) the **thing** that were throw(ing) up the sky hit somebody
- 8 And the people is going to the Hosbital

Fig. 6. Clause break and lexical chain analysis of an excerpt from Raquel's historical explanation.

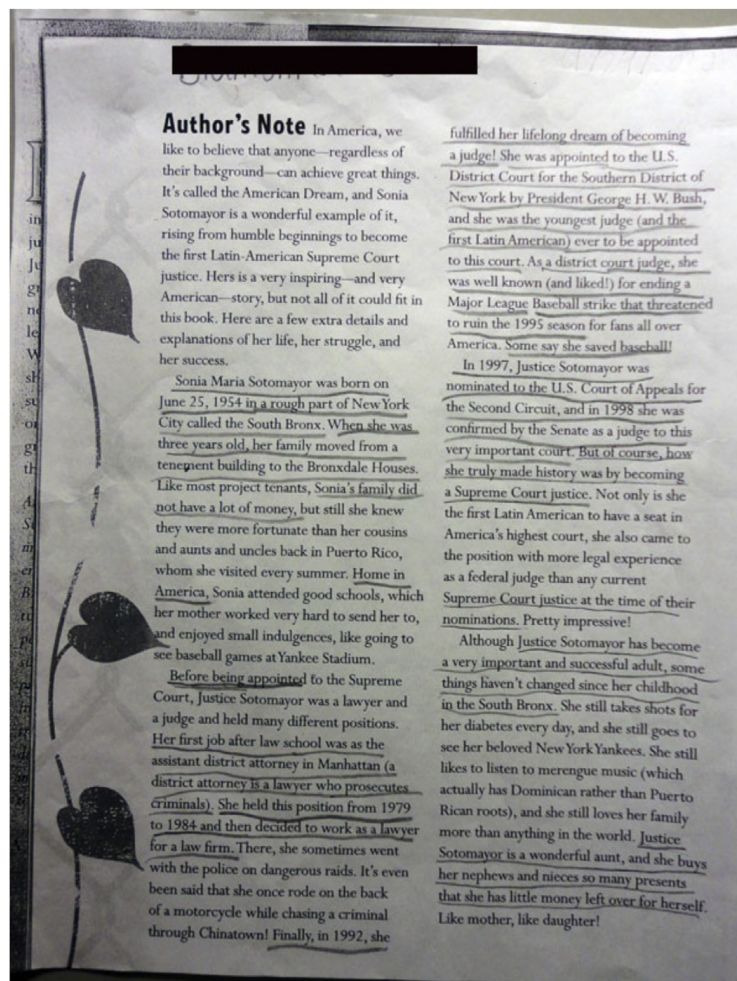
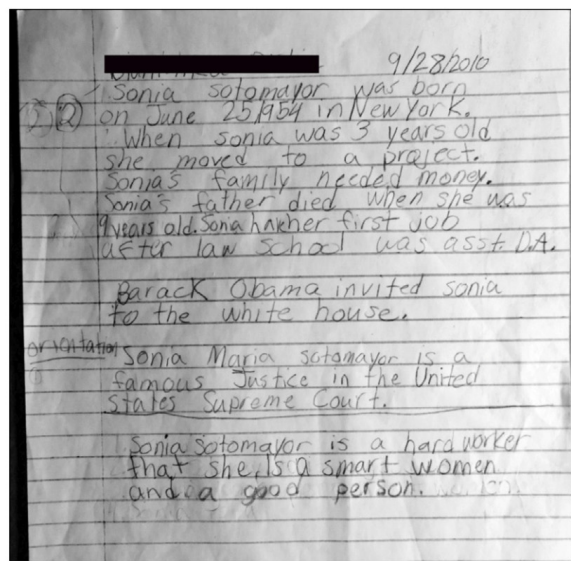


Fig. 7. Author's note with Damaris' highlighting.

At the level of genre, Lynne instructed students to attend to the text's "orientation," "record of events," and the "evaluation of the person." This genre-level functional metalanguage guided students in taking notes and drafting summaries of Sotomayor's life based on the reading. At the level of register, building on Unit One, Lynne continued to instruct students to note how authors use "time words." In this unit, however, she introduced students to the concepts of theme and rheme to illustrate how authors use temporal conjunctions to manage the flow of new and given information. The class engaged in this task by using highlighters and making a list of how the author initiated clauses with temporal conjunctions (e.g., *when, before, then, while, finally*). In addition, in regard to tense, Lynne asked students to pay attention to how processes in the "record of events" were realized in the past and reviewed how the simple past is constructed in English (e.g., *attended, fulfilled, appointed, confirmed, nominated*). She also instructed students to note that in the "evaluation" the author shifted to using the timeless present and reviewed how this tense is formed in English with extra attention paid to the third person "s" (e.g., *takes, goes, loves, is, buys has*).



9/28/2010

(2) Sonia sotomayor was born on June 25, 1954 in New York. When Sonia was 3 years old she moved to a project. Sonia's family needed money. Sonia's father died when she was 9 years old. Sonia have her first job after law school was asst. D.A.

Barack Obama invited Sonia to the white house.

Orientation (1) Sonia Maria sotomayor is a famous Justice in the United States Supreme Court.

Sonia Sotomayor is a hard worker that she is a smart women and a good person.

Fig. 8. Damaris' draft of a biographic explanation.

