Content-Based Instruction in the Foreign Language Classroom: A Discourse Perspective

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Abstract: *Although a substantial amount of professional literature argues for the potential benefits of content-based instruction, limited research exists on how this type of instruction actually is appropriated, understood, and carried out in practice by foreign language teachers. This study examines the role of two sixth grade Spanish teachers' discursive practices in content-based instruction, the goals of instruction, and the students' proficiency. Through classroom observations, discourse analysis, teacher interviews, and student writing assessments, this study shows the significance of teacher talk in engaging students in learning both language and content, an overarching goal of content-based instruction. Several implications for instruction in content-based instruction programs and the professional development of teachers emerge from this study.*

Key words: *classroom discourse, content-based instruction, literacy, teaching language and content*

Language: *Spanish*

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Introduction

Although a substantial amount of professional literature argues for the potential benefits of content-based instruction, limited research exists on how this type of instruction is actually appropriated, understood, and carried out by foreign language teachers. Foreign language teachers are often grounded in language teaching methodology and knowledgeable about language and cultures. However, when faced with a foreign language course that draws on the school's academic curriculum as the vehicle of language instruction, teachers often lack the content knowledge and the pedagogical approaches to support exploring academic subject matter. As Stoller (2002) correctly points out, "many language programs endorse [content-based instruction] but only use course content as a vehicle for helping students master language skills" (p. 112). Conversely, some teachers may focus on academic content without providing explicit language instruction, hindering students' abilities to fully develop the modes of communication as presented in the *Standards for Foreign Language Learning* (National Standards, 1996). This study seeks to inform the literature on content-based instruction, show how teachers in one school district integrate or isolate language and content, and increase understanding of how classroom talk and tasks shape a content-based foreign language course.[1]

The Benefits of Content-Based Instruction

Over the past several years, foreign language educators (Crandall, 1993; Short, 1997; Snow, 1998; Stoller, 2004) have promoted the benefits of content-based instruction, stating that such instruction fosters academic growth while also developing language proficiency. According to Curtain and Pesola (1994), ". . . in content-related instruction, the foreign language teacher uses concepts from the regular curriculum to enrich the program with academic content . . . The curriculum content is chosen to provide a vehicle for language learning and to reinforce the academic skills needed by the students" (p. 35). Content-based instruction is intended to foster the integration of language and content, viewing "language as a medium for learning content and content as a resource for learning and improving language" (Stoller, 2002). In addition, content-based instruction is beneficial because classroom tasks provide a context for language learning, are more cognitively demanding, and reinforce the existing school curriculum.

The Study

In this study, we examined the role of the teachers' discursive practices on content-based instruction, the goals of instruction, and the students' linguistic development. We analyzed discourse data from two sixth grade content-based Spanish classrooms in the same school taught by two different instructors who used the same curriculum. The insights gained from this analysis shed light on how content-based instruction is realized in two classrooms and the relationship between teachers' talk, classroom tasks, and students' language development. To the best of our knowledge, no other empirical studies have been conducted that describe the use of a content-based instruction curriculum from a classroom discourse perspective.

The overarching research question of this study was: How is content-based instruction carried out discursively in two sixth grade Spanish classes? To answer this question, we analyzed the discourse of two sixth grade classes during four class periods from February to April 2004. In addition to the classroom discourse data, we collected students' end-of-year literacy assessments. These data were gathered to provide information concerning the potential relationship between the teachers' discursive practices and student language development as measured by the literacy assessment. Finally, we interviewed the two teachers for their perspectives on content-based instruction. The article concludes with several recommendations for content-based instruction.

The Qualitative Nature of the Study

This study is qualitative in nature in that it seeks to document, analyze, and interpret naturally occurring data in the content-based instruction classroom setting. For this reason, we made no attempt at manipulating variables or predicting performance. Research in the qualitative paradigm seeks to understand a phenomenon–content-based instruction–as it emerges dynamically and socially in the experiences of the participants (Marshall & Rossman, 1999). We chose a qualitative approach based on our own initial observations of these classes and the differences that we perceived in the construction of talk in these classrooms. Qualitative research allowed us to explore and analyze closely the discursive features of these classes and the effects of these different features on classroom participation and student outcomes.

Given the qualitative nature of the study, the findings may not directly generalize to all teachers in content-based classrooms. However, this study provides a close analysis of how content-based instruction is carried out in one school district in particular, and sheds light on the approach of content-based instruction in general. The qualitative nature of this study precludes generalizing to all those who participate in content-based instruction classes, although our analysis and findings might easily transfer to other settings and resonate with the reader. As is the case for all qualitative research, the findings of this study contribute to a grounded conceptual understanding of the construct of content-based instruction rather than generalize teaching practice to all content-based instruction teachers, students, and programs.

The Role of Teacher-Student Discursive Interactions in Content-Based Instruction

In this study, we focused on classroom discourse because of the importance to learning of teacher–student talk. Drawing on the work of Edwards and Mercer (1987), Gibbons (2005) argues that it is through talk that knowledge is constructed and "it is essentially in the discourse between teacher and students that education is done or fails to be done" (Edwards & Mercer, 1987, p. 101). Thus, classroom discourse analysis is a useful tool to examine how content-based instruction is carried out by language teachers in their moment-by-moment interactions with students. Hall (1995) discusses the significant role that teacher discourse plays in the classroom and argues that teachers

> construct frameworks of interactive practices that are significant to learning and provide models of competent participation, including the uses of appropriate discursive structures and other linguistic resources associated with the practices. Teachers also play an important role in providing learners with multiple opportunities to use these means in ways that help them to develop the competencies needed for their own successful participation. (p. 38)

Thus, a teacher whose discursive practices focus exclusively on the mastery of language forms in the context of academic content potentially enables students to learn the language system, but the students' knowledge of the academic content is compromised. An excessive focus on language form may occur by default because content-based instruction teachers may not be familiar with the academic subject, with content-based instruction pedagogy, or with ways of engaging students in academic discussions. Because of their lack of content knowledge, teachers often struggle when presenting academic content and, therefore, fall back on rather traditional approaches to instruction where the primary objective is the mastery of grammatical forms, discrete word meanings, and accurate syntax.

