Counterbalanced Instruction in Practice:

Integrating a Focus on Content into a Foreign Language Classroom

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Abstract

The present study examines the feasibility and effectiveness of integrating a focus on content/meaning into a predominantly form/language-focused French foreign language high school classroom context in rural, upstate New York. A classroom intervention was conducted with 27 student participants and their French teacher, implementing a French content-based unit on environmental issues. The study used a mixed-methods approach for data collection and data analysis. Data were analyzed using both qualitative content-analyses and quantitative statistical analyses. Results indicate that implementing a counterbalanced content-based unit into a traditional form-focused foreign language classroom, while challenging on many levels, is feasible and has the added benefit of helping students progress in both content and language, while making a meaningful and deep connection with students.

Keywords: counterbalanced instruction, content-based language teaching (CBLT), content-based instruction (CBI), content and language integrated learning (CLIL), French, foreign language, science education, classroom context.

Résumé

Cette étude examine la faisabilité et l'efficacité de l'intégration d'une concentration sur le contenu/le sujet dans un contexte principalement concentré sur la forme/la langue. Le contexte choisi pour cette étude est une classe de français langue étrangère dans un lycée d'une petite ville rurale du nord-ouest de l'État de New York. Une intervention dans la salle de classe a été conduite avec 27 participants-étudiants et leur professeur de français. Cette intervention mettait en pratique un module (« une situation d'apprentissage et d'évaluation ») en français sur les problèmes environnementaux. L'étude a adopté des méthodes mixtes pour rassembler et analyser les données. Ces dernières ont été analysées au regard du contenu qualitatif aussi bien que par des analyses statistiques quantitatives. Les résultats ont indiqué que la mise en pratique d'un module basé sur l'instruction contrepoids dans une salle de classe de langue étrangère qui se concentre sur la langue est faisable, même s'il y a plusieurs défis. En outre, cette approche peut soutenir le progrès des étudiants tant dans le contenu que dans la langue, en créant une connexion significative et profonde avec les étudiants.

Mots-clés: l'approche du « contrepoids », l'enseignement des langues par le contenu (CBLT), l'instruction par le contenu (CBI), l'intégration d'une langue étrangère et une discipline non linguistique (DNL), l'enseignement de matières par intégration d'une langue étrangère (EMILE/CLIL en anglais), le français, la langue étrangère, l'enseignement des sciences, le contexte de salle de classe.

Table of Contents

List of Tables and Figures

Chapter 1

Introduction

In this chapter, I will present the purpose of the present study, first by discussing the language learning topic that inspired my interest in this research, then by considering the present study's potential to add to the recently growing body of research on a counterbalanced approach to content-based language teaching in the secondary level foreign language classroom context.

1.1 Purpose of the Study

The focus of the present study was inspired by Lyster's (2007) counterbalanced approach to content-based instruction. This theory focuses on the effects of reallocating students' attention in order to achieve a more balanced focus between content and language in the classroom. This balance is attained by shifting learners' focus, either to a focus on language if the classroom context is more meaning-oriented, as is often the case in immersion classrooms, or to a focus on content if the overall classroom context is more language-oriented, as with many foreign language classrooms. According to the counterbalanced instruction hypothesis, pushing students to shift their focus between language and content "facilitates the destabilization of interlanguage forms," (Lyster, 2007, p. 4) and "promotes continued second language growth" (ibid, p. 126).

As illustrated by Met (1998), most foreign language classrooms tend to be more language-focused in nature, often consisting of language within thematic units or using content to look at language. This description of focusing on language and only using content in very limited ways mirrored my personal

experience teaching English as a Foreign Language (EFL) in France and China, as well as French as a Foreign Language (FFL) in New York State, where the classroom contexts and students' focus were both predominantly oriented towards language. Often, content seemed to be a tool used to focus on language, rather than language being used as a tool for understanding the content. Learning language for language's sake has clear limitations since, without any focus on content, the language is devoid of a meaningful and purposeful context.

According to Lyster's (2007) counterbalanced approach, students in a language-focused classroom context would benefit from being pushed to shift their attention towards content / meaning, away from the classroom's natural language orientation, in order to achieve a balance between language and content. Whereas a substantial body of studies have explored a counterbalanced approach to integrating a form-focus into content-based classroom contexts, particularly in immersion contexts (e.g., Allen, Swain, Harley & Cummins, 1990; Day & Shapson, 1991, 1996; Harley, 1989, 1998; Lyster, 1994, 1998a, 2004; Salomone, 1992; Swain, 1996; Wright, 1996), far fewer studies seem to have researched the effects of counterbalancing instruction through integrating a content-focus within language-driven classroom contexts. What research has been published within this field comes predominantly from Europe within the past decade (e.g. Coyle, 2007; Coyle, Hood & Marsh, 2010; de Graaff, Koopman, Anikina, & Westhoff, 2007; Mehisto, Marsh & Frigols, 2008; Ruiz de Zarobe & Jiménez Catalán, 2009), with a growing body of research recently emerging largely in North America (e.g. Cammarata, 2009, 2010; Huang, 2003; Mohan & Huang, 2002; Pessoa, Hendry,

Donato, Tucker & Lee, 2007; Rodgers 2006) and Asia (e.g., Chang & Xia, 2011; Hoare, 2010; Huang, 2011; Kong, 2009; Kong & Hoare, 2011; Lingley, 2006). Overall, these studies convey very promising results regarding the benefits in students' second language acquisition. In this sense, research on the integration of content into a North American language-driven foreign language classroom, as is the present study's focus, would help to expand upon existing studies in this field by adding a new context in which to explore the effects of counterbalanced instruction.

Chapter 2

Literature Review

In this chapter, I will take a closer look, both theoretically and practically, at three well-known content and language integrated approaches to second language instruction: content-based language teaching (CBLT), counterbalanced instruction, and content and language integrated learning (CLIL). Specifically, by exploring the key features of each approach and how they interconnect, I aim to demonstrate my understanding of how these three pedagogical approaches can benefit foreign language teaching in North America. In addition, previous CBLT research findings focusing on the integration of a focus on content into form-focused foreign language classroom contexts will be analyzed in order to explore the perceived benefits and challenges of the integration.

2.1 Introduction

"Like Antarctica, the field of teaching and learning in a second language, or otherwise additional language, is claimed by many and yet still in the stages of exploration and discovery" (Ruiz de Zarobe & Jiménez Catalán, 2009, p. xii). This statement not only appears to hold true for the overarching second language acquisition (SLA) theories in existence, but additionally within the smaller branches of second language teaching pedagogies. When exploring content-based instruction, this branch of second language pedagogy is shared by several specific SLA approaches, while the main aim of how to most effectively integrate content and language to maximize learners' second language acquisition continues to be explored and developed.

2.2 Content-based Language Teaching

As defined by Lightbown and Spada (2006), the term content-based language teaching (CBLT), also known as content-based instruction (CBI), refers to "second language programmes in which lessons are organized around subject matter rather than language points" (p. 197). However, CBLT can be used in a wide range of different contexts. Met (1998) described this range of different CBLT settings along a continuum (see Figure 1), varying from content-driven second language programs at one end to more language-driven programs at the other end. In each of these instructional settings, learners are engaged with the target language through content.

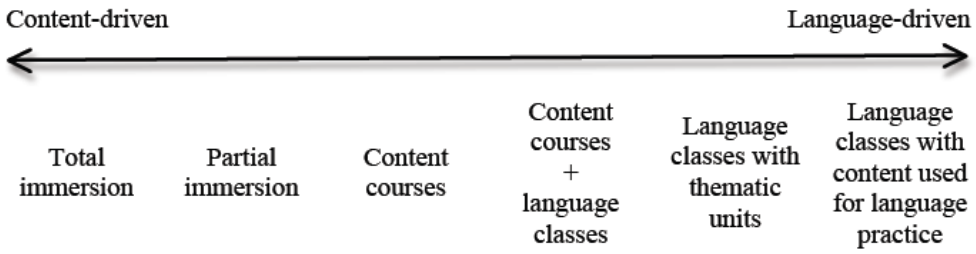


Figure 1. Met's (1998) Range of CBLT Settings (as cited in Lyster & Ballinger, 2011, p. 280).

While CBLT "is based on the premise that focusing on meaning in a second language in a content-rich curriculum provides an appropriate context for students to learn the second language as they learn content" (Hoare, Kong, & Bell, 2008, p. 187), the level with which learners engage with content can vary greatly between various programs across the continuum. In a broader sense, therefore, content-

based instructional approaches may be seen as "classrooms where subject matter is used at least some of the time as a means for providing second language learners with enriched opportunities for processing and negotiating the target language through content" (Lyster, 2007, p. 1). Due to this large variability within CBLT classrooms, detailing a study's specific educational context in order to contextualize the implementation process is crucial.

Overall, CBLT instruction draws from an assortment of theoretical perspectives, including an important connection to the socio-cognitive perspective, where cognition and social interaction play complementary roles in the learning process. Anderson's (1983, 1985) description of skill acquisition theory, defining learning as a gradual shift in knowledge from controlled, declarative knowledge to automatic, procedural knowledge developed through practice, and Skehan's (1998) information processing model, describing the importance of conscious awareness and the central role that noticing plays in processing input, are both key components of the socio-cognitive view. As well, other central theoretical understandings include Vygotsky's (1986) zone of proximal development which describes the gap between students' actual development and their potential development when given educational support, Bruner's (1971) emphasis on the importance of scaffolded interaction and how "growth of mind is always growth assisted from the outside" (p. 52), DeKeyser's (1998, 2007) description of the key roles of practice and feedback in the transition of knowledge from controlled to automatic, and Swain's (1993, 1995) Output Hypothesis, which emphasizes the importance of pushing learners to notice gaps in their language skills and to

practice speaking to develop fluency. The socio-cognitive understanding of learning being both a social and cognitive process seems especially apt and well-grounded when observing second language acquisition within a classroom context, whether through teacher-student interaction or student-student interaction.

At its core, as a communicative approach integrating both content and language into the curriculum, CBLT has been consistently praised for the benefits inherent in viewing "language as a medium for learning content and content as a resource for learning and improving language" (Stoller, 2002, p. 109). As described by Lightbown and Spada (2006): "It creates a genuine need to communicate, motivating students to acquire language in order to understand the content. For older students, there is the advantage of content that is cognitively challenging and interesting in a way that is often missing in foreign language instruction, especially where lessons are designed around particular grammatical forms" (p. 159). Well-implemented content-based instruction provides a context for purposeful, meaningful language learning in the classroom that is cognitively demanding and engaging.

2.3 CBLT Research: Integrating Content into FL Classrooms

A majority of CBLT research has come from the content-driven end of the spectrum, including abundant research focusing on integrating form-focused instruction into meaning-oriented classroom contexts. This trend in CBLT research can likely be attributed to the surge in interest and vast amount of research on immersion classroom contexts that has been conducted over the past forty years (Lyster, 2007; Wesche & Skehan, 2002). In comparison, the other

half of the CBLT continuum, comprising language-driven CBLT settings, seems to include considerably fewer research studies. The studies which have been conducted in this area, however, by researching classroom contexts where students take a content course in the target language with an accompanying language class or where students take a language class with embedded thematic unit(s), can be very valuable as a guide to others working in similar settings. Previous research studies from the language-driven end of the CBLT continuum permit a closer examination of the benefits and challenges resulting from the present study's specific context: integrating a primary content focus into a foreign language classroom context—with a primary focus on language and a secondary and occasional focus on content—through the implementation of a content-driven intervention unit designed to counterbalance by switching the emphasis so that the primary focus was on content and the secondary focus on language. In addition, the analysis of similar previous studies facilitates important reflection on how to most effectively integrate content into a foreign language classroom.

Previous studies focusing on CBLT instruction in a foreign language classroom context taught by language teachers span a wide range of settings, with content-based instruction at the university and adult FL program level appearing to be the prime corpus of research, first emerging in the early 1980s and with some key studies during the 1990s (Musumeci,1996; Stryker & Leaver, 1997). More recently, while university-level studies make up a substantial portion of the research on CBLT in foreign language classroom contexts, both in North America (Rodgers 2006) and Asia (Chang & Xia, 2011; Lingley, 2006), a growing body

of research from K-12 foreign language classroom contexts is emerging: elementary classroom contexts in North America (Huang, 2003; Mohan & Huang, 2002) and Asia (Huang, 2011), and secondary classrooms contexts in North America (Pessoa et al., 2007) and Asia (Hoare, 2010; Kong, 2009; Kong & Hoare, 2011). Broader contexts, such as CBLT curriculum design studies in North America (Cammarata, 2009, 2010) have also enhanced this body of research.

Looking to the above studies as a source of guidance in better understanding how CBLT can best be implemented into the foreign language classroom by foreign language teachers, the following themes appeared repeatedly throughout multiple studies as key points of discussion and reflection: (a) teacher preparation and understanding of CBLT, (b) content depth, (c) language focus, (d) quantity and quality of interaction, (e) resources, and (f) shifting teaching pedagogy.

2.3.1 Teacher preparation and understanding of CBLT. As a commonly repeated key point throughout the studies, the importance of ensuring that language teachers receive adequate CBLT training became apparent. Hoare (2010) voiced particular concern over how teachers' and school members' lack of CBLT preparation and reflection on how to develop a CBLT curriculum led to "little commitment to the specific objectives of CBLT and in particular to the focus on language learning through content" (p. 75). A lack of understanding of CBLT pedagogy and its content-language integration led to several instances where teachers did not integrate language learning (Hoare, 2010), where lesson goals predominantly centered on language practice rather than both language and

a deeper understanding of the content topic (Cammarata, 2010; Hoare, 2010; Kong & Hoare, 2011, Pessoa et al. 2007), and where lessons within the unit had a linear structure, moving from one sub-topic to another with no deeper connection to the content (Kong & Hoare, 2011; Kong , 2009).

As a direct illustration of the importance of having clear content and language learning objectives, where language objectives stem from the content objectives, the observed lessons deemed to be the most successful were those which "[planned] for both content and language learning objectives that focus on the knowledge relationship" of the content topic—how the content details are related and connected to one another (e.g. classification, cause-effect) (Kong & Hoare, 2011; Kong, 2009). As well, lessons which had a cyclical structure, connecting to and building off one another, were also shown to be most effective (Kong, 2009; Kong & Hoare, 2011). Kong and Hoare (2011) even proposed a curriculum structure for teachers to follow in designing a CBLT unit: (a) "identification of appropriately challenging content"; (b) "develop content objectives which entail the understanding of concepts and relationships between concepts"; (c) "[develop] related language objectives to support students' language development"; (d) "[implement] with a pedagogy that requires students to process this content in sufficient depth using the appropriate academic language, explicitly taught as necessary" (p. 323).

Overall, Pessoa et al. (2007) mirrored the opinion of others (e.g. Hoare, 2010; Kong, 2009) when stating that "a more in-depth introduction to content-based instruction would be beneficial to foreign language teachers" (p. 117).

Through a better understanding of CBLT and its integration of both content and language, teachers are better able to design and implement units which truly embody CBLT's goals. Indeed, it seems unreasonable to expect teachers to design effective CBLT materials and curriculum *without* an in-depth look at the *what, when* and *how* of content-based instruction.

2.3.2 Content depth. When observing the content focus of language teachers' CBLT lessons, the most repeated negative observation gleaned from studies encompassed using simple content with a lack of depth, resulting in limited cognitive processing for learners (Hoare, 2010; Kong, 2009; Kong & Hoare, 2011) In particular, stating content as facts in a linear structure (Kong, 2009; Kong & Hoare, 2011), only using content language as a vocabulary resource for practicing grammar (Pessoa et al., 2007), and allowing learners to stick to non-academic, colloquial language use instead of pushing them to use more accurate subject-specific vocabulary (Kong, 2009; Kong & Hoare, 2011) were all deemed to be ineffective since they fail to promote deeper learning of the content. As a positive observation, findings from Chang and Xia's (2011) study, comparing university students who had content-based courses over two academic years versus those who had only skill-oriented, form-focused courses, suggested that content-based courses significantly enriched students' range of content-area knowledge.

When looking at effective content practices, Kong and Hoare (2011) stated: "Engagement seems to occur when the teacher focused the content on challenging technical academic knowledge and helped students explore this

content in depth" (p. 1). In addition, returning to the concept of knowledge relationships, organizing content around these knowledge relationships (e.g. cause and effect, comparison, hypothesis, definition) appeared to promote a cyclical unit structure, where learners were pushed to explore the content from different and increasingly more complex perspectives (Kong, 2009; Kong & Hoare, 2011).

This emphasis on using a framework to link content and language also appeared in Huang's (2003) and Mohan and Huang's (2002) studies, both of which used the terms "knowledge structures" within the larger "knowledge framework," instead of the previous researchers' use of "knowledge relationships", to describe the overall framework of language as discourse contextualized within the content topic (e.g. classifying, evaluating/ranking, describing, sequencing). Results from Huang's (2003) elementary classroom case study implied that using the "knowledge framework" was a feasible way to explore content within the foreign language classroom in a way that cognitively engages students. The activities organized around this framework were depicted as a "bridge linking the construction of world knowledge and the development of the target language" (Huang, 2003, p. 87).