Genre stages	Text	Lexicogrammatical features
Orientation	<i>Sonia Maria Sotomayor is a famous Justice in the United States Supreme court. Barack Obama invited Sonia to the White house.</i>	Use of experiential themes to keep the flow of information focused on the topic (e.g., <i>Sonia Sotomayor</i> , <i>Sonia</i> , <i>she</i>) Use of the present tense
Record of Events	<i>Sonia Sotomayor was born on June 25, 1954 in New York. When Sonia was 3 years old she moved to a project. Sonia's family needed money. Sonia's father died when she was 9 years old. Sonia have her first job after law school was asst. D.A.</i>	Use of the textual theme <i>when</i> to build temporal cohesion. Use of the past tense in record of events (e.g., <i>was born</i> , <i>moved</i> , <i>needed</i> , <i>died</i>)
Evaluation	<i>Sonia Sotomayor is a hard worker that she is a smart women and a good person.</i>	Expanded nominal groups (e.g., <i>a hard worker</i> , <i>a smart women</i> , <i>a good person</i>)

Fig. 9. Genre and register analysis of Damaris' final biographic explanation.

Damaris used this instruction in reading and writing biographical explanations. As illustrated in Fig. 8, Damaris reviewed and labeled her reading notes using the metalanguage “orientation” and the numbers “1” and “2” to represent the record of events. She also noticed she was missing an evaluation. This awareness supported her in turning her notes into the text rendered in Fig. 9. This text illustrates how Damaris used her emergent genre and register knowledge to produce a short but coherent biographical explanation reflective of planned written discourse as opposed to a more informal spoken register (e.g., Eggins, 2004; Fang, 1998). As evident in Raquel's text in Fig. 5, emergent writers tend to produce texts that lack coherence because they assume a mutual point of reference that allows for the shifting and building of topics in shared here-and-now contexts through face-to-face interactions. Emergent writers, therefore, tend to link clauses in an additive way with oral discourse markers such as “and” as well as use minimal punctuation. They typically lack the textual resources needed to weave participants and processes together coherently in ways that are characteristic of planned written discourse. Last, they often use more everyday lexicogrammatical constructions that construe more informal relationships (Gebhard, Shin, & Seger, 2011).

In contrast, Damaris' text is more structured, cohesive, and formal than the everyday oral discourse young emergent L2 writers tend to produce (e.g., Fang, 1998; Gebhard et al., 2011). She provided an orientation, a record of events, and an evaluation. These genre moves were further supported by her use of lexicogrammatical choices that realize particular ideational, textual, and interpersonal meanings. For example, she first introduced Sonia Sotomayor and then used themes to keep the flow of information focused on this one topic through the repetition of Sotomayor's full name, first name, or the pronoun “she” as an anaphoric reference. The only exception to this pattern is when Damaris used the temporal conjunction

when to build temporal cohesion. Interestingly, Damaris' patterning of themes closely mirrors the model text shown in Fig. 7, which also builds coherence primarily through the repetition of Sotomayor's name and pronominal references, except in instances where the author uses temporal conjunctions in the thematic position. Damaris' text is still somewhat disjointed and would benefit from some re-ordering and elaboration as well as the addition of temporal conjunctions. However, on the whole, the text is coherent. It also demonstrates Damaris' ability, as an ELL, to manage aspects of tense using the instruction Lynne provided. For example, in the orientation and the evaluation sections, she correctly used the present tense, and she used the past tense in the record of events (e.g., *was born, moved, needed, died*). While perhaps not a deliberate choice as much as a result of following direction, her use of the declaratives construed a more authoritative academic voice. This is further supported by the tempered appraisal resources she used in the evaluation section, in which she slightly expanded nominal groups by including adjectives (e.g., *a hard worker, a smart person, a good person*) as opposed to using more informal and intensified expressions such as *cuz* or *very very very*, which are not uncommon in children's texts (e.g., Dyson, 1993; Gebhard et al., 2011). In sum, an analysis of Damaris' texts suggests that SFL-based pedagogy supported her in deconstructing a challenging text about an important Puerto Rican figure and expanding the lexicogrammatical options available to her in realizing meaning in print.

5.3. The metalanguage of scientific explanations

The third unit focused on reading and writing scientific explanations as shown in Figure 1.3. In this four-week unit, students collected data and graphed multimodal representations of the daily temperatures in the cities of San Juan, Puerto Rico, and Milltown, Massachusetts. Next, they compared these graphs as a way of discussing the topic of climate. They also read two texts on the subject of climate change. To support ELLs in reading and writing scientific explanations, Lynne taught students to notice the genre moves typically associated with this type of text following her reading of Schleppegrell (2004, p. 115). The genre moves she highlighted included an "introduction" to the phenomenon, "interaction of factors," and a "closing/restatement."

At the level of register, Lynne continued to work with students to develop their ability to use SFL metalanguage to support them in deconstructing and constructing texts (e.g., process types, participant types, theme/rheme, and "time words"). For example, through mini-lessons and the use of the reading/writing guide displayed in Fig. 10, the class noted that in assigned readings, authors tended to use material and relational processes. They also noted that authors tended to use "generalized participants" (e.g., scientists, animals, people) and phrases that signal causal relationships (e.g., therefore, as a result).

Lynne also introduced students to the concept of nominalization. For example, with guidance, students analyzed a model text and noted that the process *to melt* in the sentence *Polar ice caps are melting* was followed by a sentence that further built on the idea of melting as the point of departure for the clause. Now in the theme position, *melting* was realized as a participant in a clause that read, *This melting is causing the sea level to rise*. In continuing to analyze this pattern, they noted that the next sentence read, *As a result of this rising, animals are losing their habitats*.