Setting

This study was conducted in a suburban middle school in southwestern Pennsylvania. Committed to the teaching of foreign languages, the school district's curriculum includes an elementary foreign language program in which the students begin learning Spanish in kindergarten and continue through seventh grade. This program started in 1996 as an initiative of the district's superintendent and with the continuous support of a university partnership (Tucker, Donato, & Murday, 2001). In sixth grade, students begin to learn Spanish through content-based instruction for 40 minutes every day. Spanish is used to teach topics from the middle school curriculum in four subject areas–English/language arts, reading, social studies, and science.[2]

For this study, data were collected from two sixth grade Spanish classes taught by two different teachers, Grace and James (pseudonyms). Grace and James attended a full-year graduate teacher-education program at the same university and earned their Master of Arts degrees in teaching foreign language and K–12 certification in Spanish. Grace also obtained an additional certification in elementary education. At the time of the study, Grace had been teaching Spanish for two years and James, for three years.

As part of a larger research program, this study emerged from classroom observations conducted to document student literacy learning in content-based instruction. As we visited teachers at the research site, we noticed that two sixth grade Spanish teachers were carrying out content-based instruction quite differently in their classrooms, despite using the same curriculum, materials, and resources. To examine this difference more closely, we chose four class periods in which to record, transcribe, and analyze data. These classes were deemed representative of the majority of both teachers' classes, since the research team conducted observations throughout the entire school year and could compare these four classes to what was typically observed. Therefore, the recorded class periods analyzed in this study serve as a proxy for other classes the research team observed throughout the year.

Data Sources

To collect data on the discourse of content-based instruction, informal observations of two sixth grade foreign language classrooms were conducted throughout the school year. Over the course of the year, four class periods (February 27, 2004; March 12, 2004; March 22, 2004; and April 15, 2004) of each teacher were videotaped and transcribed. We worked inductively from the data and selected the discursive features that were recurrent and emerged from the instructional tasks each teacher used.[3] The features of the teachers' talk reveal how these two teachers explored and discussed academic content discursively with their students. Additionally, we selected discursive features that are important when analyzing the development of interactional and linguistic competence in discursive contexts (Hall, 1993, 1995; Johnson, 2001; Young, 1999). Thus, in the data, we attempted to isolate discourse features that enabled discussions about academic content while simultaneously supporting the development of foreign language proficiency, an overarching goal of all content-based instruction programs.

The discourse features for this study are (1) language-related talk and content-related talk, (2) conversation features of interpersonal communication, (3) the use of English, and (4) teacher feedback and error correction. Although other features of the discourse were present, we believe these four features capture how talk shapes discussion of academic content while simultaneously promoting language development. To develop interactive communicative ability, learners need occasions to participate in interactions that permit them to observe interactional moves, reflect upon them, and "create their own active construction of responses to these patterns" (Hall, 1995, p. 218). For example, a teacher's discursive practices to advance the discussion of the academic topic engage students in emergent understandings of academic concepts while making visible language structures and oral interactive practices (Tharp & Gallimore, 1988). During these interactions, learners can reflect on language form (Swain & Lapkin, 2002), receive feedback on comprehensibility, and take up new language forms from the more knowledgeable student or teacher (Lyster, 1998; Lyster & Ranta, 1997). Finally, the four discourse features are not discrete; they can complement each other and realize the integration of academic content and a focus on language form within the oral interactive practice.

Additional data were collected to assess the impact of the teachers' discursive practices on student academic writing. To evaluate individual student writing, a sample of 25 students from Grace's class and 26 students from James' class responded to a writing prompt on natural resources, a task designed based on the same lesson analyzed in this study. The task directed students to write a letter to the Environmental Protection Agency and to discuss and compare various natural resources in their community. The assessments were evaluated using a modified version of the ACTFL presentational mode of communication rubric for intermediate learners. To include the teachers' perspectives on content-based instruction and to corroborate our analysis, we conducted two separate interviews with each teacher.

Findings

Language-Related Talk and Content-Related Talk

To examine the integration of language and content, we analyzed the talk deriving from each classroom task. In the analysis, we determined if the discourse of the task was focused on enabling the students to discuss the academic content, to reflect on target language forms, or both. The analysis of the tasks in these classrooms reveals that both classes were predominately focused on language learning tasks in contrast to tasks that promoted discussions of academic concepts, in this case the concept of energy resources. In Grace's classes, 33% of the tasks were related to the academic content, compared to 11% of the tasks in James' classes. This analysis indicates that Grace used instructional tasks focused on discussing academic content more than James. In both teachers' classes, however, activities that explore academic concepts in the target language were relatively rare.

Example 1 is taken from James' class during the correction of a homework assignment and illustrates the relationship between task and talk. The example is noteworthy because it shows how the teacher used a task that requires the vocabulary of the content area yet circumvents discussing concepts associated with the academic topic. The example shows how the language of the content area may serve only as a vocabulary resource for grammatical practice. In Example 1, James directed students to construct sentences using phrases for making comparisons. As the teacher's utterances indicate, the objective of the task was to practice comparative phrases such as *más peligroso que* [more dangerous than], rather than to make use of comparative structures to evaluate energy resources as the objective of the lesson.