However, this bridging of content and language may not always be so easy, seeing as how several studies (Cammarata, 2009; Hoare, 2010; Kong, 2009; Pessoa et al., 2007) pointed out the major challenge of language teachers taking on the additional responsibility of teaching content and having a lack of content-specific knowledge to draw from. Pessoa et al. (2007) stated: "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." (p. 104). Cammarata (2010) described how teachers felt trapped by the content since the focus and depth they were expected to go into prevented them from jumping from one topic to the next as they were used to doing within their language-driven curriculum.

2.3.3 Language focus. The main language concerns mentioned through several studies related to the lack of a clear language objective integrated into the content, except for some content vocabulary terms (Hoare, 2010; Kong, 2009; Kong & Hoare, 2011). These observations seem to mirror Stoller's (2002) perception that "many language programs endorse [content-based instruction] but only use course content as a vehicle for helping students master language skills" (p. 112). Similarly, Cammarata's (2010) findings indicated that teachers struggled with how to contextualize language within the content since they believed there was "an ideal linear grammar sequence of language instruction that, if not followed, can be detrimental to language learners," thus demoting content to a secondary focus under language (p. 99). In contrast to the above studies' results indicating that teachers seemed to focus more on language practice over content, Musumeci (1996) observed that the subject matter was the sole focus within the university-level lessons, though this was perhaps a result of the professors being mostly native target-language speakers, unlike most of the other studies' foreign language teachers who were predominantly non-native speakers.

As a noted benefit of content-based teaching, Chang and Xia's (2011) findings suggested that content-based courses significantly improved students' English language proficiency, specifically in regards to vocabulary acquisition. When looking to results which indicated effective CBLT methods, the consistent and repetitive use of target-language features (Kong, 2009), and practicing of accurate, academic content language described as language *of* the content and language *for* the content (Kong & Hoare, 2011) were both proposed as effective techniques. The use of content knowledge structures appeared to lend itself to creating specific language objectives as well (Kong, 2009; Kong & Hoare, 2011; Mohan & Huang, 2002), acting as a bridge between language and content learning, a grammatical scaffolding which is "constructed from semantic relations which have a range of linguistic realizations" (Mohan & Huang, 2002, p. 416). Mohan and Huang (2002) shared the following example to illustrate the grammatical scaffolding inherent within content knowledge structures:

> S: I think your sentence is wrong.
> A: Wrong? Why wrong? 'If the pupil smaller, then you increase the brightness.'
> S: Should be 'If you increase the brightness, the pupil becomes smaller.' The brightness is the CAUSE and the smaller is the EFFECT. (p. 409)

The aforementioned findings mirrored Huang's (2003) results, which indicated that "activities organized around the [knowledge framework] may bring with them more systematic form–function connections in young beginners' use of the target language" (p. 82).

2.3.4 Quantity and quality of interaction. Looking at studies' indications of CBLT success, lessons appeared to be the most effective when the

amount of student-talk and teacher-talk and the length of student turns and teacher turns were all roughly equivalent (Kong, 2009), and when teachers used questions to promote interaction, including asking open-ended questions that required student discussion (Kong, 2009; Pessoa et al., 2007). Huang's (2011) findings, after comparing students during two content-based lessons and two language-focused lessons, indicated that "the learners had a tendency to use more complex and longer sentences in both…[content-based language instruction] sessions compared with the…language-input sessions" (p. 197).

On the other hand, lessons where there was frequent interaction but very short student turns (Kong, 2009), where teachers asked predominantly close-ended and/or display questions which restricted students' production and exploration of the content (Kong, 2009; Musumeci, 1996; Pessoa et al., 2007), and where teachers dominated the lesson with lecture-style talking, allowing for very little student production or interaction (Moriyoshi, 2010; Musumeci, 1996) were all illustrated to be ineffective. As Pessoa et al. (2007) stated: "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" (p. 111).

In addition, Musumeci (1996) described how the teachers observed in her study "supplied key lexical items and provided rich interpretations of students' responses, rather than engage in the kind of negotiation which would have required learners to modify their own output" (pp. 314-315). This not only places a large burden on the teachers to carry the conversation, but also fails to push

students to modify their output and allow them to have equal footing in the interaction.

2.3.5 Resources. Perhaps the biggest concern repeated throughout the studies was with the availability and quality of CBLT resources (Hoare, 2010; Lingley, 2006; Pessoa et al., 2007). This concern was mirrored by Cammarata's (2009) assertion that: "The most commonly cited barrier is a lack of available curricular materials designed specifically for CBI" (p. 562). Teacher interviews from Hoare (2010) indicated a "serious limitation on the range of teaching materials available to them, both printed and online" (p. 76). This lack of materials places a strain on teachers by requiring a substantial increase in preparation time. As Cammarata (2009) aptly explained: "For CBI, teachers need to create curricular units that are much more detailed than those commonly required in traditional settings. The resulting increase in preparation time (at least at the introductory level) is perceived as a real constraint in a profession in which time is always an issue and the lack of time for preparation is already a great source of anxiety" (p. 571). Highlighting why this lack of CBLT resources needs to be corrected, Pessoa et al. (2007) stated how "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" (p. 117).

2.3.6 Shift in pedagogy. The integration of content into the foreign language classroom obviously brings with it some important modifications to the classroom curriculum, as well as a shift in pedagogy that the foreign language

teachers will have to make in order to effectively adopt CBLT. Cammarata's (2009, 2010) findings indicated that these changes may be perceived by foreign language teachers as a threat to their already established teaching style and system, resulting in teachers who "embed content within their existing language-driven and language-focused curricular framework," rather than make the changes required to properly implement a CBI approach (Cammarata, 2010, p. 98). Cammarata (2009) noted: "The changes this transition required represented a daunting task, a fundamental remodeling rather than the refining of one's habitual curricular/lesson planning scheme" (p. 573). As a result of the heavy demands required to re-structure one's teaching method in order to effectively implement a CBI approach, this led some foreign language teachers to view CBLT as an overwhelming and rather rigid teaching pedagogy (Cammarata, 2009, 2010). As a possible means of lessening this transitional struggle, Lingley (2006) recommended allowing teachers the flexibility to use their own discretion to determine when to focus on meaning, form, or both.

2.4 Counterbalanced Instruction

Lyster's (2007) description of counterbalanced instruction consists of "systematically integrating content-based and form-focused instructional options…by orienting learners in the direction opposite to that which their classroom environment has accustomed them" (p. 3). The concept involves finding a balance with the overall learning environment of the classroom by shifting learners' focus as a way to increase the salience of the target feature, whether integrating content into a language-focused classroom or integrating a

form-focus into a meaning-focused classroom. This theory originally stems from Skehan's (1998) argument, which emphasized pushing a learner in the opposite direction from his/her form or meaning orientation in order to balance said learner's awareness of both language and content. Skehan (1998) stated:

> In the case of analytic learners, the intention is to build in a greater concern for fluency and the capacity to express meanings in real time without becoming excessively concerned with a focus on form. In the case of memory-oriented learners, the intention is to set limits to the natural tendency to prioritize communicative outcome above all else. (pp. 171-172)

Lyster and Mori's (2006) *counterbalance hypothesis* extended Skehan's (1998) understanding by applying his theory to a group level in order to consider the orientation of a group of learners in a specific classroom context. Lyster and Mori (2006) stated that:

> Instructional activities and interactional feedback that act as a counterbalance to the predominant communicative orientation of a given classroom setting will be more facilitative of interlanguage restructuring than instructional activities and interactional feedback that are congruent with the predominant communicative orientation. (p. 294)

Lyster (2007) subsequently expanded upon Lyster and Mori's (2006) *counterbalance hypothesis*, coining the term *counterbalanced instruction*, which refers to "systematically integrating content-based and form-focused instructional options" (pp. 3-4).

When analyzed in relation to CBLT, counterbalanced instruction can be seen as a way to approach the entire spectrum of CBLT classroom contexts, a way which exploits the overall orientation of the classroom setting, whether meaning- or form-oriented, in order to strike a balance between focusing on content and language as a means to push learners and facilitate second language acquisition. While highlighting the potential inherent benefits of content-based instruction's approach to integrating content and language through meaningful and purposeful activities and tasks, Lyster (2007) acknowledged that there is room for improvement and "much potential for refining pedagogical know-how and enhancing learning outcomes" throughout the various CBLT classroom settings (p. 23).

Counterbalanced instruction specifically uses the term "form-focused" when talking about shifting learner's focus to language/form. Form-focused instruction refers to "any pedagogical effort which is used to draw the learners' attention to language form either implicitly or explicitly" (Spada, 1997, p. 73). Lightbown and Spada (2006) explained how form-focused instruction "draws attention to the forms and structures of the language within the context of communicative interaction. This may be done by giving metalinguistic information, simply highlighting the form in question, or by providing corrective feedback" (p. 199). In form-focused instruction, both implicit and explicit teaching methods are seen as effective options, depending on the learning environment's specific context. This combination reflects Lyster's (2007) belief

in using a balanced mix of prompts and recasts, depending on the specific classroom context and learners' needs.

The understanding and usage of form-focused instruction as described above is in contrast to the term "focus on form", which is often used synonymously with drawing students' attention to form in a strictly implicit way, as occasions arise incidentally within a meaning-focused lesson, (Long 1991, 1996, 2007; Doughty & Williams 1998). Unlike the "form-focused" instruction portrayed in counterbalanced instruction, the term "focus on form" does not incorporate any systematic planning for language development.

Overall, counterbalanced instruction's fundamental goal is in shifting learners' focus between content and language as a means of counterbalancing the natural orientation of the classroom context. Segalowitz and Hulstijn (2005) stated that, "Given the fact that humans have limited capacity for information processing, it is obvious that language users cannot pay attention to all information at all linguistic levels simultaneously to the same high degree" (p. 381). Additionally, when linked to VanPatten's (1990) results which highlighted beginner second language learners' difficulty in trying to focus simultaneously on content and form, Lyster's (2007) counterbalanced instruction goal appears to be a pedagogically sound and effective strategy for boosting second language development. "Without sacrificing language at the expense of content nor content at the expense of language, counterbalanced instruction emphasizes a flexible and relatively balanced integration of content-based and form-focused instructional options" (Lyster, 2007, p. 136). Whereas Swain (1996) disclosed that "there is a

lot of content teaching that occurs where little or no attention is paid to students' target language use; and there is a lot of language teaching that is done in the absence of context laden with meaning" (p. 530), counterbalanced instruction enables teachers to combine the strengths of both content and language by interweaving and counterbalancing content-based and form-focused activities in a way which exploits the classroom orientation to maximize learners' second language acquisition.

2.5 Content and Language Integrated Learning (CLIL)

Adopted as a term in the mid-1990s by the European Network of Administrators, Researchers and Practitioners (EUROCLIC) (Coyle, 2007), Content and Language Integrated Learning (CLIL) programs have developed rapidly throughout Europe (e.g. Coyle, 2007; Coyle et al., 2010; Lagabaster & Sierra, 2010; Mehisto et al., 2008; Ruiz de Zarobe & Jiménez Catalán, 2009). CLIL is defined as a "dual-focused educational approach in which an additional language is used for the learning and teaching of both content *and* language" (Coyle et al., 2010, p. 1). As described by Coyle et al. (2010), "CLIL is not simply education *in* an additional language; it is education *through* an additional language" (p. 12).

An examination of relevant research that would contribute to the present study's aim of integrating a focus on content into a North American language-driven yet communicatively-oriented foreign language classroom context revealed that CLIL seemed to embody many similar characteristics to the present study's specific classroom context and learning objectives: (a) taking place on a smaller,

context-specific scale, including language-based projects involving the "language teacher who takes primary responsibility for the CLIL module" (Coyle et al., 2010, p. 22), (b) the fact that CLIL's "primary focus is on substance (content) as opposed to form" (Mehisto et al., 2008, p. 30), (c) that CLIL's additional language is often a foreign language to students (Linares, Morton & Whitaker, 2012), and (d) how CLIL largely came about as a reaction to the limitations/ weaknesses of traditional foreign language teaching methods (Dalton-Puffer, 2011; de Graaff et al., 2007; Lagabaster & Sierra, 2010). As well, CLIL's support of the Generation Y mindset—"learn as you use, use as you learn" (Mehisto et al., 2008, p. 11)—greatly appealed to me and paralleled my personal experience with students. For the above reasons, CLIL was chosen as the third key topic for this literature review in order to better understand its similarities to and differences from CBLT and counterbalanced instruction, and how its methodology could benefit the present study's goals.

2.5.1 Understanding CLIL. After reading numerous studies and books on CLIL, while much of what was read seems pedagogically sound and offers much promise, the issue of what exactly CLIL *is* and *is not* still seemed rather blurry, no doubt in part due to the fact that even within the European CLIL research community, there are several different and competing definitions of CLIL. As Lagabaster and Sierra (2010) stated: "After analyzing CLIL programmes in 30 European countries, the Eurydice study concludes that different labels are used in different contexts. Thus, CLIL can mean many things and create much confusion in the mind of the reader" (p. 368).

Coyle (2007), while stating that there are some similarities in basic theories and practices between CLIL and CBLT, argued that the two have some fundamental differences and are not synonymous, stating that "[CLIL's] distinctiveness lies in an integrated approach, where both language and content are conceptualized on a continuum without an implied preference for either" (p. 545). However, this description of CLIL's distinctiveness lying in its approach to integrating both content and language directly parallel's CBLT's definition as "the concurrent study of language and subject matter, with the form and sequence of language presentation dictated by content material" (Brinton, Snow, & Wesche, 2004, p. ix).

Coyle's (2007) description of CLIL's planned integration of content, cognition, communication and culture within the specific learning context also closely parallels CBLT's socio-cognitive approach. Coyle et al. (2010), while siding with CLIL as a flexible approach which takes into account a variety of contexts, added that "for CLIL to be effective, certain fundamental principles must be recognized as essential" (p. 48). These fundamental principles are largely reflected through CLIL's "4C's Framework", which illustrates the central goals of content, communication (language) and cognition, with the added focus on cultural awareness and understanding, all within a classroom's specific context (Coyle et al., 2010). This parallels many CBLT programs' inclusion of a cultural awareness component or objective, including one-way and two-way immersion programs, as well as indigenous immersion programs (Cammarata & Tedick, 2012; Tedick & Cammarata, 2012). As Cammarata and Tedick (2012) noted:

"The principal aims of both one-way and two-way programs are to promote additive bilingualism and biliteracy, academic achievement, and intercultural understanding," while "the primary purpose of indigenous immersion programs is to revitalize endangered Native languages and cultures while promoting academic achievement and development of the majority language" (p. 252). The main goals of content, communication (language), cognition and cultural awareness, therefore, can be seen as goals shared by both CLIL and CBLT programs.

One of CLIL's main similarities to CBLT lies in its wide range of contexts, being described as an "umbrella term" covering everything from "language showers" to immersion and bilingual education (Mehisto et al., 2008), relating to "any language, age, and stage" (Coyle, 2007, p. 545). Like CBLT's wide range of contexts (Lyster, 2007; Lyster & Ballinger, 2011; Met, 1998), with CLIL "one size does not fit all—there is no one model for CLIL" (Coyle et al., 2010, p. 14). Also very similarly to the wide range of CBLT contexts, Dalton-Puffer (2011) described how there is a "high variability of foreign language exposure between different CLIL programs" (p. 187).

Over the past couple of decades throughout Europe, CLIL has been offered in a variety of different forms (de Graaff et al., 2007), including a "range of approaches which…sometimes resembles English for Special Purposes, TESOL or content-based language instruction" (Coyle, 2007, p. 549). In its more flexible definition, CLIL has been used in a broad sense which "allows us to consider the myriad variations…without imposing restrictions which might fail to take account of school or region-specific implementation characteristics" (Marsh,

2002, as cited in Coyle, 2007, p. 545). This broad sense of CLIL has even grown to include programs outside Europe (e.g. *Latin American Journal of Content and Language Integrated Learning*).

In this broader sense of CLIL, Navés (2009) acknowledged that "Integrating content and language is not new. It has been used for decades under different labels" (p. 35). Many studies link content-based instructions (CBI), also known as CBLT, and CLIL together as synonymous (Cammarata, 2009, 2010; Jäppinen, 2005; Lightbown & Spada, 2006; Ruiz de Zarobe & Jiménez Catalán, 2009). As described by Ruiz de Zarobe and Jiménez Catalán (2009): "*Content-based instruction* (CBI) and *Content and Language Integrated Learning* (CLIL) can be considered synonyms. The former is used more frequently in the United States and Canada, while the latter has gained more popularity in Europe" (p. xvi).