Lynne drew their attention to analyzing how this pattern of topic development created what Eggins calls a "zig-zag" pattern between clauses. This pattern works to build experiential meaning while simultaneously creating textual cohesion (Eggins, 2004, p. 324). Lynne coupled a discussion of the zig-zag pattern with previous work focusing on charting theme and rheme patterns, as illustrated in a student's class notes (Fig. 11) where the connections between theme, rheme, and nominalization are displayed.

Next, students used their marked-up reading assignments, notes, and the instructional chart as resources to help them produce texts of their own. With this kind of linguistic scaffolding, Juan produced the text shown in Fig. 12. This text illustrates that, despite struggling with conventions of spelling, he developed an understanding of the concept of global warming and of the genre conventions associated with scientific explanations. His text began with a clear statement of the phenomenon, a sentence he selected from one of the readings to realize this genre move. Next, he was able to keep the focus of the text on the topic of global warming in subsequent clauses that include a discussion of glaciers melting, animals losing their habitat, and greenhouse gases.

In regard to register, he used the relational and material processes highlighted (literally) in the reading materials and was able to realize these processes consistently in the present progressive (*is/are making, melting, falling, changing*). However, in regard to cohesion, his text was more of a listing of topics related to global warming linked with the conjunction *and* rather than an explicit causal explanation of the relationship between *cars throwing smoke, the green house, and the glaciers are folleing and changing the warar (water)*. Similar to Raquel's text, his text moved along thematically using the additive conjunction *and* in 6 of the 14 clauses. This thematic progression did not allow him to build meaning in the text ideationally while also managing the flow of ideas textually to construe causality.

The fact that Juan lacked the grammatical resources for constructing causal relationship in an autonomous printed text, even after participating in a unit focusing on developing these resources (e.g., zig-zag pattern, nominalization), should not be interpreted as a general deficiency regarding his ability to engage with challenging texts or emergent ELL readers' and writers' ability to use SFL. Rather, as Christie (2012) and others have made clear, it takes time and sustained scaffolding to support students, especially ELLs, in developing the semiotic resources required to construct disciplinary meanings using grammatical resources, such as nominalization, as they transition from primary to upper elementary grades and then into middle and high school.

I am a Critical Text Analyst ✓

Name [REDACTED] Date 11-16-10

Genre: Scientific explanation

Title / Topic: Climate and weather

Text Organization: Makes the text easier for a reader to understand. Below are the text structures for your specific genre.
Write evidence of each feature in the space below the section name.

Statement / Introduction
<p>gives the reader information about what the text will be about</p>
<p>Interactions of Factors and Processes</p> <ul style="list-style-type: none"> Material and relational Processes Logical sequence <p>Interaction of factors</p> <p>process = verb</p> <p>melting</p> <p>rising</p> <p>changing</p> <p>escaping</p> <p>general participants = common nouns</p> <p>causal words/phrases</p> <p>As a result</p> <p>therefore</p> <p>Scientific Explanations use material and relational processes</p>
Closing
<p>As shown by the scientific facts above.....</p>

Fig. 10. Juan's scientific explanation reading/writing guide.

5.4. Changes in students' abilities to comprehend and produce extended discourse

Over the course of the study, all students made gains in their reading and writing abilities, but these gains were uneven across the three focal students (see Table 2). In this section, we summarize the progress each student made in regard to reading and writing by analyzing changes in their ability to produce extended discourse and the degree to which they drew on SFL metalanguage tools in revising their texts to make them more coherent over the course of the year. We also discuss gains made in reading as measured by the Fountas and Pinnell Benchmark Assessment System (Fountas & Pinnell, 2008) and in general language proficiency as measured by a state exam.

As evident in Table 2, Damaris made the most dramatic progress in her ability to read and write extended discourse. In reviewing the texts she produced over the course of the study, including those produced with scaffolding (e.g., explanations) and those produced independently (e.g., freewrites at the beginning of each unit and her final narrative), we see a steady increase in the length of her texts. For example, the first text she produced without scaffolding, in the context of the Puerto Rican migration unit in April 2010, was a single 144-word paragraph. This text is significantly shorter than the 230-word narrative she produced with no assistance in June 2011. Moreover, in producing texts over the course of the year, Damaris used SFL metalanguage as instructed to make substantive revisions to her texts at the level of genre (e.g., rearranging the order of paragraphs, adding paragraphs, checking to ensure she included all the expected genre moves). At the register level, she also began to control a greater range of tenses and expand the types of conjunctions she used to link clauses (e.g., deleting *and* and using temporal and causal connectives such as *when*, *if*, *then*, *until*, *so*, *because*, *after*, *next*, *finally*). In addition, she exhibited greater control over conventional punctuation and spelling. Aspects of these changes are evident in a typed rendering of the orientation phase of an unassisted draft she wrote about a tornado touching down in her neighborhood in June 2011 shown in Table 2. While still having language learner features (e.g., creatively using *painting* for *dying*), her text shows both genre and register knowledge. For example, she located the reader in time and space using lexicogrammatical resources that create suspense (e.g., the use of the marked temporal theme *In June 1*; the use of the past progressive and specific processes *waiting*, *coming*, *screaming*; use of dialog). She also packed meaning into these clauses