Example 1

Teacher: *Vamos a hacer dos cosas, primero las comparaciones. ¿Qué significa las comparaciones?* [We are going to do two things, first the comparisons. What does comparisons mean?]
Student: Comparisons.
Teacher: Comparisons. *Sí, primero las comparaciones. ¿Cómo se dice* better than? [Comparisons. Yes, first the comparisons. How do you say better than?]
Student: *Mejor que* [Better than]
Teacher: *Mejor que, perfecto.* [Better than, perfect.]
Teacher: *¿Cómo se dice* worse than *en español?* Worse than, Tim. [How do you say worse than in Spanish? Worse than, Tim.]
Student: *Peor que.* [Worse than.]
Teacher: *Ahora necesito unos voluntarios, por favor. Necesito unos voluntarios para escribir una oración. Un voluntario para mejor que, Sarah, por favor, escribe, peor que, Kristin, más seguro que, Kerri, y más peligroso que, Tim. Ok, bien, ¿Qué persona tiene mejor que? Por favor, la oración.* [Now I need some volunteers,

please. I need some volunteers to write
a sentence. A volunteer for better than,
Sarah, please, write, worse than, Kristin,
30 safer than, Kerri, and more dangerous
than, Tim. Okay, good, Who has better
than? Please, the sentence.]
Student: *La biomasa es mejor que la*
energía nuclear. [Biomass is better than
35 nuclear energy.]
Teacher: *Sí, la biomasa es mejor que la*
energía nuclear. ¿Qué significa en inglés?
[Yes, biomass is better than nuclear
energy. What does it mean in English?]
40 Student: Biomass is better than nuclear
energy.
Teacher: *Muy bien, mejor que, excelente.*
[Very good, better than, excellent.]

Lines 1 to 17 reveal that the teacher's objective for the task was to create comparative phrases and translate them into English. In lines 19 to 41, the students wrote their homework sentences on the board, using these phrases in conjunction with vocabulary from the unit on energy resources. However, the teacher's instructions focused attention solely on the structural characteristics of comparative forms (e.g., better than, worse than, safer than, more dangerous than) rather than on the accuracy of the information or on justifications for the students' reasoning. The teacher's evaluations (*muy bien* [very good], *excelente* [excellent]) in line 42 refer exclusively to the forms produced by the students and indicate that the goal of the task was to produce grammatically accurate comparative sentences.

The percentage of tasks and talk related to academic content was somewhat higher in Grace's class. In Example 2, Grace's questions enabled students to discuss the topic by requiring evaluation and justification of various energy resources. In contrast, James' questions in Example 1 required students to display knowledge of the comparative forms and their English meanings in the context of vocabulary related to energy resources.

Example 2

1 Teacher: *Contesta la pregunta en*
una frase completa: ¿Cuál recurso es
peor, la energía nuclear o la energía
geotérmica y por qué? [Answer the
5 question in a complete phrase: What
resources are worse, nuclear energy
or geothermic energy, and why?]
Student (writing in notebook): *La*
energía nuclear es peor que la energía
10 *geotérmica, porque es más peligrosa al*
medio ambiente y producir los desechos
radioactivos. [Nuclear energy is worse
than geothermic energy because it is
more dangerous to the environment
15 and to produce radioactive waste.]
Teacher: *¡Wow, increíble! Vamos a ver.*
La energía nuclear es peor que la energía
geotérmica. ¿Todos están de acuerdo?
¿Está bien esta parte de la oración?
20 *Sí, está bien. ¿Marta estás de acuerdo?*
[Wow! Incredible! Let's see. Nuclear
energy is worse than geothermic energy.
Does everyone agree? Is this part of the
sentence good? Yes, it's good. Marta do
25 you agree?]
Student: *Sí.* [Yes.]
Teacher: *Sí, estoy de acuerdo. Está bien.*
[Yes, I agree. It's good.]
Teacher: *Es más peligrosa ¿por qué*
30 *peligrosa y no peligroso aquí? ¿Por qué?*
[Is it more dangerous, why dangerous
(feminine) and not dangerous (masculine) here? Why?]
Student: *Geotérmica es femenina.*
35 [Geothermic is feminine.]
Teacher: *Ok, la palabra geotérmica es una*
palabra femenina. Ok, tienes razón es una
palabra femenina pero, ¿qué es el sustantivo? [Okay, the word geothermic is a
40 feminine word. Okay, you are right, it's a
feminine word, but, what is the noun?]
Student: *Porque el sustantivo es la energía*
nuclear y es femenina porque es la energía.
[Because the noun is nuclear energy and
45 it is feminine because it is energy.]
Teacher: *Ah, la energía es un sustantivo*
femenino porque es más peligrosa al
medio ambiente y producir los desechos
radioactivos, producir, ¡muy bien! Pero
50 *tenemos que cambiarlo un poquito.*
Producir, ¿qué significa producir? [Ah,
energy is a feminine noun because it is
more dangerous (feminine adjective) to

the environment and to produce radio-
55 active waste, to produce, very good!
But we have to change it a little bit. To
produce, what does to produce mean?]

Grace initiated the interaction by asking the students to compare natural resources and provide a justification for their opinions. By asking the question in this manner, she encouraged students to go beyond grammatical form and lexical meaning. Rather, students explored the use of comparative structures to indicate the advantages and disadvantages of certain natural resources (Larsen-Freeman, 2003). Evidence that the students understood that they were to justify responses can be seen in their use of *porque* [because] in line 10. The interaction demonstrates how Grace integrated language and content by requesting that the students express their opinions relating to the topic of energy resources with the target grammatical structure.

We also observe in Example 2 how reflection on form was woven into the interaction. While explaining their opinions, students also explained their reasons for choosing *peligrosa* [dangerous, in the feminine form] instead of *peligroso* [dangerous, in the masculine form] (lines 29 to 57). Although Grace focused on linguistic form, she situated the language within the academic content and encouraged reflection on form when it was needed. According to interactional competence theory, local situational contexts are the arenas that give rise to future language competence (Hall, 1995).[4]

In summary, these interactions raise two important issues. First, despite the content-based nature of this program, the teachers' discursive interactions with students appear to have the goal of mastery of language form rather than discussions of academic content. Second, although the teachers share the same curricular goals, the difference in the percentage of content-related tasks indicates that these two teachers carry out the practice of content-based instruction in two distinctly different ways. The contrast in discourse practices suggests that the teaching of content-based instruction might yield different instructional outcomes depending on how teachers understand and implement the goals of a content-based curriculum. Thus, classroom discourse becomes an important feature of content-based instruction that deserves systematic analysis to understand further this increasingly popular model of instruction.