2.5.2 CLIL background and "good teaching" methods. CLIL shares a similar socio-cognitive theoretical background to CBLT, with an emphasis on the importance of dialogue/interaction/talk as a powerful learning tool. Also like CBLT, CLIL's approach includes socio-constructivist theories on active student learning, scaffolding, and Vygotsky's (1986) zone of proximal development (Jäppinen, 2005). Many CBLT key theories also make up the foundation of CLIL, such as those of Bruner, Piaget, Vygotsky, Gardner, and Bloom (Mehisto et al., 2008; Coyle et al., 2010). As well, both CLIL and CBLT share many important teaching tools, including the importance of repetition and recycling of language, striving for meaningful, relevant, purposeful language learning activities and tasks, including lots of opportunities to use and practice the target language, the

importance of scaffolding, and the teacher's essential use of questioning to promote scaffolding and interaction (Coyle et al., 2010; Mehisto et al., 2008).

In this light, CBLT and CLIL appear to share a very similar theoretical foundation. At their core, both CBLT and CLIL can both be seen as communicative teaching approaches aiming for purposeful academic talk and meaningful interaction with authentic purposes (Fisher, Frey & Rothenberg, 2008). CLIL may go a step farther, though, in detailing these goals, often listing goals that can be applied as general methods of good teaching: activating prior knowledge, using cognates and repetition, using graphic organizers, using both lower order and higher order thinking skills, reinforcing key concepts, and using "wait time" (Cloud, Genesee, & Hamayan, 2000; Dale & Tanner, 2012). As mentioned by a CLIL project trainer cited by Wiesemes (2009): "Actually, what we're talking about is good teaching and learning, always and that a lot of what CLIL is about is simply reflecting that, only with a foreign language element" (p. 43). Thus, while being a very promising and pedagogically sound approach that holds much potential, CLIL does not seem to be as unique as some researchers would make it out to be.

2.5.3 CLIL's content and language integration. Both CLIL and counterbalanced instruction have a shared aim of a constant drive to integrate content and language into the classroom. Lyster's (2007) counterbalanced instruction is clearly reflected in Coyle et al.'s (2010) statement suggesting that "in CLIL contexts it is not a question of whether to focus on meaning *or* form, but rather that it is fundamental to address *both*, the balance of which will be

determined by different variables in specific CLIL settings" (p. 35). This closely resembles counterbalanced instruction's balancing of content and language, which is determined by the specific classroom context and its meaning or form-orientation (Lyster, 2007).

Similarly, CLIL, like counterbalanced instruction, emphasizes that "neither [content nor language] must be subsumed or the interrelationship between the two ignored" (Coyle et al., 2010, p. 28). Both approaches recognize the intricate and important relationship between focusing on content and focusing on language, or as described by Swain (1988), they "recognize both the need of using language for content learning and of using content for language learning" (p. 77). Both CLIL and counterbalanced instruction also acknowledge the inherent limitation of more traditional instruction methods which often lack any type of meaningful context. Mehisto et al. (2008) stated that: "It is a student's desire to understand and use the content that motivates him or her to learn the language. Even in language classes, students are likely to learn more if they are not simply learning language for language's sake, but using language to accomplish concrete tasks and learn new content" (p. 11). Additionally, as a direct reflection of counterbalanced instruction's goal of promoting second language development by shifting learners' focus in the opposite direction of the classroom orientation (Lyster, 2007), Mehisto et al. (2008) stated in their book about CLIL that "growth in language increases within the context of a meaningful discussion about content when attention is given by content teachers to form, and by language teachers to content as well as form" (p. 170).

CLIL, similar to counterbalanced instruction, focuses on integrating language into the content so that activities and tasks are meaningful and purposeful (Mehisto et al., 2008). In this sense, while content is ultimately driving and determining the route taken, language is providing support all along the way so that together they successfully reach the target destination. As a result, "content and cognition objectives are often set as advance parameters, and communication (language) objectives supply the means of meeting these parameters" (Coyle et al., 2010, p. 131). CLIL specifically illustrates this integration of language through the content in the CLIL Language Triptych, which focuses on the language *of, for,* and *through* learning. The multiple role of language as both the object *of* learning and a vehicle *for* learning has been highlighted by several SLA researchers (Fisher, Frey, & Rothenberg, 2008; Folse, 2006; Long, 1983; Lyster, 2007; Seedhouse, 2004). In addition, just as Schmitt (2008) emphasized focusing on the most frequent, useful words to help learners link form and meaning, CLIL emphasizes content-obligatory language and content-compatible language (Coyle et al., 2010).

Similarly to counterbalanced instruction, CLIL recognizes the content focus as the key to successfully creating a meaningful, purposeful learning environment (Mehisto et al., 2008). This also parallels Lightbown and Spada's (2006) description of CBLT, stating that "The advantages of content-based instruction are numerous. Motivation is increased when the material that is used for language teaching has an inherent value to the students. That is, it creates a genuine, immediate need to learn the language" (p. 193).

Where CLIL becomes more specific and differentiates from counterbalanced instruction's goal of integrating language into content is in its specific "just-in-time" approach to incorporating language, with a primary focus on the content and creating the context to provide language needed just-in-time (Mehisto et al., 2008). As stated by Coyle et al. (2010): "Pre-teaching of specific language in 'language teacher mode' is often not the best practice" (p. 92). This is supported by evidence that just-in-time language teaching can be more effective than pre-teaching vocabulary (Gibbons, 2002), and is supported by Swain's (1988) understanding that "The solution is *not* to force language into content, but to explore content sufficiently so that language in its full range emerges" (p. 76). This would also seem to parallel transfer-appropriate learning's framework where something is best learned in the context in which learners will be using it (Segalowitz, 2000), which is a key goal of counterbalanced instruction and "provides a rationale for moving away from decontextualized grammar instruction and toward the integration of form-focused instruction" (Lyster, 2007, p. 43).

2.5.4 CLIL feedback. One possible clear distinction between CLIL and counterbalanced instruction is in some researchers' descriptions of CLIL's beliefs regarding feedback. Coye et al. (2010) emphasized the use of a language clinic to correct learners errors, where "from time to time, the teacher gathers language errors which need to be addressed as a class and holds a language clinic in a lesson, explaining to learners that this is a necessary step to support better communication of content" (p. 120). Dalton-Puffer (2011) detailed CLIL

classrooms as "an environment for naturalistic language learning" where language mistakes are "neither penalized not corrected" (pp. 193-194). Either of these approaches is in clear contrast with counterbalanced instruction's goal of transfer-appropriate learning and a balanced use of reactive feedback, as well as with how "research in support of reactive form-focused instruction suggests that it may be precisely at the moment when students have something to say that a focus on language can be most effective, rather than postponing a focus on language until a subsequent language arts lesson" (Lyster, 2007, p. 47). In this light, Coyle et al.'s (2010) and Dalton-Puffer's (2011) views of corrective feedback in CLIL mirror some researchers' belief that oral feedback on form will cause anxiety and interfere with the communication flow (Krashen, 1994; Truscott, 1999) or that any type of non-implicit correction will interfere with content learning (Long, 2007). However, previous studies have revealed that teachers can draw learners' attention to form without breaking the flow of a meaningful, content-focused interaction (Doughty & Varela, 1998; Lyster & Ranta, 2007).

Mehisto et al.'s (2008) CLIL feedback approach seems to adopt a more balanced perspective. The authors state that "recasts are helpful scaffolding tools when students lack the language needed to discuss content," but that recasting "is a strategy that is often overused or ineffectively used and that may not lead to sufficient language growth" (p. 170). They also acknowledge that "prompts about language are particularly helpful for students who are used to focusing on content" and that "it is wise to integrate both prompts and recasts and to provide 'a balanced provision of both'" (p. 170). Additionally, Llinares et al. (2012) also

state that they believe that "some formal language features should be attended to explicitly or implicitly (through proactive or reactive approaches), and cannot be left to be acquired by the students incidentally" (p. 214). Taking what could be considered a more balanced approach directly in unison with counterbalanced instruction's beliefs, Mehisto et al. (2008) and Llinares et al. (2012) offer a significantly different approach to CLIL feedback/correction compared to that of Coyle et al. (2010) and Dalton-Puffer (2011), which would seem to have a substantial effect on the direction CLIL could take and how it is characterized.

2.5.5 CLIL model similar to present study. When looking to CLIL in terms of gaining perspective for the present study, the "Model B4 Secondary 12-19 years" classroom context mentioned in Coyle et al. (2010) (see Figure 2), directly applies to the present study's specific classroom context. Model B4 describes language-based projects where it is the "language teacher who takes primary responsibility for the CLIL module…. leading to content-based projects which complement more formal forms of language instruction" (pp. 22-23). Although the amount of exposure to the L2 isn't specified, if defined in terms of Llinares et al.'s (2012) "low-immersion CLIL [context] (where the students are exposed to the L2 for one or two hours a day)" (p. 198), it would resemble the present study's context even more closely.

In the foreign language classroom, CLIL defines itself as "an approach to foreign language teaching in which language instruction is organized around non-linguistic topics, themes, and/or various subject matters rather than around linguistic lesson plans" (Ojeda Alba, 2009, p. 131). In this light, "CLIL allows

Modern Foreign Language (MFL) teachers to enrich their traditional teaching with content elements that in turn have a positive effect on learner achievements and motivation" (Wiesemes, 2009, p. 46).

Model B4

Language-based projects

This type differs from Examples B1-B3 in that it is the language teacher who takes primary responsibility for the CLIL module. This may be done though international partnerships and is an extension of both content-based and communicative language teaching. The module involves authentic content learning and communication through the CLIL language, and is scaffolded through language-teacher input.

→ Learners view this as part of language teaching but see it as an authentic way in which to use the language to learn non-language content.

→ Content assessment is usually formative and complimentary to existing language assessment.

Figure 2. Coyle et al.'s (2010) Curricular Variation in CLIL: Model B4 (p. 22).

CLIL's ability to bring context, meaning and authenticity into the foreign language classroom through content mirrors the advantages of bringing in a content-driven CBLT curriculum within a larger counterbalanced instruction framework. In each case, language becomes a tool for learning rather than an end in itself. All three approaches highlight the underlying belief that "using language to learn is as important as learning to use language" (Coyle et al., 2010, p. 35). All three approaches' aims are to inspire foreign language teachers "to integrate more

content-based instruction as a means of enriching classroom discourse" (Lyster, 2007, p. 138).

2.6 The Broader Context

After exploring CBLT, counterbalanced instruction, and CLIL in order to gain a better understanding of the core tenants of each and how they interconnect, I was largely reminded of the "can't see the forest for the trees" proverb, particularly pertaining to CLIL and CBLT. The distinction between CLIL and CBLT can be seen in CLIL's use of the language triptych to define the language *of, for,* and *through* learning, its specific "just-in-time" approach to vocabulary, as well as some researchers' described approaches to feedback/correction. However, apart from these few "trees", the larger "forest" of CLIL greatly parallels that of CBLT, particularly in regards to a counterbalanced approach to CBLT. Just as counterbalanced instruction can be used with CBLT as a way to increase CBLT's effectiveness in promoting second language acquisition, the present literature review leads me to believe that counterbalanced instruction can also be used with CLIL and with any approach which emphasizes the importance of *both* content and language. Counterbalanced instruction functions as an overarching organizational framework which can not only incorporate CBLT's and/or CLIL's integration of content and language, but maximize their potential by considering learners' specific classroom contexts and using that context-specific knowledge to shift learners' focus in order to further second language growth.

2.7 The Present Study

The present study investigates the effects of using a counterbalanced approach to integrate a strong primary focus on content, with a secondary focus on language, into a French foreign language secondary school classroom in New York State, switching the classroom context's primary focus on language with a second and occasional focus on content. With the above research need in mind, by incorporating CBLT and CLIL design and teaching methods into a larger counterbalanced approach framework, I am interested in exploring the feasibility of shifting to a more meaning-oriented, purpose-driven foreign language teaching and learning experience.

Cammarata (2009) stated that: "CBI [CBLT] has long been identified as a highly effective approach to L2 and FL education….Yet it remains rarely implemented in most conventional FL programs in the United States today" (p. 560). As demonstrated in the previous literature review, research studies examining a counterbalanced approach to integrating a content focus into a form-driven classroom context, though developing in various forms over the past decade throughout Europe, largely thanks to CLIL, and more recently emerging in Asia, is still a relatively novel concept in North America, particularly at a secondary school level. By designing a counterbalanced unit of study which integrated a robust focus on content/meaning into a language/form-oriented foreign language classroom context, I hope to add to the previously described body of research, particularly by expanding studies with a counterbalanced

approach in North American secondary school foreign language classroom settings.

This research decision also contains a personal aspect, growing out of my own belief in the need for a balanced focus between both language and content within the second language classroom and motivated by the meaningful content component I felt missing from my foreign language teaching experiences in France, the U.S.A. and China. Thus, all of the aforementioned factors ultimately led to the following research question:

1. What are the effects of integrating a strong primary focus on content with a counterbalanced secondary focus on language on students' second language development in a predominantly language-focused New York State foreign language classroom?
    a) Is it feasible to integrate a primary focus on content in a language-focused foreign language classroom context?
    b) Do students benefit from this integrated focus on content/meaning, and if so, how?

The next chapter will outline the research methodology that was undertaken in the present intervention study to answer this research question.

Chapter 3

Methodology

In this chapter I will describe the present study's methodology, including details of the school context, the participants, and the research design of the instructional unit. Subsequently, the data collection procedure and details of the data analysis will be explained for all forms of data, presented in the following order: COLT Observation Grid, Tests, Questionnaires, Observations, Consulting Science Teacher Interview, French Teacher Interviews, and Student Interviews.

3.1 Study Context: School, Classroom, and Participants

The present intervention study was carried out in two French III classes in a small, rural upstate New York public high school where I had formerly taught French for two school years. Participants included a total of 27 students enrolled in the two sections of French III, and the high school French teacher. Students were 10^{th} and 11^{th} grade adolescents (15-16 years old) in their fourth or fifth year of studying French. All student participants described themselves as coming from English L1 households. At this level, students enrolled in French III had either chosen to continue learning French or were enrolled to fulfill graduation requirements for the New York State Regents Diploma with Advanced Designation. Students at this French III level were chosen since they had built a strong French foundation which would help them to effectively communicate and participate in the present study's meaning-focused, content-driven instructional unit. All student participants in the present study are identified numerically in order to maintain their anonymity.

The participating French teacher, a former colleague and close acquaintance of mine, had more than 25 years of teaching experience in the French classroom at the time of this study. A native francophone who moved to the U.S. after university, the participating teacher was known for having built an excellent French language program, and had received several awards for her contributions as a foreign language teacher. Situating the classroom context within Met's (1998) range of CBLT settings (see Figure 1 on page 14), the classroom was typical of foreign language classrooms in New York State: language-driven, with content themes to provide context for language practice, in addition to occasional cultural content.

3.2 Research Design: Unit, Lesson, and Activity Planning

3.2.1 Unit topic. The present study's aim was to integrate a focus on content into a primarily form-focused classroom context. The unit topic "*l'Environnement*" ("Environmental Issues") was chosen in collaboration with the participant teacher, based on the positive reaction that her previous year's students had with an environment-themed mini-unit she taught. After consulting relevant intermediate-level French environmental resources (see Appendix A), and with the help of a science teacher at the participating school who volunteered as our content expert resource, a list of key environmental issues and topics was generated (see Appendix B). A total of 20 key environmental topics were chosen and grouped into four sub-categories as a flexible means of organizing the topics into smaller, more manageable groups.

3.2.2 Overall unit design and schedule. With the instructional unit's overall length of approximately 6 weeks, consisting of 40 minutes of study per day, 5 days a week in each class, careful and strategic planning of the overall unit's progression was clearly needed. The strategy adopted for planning the unit took into account various approaches which explicitly included both content and language goals—principally CBLT, CLIL, and counterbalanced instruction.

Specifically, the CLIL triple focus on content goals, language goals and learning skills/cognitive goals (Coyle et al., 2010; Mehisto et al., 2008) was utilized as a guideline within a larger counterbalanced instruction framework (Lyster, 2007). The primary content focus directed the progression of the unit, which was broken down into three main stages:

(1) Introduction to environmental issues (emphasis on cause and effect patterns, comparing and contrasting issues);

(2) Expert group project (explore a chosen issue in more depth, then teach other groups) using first-hand French content resources (see Appendix A) and creating a Glog (interactive poster) using Glogster (online poster program) to teach peers;

(3) Possible solutions to environmental issues and a Public Service Announcement (PSA) final project, with the aim to convince others to be environmentally conscious.

Within these three main stages of the unit, the participant teacher's classroom format was integrated as much as possible, with some modifications to maintain the French content-focus goal of the study and to accommodate the unit's busy

schedule (see Appendix C). This was a desire of the teacher to help ease the transition of the new unit so that it fit into her classroom routine and so some familiarity within the week-to-week format was maintained before, during, and after the intervention unit.

New vocabulary was introduced on a need-to-know basis so that language was used as a tool for grasping the content rather than an end in itself (Cloud et al., 2000; Coyle et al., 2010; Fisher, Frey & Rothenberg, 2008; Gibbons, 2002; Lyster, 2007; Mehisto et al., 2008). A 2-page double-sided vocabulary guide was created for students (see Appendix D), based on the environmental topics being covered and the most common terms that would be discussed within each topic. To help keep the focus on meaning and the content knowledge being taught, the vocabulary was listed in French, with a simple French explanation, as well as possible synonyms or an example sentence using the term. The vocabulary terms were also grouped according to the four main sub-categories of the unit.