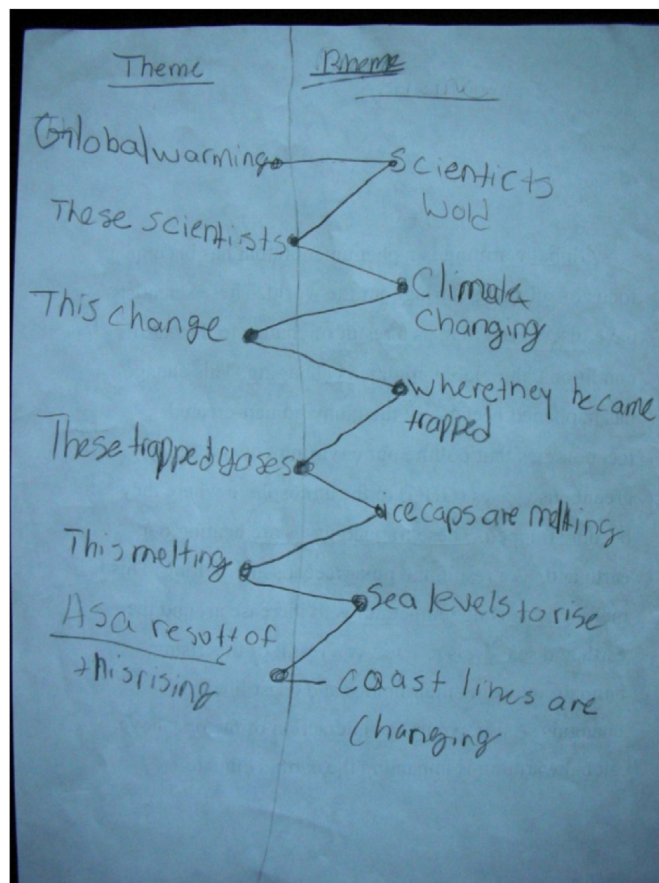


Fig. 11. Student's class notes on theme/rheme patterns and nominalization.

through embedding. Last, she was able to use conventional spelling and punctuation (e.g., commas, periods, apostrophes, quotation marks, paragraphing) to support readers in managing the flow of her discourse.

In accounting for Damaris' ability to produce these texts, as well as gains she made in reading (see Fig. 13), there are several factors that seem to be relevant. First, she was literate in her first language and therefore had developed a sense of how print works to realize meanings in ways that other focal students were still developing despite having attended Buchanan for several years (e.g., realizing word boundaries, sound/letter relationships, and the function of punctuation in extended discourse). In addition, Damaris completed her work diligently and was not easily distracted. Raquel, in comparison, could be easily distracted and tended to apply herself more to the social and interactional aspects of class activities (e.g., pair work) as opposed to those that required her to focus on her work independently (e.g., drafting, revising, editing). Nonetheless, she also showed growth in her ability to produce extended, more coherent discourse with less assistance over time. The first text she produced without scaffolding in the context of the Puerto Rican migration unit was a single 147-word paragraph compared to the 180-word tornado narrative she produced in June 2011. However, she did not use instruction in SFL metalanguage to make substantive revisions to her drafts at genre level, despite being able to use SFL metalanguage appropriately in reflecting on the presence and absence of genre moves in her own writing and others' during peer-feedback sessions. She also made gains in her ability to realize meaning using a more written register. For example, after a mini-lesson regarding the differences between everyday oral language and written academic language, Raquel circled, counted, and changed many uses of the conjunction *and* in the theme position. In subsequent revisions, she discriminated between *and* used in complex clauses (e.g., *When the tornado end I went with my mom to take pictures about what the tornado destroyd **and** did not destroyd*) and *and* used in ways that were more reflective of oral discourse (e.g., *all of a sudden my mom saw people crying and yelling **and** I started crying to because my mom call my aunt **and** she said she lost her house*). In making edits in her second draft, she inserted the conjunction *so* and *then*. These edits realized more causal and temporal connections between clauses. However, Raquel did not attend to punctuation in ways that would have supported readers in managing the flow of print. Last, in regard to Juan, it was difficult to assess gains in his ability to produce extended discourse because he was often absent, lost work, or did not complete assignments. He did however make progress in his reading abilities as measured by Fountas and Pinnell Benchmark Assessment System as shown in Fig. 13 (Fountas & Pinnell, 2008). This system provides a formative assessment of students' abilities in the domains of decoding, fluency, vocabulary and reading comprehension for grades K-8. This instrument was not field tested with bilingual learners and is considered to be a more subjective measure than others because it is administered by the student's teacher in ways that may vary or be biased.