Conversational Features of Interpersonal Communication

We observed eight classes prior to videotaping and noticed differences in the ways that each teacher interacted with the students during their opening conversations. Since these opening conversations reflected the interactional oral practices that we observed in both classes throughout entire lessons, they served as a proxy for the teachers' customary interactional style with their students. Conversational features include coherent topical themes for discussion, expressive reactions to interlocutor contributions, and feedback that advances the topic of conversation (for a discussion of evaluative feedback vs. nonevaluative feedback, see Cazden 2001; Mantero, 2000a, 2000b; Mehan, 1979; Wells, 1993, 1996, 1999). Interactions constructed in pragmatically appropriate ways are considered useful discursive environments for the development of interactional competence (Hall, 1995). Thus, in a classroom where the conversational topics change rapidly and where formulaic uses of the language are more prevalent, there is little opportunity for students to engage in pragmatically appropriate conversations with the instructor and with other students. Similarly, the extensive use of evaluative feedback, characteristic of initiation-response-evaluation discourse patterns, has been shown to inhibit students from further elaboration, explanation, and clarification (Donato & Brooks, 2004).

For this portion of the analysis, we focused on the first three classes of each teacher and the topics that emerged in the opening conversations of these classes.

Each opening conversation varied in topic, including such subjects as the weather, the date, students' health and feelings, and students' favorite day of the week. A change in the conversational topic was indicated when the content of the discourse shifted to a new topic unrelated to the previous utterances. For example, when the teacher asked a question about the weather and then asked how a student was feeling that day, a change in topic was indicated. To ensure reliability of our analysis of the number of conversational topics in the three opening episodes of both teachers' classes, two raters coded the discourse. Table 1 shows the percentages of topics during the opening conversations in the two classrooms as agreed upon by the two raters. We arrived at this percentage by dividing the total number of turns in the opening conversations in each class by the turns that were coded as belonging to one specific conversational topic.

Table 1 indicates that Grace introduced fewer conversational topics during opening conversations than James. The importance of this observation is that by focusing on fewer topics, the teacher and students can develop ideas more extensively during discussion. To illustrate this point, Example 3 shows how Grace constructed the topic of my favorite and worst day of the week with her class, maintained this topic throughout the opening conversation, and allowed students to elaborate and expand upon their contributions to the discussion.

TABLE 1

Number of Topics in Opening Conversations

	James	Grace
Class 1	13%	8%
Class 2	18%	5%
Class 3	18%	6%

Example 3

Teacher: *Nora, dígame. ¿Cuál es el día mejor de toda la semana? En mi opinión. . .* [Nora, tell me. What is the best day of the week? In my opinion . . .]
Student: *En mi opinion, martes.* [In my opinion, Tuesday.]
Teacher: *¿Por qué?* [Why?]
Student: *Porque tengo clase de baile.* [Because I have dance class.]
Teacher: *Ah, ¡qué bueno! En tu opinión Natalia, ¿cuál es día peor de la semana?* [Ah, how nice! In your opinion Natalia, what is the worst day of the week?]
Student: *En mi opinión es el lunes.* [In my opinion, it's Monday.]
Teacher: *¿Por qué?* [Why?]
Student: *Porque estoy cansada.* [Because I am tired.]
Teacher: *Ah, porque estás cansada. Tienes razón. Yo estoy cansada también el lunes después del fin de la semana. ¿Ross, cuál es el día mejor de la semana y por qué?* [Ah, because you are tired. You are right. I am tired too on Monday after the weekend. Ross, what is the best day of the week and why?]

Grace began with an open-ended opinion question about the students' favorite day of the week (line 1). The students' responses are followed by the teacher's question *¿Por qué?* [why], which allows the students to extend and justify their responses while indicating interest in the students' opinions. Grace's approach to the opening conversation about the students' favorite days of the week reflects a consistent pattern of discourse that is analogous to her conversational exchanges about academic topics. That is, she asks open-ended questions that require discussion of student opinions about the academic content rather than verbal displays of accurate linguistic forms.

Conversely, the higher percentage of different conversational topics in James' classes shows a lack of conversational coherence and the presence of topic shifting in his lesson openings. Example 4 illustrates how three topics that could be related (the date, the weather, and how students are feeling) are approached as discrete language practice exercises.

Example 4

Teacher: *Dime, ¿qué día es hoy? Ayer fue jueves. ¿Qué día es hoy?* [Tell me, what day is today? Yesterday was Thursday. What day is today?]
Student: *Viernes.* [Friday.]
Teacher: *Viernes, gracias.* [Friday, thank you.]
Teacher: *¿Cuál es la fecha?* [What is the date?]
Student: *Es el 27 de febrero.* [It is February 27.]
Teacher: *El 27 de febrero, muy bien.* [February 27, very good.]
Teacher: *Ahora dime, el tiempo. ¿Qué tiempo hace hoy? ¿Kristin?* [Now, tell me, the weather. What is the weather like today? Kristin?]
Student: *Hace frío.* [It's cold.]
Teacher: *Un poco frío, un poquito frío, sí.* [A little cold, a little cold, yes.]
Student: *Hace sol.* [It's sunny.]
Teacher: *Hace sol. Aha. ¿Algo más?* [It's sunny. Aha. Anything else?]
Student: *Hace buen tiempo.* [It's good weather.]
Teacher: *Hace buen tiempo, sí, bien. Ahora dime, ¿cómo estás? ¿Uh, Kristin, cómo estás hoy?* [It's good weather, yes, good. Now tell me, How are you? Uh, Kristin, how are you today?]
Student: *Estoy muy bien. ¿Y tú?* [I am very well. And you?]
Teacher: *Estoy bien. Gracias ¿Cómo estás hoy, Maggie?* [I am fine. Thank you. How are you today, Maggie?]