3.2.3 Instructional unit activities and tasks. The unit topic was composed of lessons and tasks with a strong primary focus on content and a minor secondary focus on language, based on counterbalanced instruction principles, in addition to CBLT, CLIL, and other content-oriented instructional approaches. The classroom teacher and I co-created all lessons and activities within the intervention.

The goal of strategically choosing activities and tasks that were truly content-driven and meaning-focused in nature for the majority of the lessons, in addition to counterbalancing this with a few language-focused activities—where

form is contextualized within content—was of the upmost importance. In this way, the study's main goal of counterbalancing instruction by "promoting transfer-appropriate learning through activities that differ from [the] classroom's usual instructional routine" (Lyster, 2007, p. 133) —in this case through implementing a content-based intervention into a typical language-driven classroom—could be realized. Activities and tasks based on several second language teaching pedagogies (CBLT, CLIL, communicative language instruction, the SIOP model) were developed by consulting relevant resources (Cloud et al., 2000; Coyle et al., 2010; de Graff et al., 2007; Echevarria, Vogt & Short, 2008; Fisher, Frey & Rothenberg, 2008; Folse, 2006; Lyster, 2007; Mehisto et al., 2008; Spada & Fröhlich,1995; Vogt & Echevarria, 2008) in order to create a rich variety of content-focused tasks and secondary form-focused activities to integrate into the unit (see Appendix E).

Stage 1 of the intervention unit consisted of introductory activities to *l'Environnement*. Day 1 was the unit introduction, with the key activities of brainstorming existing knowledge, talking about the relevance of the topic, answering the first "*5 Questions*" environmental trivia card (see Appendix C for details), and examining the Environmental Topics Chart listing the 20 environmental issues to be covered. Days 2-5 involved introducing the 20 environmental issues, broken down by the 4 sub-categories: Day 2: *la Terre*, Day 3: *l'Air,* Day 4: *le Feu*, and Day 5: *l'Eau*, with an emphasis on cause and effect patterns, as well as comparing and contrasting issues. A repetitive format was followed: a short review bellringer activity (which students completed when they

arrived to class and which was corrected as a class a few minutes after class began), introducing the new sub-category and reading over the relevant environmental issues (using vocabulary sheet), answering simple aural content comprehension questions with visual aid support, completing a cause and effect puzzle in small groups on the day's focus issues, and completing an additional introductory-level content-focused activity. Students also answered "*5 Questions*" trivia on Days 3, directly after the bellringer.

Days 6 and 7 of Stage 1 were reserved for reviewing and practicing all of the new information students were introduced to on Days 2-5. Students used both days to complete "review stations", where they completed a total of 7 primarily content-based activity stations located around the room, working in assigned groups of 3 and moving to another available station when ready (see Appendix E for activity details). Students also answered "*5 Questions*" trivia on Days 6 at the beginning of class. In addition, during Stage 1 of the intervention unit students were given 6 predominantly content-focused homework assignments, a total of 3 per week (see Appendix F). Homework was primarily assigned and completed by students online (through EdModo), with in-class homework reminders given at the beginning of class.

Stage 2 of the intervention unit was comprised of *l'Environnement* expert group projects. Besides a quick review bellringer, Day 8 consisted of introducing the project to students, reading over the project grading rubric, looking at the organization charts provided to help students with their data collection, and students beginning their research using the array of primary resource French

environmental books provided (see Appendix A). Students were assigned to groups of 2-3 (based on results from Stage 1 where students ranked which issues they were most interested in studying). Along with continuing a daily review bellringer, students continued collecting data on their expert issue during Days 9-10, transitioning on Days 11-12 to choosing which key points to share with their classmates, deciding how to distribute the information amongst group members, and creating a Glog to present to their peers. Other than one homework assignment on Day 10, students were not assigned any other homework so that they would have time to complete their Glog. Students also answered "*5 Questions*" trivia on Days 11 at the beginning of class.

Stage 3's solution theme was introduced on Day 13, though there was a transition period during Days 13-14 with both wrapping up Stage 2 and introducing Stage 3 of the intervention unit. On Day 13, after a review bellringer and "*5 Questions*" trivia, a solutions-related language-focused introduction (using French imperative forms) and a content-focused activity were completed, before students met with their expert group mates to finalize their presentation plans. After a bellringer, all prepared groups presented their expert group Glogs to their peers on Day 14.

Stage 3 of the intervention unit continued on Day 15, with students completing a review bellringer, continuing the content-based activity from Day 13, before doing another content-based solutions-related activity involving video clips. The Public Service Announcement (PSA) final project was introduced to students on Day 16, which included distributing and reading over the project rubric,

brainstorming possible project ideas as a class, choosing project groups (students' choice), and each group creating a "to-do" list to divide and conquer project tasks. Days 17-19 were devoted to working on the final project, besides the review bellringer at the beginning of class on Days 17-18, and a schedule announcement at the beginning of Day 19. It should be noted that students had a 4-day weekend between Days 17 and 18.

On Days 20-21, a special collaboration between the two French classes and two science classes took place. Two of the consulting science teacher's classes participated in an environmental issues information share collaboration, where French and science students shared their expert topic presentations with one another. After distributing blank presentation informational charts at the beginning of class for students to complete while listening to others' presentations, the French students walked over to the science classroom to either (a) present their expert group Glogs to the science students one day, or (b) visit each station to listen to science students' environmental issues presentations on the other day. The French students presented their French environmental Glogs to the science students, using their common underlying content knowledge to summarize the key information they learned, while the science students shared their English presentations.

Day 22 was devoted to students finishing their final project. Students presented their final projects to their peers on Days 23-24, along with working on a bellringer at the beginning of each class and ending class with a content-based activity. There was a 5-day holiday weekend between Days 24 and 25. After

starting Day 25 with a bellringer, students used days 25-26 to work on Stage 3 review stations, completing a total of 7 primarily content-based activity stations, working in assigned groups of 3 (see Appendix E for activity details).

On Day 27 students completed a bellringer, any remaining final presentations, and a content-based interactive website activity. The last day of the intervention unit, Day 28, was devoted to completing the last "*5 Questions*" environmental trivia card and to a listening comprehension quiz prepared by the teacher, centering on environmentally-themed passages read aloud by the teacher, followed by comprehension questions for the students to answer. In addition, students were not given any extra homework other than working on their final project during the first half of Stage 3 of the intervention unit, and were given a total of 4 content-focused homework assignments during the second half of Stage 3, a total of 2 assignments per week.

3.3 Data Collection and Analysis

A mixed-methods research methodology was used in the present intervention study, with data collected through Spada and Fröhlich's (1995) Communicative Orientation of Language Teaching (COLT) observation grid, pre-, post- and delayed post-tests, student questionnaires, classroom observations, teacher interviews, and student interviews. Quantitative and qualitative data-gathering methods were combined to support one another, with the overall goal of strengthening the study and, particularly taking into consideration the present study's research question focus and aim, overcoming the potential weakness of including solely a qualitative or quantitative approach (Creswell & Plano-Clark,

2007). Using identical methods in both sections of French III, data were collected before, during, and after the intervention French unit of study.

3.3.1 Ethics requirements and researcher's role. Prior to the study, the McGill Review Ethics Board examined my research proposal and provided a certificate of ethical acceptability.

Following the school district's procedure, approval was sought and granted directly by the principal of the high school to carry out the study (see Appendix G). Permission was then requested and obtained from the high school French teacher for her consent to participate (see Appendix H). These contacts were able to be established since I formerly taught at the participating school for a period of two years and have remained in close contact with the French teacher. Finally, all French III students in both sections were given a permission letter to be signed by themselves and their parents, in accordance with ethical guidelines (see Appendix I). All students agreed to participate in the 3 administered tests and the 3 questionnaires handed out, as well as to appear in the daily video recording of the intervention unit which was used to supplement my observational notes. I interviewed only students who agreed to be recorded on audio tape during a post-unit interview.

The teacher participating in this study was aware of the research questions I was investigating. The students participating in the study were aware that I was coming in to collaborate with their French teacher on a French unit on the environment, but I did not discuss my research with them until I returned to visit them in March 2012 to share my preliminary results. As mentioned before, having

formerly taught French for two years at the participating school, the participating French teacher is a mentor, former colleague and close friend of mine. As well, with the exception of 2 students who had moved to the school district in high school, 25 of the 27 participating students were former middle school French students of mine, 10 of whom I taught for one year and 15 of whom had taken French with me for two years. From a personal standpoint, it was a great pleasure to be able to return to observe and collaborate with my former colleague, as well as to see how far my former students had progressed since they first started learning French with me.

During the intervention unit, I participated as a teaching assistant. Although the preliminary research plan involved me as a non-participant observer, after talking with the participating teacher about her wishes, she clearly stated her interest in my having a more active, collaborative role in the classroom. As well, due to the teacher's busy schedule and the ambitious amount of environmental content included in the unit, I found myself taking a more active role in explaining content-specific concepts and acting as a content specialist.

3.3.2 COLT observation grid. Spada and Fröhlich's (1995) COLT Part A observation grid was used directly preceding the intervention unit while observing the two French III classes. This allowed (a) the students to become familiar with my presence and (b) the chance for me to better assess the content and/or language focus of this particular classroom context. The Content portion of the COLT checklist was specifically chosen and used for the purpose of evaluating to what extent the two French classes were meaning and/or form-focused during a

typical unit. The Content of each classroom activity could fall into 3 possible categories: *Management* (Procedure or Discipline), *Language* (Form, Function, Discourse or Sociolinguistics) or *Other topics* (Narrow or Broad). The *Other topics* category is representative of activities with "a focus on meaning (i.e., *Other topics*)," whereas *Language* is more clearly representative of activities with "a focus on *Form* (i.e., *Language*) (Spada & Fröhlich, 1995, p. 40). For the purposes of the present study, *Other topics* will henceforth be referred to as *Content*.

During my pre-unit observations, I used the COLT checklist to collect data over a total of 5 days. Although data were collected for both sections of French III, since most activities were very similar or exactly identical in both sections, I mistakenly did not note the exact timing of each activity during the second French III class and, therefore, could only analyze the data from the first class to give an overall representative picture of the primary focus in this specific classroom context. After the data were collected and coded accordingly, they were analyzed by using the content focus(es) and length of each activity to calculate the mean percentage of time spent during class on each category.

3.3.3 Tests. Before and after the instructional intervention, two different versions (Form A and Form B) of the same test were administered to students for a pre-unit, post-unit, and delayed post-unit assessment. All 27 student participants completed the tests in an A-B-A or B-A-B sequence. Both tests comprised four parts assessing three different areas of interest: (a) gender attribution, using the "Masculin ou Féminin" tests adapted from Lyster (2004); (b) informal *tu* / formal *vous* imperative use, adapted from Lyster's (1994) intervention study targeting

second-person pronouns; (c) students' general content knowledge of environmental issues, using a short-answer structure listing different environmental issues and asking students to elaborate upon what they already knew.

Parts 1 and 2 of the test assessed students' French knowledge of gender attribution, an inherent feature of French nouns. Students were asked to decide if words were masculine or feminine, circling the un/une or le/la which accompanied each noun accordingly (e.g. le / la natation), with 48 words in Part 1 each accompanied by a corresponding picture and 30 words in Part 2 embedded within a reading passage. Specifically, nouns containing strong inherent masculine or feminine endings were chosen. During the environmental unit, two specific endings naturally appeared quite frequently within the content and thus were chosen and referred to on occasion as a minor form focus: -*tion* words (feminine 99.9% of the time) and –*ment* words (masculine 99.6% of the time) (Lyster, 2004). These two gender attribution assessments were intended to measure what language development, if any, occurred within the intervention's primary focus on content.

Part 3 assessed informal *tu* / formal *vous* imperative use in French, the other minor, secondary language target of the instructional unit, along with gender attribution. Students were asked to look at a map with an indicated route highlighted and asked to write how they would direct (a) their friend, then (b) an older man of 50, to go from point A to point B. For each person, students were prompted with a phrase stating, "To go from the metro to the museum," followed

by six numbered lines for them to write the directions they would give. Specifically during the third and last part of the environmental unit focusing on solutions and telling others what to do to help the environment, the use of imperatives naturally emerged as a secondary language focus and was employed. As with Parts 1 and 2, Part 3's assessment of informal and formal imperative use was intended to measure what language development, if any, occurred during the intervention's primary focus on content.

Part 4 assessed students' general content knowledge of environmental issues in English. Students were asked to write a short-answer list of any environmental issues they had learned about or were aware of, adding any supporting information, key terms, or other known information next to each issue. This was followed by two blank lined pages for students to write their list on. The environmental issues knowledge assessment was intended to measure what general underlying content knowledge development was gained as a result of the instructional unit.

The delayed post-tests were administered eleven weeks after the completion of the intervention unit. All tests were statistically analyzed in order to measure any specific gains made by student participants, with descriptive statistics used as a measure of central tendency—in this case to calculate the mean of Parts 1 and 2, Part 3, and Part 4. Additionally, the mean scores from Parts 1 and 2 were statistically analyzed to compare the pre- vs. post- set of scores in order to examine any change in scores over time. Scores from both sections of French III were analyzed together as one large group, comprising a total of 81

tests—3 tests each (pre-, post- and delayed post-) from each of the 27 participating students.

Scores from Part 1 and Part 2 were combined into one sum score, based on how many words were correctly labeled as masculine or feminine out of the total word count. Part 3 scores were based on how many written sentences showed correct imperative use. A maximum of 2 points per sentence were possible, based on whether or not the phrase would sound correct in spoken French (meaning that spelling errors, noted by an "*", were not penalized if they did not affect the sound of the command). However, spelling and accent errors affecting the sound did not receive any points (e.g. informal context: *continué** = 0 points). As well, unconjugated verbs were not accepted, meaning no points were awarded for infinitive endings on verbs. Students received the full 2 points for a sentence containing a correct-sounding imperative command, with the verb used by itself without a pronoun (e.g. informal context: *continue* = 2 points; informal context: *turnes** = 2 points; formal context: *tournez* = 2 points). If a regular declarative sentence (pronoun + verb) was used, students received 1 point for the correct-sounding pronoun use and 1 point for the correct-sounding verb use (e.g. informal context: *tu tourne** = 1 point + 1 point; formal context: *vous continuez* = 1 point + 1 point, *tournez-vous* = 1 point + 1 point). Part 4 was analyzed through a quantitative tallying of listed environmental issues, where each issue listed received 1 point and each piece of supplemental detail received 1 point.

As the quantitative data were embedded within the study's overall qualitative focus, they largely served a supporting role as a way to better

understand what, if any, language and overall content gains were made as a result of the content-focused intervention.

3.3.4 Questionnaires. As a means to assess participants' understanding of the key content and language concepts, as well as their opinions of the tasks and activities completed, a six-question questionnaire was given to student participants three times throughout the intervention unit. The questionnaire format was adapted from the student questionnaire used by Lyster (1998b), including 3 quantitative questions based on (a) how much they liked the various activities, (b) how much they felt the activities helped them learn French, and (c) how much the activities applied to their life beyond the French classroom, all answered using a Likert scale, in addition to 3 open-ended questions regarding participants' understanding of the previous weeks' key concepts and a place for any additional comments (see Appendix J). The questionnaires were analyzed by calculating students' mean ratings for each item according to the 5-point Likert scale. Open-ended questions were also analyzed by reading over students' responses regarding what they had learned, what they hadn't understood, and what they would like to learn, in regards to the previous couple of weeks' activities.

3.3.5 Observations. During the instructional intervention, observational notes were taken by the researcher, describing the overall classroom atmosphere and how students responded to the primarily content-based tasks and activities. Notes were also taken of any other information that seemed pertinent at the time. The lessons in the unit were video-recorded using a stationary camcorder in order

for the researcher to play back, verify observational notes, and later provide verification of coding as needed. The video recording was strictly for supplemental support of observational notes and not for transcribing or coding of the video data itself.

3.3.6 Consulting science teacher interview. The consulting science teacher worked with the participating French teacher and me throughout the unit, acting in a supportive role to answer content-specific questions. As well, two of the consulting science teacher's classes participated in an environmental issues information share collaboration. As a result of this collaboration, the science teacher agreed to a brief (approximately 6 minutes) post-collaboration discussion to share her opinion and offer feedback on the experience.

3.3.7 French teacher interviews. Pre-unit, during-the-unit, and post-unit interviews were conducted with the French teacher in English (in which she is fluent), using a semi-structured format in which open-ended questions guided the interview, but allowed the teacher to elaborate and explore certain topics in greater depth when inclined to do so. Pre-unit and post-unit teacher interviews were approximately 25 minutes in length, while the three during-the-unit teacher interviews were approximately 11-12 minutes in length, with the goal to gain a better understanding of the teacher's thoughts on the unit's progression and what was and was not working effectively.

3.3.8 Student interviews. Post-unit interviews were conducted with students in order to elicit their opinions and personal thoughts on the progression and overall outcome of the meaning-focused unit. Student interviews were semi-

structured and approximately 10 minutes in length, with 22 out of the 27 student participants volunteering from the two French III sections.