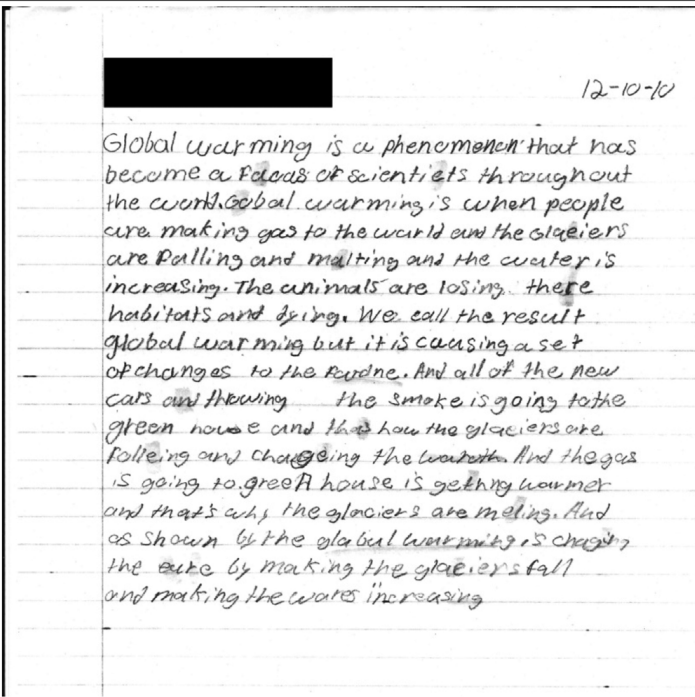
Juan's text	 <p>12-10-10</p> <p>Global warming is a phenomenon that has become a focus of scientists throughout the world. Global warming is when people are making gas to the world and the glaciers are falling and melting and the water is increasing. The animals are losing their habitats and dying. We call the result global warming but it is causing a set of changes to the earth. And all of the new cars and throwing the smoke is going to the green house and that's how the glaciers are falling and changing the weather. And the gas is going to green a house is getting warmer and that's why the glaciers are melting. And as shown by the global warming is changing the earth by making the glaciers fall and making the water increasing.</p>	Lexicogrammatical features
Genre stages	Text	Lexicogrammatical features
Statement of the phenomenon	Global warming is a phenomenon that has become a focus of scientists throughout the world.	Use of relational process (is)
Interaction of factors	Global warming is when people are making gas to the world and the Glaciers are falling and melting and the water is increasing. The animals are losing there habitats and dying. We call the result global warming but it is causing a set of changes to the fardne. And all of the new cars and throwing the smoke is going to the green house and thas how the glaciers are folleing and changeing the wareth. And the gas is going to green house is getting warmer and that's why the glaciers are melting. And as shown by the glabal warming is chaging the eare by makig the Glaciers fall and making the wares increasing	General participants (people, animals, greenhouse gases, etc.) Use of material processes in the present progressive tense (are making, are falling and melting, is changing, etc.) Additive conjunction (and) in theme position that links clauses

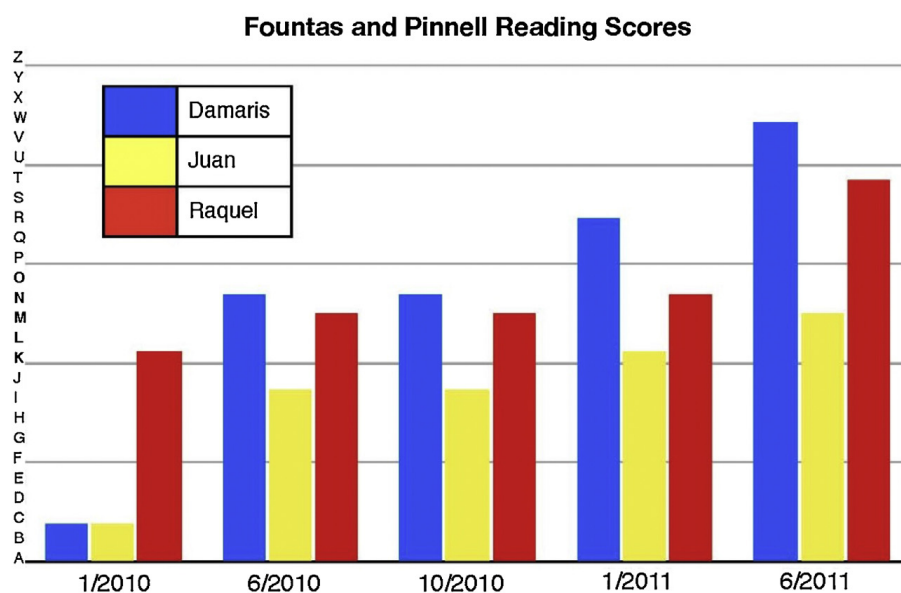
Fig. 12. Genre and register analysis of Juan's scientific explanation.

Of particular interest is that the Fountas and Pinnell system assesses students' abilities to read increasingly demanding fiction and non-fiction texts on a gradient from Level A–Z. At Level A, aligned with the types of texts students encounter in kindergarten, students were assessed on their ability to read short highly congruent sentences about everyday topics realized through simple and repeated lexicogrammatical patterns. At Level Z, aligned with the types of texts students encounter in grade 8, students were assessed on their ability to read longer discipline-specific passages that realize meaning through more complex clause structures using an increasingly incongruent grammar. The fiction texts tend to be narratives exhibiting the canonical genre and register features of this text type and the non-fiction texts tend to be scientific explanations, scientific reports, or biographical explanation—all text types that students had analyzed over the course of the year with Lynne's support. While we cannot make any causal claims regarding students' gains given the design of this study, which certainly did not control for language development that might have resulted from interactions in other contexts over the course of the study, we can speculate that their intensive study of the precise genre and register features of these kinds of explanations may have supported the development of their reading abilities in school. For example, Damaris made the most gains, jumping from Level B (kindergarten), in January 2010 to Level W (grade six) in June 2011. Raquel, who had been attending school in the U.S. longer than Damaris also made progress, progressing from Level K (grade two), to Level T (grade five). And last, Juan, progressed from Level B (kindergarten) to Level M (grade three).

Table 2

Gains in focal students' literacy practices between April 2010 and June 2011.