The conversational exchanges in Example 4 are formulaic and appeared in all the classes that we observed. Cazden (2001) and Mehan (1979) describe this type of question as display questions, that is, questions to which the teacher already knows the answer. Given the extensive use of James' display questions in the opening conversations, there was no opportunity for student elaboration on a single topic. The formulaic nature of the exchanges during class openings also was apparent in discussions later in the class when the topic shifted to academic content. Both in the opening conversations and elsewhere in his lessons, James' questions yielded formulaic responses from the students and appeared to prevent students from making meaning in Spanish. The use of display questions restricted elaboration and exploration of academic content, and indicated that the teacher's goal was focus on language form.

Finally, the opening conversations show the teachers' use of evaluative feedback in contrast to teacher feedback that promotes and sustains student talk. As seen in Table 2, both teachers engaged in evaluative feedback exchanges (IRE) for a considerable amount of time during instruction. However, Grace displayed more teacher feedback exchanges (IRF), asking *why* questions frequently (see Example 3, lines 7, 16, and 22) and responding to her students

TABLE 2

Teachers' Use of Initiate Response Evaluate (IRE) Exchanges and Initiate Response Feedback (IRF) Exchanges in Opening Conversations

	James		Grace	
	IRE	IRF	IRE	IRF
Class 1	26%	0%	23%	0%
Class 2	5%	0%	21%	21%
Class 3	5%	0%	0%	6%

with expressive reactions such as *¡Qué bueno!* [How nice!] (Example 3, line 10). As previously noted, teacher responses create interactions that can promote or inhibit a learner's interactional competence and extended discussion of academic content.

In summary, the differences in the opening conversations of these two teachers reflect an orientation to discourse in the teachers' lessons, including the discourse of content-based instruction. In Example 1, the focus of James' lesson is on the use of comparative phrases in the context of lexical items dealing with energy resources. This approach contrasts with Grace's discussion of energy resources in which these comparative expressions played a role in the expression of student opinion. As observed in Example 2, Grace encouraged students to elaborate on academic content using discursive features such as open-ended questions and topic development, a feature that was also observed in her opening conversations. One interesting finding is that the two teachers are consistent in their orientation to classroom talk across time and a variety of instructional activities. This observation suggests that academic content alone will not suffice to create discursive opportunities for students beyond formal language practice. Simply infusing academic content into language lessons will not create a classroom discursive environment that promotes the students' ability to engage in target language interactions, academic or otherwise. We will return to this topic in the conclusion.

The Use of Students' First Language for Translation

The extensive use of translation into English signals a focus on decontextualized vocabulary recognition rather than contextualized academic content knowledge. The continual use of oral translation may undermine students' ability to make meaning in context by emphasizing to students that language is composed of discrete vocabulary and ultimately by preventing the coconstruction of language. To determine the extent and use of English for translation, we coded all instances of the use of *¿Cómo se dice X en inglés?* [How do you say X in English?] and *¿Qué significa X?* [What does X mean?].

Over four class periods, 2% of Grace's utterances involved English translation; the remainder of her instructional talk was carried out in Spanish. James used English translations 12% of the total turns of talk over four class periods, a much higher percentage and consistent with his focus on the language of content rather than on the content itself. We arrived at this percentage by dividing the total number of turns in each class by the turns that were coded as English translations.

In Example 5, James used translation to review vocabulary in the energy unit in the context of a game of Jeopardy.

Example 5

Teacher: *Las categorías son la energía. ¿Qué significa la energía, Sarah?* [The categories are energy. What does energy mean, Sarah?]
Student: Energy.
Teacher: *¿Las comparaciones, Aisha?* [The comparisons, Aisha?]
Student: Comparisons.
Teacher: Comparisons. *Renovable, ¿qué significa renovable?* [Renewable, what does renewable mean?]
Student (speaking during the game): *La energía, doscientos.* [Energy, two hundred.]
Teacher: *¿Cómo se dice* nuclear energy? [How do you say nuclear energy?]
Student: *La energía nuclear.* [Nuclear energy.]
Teacher: *La energía nuclear. Excelente. Equipo 2.* [Nuclear energy. Excellent. Team two.]
Student: *La energía, trescientos.* [Energy, three hundred.]
Teacher: *¿Cómo se dice* hydroelectric energy? [How do you say hydroelectric energy?]
Student: *La energía hidroeléctrica.* [Hydroelectric energy.]
Student: *Comparaciones, cuatro cientos.* [Comparisons, four hundred.]

30 Teacher: *¿Cómo se dice* more dangerous than? [How do you say more dangerous than?]
Student: *Más peligroso que* [More dangerous than]

In Example 5, translation was used to elicit the English meanings of the categories in the game of Jeopardy (e.g., *energía, comparaciones*) (lines 1 to 10). The game itself also involved translation. While the task drew on vocabulary from the energy resource unit, translation focused student attention on word recognition rather than giving students the opportunity to state why certain energy resources may be better for the environment than others.

Error Correction and the Coconstruction of Form

To examine the integration of language and content, we analyzed implicit and explicit error correction and the coconstruction of form. Explicit error correction occurs when the teacher provides the correct form; implicit error correction occurs when the teacher guides the student toward the correct form, for example by prompting for self-repair. Prompting involves the teacher's use of rising intonation, questions, and repetitions to help students identify their errors, reflect upon them, and consequently correct them. Correct forms also may arise though the coconstruction process in which teacher and students jointly contribute to building forms and meanings during interaction (Donato, 1994; Foster, 1998; Jacoby & Ochs, 1995; Ohta, 2001). The coconstruction of form involves collaborative talk between the teacher and the students (or the students with each other) to reflect on, hypothesize about, and jointly construct appropriate grammatical forms in local discursive contexts.

Table 3 shows the number of explicit and implicit error corrections and the coconstruction of form in both Grace's and James' classrooms.