3.3.9 Observation and interview analysis. All qualitative data were analyzed through a content analysis approach where observational notes and interview answers were coded and examined for predominant, recurring themes. In this way, a broad, holistic understanding of the feasibility of integrating a focus on content into a language-focused learning context was sought.

All interviews were audio-recorded and subsequently transcribed by the researcher. One of the primary goals of the interviews was to achieve a better understanding of the teacher's and students' personal beliefs in the benefits and/or drawbacks of this counterbalanced instructional approach to integrating a stronger focus on content into the foreign language classroom.

3.4 Summary

In this chapter, I presented the methodology used in the present study. In addition to details concerning the school context, the participants, and the research design of the instructional intervention unit, the data collection and data analysis procedures were fully detailed. In the subsequent chapter, I will present the results obtained from the data described above.

Chapter 4

Results

In this chapter, I will describe the present study's results, based on the data collection and analysis procedures described in the foregoing chapter. Results will be presented in the following order: COLT Observation Grid, Tests, Questionnaires, Observations, Consulting Science Teacher Interview, French Teacher Interviews, and Student Interviews. After a detailed explanation of each set of results, further details will be noted as a means to fully contextualize data results and offer a clear picture. As the aim of this study was to examine the feasibility of integrating a strong content focus into a language-driven, communicatively-oriented foreign language classroom context, results were not and should not be used to personally evaluate the participating school, the individual teachers, or the students themselves.

4.1 COLT Observation Grid

As shown in Table 1, the overall classroom focus varied greatly on a day-to-day basis during the COLT observation period preceding the instructional intervention. Overall, the largest percentage of the class time observed was comprised of activities with a shared focus of *Language & Content*, accounting for 46% of the total classroom observation time. When looking at the amount of class time with an exclusive or primary focus, 29% of class time was comprised of a *Language* focus and 21% of a *Management* focus. An exclusive or primary focus on *Content* made up the smallest amount of time, at only 4%. When specifically comparing language-focus to content-focus, results revealed that

language and content tended to co-occur, but that the classroom context overall contained a stronger language-focus than a content-focus.

Table 1

COLT Task Focus Breakdown by Percentage of Class Time

Observation	Management	Language	Content	Language & Content	Total %
Day 1:	0%	46%	0%	54%	100%
Day 2:	9%	0%	0%	91%	100%
Day 3:	0%	38%	6%	56%	100%
Day 4:	59%	28%	13%	0%	100%
Day 5:	37.5%	35%	0%	27.5%	100%
Total Mean	**21%**	**29%**	**4%**	**46%**	**100%**

The majority of the dual *Language & Content* focus time observed during the pre-unit observations came from the "*5 Questions*" trivia competition students played twice a week. In addition to a focus on specific French vocabulary terms and translations, a wider focus on general Francophone culture and history was also included. The broad francophone culture and history content found in this activity is representative of typical content found in the participating classroom and correctly labeled as being content on a basic level, but clearly not the same depiction of content, nor at the same level of depth as the content-based unit implemented in the present study.

4.2 Tests

4.2.1 Parts 1 and 2. When comparing the students' mean score of Parts 1 and 2 from the pre-, post- and delayed post-unit tests, results revealed minimal difference between the three sets of tests (see Table 2). Particular attention was given to comparing pre- and post-test results to analyze any change in students'

performance before and after the intervention, with students scoring 69.9% on the pre-test and 71.1% on the post-test. When students' pre- and post- test results were represented in a histogram and Q-Q plot, using the Bonferroni method to adjust the *p* value for multiple tests, both failed to show normality. Therefore, a Wilcoxon Signed Rank Test was used to analyze the pre- and post-test scores since, unlike a dependent *t*-test, it does not assume normality in the data.

Table 2

Mean scores from Parts 1, 2, 3, and 4 of assessments

Test Sections	**Pre-test**	**Post-test**	**Delayed Post-test**
Parts 1 and 2 (French) (combined percentage of correct French gender attribution)	69.9%	71.1%	71.5%
Part 3 (French) (points earned for correct imperative uses)	8.78	12.41	11.48
Part 4 (English) (tally of listed environmental issues)	9.81	16.74	13.48

The Wilcoxon Signed Rank Test confirmed that students' scores remained relatively stable, further detailing that 14 students had a slightly higher pre-treatment score than post-treatment, while 12 students had a slightly higher score post-treatment, and 1 student saw no change at all in score. Overall, results from the Wilcoxon Signed Rank Test revealed that a 6 week, content-based intervention unit course did not produce a statistically significant change in students' language skills ($Z = -.269$, $p = .788$).

In order to gain further clarity on student progress, a closer examination of students' gender attribution skills was also analyzed, specifically comparing their scores of individual word ending groups from Part 1. The two word endings which appeared as a secondary language focus during the intervention unit (*-ment* and *–tion*) were compared to two other word endings which were complementary comparisons to both (comparison to *–ment*: *-et(t)e*; comparison to *–tion*: *-age*) (see Table 3), based on whether the word ending groups followed the general "feminine words end with an e" guideline. Results suggest that students' gender attribution skills remained fairly steady between all three tests.

Overall, results showed that students tended to label words ending with an –e as feminine and words not ending with an –e as masculine, which the French teacher had mentioned was a general rule that she taught students. Whereas this general guideline helped students to correctly label *–ment* words as masculine 4.48/5 times in the pre-test, it also caused them to label *–tion* words as feminine only 1/5 times—mislabeling them as masculine 4/5 times.

Table 3

Part 1 Gender Attribution Individual Mean Scores

Word Endings	**Pre-test**	**Post-test**	**Delayed Post-test**
-ment	4.48 points	4.52 points	4.70 points
-et(t)e (comparison to *–ment*)	4.63 points	4.67 points	4.67 points
-tion	1.00 points	1.48 points	1.41 points
-age (comparison to *–tion*)	1.04 points	1.04 points	0.93 points

Note: Scores are out of a total of 5 points.

Considering the strong shift in students' focus from more language-oriented to strongly content-oriented in order to counterbalance the inherent classroom orientation, the above results indicate that even within such a predominantly content-based unit where form took a back seat, students' language skills remained reassuringly steady.

4.2.2 Part 3. Table 2 (see page 65) shows the results of students' scores for Part 3. Overall, there was a small increase in the number of correct imperative form uses, with an increase between the pre-test and post-test, followed by a slight decrease between the post-test and delayed post-test.

Perhaps the small increase can be associated with the observation that the imperative form had a slightly more explicit presence in the intervention unit than either *–ment* or *–tion* word endings. Due to the solutions portion of the unit, students actively practiced and reviewed how to use the imperative form to tell someone what to do and not to do to be environmentally-friendly. Further analysis of the results revealed that the number of students making a *tu* and *vous* distinction remained fairly constant (pre-test = 19 students, post-test = 21 students, delayed post-test = 18 students), and the number of students distinguishing between *tu* and *vous* distinction and additionally carrying that distinction into the appropriate conjugation of the verbs showed a slight increase over time (pre-test = 6 students, post-test = 10 students, delayed post-test = 12 students). Again, considering the strong shift in students' focus towards content during the duration of the intervention unit, the above results indicate that students' language skills remained steady.

4.2.3 Part 4. A comparison of the number of environmental issues listed in the final Part 4 of the assessment, shown in Table 2 (see page 65), revealed an overall increase in the number of environmental issues listed, with an increase from a mean of 10 terms in the pre-test to a mean of 17 terms in the post-test. A slight decrease is revealed between the post- and the delayed post-tests, from a mean of 17 to 13.

With the quantitative calculations in mind, a more qualitative breakdown of the students' list of environmental issues is perhaps of greater benefit. Specifically comparing students' pre- and post-test lists, a clear increase in the level of specific scientific language and the level of detail—cause-effect relationships, pros and cons, definitions and examples—was evident (see Appendix K). An apt representation of the growth shown by students, Student 16 mentions "Ozone damage" on his pre-unit list, but refines his scientific language to "Ozone depletion" on the post-test, further detailing how "chemicals are released and Ozone depletes." Similarly, whereas Student 4 mentions "Green energy" in the pre-test, identifying "nuclear power, wind power, solar power, and water power" as examples, much more detail is offered on the post-test, including describing whether each energy is renewable or nonrenewable, the pros and cons of nuclear energy, an example of wind power, details of the two types of solar power, a scientific term associated with water power, as well as the addition of geothermal energy and its description.

Overall, students' post-test lists contained a more sophisticated and detailed level of scientific lexis. A qualitative analysis of Part 4 test results imply

that, even though the intervention unit was a content-based French unit, students' broader English knowledge of environmental issues were also benefitted. Students' delayed post-test lists showed a decrease in the sophistication and level of detail compared to the post-test, but still contained a slightly more academically scientific level of vocabulary compared to the pre-test overall.

4.3 Questionnaires

4.3.1 Likert scale activity ranking. Analysis of students' ranking of activities revealed that students best liked the two main projects (Glogster expert project: 4.23/5, PSA project and presentation: 4.33/5 and 4.16/5), along with the environmental short film (4.46/5), video clips (4.16/5) and SmartNotebook computer review games (Vortex: 4.21/5 and Hot Spot: 4.08/5) (see Appendix L). In terms of what students thought was most beneficial to helping their French, the two main projects (Glogster expert project: 4.3/5, PSA project and PSA presentation: 4.13/5 and 4.09/5) and the Week One introduction activities (comprehension check: 4.26/5, topic questions: 4.13/5, and cause and effect puzzle: 4.13/5) were ranked highest. The Glogster expert project, with a score of 4.3/5, far outranked the other activities in terms of students' opinion of its applicability to their lives outside the French classroom and was the only activity ranked above 4 in this category, with the PSA final project and Stage 3 Review Stations SmartBoard Activities tying for the second highest ranking (3.92/5). When comparing all three categories, the Glogster expert project received the highest overall ranking, with the PSA project also ranking high in all three categories.

4.3.2 Open-ended question 1. The open-ended questions from the questionnaires were also analyzed by reading about students' responses regarding what they had learned, what they hadn't understood, and what they would like to learn, in regards to the previous couple of weeks' activities, in addition to any additional comments students added in the last section of the questionnaire.

When asked what they had learned during the past couple of weeks, students' responses suggest a clear shift towards a strong content focus during the progression of the intervention unit (see Table 4). The majority of students (47.8%) maintained a language-focus on Questionnaire 1 when describing what they had learned over the past couple of weeks, mostly describing how they learned a lot of French words about the environment. However, this language focus decreased over the course of the unit, with 16.7% of students maintaining a language-focus on the same question in Questionnaire 2 and only 3.8% for Questionnaire 3. By contrast, while only 34.8% of students wrote a content-focused response when describing what they had learned for Questionnaire 1, the percentage went up to 66.7% of students for Questionnaire 2, with most students specifically commenting on how they learned a lot about their expert topic.

Table 4

Questionnaire Question 1: What did you learn?

Response types	**Questionnaire 1**	**Questionnaire 2**	**Questionnaire 3**
Language-focused	47.8%	16.7%	3.8%
Content-focused	34.8%	66.7%	92.3%
Both	17.4%	16.7%	3.8%
Total	100%	100%	100%

By Questionnaire 3, a total of 92.3% of students' responses were content-focused, with the majority of students describing how they learned "a lot about what we can do to save the environment," and about environmental solutions.

4.3.3 Open-ended question 2. When asked what they had not understood from the past week, students' responses indicate a clear progression in the self-reporting of their understanding of the intervention unit content (see Table 5).

Table 5

Questionnaire Question 2: What did you not understand?

Student Response	**Questionnaire 1**	**Questionnaire 2**	**Questionnaire 3**
Didn't Understand Something	34.8%	33.3%	23.1%
Understood Some / After Some Help	17.4%	16.7%	7.7%
Understood	39.1%	45.8%	65.4%
Other (blank, "not sure")	8.7%	4.2%	3.8%
Total	100%	100%	100%

Whereas 39.1% of students in Questionnaire 1 responded that they had understood everything, this number increased to 45.8% of students in Questionnaire 2 and 65.4% of students in Questionnaire 3, with a typical student response indicating that "I understood most everything." Some students (17.4% from Questionnaire 1, 16.7% from Questionnaire 2, 7.7% from Questionnaire 3) described how they had not understood everything, but either "got the basic idea of it all" or got it with help or after further explanation. In addition, out of the 34.8% of students who mentioned not understanding something in Questionnaire 1, 50% specifically mentioned not understanding something because of all of the French being used (see Table 6). As one student stated: "Sometimes I didn't

understand the questions being asked and it confused me when everything was in French." However, as the unit progressed, the percentage of students specifically referencing French decreased to only 12.5% of the 33.3% of students who mentioned not understanding something in Questionnaire 2 and 16.6% of the 23.1% of students who mentioned not understanding something in Questionnaire 3.

Table 6

Question 2 Details: Category of item not understood

Student Response	**Questionnaire 1**	**Questionnaire 2**	**Questionnaire 3**
French Reference	50%	12.5%	16.6%
Other Reference	50%	87.5%	83.3%
Total	100%	100%	100%

4.3.4 Open-ended question 3. When asked what they wanted to learn about as a result of the past week's activities, students' responses implied a genuine interest in the intervention topic, with the majority of students expressing an interest in learning something more (see Table 7).

Table 7

Questionnaire Question 3: What would you like to learn more about?

Student Responses	**Questionnaire 1**	**Questionnaire 2**	**Questionnaire 3**
Wanted to learn more about something	65.2%	75%	73.1%
Didn't want to learn more about anything	8.7%	0%	19.2%
Other (blank, "I don't know," etc.)	26.1%	25%	7.7%
Total	100%	100%	100%

In addition, students' responses regarding what they wanted to learn more about were increasingly content-focused in nature, with 86.7% (Questionnaire 1), 88.9% (Questionnaire 2), and 94.7% (Questionnaire 3) out of the total number of students who responding about wanting to learn more about something (see Table 8).

Table 8

Question 3 Details: Category of interest

Student Responses	**Questionnaire 1**	**Questionnaire 2**	**Questionnaire 3**
Language-focused response	13.3%	5.6%	0%
Content-focused response	86.7%	88.9%	94.7%
Both language and content-focused response	0%	5.6%	5.3%
Total	100%	100%	100%

4.3.5 Final Comments and General Thoughts. Lastly, there was also a space at the end of the questionnaires where students could add any final comments and/or general thoughts (see Table 9). Overall, the majority of students left this section blank. However, out of the students who did comment in this section, all but one of the comments were exclusively positive in nature (see Table 10). The student who commented on Questionnaire 1 simply stated they s/he thought it was a "fun class." From Questionnaire 2, out of the students who commented, one mentioned how much s/he enjoyed the review stations, another mentioned that, "I really enjoyed our research project. I learned the most from reading the articles in French," and still another wrote that, "Researching topics in books written in French is an effective method." Of the six students who

commented on Questionnaire 3, three students mentioned enjoyed having me in class, one student commented that "the whole unit was enjoyable," and the other two offered positive feedback on the projects, with one stating that, "I like learning about the environment and creating the PSAs" from the Final Project, and the other that the projects were good but the homework not as good.

Table 9

Questionnaire Final Comments and General Thoughts

Student Responses	**Questionnaire 1**	**Questionnaire 2**	**Questionnaire 3**
Commented	4.3%	12.5%	19.2%
Didn't Comment	95.7%	87.5%	76.9%
Total	100%	100%	100%

Table 10

Final Comments Details: Category of comment

Student Responses	**Questionnaire 1**	**Questionnaire 2**	**Questionnaire 3**
Positive	100%	100%	100%
Negative	0%	0%	0%
Both	0%	0%	3.8%
Total	100%	100%	100%

4.4 Observations

After coding and examining the observational notes for common underlying themes, five predominant themes appeared throughout the observations and are detailed below.

4.4.1 French frustrations. Students being frustrated with the large amount of French being used throughout the unit was a central theme, appearing throughout the unit, though most prevalent at the beginning and slowly decreasing with time. Examples of this theme found in the observational notes are:

Day 1: “Period 2 students are quick to vocalize that they don’t understand the French questions.”

Day 3: “Period 2 students ask more questions and don’t seem as confident with all the French being used—want it broken down.”

Day 8: “Student seems frustrated with all the French, saying ‘Can we write this in English?!’” (in reference to organizational chart for expert group project)

4.4.2 Time crunch. The theme of the unit’s pacing being rushed and the sense of a time crunch was predominant throughout the entire unit, equally prevalent from start to finish. Examples of this theme found in the observational notes are:

Day 4: “Period 1 ending transition seemed abrupt—more of a wrap-up...would have been preferred.”

Day 10: “With shortened periods, Period 1 had only about 12 minutes of French class, and Period 2 only 25 minutes.”

Day 12: “Overall, students did well with the time given them, but it feels a bit rushed.”