Name	Text length	Types of revisions	Excerpt from unassisted writing sample April, 2010	Excerpt from unassisted writing sample June, 2012	Changes in Fountas and Pinnell reading scores	Changes in Mass. English proficiency scores
Damaris	Steady increase (60% longer)	Made substantive revisions that attended to genre stages and register features	<i>Los Puertorriqueno se madaron para Milltown para tener una mejor vida y no tener problema</i>	<i>In June 1st, I was in my aunt's house. I was waiting my mom to finish painting my aunt's hair. Then my aunt's daughter interrupted by screaming "There's a tornado coming"</i>	Level B "kindergarten" → Level W "grade 6"	Level 3 "communicates in basic English; errors sometimes interfere" → Level 4 "reads and writes shorts texts; understands grade level texts with occasional errors"
Raquel	Steady increase (23% longer)	Did not make substantive revisions; edits related to excessive use of and	<i>The people that came to move to Milltown because they were looking for work and for a safe place to live, like Milltown, like new york, like florida. And like SAnto domingo and I'm learning more and more About the Puerto ricans and About the immigration</i>	<i>All of a sudden my mom saw people crying and yelling so my mom started to cry me too because that was sad for her then my mom call my aunt from Winchester and she said that she lost her house because of the tornado</i>	Level K "grade 2" → Level T "grade 5"	Level 3 "communicates in basic English; errors sometimes interfere" → Level 4 "reads and writes shorts texts; understands grade level texts with occasional errors"
Juan	Insufficient data	Insufficient data	(1) <i>For a barel lif in the U.A.S.</i> (2) <i>For a barel relationship in the U.A.S.</i> (3) <i>For abarel Economic in the U.A.S.</i> (4) <i>Forabare Geagraphis in the U.A.S.</i>	<i>My dad was comean from the marre and when hi was going to pass throthe the conrec revave. But it was block so he had to go throu the highway but he so a three in the way so he had to go in the grass to pass throu the three</i>	Level B "kindergarten" → Level M "grade 2"	Level 2 "errors interfere with communication" → Level 3 "communicates in basic English; errors sometimes interfere"

**Fig. 13.** Focal students' Fountas and Pinnell reading scores.

These improvements in all three students' abilities to persistently read longer, more structured texts realized through more complex lexicogrammatical structures (e.g., use of nominalization, types of embedding, and technical lexis) is supported also by collective gains on the Massachusetts English Proficiency Assessment (MEPA). This test measures ELLs' speaking, listening, reading, and writing abilities on a scale from Level 1 to 5, with Level 1 indicating that a student "cannot yet communicate in English" and Level 5 indicating that a student "is fluent and communicates effectively across all academic subjects" (Massachusetts Department of Elementary and Secondary Education, 2012). Despite this instrument's shortcomings, which have been recognized by the state, over the course of the year, Juan progressed from a beginning Level 2 to a more intermediate Level 3, and Damaris and Raquel progressed from an intermediate Level 3 to a more advanced intermediate Level 4.

6. Conclusion and implications

The findings from this longitudinal case study of the literacy practices of three bilingual students corroborates the findings of other studies that suggest SFL metalanguage can support teachers in designing effective academic literacy instruction for ELLs (e.g., Achugar et al., 2007; Aguirre-Muñoz et al., 2008; Brisk & Zisselsberger, 2010; Gebhard et al., 2013; Hammond, 2006). In addition, this study contributes to the available SFL scholarship by describing the benefits of teaching students to use functional metalanguage as a tool in learning how to read and write challenging disciplinary texts about topics that are culturally relevant to them as members of non-dominant groups. In sum, an analysis of the data suggests that an explicit functional metalinguistic knowledge of how disciplinary discourses work to construct meaning provided both Lynne and her students with useful tools for engaging in robust reading and writing activities about topics of academic, social, and political importance. Namely, SFL metalanguage provided participants with text-analytic tools for recognizing and naming discourse semantic and lexicogrammatical patterns within and across grade-level texts. These tools were useful in designing curriculum that built on students' linguistic and cultural resources as Spanish speakers and focused their attention on the types of texts they needed to learn to read and write in the disciplines of social studies and science. These tools also supported Lynne in reflecting on students' emergent literacy practices with greater linguistic precision and in planning future instruction with greater clarity by attending to clause-level grammar.

In sum, the data suggest that ELLs benefited from learning how to use SFL metalanguage to read and write disciplinary texts. For example, following Lynne, they learned to identify expected genre moves and register features, classify different types of processes and participants, notice how and why authors shift tenses, catalog different types of conjunctions, and track theme/rheme patterns in assigned readings and in their own texts to note how coherence is achieved in extended written discourse. In addition, the use of SFL metalanguage appears to have played a role in expanding the semiotic resources of students, especially as these resources relate to comprehending and producing written discourse. While the gains students made in producing extended coherent written discourse were uneven, students' texts displayed greater ability to produce texts that were longer, required less scaffolding, and used language more typical of disciplinary texts. These findings were consistent with students' progressively higher Fountas and Pinnell and state English proficiency test scores.

These findings support Macken-Horarik's (2008, p. 46) claim that SFL metalanguage can provide teachers, and we would argue ELLs, with a "powerful navigational toolkit" for making sense of how language works in disciplinary texts. These findings suggest that teachers and even young learners can get started relatively quickly in using SFL tools to analyze texts in productive ways. For example, prior to participating in this study, Lynne had no coursework in linguistics, but she was nonetheless able to use a 14-week introduction to SFL to make connections between what the theory had to offer and what her students needed to learn how to do with print by focusing the curriculum on selected genres and a limited number of register features that supported the construction of meaning in these text types (see also Gebhard et al., 2013). Moreover, the metalanguage she taught students to use to analyze these texts was not extensive. It consisted of a relatively short list of terms she introduced gradually and iteratively over time to help students make sense of different types of explanations over the course of the year (e.g., participant, process, conjunction, theme/rheme, nominalization).

In reflecting on her use of SFL metalanguage, Lynne stated, "a little SFL and genre theory goes a long way." She added that it enabled her to go "deeper into texts" with students in ways that were anchored to what "they can do with language now and what they need to learn next to move along a linguistic pathway that makes developmental sense." She contrasted this approach to the disjointed "curriculum surfing" that she felt characterized many ESL materials and professional development workshops that had shaped her teaching practices previously. She said SFL and genre theory allowed her to "connect," rather than separate, the teaching of vocabulary, grammar, reading, writing, and content in ways that "build" academic literacy proficiency rather than "jumping from topic to topic and genre to genre . . . one day poetry, the next science."