TABLE 3

Error Correction and the Coconstruction of Form

	James	Grace
Implicit/ prompting	1	18
Explicit correction	7	5
Coconstruction	0	16
Total lines	453	917

As seen in Table 3, the amount of teacher talk in James' classroom over four class periods is almost half the amount of talk in Grace's classroom. In addition, James' classroom discourse has fewer instances of error correction and these corrections are largely explicit. No example of the coconstruction of form occurred in James' class. Rather, James corrected students explicitly by indicating when a student is wrong and choosing another student to answer the question correctly. He did not attempt to explain why the student had made a mistake and did not encourage students to repair their own errors through implicit error correction or the joint construction of form.

There were few instances of assisted error correction in James' classroom, due in part to the limited language production of his students. James' students routinely gave one-word responses and when asked to produce longer utterances, their responses were formulaic in nature. In contrast, Grace corrected the majority of her students' errors implicitly or in collaboration with her students. What is striking is that when Grace engaged in explicit focus on form, it occurred as a purposeful task. For example, in one class, Grace provided a sentence correction task in which four inaccurate sentences were written on the board and students were asked to determine the errors, correct them, and explain why.

In Example 6, Grace indicated an error implicitly by restating phrases that are incorrect using a rising intonation. She asked her students to indicate the accuracy or inaccuracy of a word, saying *¿Está bien?* [Is it good?]. Grace then worked with her students to coconstruct the form of the language, as seen in the following example in which Grace asked students about a correct verb form and students explained their reasons for choosing *son* [are] instead of *es* [is].

Example 6

Teacher: *¿Están de acuerdo? ¿Está bien? ¿Si tenemos los combustibles fósiles "es" o "son"?* [Do you agree? Is it good? If we have fossil fuels is it is or are?]
Student: *son* [are]
Teacher: *Daniela dice "son." ¿Por qué "son"? ¿Los combustibles fósiles es plural o singular?* [Daniela says are. Why are? Fossil fuels is plural or singular?]
Student: *plural*
Teacher: *Los combustibles fósiles son. En este caso sí estoy de acuerdo. ¿Cuál es el sustantivo de la oración? Aquí el sustantivo es porciento y ¿cuál es el sustantivo de esta? ¿Natalia?* [Fossil fuels are. In this case yes I agree. What is the noun of the sentence? Here the noun is percentage and what is the noun of this? Natalia?]
Student: *Combustibles fósiles.* [Fossil fuels]
Teacher: *Sí, ¡muy bien! Los combustibles y es un sustantivo plural.* [Yes, very good! Fossil fuels and it is a plural noun.]

Example 6 illustrates how content and language may be integrated in a content-based classroom. As the literature on content-based instruction indicates, an appropriate balance between language and content may be difficult to achieve, resulting in an instructional focus on either language or content, rather than both. In the above exchange, within the context of natural resources and in response to an academic content question, Grace called students' attention to language and gave them the opportunity to inspect it. These instances of the coconstruction of form are elicited within an academic content discussion as errors emerge in the students' elaborations. Through the coconstruction of form, Grace assists the development of grammatical knowledge, making forms explicit and visible, questioning and providing suggestions, and encouraging students to make decisions about grammatical choices.

The coconstruction of form and implicit error correction may be more widespread in Grace's classroom because of the amount of language produced. Grace's tasks encourage students to use Spanish to express their reasons for evaluative comparisons of energy resources, thus going beyond the display of comparative forms to their meaning and use for expressing their reasoning. As students show verbally their understanding of the form and meaning of comparative expressions in Spanish, the goal of the discussion remains understanding the academic content. In this way, student contributions to the discussion allow for the possibility of language errors, for implicit or explicit error correction, for the coconstruction of form at the service of making meaning, and for the integration of language and content.

Student Outcomes: Writing Assessment

To understand the outcomes of these two contrasting approaches to content-based instruction, we examined the students' end-of-year performance on a contextualized writing task based on the topic of energy resources. We realized that comparing the interpersonal mode of communication in speaking to the presentational mode of communication in writing was perhaps comparing the proverbial apples and oranges. However, we posited that, whether these tasks were spoken or written, in a class where students' attention was explicitly and routinely drawn to form, these students would significantly outperform other students on the feature of language control, specifically grammatical accuracy. Conversely, we believed that in a class like Grace's, where classroom talk emphasized the elaboration of a topic, various language functions, comprehensibility of oral expressions, and rich vocabulary resources, these students should outperform their form-focused counterparts. What we discovered, however, was that Grace's students significantly outperformed James' students in every category of the writing assessment including function, text, impact, vocabulary, comprehension, and language control with *p* value ranging from .001 to .005 (see Table 4). These results are particularly interesting since James' classes focused largely on language, but his students performed significantly lower on the grammatical accuracy feature of the writing task.

The following writing sample illustrates how students in each class responded differently to the writing prompt requiring describing, comparing, and evaluating natural resources. Grace's students were able to respond using connectors such as *porque* [because], indicating how they were able to go beyond grammatical comparisons to actual justifications of their responses:

> *La energía eólica es mejor que el petróleo porque no produce los desechos peligrosos y la contaminación, pero el petróleo produce el plástico y usamos el plástico todos los días del año.* [Wind energy is better than oil because it does not produce dangerous waste and pollution, but oil produces plastic and we use plastic every day of the year.]

In contrast to Grace's students, James' students listed comparisons using formulaic utterances without elaboration or connectors, as seen in *La energía solar es mejor que el petróleo* [Solar energy is better than oil]. Given that the students in both classes attend the same school and are in the same content-based program using the same curriculum, we argue that the discursive practices of these teachers (analyzed in the previous sections) were consequential to their students' writing abilities, including grammatical accuracy. This finding of significant differences in grammatical control is particularly intriguing and may be explained by the fact that Grace routinely negotiated form with her students. In contrast, James' approach to accuracy issues relied heavily on the direct provision of the correct form by the teacher embedded in evaluative feedback sequences.