4.4.3 Differences between sections. A distinct theme of the differences in class confidence and class dynamics appeared in the observational notes, most notably in reference to students in Period 1 appearing more confident and asking fewer questions and students in Period 2 appearing less confident, particularly at the beginning of the unit, and in general asking more questions and having longer discussions. Examples of this theme found in the observational notes are:

Day 6: "Period 1 students go through this [*5 Questions* trivia] very easily, without asking any questions about the trivia questions. Period 2 students are again a bit more vocal with questioning and double-checking that they understand correctly what the trivia questions are asking."

Day 10: "It's funny observing how independently Period 1 works [with the true/false bellringer] compared to all the questions and discussion which occurs in Period 2, as students check to make sure they understand the sentences."

Day 15: "Period 2 students get into a lot more discussion [during the solutions activity], but also come up with more responses and seem to take a more active role in the activity than Period 1 students— it seems like they got more out of it from the group discussion that occurs."

4.4.4 Sense of progression. A slow but clear sense of students making a positive progression with their French and content also appeared during the progression of the unit. Examples of this theme found in the observational notes are:

Day 11: "Period 2 students seem to be becoming more comfortable with reading and explaining the terms in French we've been covering in the unit—no questions about word clarification were even asked [during true/false bellringer]."

Day 14: "Class starts out with *Vrai/Faux* [true/false bellringer], which Period 1 and Period 2 students easily complete and justify or correct without any need for help or questions. Period 2 I was really impressed with how even a student who isn't very strong in French read, answered, and justified the phrase with confidence!"

Day 28: "Period 2 students get all 5 answers [from *5 Questions* trivia] correct and go on to the next card, which they do very well at understanding. They're definitely more comfortable with dealing with the all-French questions—compared to the beginning of the unit, there are far less questions and less sense of frustration."

4.4.5 Unplanned form-focused occurrences. As a minor theme, a few observational notes make mention of unplanned form-focused moments occurring, initiated either by the teacher or the students. For the teacher, this specifically occurred during some instances of eliciting feedback from students or correcting and providing feedback to students. For students, the shift to a form focus occurred both times during the preparation and writing portion of the two main projects. Examples of this theme found in the observational notes are:

Day 12: "One student asks how to say 'of' and asks if it's 'de," to which the teacher responds that it depends on the context, then engages in a conversation answering the student's question about '*du*' and '*de l'energie*'."

Day 15: "The teacher points out the circumflex in '*arrête/ arrêtez'* and asks students to remind her what the circumflex represents, which students answer."

Day 19: "[While creating and writing sentences for their project] students ask very language-focused (spelling, accent, etc.) questions."

4.5 Consulting Science Teacher Interview

The brief interview with the consulting science teacher revealed (a) a general positive opinion and (b) the challenge of time. When discussing the collaboration, the teacher said: "It was better than I expected. I think most kids were very engaged." Talking about one of the benefits of the collaboration and collaborations in general, she mentioned how she "like[s] students to see all the different content areas and that really, we are interconnected." When commenting on the French students' presentations in particular during the collaboration, she stated: "I thought the French students', their content was excellent, the ones that I saw."

The challenge of a lack of time and the importance of flexibility was brought up twice by the teacher during her short interview. Firstly she mentioned that: "I think collaboration should happen more often—the biggest problem is time. It takes time to think about the project. And you got to be flexible—you really got to flow with it." She then restated the importance to "be flexible" as key advice for other teachers wanting to collaborate, and ended her reflection by repeating the challenge of being crunched for time by saying: "And the timing piece—I mean, honestly, I'd like another week. I would have liked another week

to introduce the material, before they left and did their project, but, you got to time it the way it is."

4.6 French Teacher Interviews

After coding and examining the French teacher's interview discussion and responses for common underlying themes, five predominant themes appeared throughout the data and are described below.

4.6.1 Overall positive feedback. A clearly positive global outlook both on the content-based unit itself and on students' progression throughout the unit arose from the interview data. Even before the unit, although the teacher was concerned that the unit might be too advanced or technical for students and that there might be some frustration along the way, overall she held a very positive opinion in terms of all the potential that the content-based intervention unit had.

In the pre-unit interview, the teacher repeated the word "rich" several times when describing her thoughts on the unit, mentioning how it's a "rich experience; authentic too because [it's] real world." She described how if we really want students to become 21st century learners and citizens, any chance to include a unit that encompasses so much more than the traditional, compartmentalized "this is French class and today we're going to conjugate verbs" was greatly beneficial. She also mentioned that "if we can branch off and start making connections, making connections, making connections, from one language to another or from one theme to another or from one content area to another, it's going to be just a rich experience for everybody."

Overall, she described the unit as a "world-based unit" that's in touch with this generation of students and that has a "real depth" to it. She additionally detailed her positive outlook of the unit by describing how teaching units involving cross-curricular connections, such as with the intervention unit, "is the future," and could also strengthen our position as language teachers when administrators see how the language department can play such a strong integrative role and is "not just this little compartmentalized area." She seemed to strongly feel that this unit would have a strong connection with students and that it was an example of the collaborative structure classes were moving towards.

This positive outlook of the unit continued throughout the implementation of the unit, with the teacher mentioning during Interview 2, which took place on Day 8 of the intervention unit, that she liked the review stations since "[the students] were starting to put everything together." During the same interview, the teacher also gave several positive remarks in regards to students' progress thus far, stating: "I really feel like they are picking up quite a bit of content and quite a bit of French." When describing how she thought students were "dealing quite well" with the strong content focus of the unit, she described an incident that occurred just that morning:

> [One student], for example, was saying something like 'Well, you see this chart here says this, but then when you look at it, so if you compare,' and so she was really absorbing the information and interpreting it and I said 'Yeah, you're right, that's exactly it! The solar energy is almost inexhaustible / very plentiful, but we only use this little portion.' And she

> goes, 'Okay, so I did get that.' That's pretty cool, because it was totally content-based and she was interpreting the chart and reading into it. (Interview 2)

Talking about other key activities throughout the unit, the teacher expressed in Interview 3 that her feelings on the Expert Group Projects were quite positive overall, though the term "expert" might be a bit strong, with perhaps "focus group" more apt. Her opinion of the collaboration between French and science students was also positive. "I think they did quite well," she stated in Interview 4, and also that she found it interesting how the French students had to interpret their presentations into their own words in English for the science students, and that this change of pace was good. In terms of the Final Project, the teacher acknowledged in Interview 4 being "a little bit disappointed" with the outcome of students' final projects, which took place on the last day of the unit, but also expressed that she thought the unit went well overall.

After having some time to reflect on the intervention unit, the teacher maintained her overall positive opinion of the unit during the post-unit Interview 5, describing how: "It [the unit] kind of acted a little bit as a boost and it just pushed everybody because we raised the bar but still kept it realistic." Looking back on the unit, the teacher stated, "I'm really, I'm very impressed by the whole thing," and also that she thought that the unit really maximized learning and played a positive role in helping instill "better confidence, better language skills" in the students, and an academic classroom atmosphere which continued after the end of the unit. She stated that, "In all respects, I feel like it's been really

beneficial." Thinking about the approach overall, she also mentioned how a content-based unit would be especially beneficial for stronger students since the added content depth helped ensure that they wouldn't "plateau" but would continue to be challenged.

4.6.2 Time crunch. One of the strongest reoccurring themes to occur throughout the entire length of the unit involved a sense of rushed timing and the challenge of staying on schedule and covering everything planned.

The second comment made by the French teacher in Interview 2, which occurred on Day 8 of the intervention, right after saying how she thought that things were going very well, was that things were also going fast. As she described: "I feel like we're a little bit rushed, and I'm hoping that it doesn't reflect on the students, just because we're on such a tight schedule and if we want to respect our timeframe and we have reserved computers for a certain day, and we have this project and that project…there's a lot going on for a couple weeks." Later in the same interview, when discussing if there were any activities which she wouldn't use again, she mentioned how she didn't think she would delete anything, but would stretch the timeframe to add an extra day between each sub-category so that students could practice more. She confessed: "I did feel like we were flying a little bit." She also mentioned that she'd want to allot a whole month for the Expert Group research if she did the project again.

In Interview 3, which took place on Day 17 of the intervention unit, the theme of a "lack of time" came up again when the teacher was asked what she would do differently if she covered this unit again the following year. "Sometimes

I felt a little rushed, but that's been the constant," she stated, adding that at the same time it was good that we pushed ourselves to stay on schedule since we couldn't be spending three months on it. She specified: "I feel like sometimes I will tend to want to rush us a little bit because we have to accomplish this or this or that, but I don't feel like the kids are stressed at all." As one possible solution to feeling rushed, she mentioned giving students an extra computer day to work on their presentations in class.

The theme of time reappeared later in the interview when discussing the progression of the Final Project, when the teacher stated that the Final PSA project "seems a little bit rushed" compared to similar projects students had completed in the Media Literacy class she co-taught. Subsequently, in Interview 3, when thinking aloud of possible reasons why students' Final Projects were not as impressive as she had hoped, the teacher wondered whether the time crunch and all the coordinating which had to take place in a short amount of time were to blame.

Reflecting back on the unit in Interview 5, the teacher revealed what the most challenging part of the unit was: "I think just the time," explaining that it was discouraging to have spent time preparing the lesson activities without being able to use all of them due to time constraints. In regards to what she would change, the teacher mentioned that she would give students more time for their final project. When reflecting on the scope of the unit—which included more technology, more group work, and more projects—the teacher concluded: "It was sort of like a regular unit on steroids." Joking about titling my thesis something

about "Boost up your program," her comment was meant largely in a positive light, but she also revealed that, with trying to fit as much as we did into the intervention unit, "It was getting just a little stressful because we had such a tight schedule, and we would need to get to a certain point." Looking back, I agree that a slightly less ambitious undertaking would have been a better choice.

4.6.4 Students' psychological barriers. Another reoccurring theme that emerged throughout the interviews involved discussion of students' psychological barriers. The teacher mentioned students' lack of confidence as a general barrier, referring in particular to students' frustration with French during the intervention unit. Even before the intervention unit started, the teacher raised the topic of students' psychological barriers in the pre-unit Interview 1. She speculated that, "some [students] are so perfectionist…they think they have to understand every word, and that's going to be a major barrier for them to…get it. And I think a lot of them have a confidence problem" in terms of "lacking confidence." She felt that those psychological barriers played a key role in students' lack of confidence, mentioning how students who have this lack of confidence "think they just can't say anything" in French as a result of it.

When the topic of students' psychological barriers reappeared during and after the intervention unit, it was almost entirely in reference to how students were progressing and overcoming their initial lack of confidence. In Interview 2 when the teacher described her general impressions of the first week of the intervention unit, she stated that she felt students were overcoming their initial psychological barriers to the unit and that, "At the beginning, it was a little bit painful; they

wanted to know the English meaning of everything, and then as we went along, they got more and more comfortable." The topic reappeared when she remarked that students were managing the stronger focus on content, affirming: "I almost feel like the shift of being of a bit of an immersion was tougher on them…some of them seemed to be 'oh my god, this is over my head' but then they got used to it and it became more and more comfortable."

The teacher also pointed out that, while this shift to having all the content in French is what she considered the main barrier, she didn't think that it was hindering them from anything. She emphasized how no one was tuning us out or thinking that since the whole class was in French they had no idea what was going on. Referring to one student who initially tried to drop the class right at the beginning of the intervention unit but who ultimately stayed, the teacher commented that said student may have exhibited some defeatist attitude, but that she saw that as an excuse or as evidence of a lack of effort "regardless of what we're doing." A quick reference also appeared in Interview 3, when the teacher mentioned that she wondered "how expert [the students] really either are or feel" after the Expert Group research project, questioning whether their lack of confidence had affected that.

Additionally, the topic of students' psychological barriers was also brought up in the post-unit Interview 5. When asked what the most challenging part of the unit was for students, the teacher mentioned: "[Students] didn't seem to be too, too challenged," elaborating on how during the Stage 1: Introduction of the unit, especially 2nd period students "would get frustrated because they didn't

have all the meanings there, so they…expected a little spoon-feeding and we didn't do it, but then they got used to it and I think that was okay. But at the beginning, that was a little iffy."

4.6.6 Worries and challenges. Although rather extensive in topic, throughout the interviews the teacher voiced various worries she had regarding both possible student challenges with the intervention unit itself and worries about the perceived challenges of content-based units in general. The first worry, regarding possible student challenges with the intervention unit we implemented, appeared three times during the interviews. First, before the intervention unit had started, the teacher revealed in Interview 1 that she was a little bit scared about students getting frustrated since she saw the unit as being "something pretty advanced and pretty technical," adding: "We'll have to be very gentle and maybe reign them back in or simplify things and tweak it as we go." However, once the intervention unit got underway, these worries seemed to subside for the most part, with the teacher mentioning in Interview 2 that "as far as content, I think they're dealing quite well, actually." Secondly, during Interview 3 the teacher addressed her former worry, mentioning how "at the beginning, I kind of wondered [how students would fare], when it was so new and all that, but they seem to be…relatively relaxed and…it's not over their heads. I think they're learning a ton. They seem to be comfortable with us and all that." Finally, when reflecting back on the unit during Interview 5, she again addressed her early fears by recounting that, before the unit had started, she had been concerned that the content would overpower students or that students would get lost, discouraged, or

unmotivated to work if they weren't interested in the topic. She went on to state, however, that it had not become overwhelming at all for students, giving credit at least in part to how "we made it so varied and there were so many different pieces to it."

The other, broader worry regarding the challenges of content-based units in general came up several times throughout the unit, though chiefly in the post-unit interview. In Interview 2, when asked about any comments to note for herself or other teachers for future reference, the teacher mentioned how it was a lot of work to find authentic, up-to-date, visually appealing information at her students' level for them to use in the Expert Project groups. She mentioned that, if she were to teach this unit again, "I probably would do the research much more internet-based because there's no way I would have that kind of time, you know, to do all the whole labeling," referring to how books were specifically tabbed by content topic. She also mentioned her worries about securing books for students to use, stating that unless she bought an inordinate number of books, she would not have the same access to books as I did living in Montreal and being able to borrow books from the *Bibliothèque Nationale*.

The teacher's concern about access to resources was raised again in Interview 3. When asked what she would do the same or change the following year, the teacher stated that, although she really liked the books and the fact that they were at the students' level and authentic, she worried about what she could find herself. She explained: "I wonder what I could do that would be web-based

along the same line—maybe bookmark a few websites that would kind of have the same idea, designed really for kids, for francophone kids?"

Concern regarding the challenges of teaching content-based units appeared most frequently in the post-unit Interview 5. First, when asked what she would do differently and why, the teacher mentioned her concern about content knowledge, stating: "Just because of my lack of knowledge, some of the content I might…either simplify or not go as much in depth, but a lot of it I would keep." The topic of content knowledge came up again when talking about possible content-based topics she either had or would consider teaching.

Mentioning the metric system, art, geography, and history as possibilities, the teacher explained that she had collaborated in the past with the art teacher on a unit, which was a positive experience overall, but had a specific negative occurrence of some students compartmentalizing and having a negative attitude towards covering another subject area in French. She also mentioned having attempted a collaborative unit on the metric system, but due to time constraints and students being "a little bit turned off," it didn't happen, though it's still in the back of her mind. Later, while discussing how the content topic a teacher chooses depends on his or her interests, comfort and content expertise, the teacher mentioned: "I wouldn't want to do trigonometry in French, or physics—that would be a disaster. So the environment is probably about as far as I can go. I mean, as soon as we were talking about CO_2, it was starting to…" go beyond her content comfort zone.

In addition, the teacher indicated that, even though "it's quite doable … at level 3 or 4" when most students are in their fifth or sixth year of French, she was still concerned about finding a topic that would draw students in. Indeed, many students had expressed a dislike for their history class to her, which she felt could pose some difficulty if they brought that negative association of history class into French class if they were to cover a history-based content unit.

Another concern that arose during the post-unit interview was in regards to the level of students for whom the content-based unit would work best. The teacher mentioned that she thought "we did very well" and were very lucky with having that group of students participating, since she considered them to be fairly advanced, motivated, and interested, adding that "usually at that [French III] level they are." However, she feared that, if the content-based unit was with a lower level, as soon as we switched to all French on the content topic, students would tune us out, which would be counterproductive. She mentioned seeing it as doable with the following year's French III students, but that, "Depending on the school and the level and the motivation, it could backfire." Overall, the teacher voiced some important concerns that would need to be examined further in order to feel comfortable with implementing a counterbalanced approach to content-based language teaching.

4.6.6 Unit format and structure. Lastly, a smaller but still notable theme appeared regarding how much the teacher enjoyed the format and structure of the unit, and is thus a sub-set of the larger key theme of "overall positive feedback" which appeared throughout the teacher interview data.

The teacher seemed to really like how the environmental unit was blended with and integrated into her regular classroom format, in addition to how we had a very specific classroom routine set up during the introductory Stage 1 of the intervention unit. In Interview 2, she mentioned how "everyday there's something good but I really like the format. I love that we had those 4 elements [the Earth, Wind, Fire, Water sub-categories]...I loved how we categorized it, how we had our little routine every day, how we're keeping the format of the class, pretty much, doing the *5 Questions* and all that, and kind of wrapping this unit around the existing format." The teacher raised the format topic again during the post-unit Interview 5. When asked what stuck out in her mind as something that really worked well, the teacher replied that, along with the review stations, "I really liked the balance of everything," keeping and customizing the "*5 Questions*" to the unit topic, introducing the unit through the four elements, having a daily format with the puzzle, etc. She added: "I really like that format because I like that kind of structure, especially at the beginning."