In addition, SFL metalanguage appears to have played a role in supporting Lynne and her students in navigating the discourses of English-only instruction, standardization, and high-stakes accountability, all of which have contributed to the inability of ELLs to progress in elementary schools in ways that lead to successful graduation from high school (Darling-Hammond, 2006). Through her participation in ACCELA, Lynne developed an understanding not only of SFL-based pedagogy, but also of the importance of building on students' linguistic and cultural resources to support literacy development (Dyson, 1993; New London Group, 1996). With the support of ACCELA courses, including one on multicultural children's literature, she was able to design curriculum that was standards-based, supportive of students making gains on aligned exams, and in service of an explicit multilingual/multicultural agenda as evidenced by students' use of Spanish, attention to Puerto Rican history, and award-winning texts written by Puerto Rican authors. Our assumption is that effective curriculum draws on

the semiotic resources students bring with them to school, including their home language, and that successful instruction works to expand, rather than replace, these resources. SFL-based pedagogy appears to have provided Lynne with a conceptual framework and set of tools for designing curriculum and instruction for bilingual students that built on their home language and was geared toward teaching students how to read and write high-stakes genres in English in which multilingualism/multiculturalism and accountability to academic standards were not mutually exclusive goals. This is an important implication of this study, given the degree to which educational research, policies, and practices often force educators to take sides in false dichotomies regarding the education of linguistically and culturally diverse students, especially as it relates to reading and writing instruction. Namely, SFL-based instruction appears to have supported Lynne in balancing a focus on form and function by teaching Spanish speaking ELLs to read and write academic texts in English about topics that were potentially relevant to them as members of the local Puerto Rican community. She was able to do this by using SFL and genre theory to attend to both the process and product of academic literacy instruction in culturally responsive ways.