Interviews with the Two Teachers

As part of the study, we interviewed the two instructors about their beliefs about and experiences with content-based instruction. The purpose of the interviews was to examine whether our analysis could be enriched by the teachers' comments about their experiences with content-based instruction. Both teachers seemed concerned with the lack of materials for this type of instruction. Both Grace and James agreed that professional development workshops would be helpful to assist teachers with content-based instruction.

TABLE 4

Results of Writing Assessments

Rubric Categories	Grace	James	Test of Significance
			p <
Function	2.2	1.3	.001
Text	2.1	1.2	.001
Impact	2.3	1.3	.000
Vocabulary	2.2	1.4	.002
Comprehension	2.2	1.5	.004
Control	1.9	1.4	.005

Both teachers acknowledged the challenges of integrating language and content in teaching and assessing content-based instruction. However, clear differences in each teacher's attitude toward the use of content-based instruction emerged in the interviews. Although James stated that he enjoys content-based instruction, he indicated, "It's difficult to grade language based on the content. It's difficult to do both; it seems like I'm doing either one or the other, Spanish or science. It's hard to fit in grammar . . . Verbs are difficult." He further expressed the need for explicit grammar instruction as he observed that his students lack knowledge of grammatical structures. In addition, James stated, "It's hard also since a lot of the students don't know the material in English so I have to teach them a few things [in English]." Although Grace also struggled with "differentiating between language and content and how to grade it," she had a more positive attitude toward content-based instruction than James. Grace stated:

> I love teaching language through content. This makes it more real and not just a small isolated piece of their day. I'd rather have a kid who speaks enthusiastically and with mistakes about something in Spanish than a kid who knows how to conjugate verbs perfectly. What is that good for? I mean, when someone learns the native language as a child, that child speaks with mistakes. Why would we then try to teach a second language in such an unnatural way [with] verb conjugation and grammar sheets?

The differences in the way that these teachers envision content-based instruction are reflected in their classroom discursive practices, classroom tasks, and students' performance on the literacy assessments. While both seem to enjoy content-based instruction and face challenges in integrating language and content, James feels the need for explicit grammar instruction while Grace is satisfied with teaching language in the context of the academic content. Despite James' extensive focus on language in the classroom, we observed no explicit grammar instruction. His classroom discourse and tasks reflected a focus on formulaic utterances with limited student language production and few interactions about language form. It is not surprising that in a class where the focus is on memorized chunks of language, there is little opportunity for students to make grammatical errors and for the teacher and students to reflect on these inaccuracies. As expressed in the interviews, James finds it challenging to focus on both language and content. This is also reflected in the literacy assessments, with James' students performing lower than Grace's in all areas, including accuracy. Grace's interview confirms the findings of the classroom discourse analysis and the literacy assessments. As stated in the interview, Grace enjoys teaching content-based instruction because it provides a real-world context for teaching language. The discourse analysis of her teaching shows that she is, indeed, able to integrate language and content.

Discussion and Implications

Several implications for instruction in content-based instruction programs and the professional development of teachers emerge from this research. These instructional implications involve two complementary goals: the continual development of language proficiency and student achievement in meeting academic content objectives. The following implications derive from the research and address both these concerns.

To promote student proficiency within the context of content-based instruction, teachers in these types of programs need to be cognizant of the language of instruction when teaching academic content. One way to promote continual attention to the development of language competence is to include explicit language objectives in the curriculum. These language objectives derive from the academic subject matter and connect lexically and functionally to the content being addressed. One approach to content-based curriculum development suggested by Curtain and Haas (1995) is to design a visual thematic web that includes language goals, academic content, and cultural objectives. As Stoller and Grabe (1997) state, ". . . it is important that those implementing theme units not lose sight of content and language learning objectives, and the time allotted to meet those objectives" (p. 93).

Teachers need to learn how to monitor their oral interactive practices in and across their lessons, and to develop the ability to lead conversations with their students that reflect a cohesive academic topic and conversational features of interpersonal communication. The teacher's use of feedback moves rather than evaluative statements in conversations provides students with occasions to elaborate, create personal meanings using the foreign language, and develop academic concepts discursively with the teacher and each other. To support student language development, teachers also must limit their use of English and use translation only for specific purposes, for example, to manage the class, to ensure classroom safety, and to give directions for tasks that may be too difficult in the target language.

To this end, teachers can monitor their discursive practices by providing feedback to one another through peer classroom observations (Hall, 2001, in particular chapter 4, is an excellent resource that provides several suggestions for monitoring classroom discourse). Teachers also will benefit from observations by a language coordinator who can provide constructive feedback on their teacher talk and analyze with teachers how this talk is consequential to the development of language ability and content knowledge. The use of videotape analysis of teaching, a familiarization with the role of classroom discourse in supporting student learning, and teacher lesson study groups are additional ways to raise teachers' awareness of the importance of classroom talk. The sheltered instruction observation protocol used to observe and assess teachers who integrate language and content instruction in English as a second language classes can serve as a model to develop an observational tool for teachers and program coordinators in content-based instruction programs (see Echevarria, Vogt, & Short, 2004, for the observation protocol). Further, these observations and conversations about classroom discourse in a content-based instruction program will point out directly to teachers how their talk promotes or inhibits students' attainment of language and content objectives.

Another important consideration is the impact of teacher education on instructional practices in content-based instruction and the role of teachers' content knowledge on the teaching of academic content. Although Grace and James obtained their teaching certificates from the same institution, Grace received dual certification in foreign language and elementary education, while James was certified only in Spanish. Successful content-based instruction programs require a more thorough grounding in academic subject-matter teaching. Dual certification, such as elementary and foreign language certification, may be one way for teachers to have knowledge of foreign language and content-specific pedagogy. The superintendent of the school district in which this study was conducted advocated the use of dually certified teachers from the start of the program. However, the hiring of dually certified teachers was not a sustainable practice in the district and, therefore, not all the Spanish teachers in this program received the same level of foreign language and subject-matter teaching preparation. As Met (1991) advocates regarding content-based instruction in the elementary school, "elementary school foreign language teachers must be well versed in the elementary school curriculum. They must know what is taught, when, and how" (p. 293).