4.7 Student Interviews

After coding and examining the students' post-unit interview responses for common underlying themes, five predominant themes appeared throughout the data and are described below.

4.7.1 Overall positive feedback. A clearly positive global outlook on the content-based unit itself, on students' feeling of progress, and on students' general view of content-based units offering a meaningful connection, arose from the interview data. Several students' comments reflected a sense that they felt it was

easier to learn French through content and that they thought it helped them learn more than usual both because "it was on topics that we already knew about" (Student 10) and because "you weren't just learning the words, you were actually applying it to help bring it to life and understand" (Student 9). As student 26 explained: "It was more put together."

The most common reoccurring theme involved students' comments about a meaningful connection, a connection to something bigger, as a result of the content focus. Students repeatedly mentioned how the unit applied to their own lives and was also part of a bigger picture. As Student 25 described: "It wasn't just for language—it was for science, and our world."

Several comments also pertained to an added sense of participation and/or confidence, which largely appeared to be a reflection of students' ability to utilize their previous L1 knowledge of environmental issues and the use of English-French cognates within the content topic. A couple of students also specifically commented on their overall French confidence as a result of the unit, with Student 20 sharing that, "ever since [the content-based intervention unit], my ability to speak French is more heightened." In addition, several comments were linked to the more general positive notion of it being fun to do something different.

4.7.2 Final project. Although students shared positive comments relating to both group projects, they principally listed the final Public Service Announcement group project as their favorite activity of the entire unit. References to the project were exclusively positive in nature. The most common reoccurring comments relating to why students liked the project so much

pertained to how students felt a sense of freedom, a sense of choice, an ability to personalize their project, taking what they learned and making it their own. As Student 21 described, "I had a good time with the—our final project—at the end. I thought it was really cool because it kind of gave you the freedom to go and learn about the environment for yourself. And we took a lot of pictures and I enjoyed it." Student 18 explained that she liked the final project best "because I got to put something I like into the project."

4.7.3 Added challenge of French. French was repeatedly described throughout students' interviews as being the most difficult and challenging aspect of the intervention unit. As Student 16 put it, the French component of the unit was the hardest because "you had to focus on two things, instead of just, either the French or the [environmental] problems." Some students also specifically mentioned the amount of environmental terms and information covered in French during Stage 1 as "a lot at once" (Student 6). Also, several students specifically referred to the "*5 Questions*" activity in French as being the most difficult. Many of the comments pertaining to the "*5 Questions*" also highlighted the fact that most students seemed to be trying to take in what was being said in French and translate it in their head into English, while also juggling the content of the discussion. As Student 15 shared: "The *5 Questions* was definitely the hardest, trying to keep up and understand what they were saying in English, and also figure out what the answer is."

However, as a redeeming factor, several students also related that they could see the greater benefit of learning language through content, and that the

challenge of it got easier with time. For example, Student 21, agreeing with the other two students in her interview group about the added challenge of learning content in French, added:

> I agree. I think it was—at first it was challenging, and at first you didn't get as much out of it, but as the unit went along, we learned, it was actually really beneficial to learn it in French, and to be able to understand, like, as you went along, you could just tell, everything got easier.

4.7.4 Unexpected form-focused comments on writing. An unexpected minor theme which arose from the interview data pertained to several students specifically stating that they wished they had had more of a chance to practice writing. This topic specifically came up in 3 of the 10 student interview groups. All of these comments were in reference to a summative writing assessment the teacher asked students to complete after the end of the intervention unit, giving them an environmental unit to write about in class as part of an end-of-unit test. As Student 4 expressed when asked about something that could be improved: "I think you should work more on writing and stuff because on the test I had trouble with…writing the paragraph." From the 3 group discussions pertaining to this theme, students clearly did not feel prepared for this since the unit itself had not included any formal written practice, but was focused more on students' working knowledge of the content. As a result, students suggested to "spend more time on sentence structure and stuff" (Student 7), or "have another section where we learned how to make paragraphs and make it all work" (Student 9).

4.7.5 Time. Another minor theme which appeared throughout the students' interviews involved students referencing the longer amount of time this unit lasted. Comments varied between positive, ambivalent, and negative with respect to the length of the unit. A couple of students suggested that it could be condensed a bit more. As student 21 mentioned:

> I'm sure [the teacher] would probably change the length of the unit—making it a little shorter. I mean, I really, I enjoyed it, it just seemed like it was very long compared to all of our other units… But I think that it was important, in this situation—being like the first time we've ever done anything like this—for it to be long cause we really got a full, like, the full aspect of it.

Student 16 commented: "I can't really think of anything to change because it's one of the few units I liked, throughout. It did seem kind of long, though."

Time was also mentioned by some students as one of the strengths of the intervention unit since it gave students the chance to really deal with the content topic in depth, with some students even sharing that French class took the time to cover the environmental issues in more depth than in science class. Student 14 commented: "I feel like the French class did more in class about the environment issues than my [science] class would." As Student 4 explained, "it felt rushed in science class, and in French it wasn't so much."

4.8 Summary

This chapter reported the findings obtained from both the quantitative and qualitative portions of my mixed methodology. In the next chapter, I will discuss

these findings, relating how they compare and contrast with one another, as well as in reference to previous research.

Chapter 5

Discussion and Conclusion

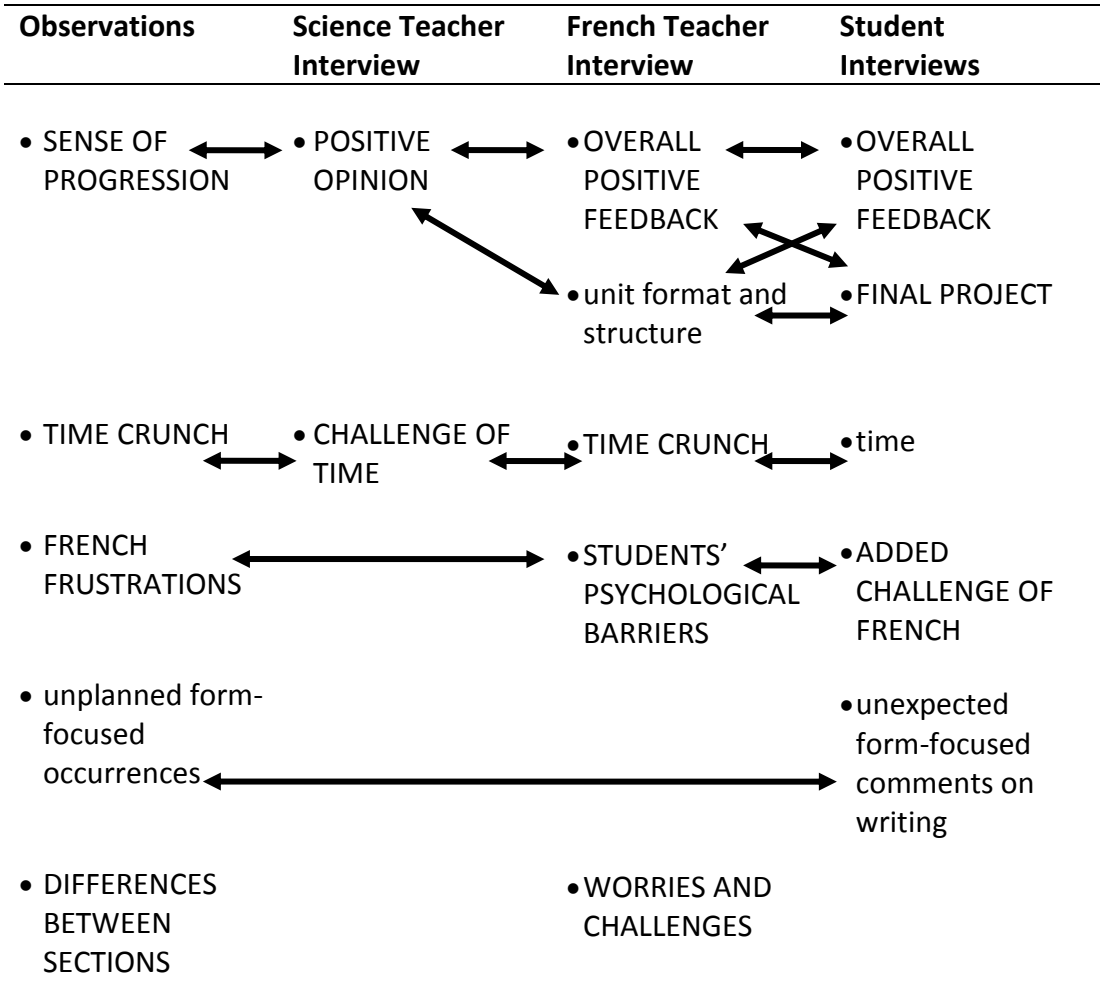
In this final chapter, I first discuss the present study's findings by comparing and contrasting how the results relate to one another in regards to the main thesis question, while comparing the present study's findings to previous research. I then detail the study's conclusion, along with its limitations and possible classroom implications.

5.1 Discussion Relevant to Thesis Question

The present study's thesis question examined the feasibility and effects of integrating a strong primary focus on content, with a secondary language focus, into a foreign language classroom context which had a primary focus on language, with a secondary and occasional focus on content

5.1.1 Challenge 1: Time. Some clear challenges to integrating a content-based unit arose from various data sources. First, as shown in Figure 3, timing was a major recurring challenge throughout the duration of the unit, appearing as a theme in all four qualitative data corpora. Both myself and the participating teacher felt rushed with the amount of content which needed to be covered in the given time in order to stay on schedule. The science teacher, in a broader context, described how a lack of time was a major issue to collaboration. Interestingly, timing was also brought up within student interviews as a minor theme, but embodied a less negative sense than in the other data. While I partially blame the intervention unit's time crunch on the rather overambitious plans the French teacher and I laid out for ourselves, these findings are consistent with other

previous research that highlighted the major challenges of implementing content-based units (e.g. Brinton et al., 2004; Cammarata, 2009; Dalton-Puffer, 2007). As Brinton et al. (2004) stated: "Given the demands of both language and content mastery, CBI is usually characterized by severe time constraints, necessitating continuous decision-making…about what to emphasize and what to leave to chance" (p. 252).



Note: Major themes are in CAPS and minor themes in lowercase.

Figure 3. Qualitative Data Recurring Themes

As a result of the extra time required to sufficiently cover content and language, Dalton-Puffer (2007) noted that, "the time pressure involved in covering content is often cited in explanation of the tendency towards the factual" (p. 126). In the intervention unit, the negative influence of not taking the time to discuss or cover some topics to the extent originally planned was noted in my observational records. However, we succeeded in avoiding having to rely on only surface-level factual information, owing in part to the two group projects embedded into the unit.

An interesting contrast appeared in the data with respect to time. Whereas my observational notes, the science teacher, and the French teacher all mentioned the lack of time we felt, students' comments did not convey the same topic in such a negative light. While students did mention that the unit was longer than was normal for French class, with a couple suggesting it could be shortened, others clearly stated how they thought the length was a strength since it allowed substantial coverage of the topic. No student mentioned feeling a time crunch or lack of time. In fact, a few students even mentioned the opposite, describing how the added time in French class was positive since it allowed them to cover the topic in more depth, whereas in science they had "just skimmed over it" (Student 9). Clearly, time was a source of stress from the teachers' perspective, but this was not felt by the students.

5.1.1 Challenge 2: Students' psychological barriers. Students' psychological barriers also appeared as a recurring theme in the three main data

corpora: my observations, French teacher interviews, and Student interviews, in addition to the open-ended Questionnaire Question #2, and thus is another challenge to CBLT implementation, although a surmountable challenge according to the findings (see Figure 3 on page 97). All four sets of data illustrated that, while many students were frustrated, anxious, and/or a bit overwhelmed at the start of the unit, they were able to overcome their initial frustrations and lack of confidence as the unit progressed. This initial frustration has been noted in several other previous research studies (e.g. Dale & Tanner, 2012; Swain, 1995; Wesche & Skehan, 2002). Wesche & Skehan (2002) noted: "Students struggling to master new concepts and conceptual skills through a language in which they have limited proficiency" is a common feature among all CBI contexts (p. 220). Reflecting this added challenge, Student 5 stated that: "science isn't really my strongest subject, so to do it in French, it was hard."

Fortunately, as students became more familiar with the intervention unit, its content, and the classroom routine, their affective filters were lowered and they were able to make some substantial progress, as noted both by myself, by the French teacher, and by many of the students themselves. Student 8 aptly summarized: "It was a little slow to get into, but the new styles were a lot more effective, I thought." This was reflected in the open-ended Questionnaire Question 2 results, which showed clear references to frustrations during the first week with all of the French, but that frustration and feelings of "this is too much French and I don't get it" rapidly dissipating over the remainder of the unit (see Table 5 on page 71).

By the post-unit student interviews, while 10 of the 22 students interviewed mentioned the French aspect as the most challenging part of the unit, 20 of the 22 students said they were interested in having more content-based units. Of the two that didn't answer affirmatively, one mentioned that she preferred the traditional kind of French class, but thought that a content-based unit every once in a while would be helpful, while the other student confessed: "I don't know. I didn't like it 'cause it was harder, 'cause there was not many English words to explain it to us" (Student 18).

Overall, I believe the above findings convey how switching from a more typical language-driven foreign language classroom context to a strongly content-based unit is definitely a challenge and will most likely be met with some initial frustration, but that it is ultimately one that most students will overcome with time and even go on to enjoy and find beneficial. In addition, although initially frustrating if students are not used to CBLT lessons and their inherent added challenges, previous research has specified that "the need to probe cognitive and linguistic complexity during L2 practice… cannot be overstated" (DeKeyser, 2007, p. 190).

As Ortega (2009) expressed:

> Optimal L2 learning must include opportunities for language use that is slightly beyond what the learner currently can handle in speaking or writing, and production which is meaningful and whose demands exceed the learner's current abilities is the kind of language use most likely to destabilize internal interlanguage representations. (p. 63)

As with so many things in life, the easiest option, such as maintaining the traditional classroom language teaching methods the teacher and students are both used to in order to avoid any frustrations, is not always the best.

5.1.3 Challenge 3: Unplanned form-focused occurrences. Although only a minor theme, as shown in Figure 3 (see page 97), reference to unplanned form-focused occurrences emerged twice in the data: in the observation notes and the student interviews. These references pertained to a small number of instances where the participating French teacher shifted into a form-focused mode. The most notable of these occurrences was at the very end of the unit, when the teacher wished to include a more summative test grade to add to the formative homework grades (i.e., two Review Stations grades and two project grades). Due to timing and since it was not an original part of the unit plan, the teacher created and implemented a final test on her own.

It was clear from the post-unit student interviews that students felt unprepared for the writing portion of the test on which students were given an environmental topic and asked to write about it. Although the intervention unit itself had been strongly content-based and assessed students' working knowledge, the writing portion of the final test assessed students' formal writing skills on a given content sub-topic that students had to complete without the use of their notes. Unfortunately, this assessment was not consistent with the overall structure of the unit.

A similar scenario was described by Mohan and Huang (2002): "One teacher reflected that they *taught* language and content in an integrated way, but

they did not *mark* in an integrated way" (p. 431). Llinares et al. (2012) made a point of stating that, "It is important to avoid the situation in which CLIL students are assessed on language skills which have nothing to do with the ways in which they have been using language in the learning of curricular content" (p. 283). This challenge highlights how, in order to effectively implement CBLT into a traditionally language-oriented classroom, one must make sure to systematically re-evaluate one's procedure for everything from start to finish. It takes careful planning to create assessments that measures both content and language with the same balance as the implemented unit. As the researcher, I take full responsibility for students' frustrations since I should have stepped in to help the teacher create a final test that more accurately reflected the way the students had been using the language and content throughout the duration of the intervention unit.

5.1.4 Other various challenges. While no other challenges were recurring in the data, I feel the need to briefly highlight the concerns that the teacher shared in her interviews regarding the challenges of integrating a content-based unit. The teacher voiced concern about what content topics she would feel comfortable teaching, which has been reflected as a challenge by several other studies (e.g. Cammarata, 2009; Dale & Tanner, 2012; Pessoa et al., 2007).

Pessoa et al. (2007) elaborated:

> 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. (p. 104)

Similarly, just as CLIL teachers' limited L2 competence may lead them to adhere to a narrow track in terms of preparation and discussion (Dalton-Puffer, 2011), the same can result from teachers' lack of content knowledge and content-specific terminology. Several studies have proposed solutions to this, from developing short projects to ensure that content and language teachers have a chance to closely collaborate, to setting aside a small portion of the teachers' weekly schedule to support content and language collaboration. (Dale & Tanner, 2012; Dalton-Puffer, 2007)

As well, the teacher seemed the most concerned about where she would secure content-based resources from on her own. This is a challenge that has been classified by previous studies as a key hurdle to implementing CBLT (e.g. Brinton et al., 2004; Pessoa et al., 2007). As revealed by Brinton et al. (2004): "The selection and adaption of materials…is a major undertaking" (p. 92). The researchers argue that the creation of "an ongoing materials bank, in which teachers can deposit materials and share resources with others" is a critical need (pp. 92-93). Sharing resources and not having to revert to starting from scratch would allow teachers "to devote more attention to instructional delivery rather than curriculum and material design. (Pessoa et al., 2007, p. 117). If quality content-based resources were accessible to teachers interested in implementing content-based units, I think this would greatly help to empower teachers and alleviate the trepidation that holds many back from taking the leap to try something new.