References

- Achugar, M., & Schleppegrell, M. J. (2005). *Beyond connectors: The construction of cause in history textbooks*. *Linguistics and Education*, 16(3), 298–318.
- Achugar, M., Schleppegrell, M., & Oteiza, T. (2007). Engaging teachers in language analysis: A functional linguistics approach to reflective literacy. *English Teaching: Practice and Critique*, 6(2), 8–24.
- Aguirre-Muñoz, Z., Park, J. E., Amabisca, A. A., & Boscardin, C. K. (2008). Developing teacher capacity for serving ELLs writing instructional needs: A case for systemic functional linguistics. *Bilingual Research Journal*, 31(1/2), 295–322.
- Arkoudis, S. (2005). Fusing pedagogic horizons: Language and content teaching in the mainstream. *Linguistics and Education*, 16(2), 173–187.
- Berry, R. (2005). Making the most of metalanguage. *Language Awareness*, 14(1), 3–20.
- Brisk, M., & Zisselsberger, M. (2010). “We’ve let them in on a secret”: Using SFL theory to improve the teaching of writing to bilingual learners. In T. Lucas (Ed.), *Preparing all teachers to teach English language learners* (pp. 111–126). Mahwah, NJ: Erlbaum/Taylor & Francis.
- Christie, F. (2012). *Language education throughout the school years: A functional perspective*. New York: Wiley-Blackwell.
- Christie, F., & Derewianka, B. (2008). *School discourse: Learning to write across the years of schooling*. London: Continuum.
- Coffin, C. (2006). *Historical discourse: The language of time, cause and evaluation*. London: Continuum.
- Darling-Hammond, L. (2006). No child left behind and high school reform. *Harvard Educational Review*, 76(4), 642–667.
- Davison, C. (2005). Learning your lines: Negotiating language and content in subject English. *Linguistics and Education*, 16(4), 219–237.
- Dyson, A. H. (1993). *Social worlds of children learning to write in an urban primary school*. New York: Teachers College Press.
- Eggs, S. (2004). *An introduction to systemic functional linguistics*. London: Continuum.
- Fang, Z. (1998). A study of changes and development in children’s written discourse potential. *Linguistics and Education*, 9(4), 341–367.
- Fang, Z. (2008). Going beyond the Fab Five: Helping students cope with the unique linguistic challenges of expository reading in intermediate grades. *Journal of Adolescent and Adult Literacy*, 51(6), 476–487.
- Fountas, I. C., & Pinnell, G. S. (2008). *Fountas & Pinnell benchmark assessment system 2*. Portsmouth, NH: Heinemann.
- Gánem-Gutiérrez, G., & Roehr, K. (2011). Use of L1, metalanguage, and discourse markers: L2 learners’ regulation during individual task performance. *International Journal of Applied Linguistics*, 21(3), 297–318.
- Gebhard, M., Chen, I., Graham, H., & Gunawan, W. (2013). Teaching to mean, writing to mean: SFL, L2 literacy, and teacher education. *Journal of Second Language Writing*, 22(2), 107–124.
- Gebhard, M., & Martin, J. (2011). Grammar and literacy learning. In D. Fisher, & D. Lapp (Eds.), *Handbook of research on teaching the English language arts* (pp. 297–304). Mahwah, NJ: Erlbaum/Taylor & Francis.
- Gebhard, M., Shin, D. S., & Seger, W. (2011). Blogging and emergent L2 literacy in an urban elementary school: A functional perspective. *CALICO Journal*, 28(2), 278–307.
- Gebhard, M., Willett, J., Jimenez, J., & Piedra, A. (2010). Systemic functional linguistics, teachers’ professional development, and ELLs’ academic literacy practices. In T. Lucas (Ed.), *Preparing all teachers to teach English language learners* (pp. 91–110). Mahwah, NJ: Erlbaum/Taylor & Francis.
- Gibbons, P. (2002). *Scaffolding language, scaffolding learning*. Portsmouth, NH: Heinemann.
- Halliday, M. A. K. (1985). *Spoken and written language*. Victoria, Australia: Deakin University Press.
- Halliday, M. A. K. (1993). Towards a language-based theory of learning. *Linguistics and Education*, 5(2), 93–116.
- Halliday, M. A. K. (1999). The notion of “context” in language education. In M. Ghassemy (Ed.), *Text and context in functional linguistics* (pp. 1–24). Amsterdam: John Benjamins.
- Halliday, M. A. K. (2002). On grammar and grammatics. In J. J. Webster (Ed.), *Collected works of M.A.K. Halliday* (Vol. 1) *On grammar* (pp. 384–417). London: Continuum.
- Halliday, M., & Matthiessen, C. (2004). *An introduction to functional grammar* (3rd ed.). London: Edward Arnold.
- Hammond, J. (2006). High challenge, high support: Integrating language and content instruction for diverse learners in an English literature classroom. *Journal of English for Academic Purposes*, 5(4), 269–283.
- Haneda, M. (1999). Modes of student participation in an elementary school science classroom: From talking to writing. *Linguistics and Education*, 10(4), 459–485.
- Haneda, M., & Wells, G. (2008). Learning an additional language through dialogic inquiry. *Language and Education*, 22(2), 114–136.
- Harman, R. (2013). Intertextuality in genre-register pedagogies: Building the field in L2 fifth grade literary writing. *Journal of Second Language Writing*, Special Edition (H. Byrnes, Ed.).
- Heath, S. B. (1983). *Ways with words: Language, life, and work in communities and classrooms*. Cambridge, UK: Cambridge University Press.
- Hood, S. (2008). Summary writing in academic contexts: Implicating meaning in processes of change. *Linguistics and Education*, 19(4), 351–365.
- Kamberelis, G. (1999). Genre development and learning: Children writing stories, science reports, and poems. *Research in the Teaching of English*, 33(4), 403–460.
- Lemke, J. L. (1988). Genres, semantics, and classroom education. *Linguistics and Education*, 1(1), 81–99.
- Macken-Horarik, M. (2002). Something to shoot for: A systemic functional approach to teaching genre in secondary school science. In A. Johns (Ed.), *Genre in the classroom: Multiple perspectives* (pp. 17–43). New Jersey: Lawrence Erlbaum Associates.
- Macken-Horarik, M. (2006). Knowledge through “know how”: Systemic functional grammatics and the symbolic reading. *English Teaching: Practice and Critique*, 5(1), 102–121.
- Macken-Horarik, M. (2008). A “good enough” grammatics: Developing an effective metalanguage for school English in an era of multiliteracies. In C. Wu, C. Matthiessen, & M. Herke (Eds.), *Proceedings of the ISFC 35: Voices around the world*. Sydney: 35th ISFC Organizing Committee.
- Macken-Horarik, M. (2009). Navigational metalanguages for new territory in English: The potential of grammatics. *English Teaching: Practice and Critique*, 8(3), 55–69.
- Macken-Horarik, M., Love, K., & Unsworth, L. (2011). A grammatics “good enough” for school English in the 21st century: Four challenges in realizing the potential. *Australian Journal of Language and Literacy*, 34(1), 9–23.
- Martin, J. R. (2009). Genre and language learning: A social semiotic perspective. *Linguistics and Education*, 20(1), 10–21.

- Martin, J. R., & Rose, D. (2008). *Genre relations: Mapping culture*. London: Equinox.
- Martin, J. R. (1992). *English text: System and structure*. Philadelphia/Amsterdam: John Benjamins.
- Massachusetts Department of Elementary and Secondary Education (2011). *Guide to interpreting MEAP reports for schools and districts*. Malden, MA.
- Massachusetts Department of Elementary and Secondary Education. (2012). *Interpreting the spring 2012 MEPA reports for schools*. http://www.doe.mass.edu/mcas/mepa/2012/interp_guide.pdf
- Mohan, B., Leung, C., & Davison, C. (2001). *English as a second language in the mainstream*. Harlow: Longman.
- New London Group. (1996). A pedagogy of multiliteracies: Designing social features. *Harvard Educational Review*, 66(1), 60–92.
- O'Halloran, K. L. (2000). Classroom discourse in mathematics: A multisemiotic analysis. *Linguistics and Education*, 10(3), 359–388.
- Rose, D., & Martin, J. R. (2012). *Learning to write, reading to learn: Genre, knowledge and pedagogy in the Sydney School*. London: Equinox.
- Schleppegrell, M. J. (2001). Linguistic features of the language of schooling. *Linguistics and Education*, 12(4), 431–459.
- Schleppegrell, M. J. (2004). *The language of schooling: A functional linguistics perspective*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Unsworth, L. (1998). "Sound" explanations in school science: A functional linguistic perspective on effective apprenticing texts. *Linguistics and Education*, 9(2), 199–226.
- Wiggins, G., & McTighe, J. (2004). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Williams, G. (2005). Grammatics in schools. In R. Hasan, C. M. I. M. Matthiessen, & J. Webster (Eds.), *Continuing discourse on language: A functional perspective* (pp. 281–310).