One way to address the level of preparation of teachers is to develop ongoing and active collaborations between language teachers and content-area teachers. Through this collaboration, teachers can learn more from each other and develop similar tasks driven by the same institutional and curricular goals. Working together in this way is essential if students at the same grade level, taught by different teachers, are to achieve the same goals. Although James and Grace indicated that extensive collaboration between them and grade-level teachers took place mainly through observations, such collaboration needs to be more systematic to implement similar classroom practices that support the curriculum. Additionally, interactions with content teachers provide opportunities for foreign language teachers to learn about approaches and methods of subject-area teaching that were not a part of their foreign language certification programs.

Ongoing professional development workshops with a focus on content-based instruction are highly recommended. Content-based instruction is still a rather recent approach in the history of teaching foreign language and teachers might have little exposure to its techniques during their certification programs. Thus, a more in-depth introduction to content-based instruction would be beneficial to foreign language teachers. As Grace reported, these workshops could provide "solid examples that teachers could take with them so that they see what is expected and desired at the end." In such professional-development workshops, teachers also would benefit from examples of appropriate content-based instruction materials. Having such materials enhances the practices of teachers in content-based instruction programs, allowing them to devote more attention to instructional delivery rather than curriculum and material design.

Conclusion

The findings of this study clearly point out the significance of teacher talk for aspects of student learning beyond oral proficiency. Grace's discourse balanced academic content and a focus on language, including implicit error correction, provided opportunities for the coconstruction of form, and revealed conversational features of interpersonal communication. In contrast, James' discourse focused primarily on manipulative practice of language form, explicit error correction by the teacher, and nontopically related exchanges with his students. Because Grace's students performed higher in the literacy assessments, it is possible that there is a link between features of classroom discourse and student performance when writing about academic content. Thus, teachers in content-based instruction must consider how their language might influence various aspects of students' language proficiency beyond spoken interpersonal communication.

In conclusion, previous research has defined content-based instruction as "a way of providing a meaningful context for language instruction while at the same time providing a vehicle for reinforcing academic skills" (Curtain & Haas, 1995). While there has been much discussion of the benefits of content-based instruction, little is known about how this type of instruction is actually carried out discursively in the foreign language classroom. In this study, detailed classroom discourse analysis served as a tool to examine how content-based instruction was used to achieve curricular goals and the integration of language and content in two sixth grade classes. The findings show that a teacher's discursive practice can shape the language and content knowledge gained by students as reflected in the students' oral and written discourse. Our findings indicate that an effective content-based instruction class includes attention to both content and language through conversations that encourage student language use and development, as well as metalinguistic awareness by collaboratively negotiating form and by the teacher's feedback.

As previously mentioned, given the qualitative nature of the study, the findings of this study relate to one content-based instruction program in particular. However, by analyzing how content-based instruction is implemented through a contrastive discourse analysis of two teachers in the same program, we have uncovered important discursive features that contribute to understanding the construct of this type of instruction, the challenges that teachers face, and the importance of classroom talk as fundamental to language development in this instructional framework. To date, despite the rich theoretical and practical literature base on content-based instruction, minimal research attention has been given to how teachers actually weave together foreign language and academic content instruction. Further research is needed to describe effective foreign language content-based instruction classes from a discourse perspective, addressing the discursive integration of both language and content. It is our hope that this study has initiated such a research agenda.

Notes

1. This research was supported, in part, by a grant from the International Research and Studies Program of the U.S. Department of Education to G.R. Tucker and R. Donato.
2. Although the school refers to its curriculum as content-based, in practice, lessons are based on (1) academic content that is already taught in other subject areas and (2) extensions of the academic content into topics that are connected to Spanish language and cultures (e.g., analyzing Mayan civilizations). For this reason, we think this program is best described as a combination of content-related and content-based foreign language instruction. Additionally, the foreign language teachers find themselves at times introducing academic content before the subject area teachers do so.
3. For a discussion and analysis of the role of task and its influence on talk, see Mori, 2002.
4. What is interesting about these two examples is that, although the comparative structure is potentially useful for stating evaluations, only in Grace's classes did students move beyond translation to the function of expressing evaluative opinions using comparative forms. In James' class, students practiced comparative expressions only at the level of form and meaning. For a discussion of form, meaning, and function connections of grammar teaching, see Larsen-Freeman, 2003, and Halliday, 1973.

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APPENDIX A

Writing Assessment

Nombre: ____

U.S. Environmental Protection Agency

Assignment:

You are an agent of the Environmental Protection Agency and have been given an assignment. Important officials from several Spanish-speaking countries are meeting to discuss natural resources, their uses, and their effects on the environment. Your mission is to review the attached pictures of various resources and their uses and **describe** them in Spanish for these visiting officials. After describing them, you are to **evaluate** them, stating which is better, worse, safer, or more dangerous and **why** (what are the effects or noneffects of each resource on the environment?).

APPENDIX B

Interview with James and Grace, March 18, 2005

1. Could you describe your academic training and work experience?

2. How do you think your academic training has prepared you for content-based instruction (CBI)? Did you take any specific classes on CBI? Do you think dual certification in foreign language and elementary education would be beneficial for teachers to effectively implement CBI?

3. Could you describe your first experiences implementing CBI at this school?

4. Could you describe how you go about implementing CBI in your classes now? How do you prepare yourself for teaching the different content units? How do you go about collaborating with the content teachers? Do you observe their classes?

5. Could you describe a typical CBI lesson in your classes?

6. What do you think are the benefits of CBI as opposed to traditional foreign language instruction?

7. What challenges have you faced implementing CBI?

8. How do you feel about teaching both language and content?

9. What kinds of materials are there available for CBI? What materials would you like to see developed?

10. Do you think this program would benefit from professional development workshops on CBI?

11. What is your students' reaction to related CBI? Do they seem to enjoy it or do they view it as a repetition of their content classes?

12. Do you perceive CBI to be beneficial to students' language development and content learning?