5.1.5 Positive Findings. The primary recurring theme present throughout all the data corpora was of a very positive opinion of the intervention unit (see Figure 3 on page 97). Appearing as a distinct sense of progress in the observational notes, French teacher interviews, student interviews, and Part 4 of the test, it also appeared in regards to a meaningful connection within the French teacher's and students' interviews. The theme also appeared in all four sets of qualitative interview data in a more general sense.

5.1.6 Benefit 1: Content and Language Progression. A first important observation to be acknowledged is in regards to a clear sense of progress that was described not only in the observational notes, but by the French teacher and many students as well. The observational notes I took and the French teacher's interviews expressed how students overcame their initial uncertainty and frustrations to go on to impress both of us with the amount of language and content they successfully learned and were able to navigate through in French. Many students, when talking about their own reflections on the unit, specifically described feeling a sense of progress in their own acquisition of both content and language. For example, from a content perspective, Student 24 mentioned that, "I really liked learning about my topic because I had nuclear energy, so I've never really learned about it before. So I got to learn a lot of new things about it, like how it works and everything." From a language perspective, Student 10 mentioned: "It really added to my vocabulary."

A clear sense of progression also arose from the analysis of Part 4 of the test data, with students clearly attaining a more specific, academically rigorous

lexis in English as a result of the French content-based unit. This is noteworthy since it indicates that students utilized and strengthened their common underlying proficiency of content knowledge, resulting in an increase in passive comprehension. Even though grammatical judgment skills didn't increase much, as evident from the Part 1, 2, and 3 test results, this can be seen as a huge benefit to content-based units, mirroring Cummins' (1980/2001) theory of Common Underlying Proficiency.

5.1.7 Benefit 2: Bigger Connection. Another key theme that appeared in both the French teacher's and the students' interview data was the sense of a meaningful connection between the content topic and something bigger (e.g. applied to students' lives outside of school, to science, to the world, etc.). The French teacher made several references to this, especially during the pre-unit interview when expressing why she chose this topic and what she perceived the benefits to be. However, this theme was most prevalent in the students' interviews. These findings are reflected by Wesche and Skehan (2002), who stated that CBI programs "tend to be highly appreciated by students for their relevance and by participating staff for the satisfaction of effectively helping students to prepare for life after language instruction" (p. 225).

This connection to something bigger was also apparent in students' open-ended Questionnaire Question 1 and 3 answers. While students' answers to Question 1 suggested that they substantially increased their focus on content throughout the duration of the unit, Question 3 answers indicated that students felt a genuine connection and interest in the subject matter, with the majority of

students throughout all three questionnaires stating that they wanted to learn something more about the content.

5.1.8 Holistic Positive Outlook. Holistically, all four sets of qualitative interview data included an overall positive outlook on the intervention unit, with researcher, science teacher, French teacher and students all walking away with an overall positive opinion of how the unit went (see Figure 3 on page 97). At the end of the day, I believe that this broad, holistic positive opinion, along with the science teacher's, French teacher's, and most of the students' assertions that they would be interested in doing another content-based unit like this present study, helps convey that, despite the many challenges involved in implementing a content-based unit into a language-oriented foreign language context, it is indeed feasible. As noted by Wesche and Skehan (2002):

> The research findings on a broad range of CBI programs are highly consistent, showing that successful subject matter learning, second/foreign language development superior to that achieved otherwise in school or academia, and positive attitude changes (both by learners and instructional staff) can all be achieved—with willing learners—through CBI approaches. (p. 225)

5.1.9 Summary. When all of the data are combined, including the overall positive ratings of most of the unit's activities in all three questionnaires and the Final Comments/General Thoughts remarks from all three questionnaires, which were entirely positive in nature, the results is a consensus that integrating content-based units into form-focused foreign language classrooms is indeed feasible.

Despite the Part 1, 2, and 3 test results, which implied rather stagnant language ability growth in students from pre- to post-unit, because the present study implemented such a strongly content-focused unit in order to fully counterbalance the otherwise language-focused orientation of the classroom, the fairly steady language scores seem to show that students were able to maintain their language abilities while focusing principally on content. It is important to remember, as Echevarria et al. (2008) stated: "It is not only the amount of exposure to [the target language] that affects learning, but the quality as well" (p. 53).

The findings of the present study imply that implementing a counterbalanced content-based unit into a typical language-driven foreign language classroom, while challenging on many levels, is feasible, with the added benefits of helping students progress in both content and language, while also making a meaningful and deep connection with students thanks to the authentic, rich level of content at hand that ensures students are cognitively engaged and which "creates a genuine, immediate need to learn the language" (Lightbown & Spada, 2006, p. 193).

5.2 Conclusion

The present study has aimed at exploring the feasibility of integrating a content-based unit into a form-focused foreign language classroom. This thesis has provided a detailed picture of a counterbalanced CBLT approach implemented in a North American high school foreign language classroom context, hopefully providing readers with insight and inspiration on how this compares to and could be adapted to help integrate content and language in their

own classroom context. Though not without considerable challenges, the present study's findings indicate that this integration is feasible, with the added benefits of learning both content and language simultaneously, as well as helping students connect more to the language through the use of cognitively engaging, meaningful academic content. Wesche and Skehan (2002) summed up these benefits by describing how CBLT programs, especially those at the content end of spectrum, "can provide the motivating purpose for language learning, a naturalistic learning context that includes social and other pragmatic dimensions, and the possibility of form-focused activity (p.227), concluding that "together, these perhaps offer as close to a comprehensive environment for second language development as is possible in the classroom" (p. 227).

Besides the inevitable difference from one foreign language classroom context to another, I believe that the present study's context can be regarded as fairly representative of the overall foreign language classroom landscape of Northern New York and much of the North-Eastern United States. Based on this, conclusions on the feasibility of integrating a stronger content focus into a foreign language classroom are generalizable to a certain extent.

5.3 Limitations.

There are several limitations to this study's findings. One limitation is the fact that, although the present study aimed to determine the feasibility of integrating a content-based unit into a typical secondary form-focused foreign language classroom, my assistive role in the implementation of the unit limits how generalizable the findings are to the broader foreign language classroom

context, which typically consists of one foreign language teacher without an assistant and often not a native speaker. In this sense, the study may have been more successful than it would be in other foreign language classrooms. Another possible limitation concerns the Hawthorne Effect. Particularly, as the study took place in the school where I formerly taught and am good friends with the French teacher, as well as where the majority of student participants were former middle school students of mine, it is quite possible that results were biased in a positive light as a result of participants altering their conduct for my benefit.

5.4 Classroom Implications.

The present study, through its findings indicating that the implementation of content-based units into language-driven foreign language classrooms is feasible, opens up a number of notable classroom implications. Primarily, the break-down of the intervention unit detailed throughout the present study can assist other foreign language teachers to envision how they can integrate a counterbalanced content-based unit themselves which best meets the needs of their students and which they feel comfortable with. In this sense, I hope that the present study helps foreign language teachers to feel empowered to start making the transition towards a more counterbalanced integration of language and content, if they so wish.

Secondly, a larger question arises from the findings: If the integration of content-based units is feasible in New York State secondary foreign language classroom contexts, how does this affect New York State's opinion of the teaching of languages? At the present, most New York State foreign language

classes and teachers are facing drastic downsizes and cuts. However, if foreign language classrooms can be seen as contexts where a counterbalanced approach that deliberately integrates both language and content simultaneously can occur, perhaps this offers the opportunity for foreign language teaching to regain some of its diminishing standing and make a comeback as a core subject which is meaningful, authentic, and relevant in today's school and today's world.

In this light, I think it is important for foreign language teachers to take the time to truly reflect upon how they can implement more effective ways of teaching language. However, with that said, it is also important to remember that CBLT is "not a panacea that can achieve success whatever the circumstances. It has to be carefully introduced and implemented and requires appropriate teacher training and adaption to local conditions" (Wesche & Skehan, 2002, p. 227).

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Appendix A: Intermediate-level French environmental book resources

Billioud, J.M. (2006). *Protéger la Terre : les grands enjeux de l'environnement*. Paris : Nathan.

Chambers, C. (2011). *La crise énergétique*. Montréal : Bayard Canada livres.

Combres, É. (2007). *Le réchauffement climatique*. Paris : Gallimard jeunesse.

Duva, S. (Ed.). (2008). *La Terre*. Paris : Bayard Jeunesse.

Gore, A. (2010). *À nous de décider : les solutions pour résoudre la crise du climat*. Paris : De La Martinière jeunesse. (*difficult)

Lachenaud, V. (2008). *Planète écolo : le grand livre des activités écologiques*. Paris : Fleuris : GEO Ado.

Lambrechts, M. (2009). *Agir pour la Terre*. Chevagny-sur-Guye : Orphie.

Lamoureux, S. (2010). *L'écologie*. Paris : Nathan. (*great)

Legault, M.A. (Ed.). (2006). *L'environnement : comprendre le fragile équilibre de la vie sur terre*. Montréal : Québec Amérique. (*great)

Lesterlin, A. (2007). *Les grandes pollutions*. Toulouse : Milan Jeunesse.

Levete, S. (2011). *Les catastrophes climatiques*. Montréal : Bayard Canada livres.

Meredith, S. (2009). *Sauvons notre planète!* Saint-Lambert : Héritage jeunesse.

Nicolazzi, I. (2009). *Mon atlas écolo*. Toulouse : Milan Jeunesse. (*great maps)

Panafieu, J.B. de (2009). *L'environnement*. Paris : Gallimard Jeunesse. (*great)

Sagnier, C. (2009). *L'écologie*. Paris : Fleuris. (* great pics)

Soury, O. (2006). *La Terre en danger*. Paris : Fleuris : GEO Ado.

Appendix B: Environmental Issues Topic List

Environmental Issues (Les Problèmes de l'Environnement)

- Looking at **CAUSE** & **EFFECT** relationships

- Looking at possible **SOLUTIONS**

- Making **LOCAL**, **NATIONAL** & **GLOBAL** connections

Earth (la Terre) (Solid)	**Air (l'Air) (Gas)**	**Fire (le Feu) (Energy)**	**Water (l'Eau) (Liquid)**
Waste *(les déchets, m.)*	Climate change / Global warming *(le réchauffement climatique, m.)*	Forest fires *(les incendies, m./ les feux de forêt, m.)*	Oil spills *(la marée noire)*
Desertification *(la désertification)*	Ozone depletion *(la réduction de la couche d'ozone)*	Nuclear energy (*) *(l'énergie nucléaire, f.)*	Water pollution *(la pollution)*
Chemicals *(les produits chimiques, m.)*	Air pollution *(la pollution atmosphérique)*	Solar energy* *(l'énergie solaire)*	Overconsumption of water *(la surconsommation)*
Oil &Coal : Non-renewable resources *(l'énergie fossile, f.)*	Wind energy* *(l'énergie éolienne)*	Geothermal energy* *(l'énergie géothermique)*	Overfishing *(la surpêche, f.)*
Deforestation *(la déforestation)*			Acid rain *(les pluies acides, f.)*
			Flooding *(les inondations, f.)*
			Hydroelectricity* *(l'hydro-électricité, m.)*

* = Not an issue, but possible solution as an alternative renewable energy source

Appendix C: Classroom Routines & Intervention Modifications

Routine	Regular Routine Details	Modification(s) for the Intervention Unit
Daily Schedule	Lists daily outline in French for students to read when they come into the classroom.	None; continued as usual.
"Juste après la cloche" / Bellringer	Provides students with a small review task to complete within the first few minutes of class to help them get focused and into French mode.	Continued this, making sure review tasks were content-focused and related to environmental content information discussed in class.
Tuesday & Thursday "5 Questions"	Has a trivia competition twice a week, where students are randomly chosen and compete with the other French III class to correctly answer a mix of English and French trivia based on French culture, history & language.	Continued "5 Questions" trivia, modifying it so that all questions pertained to environmental facts and review, with all questions entirely in French.
"Alternative Wednesdays"	On Wednesdays, students are usually given a task that is not necessarily linked to the current unit. Often culture-focused or connected with other content areas, it breaks up the week nicely and allows time to teach skills / present material that are valuable but do not appear in the curriculum.	Given the very tight timeline of the intervention unit, this routine was not strictly continued, though students had many computer days to work on their projects.
Thursday "French day"	Although French is used fairly often during class time on a regular basis, students are especially challenged to use ONLY French for the entire period once they set foot inside the classroom on Thursdays.	Since this was a content-based intervention unit in French, students were required to use French every day during class time. Student were learning, discussing, and working with the content every day in French.
Homework	The teacher aims to give students around 3 homework assignments per week, trying to assign them on Mondays, Tuesday and/or Wednesdays.	Continued homework assignments as normal, with 2-3 a week, modifying so that they were contextualized through the content topic and specifically reviewed

		environmental content information.
Review Stations	To review a unit, several stations are set up around the classroom and students are placed into groups to independently move around completing each station as needed and as they become available.	Continued Review Stations, modifying so that stations were all content-focused. Review Stations were used twice with different activities, at the end of the Introduction Phase and again at the very end as an overall review, including possible solutions.

Appendix D: Environmental Issues Vocabulary

L'environnement

l'empreinte écologique- Mesure de l'impact des activités humaines sur l'environnement

le monde- La Terre entière. *Faire le tour du monde.* Synonyme : *la planète*

la santé- État d'une personne ou de quelque chose. *Avoir une bonne ou une mauvaise santé. Une santé fragile.*

la Terre / la planète bleue- Planète du système solaire, habitée par les plantes, les animaux et les humaines.

la vie (…sur Terre)- Fait de vivre. *J'étudie la vie des animaux marins.* Contraire : la *mort*

l'Air (et le gaz)

*la réduction de la couche d'ozone

l'atmosphère (f.)- Partie gazeuse de notre planète. L'atmosphère terrestre est formée de plusieurs couches de gaz et de particules en suspension qui entourent la Terre.

la couche d'ozone- Partie de l'atmosphère qui absorbe la plupart des rayons dangereux du soleil.

l'ozone (m.)- Sorte de gaz.

*l'énergie éolienne- Énergie provenant de la force du vent.

le vent- Mouvement naturel de l'air qui se déplace.

*la pollution atmosphérique- Présence dans l'atmosphère de gaz nocif (dangereux) pour les humains, les animaux, la végétation ou les roches.

les émissions de carbone (CO2)- Le CO2 est libéré dans l'atmosphère.

les émissions de gaz- Rejet de gaz dans l'atmosphère. Ex : *les émissions de gaz à effet de serre.*

le smog- Brouillard épais qui se forme au-dessus des ville polluées (combinaison des mots anglais « smoke » & « fog »)

le transport - Ensemble des véhicules qui permettent de transporter des personnes ou des marchandises. Ex : *le train, le métro, l'autobus, la voiture.*

***le réchauffement climatique** (m.)- Un phénomène causé par l'augmentation dans l'atmosphère des gaz qui capturent l'énergie produite par la Terre.

un changement (…climatique)- Fait de changer.

le climat – Ensemble des conditions météorologiques et atmosphériques (températures, courant, pluies).

l'effet de serre- Effet de réchauffement de la Terre causé par l'accumulation dans l'atmosphère de certains gaz, comme le dioxyde de carbone et le méthane, qui emprisonnent la chaleur de la Terre. *Les gaz à effet de serre (GES).*

le gaz carbonique (= CO2)- Gaz présent naturellement dans l'air et produit par les activités humaines.

le niveau de la mer- Hauteur de la surface de la mer par rapport à la terre.

le réchauffement (…planétaire, de la planète)- Fait de se réchauffer; la température monte. Contraire : *refroidissement.*

l'Eau (et les liquides)

la glace- Eau gelée. *Noah met un cube de glace dans son verre.*

les glaciers (m.)- Vaste accumulation de glace en altitude qui descend de certaines montagnes.

la disparition (…des glaciers)- Fait de disparaitre. *Je suis très triste de la disparation de mon chat.*

l'eau douce- Liquide incolore, inodore et sans saveur qui n'est pas salée (= pas de sel).

un iceberg- Masse de glace flottante que l'on rencontre dans les mers polaires.

la hausse (…du niveau de la mer)- Augmentation en degré.

les lacs / les rivières / les fleuves / les mers / les océans

l'eau salée- Eau qui contient du sel.

***l'hydro-électricité** (m.) / **l'énergie hydraulique** (f.)- Électricité produite par l'énergie de l'eau (barrage, turbine, hydrolienne).

une chute d'eau- Eau d'une rivière qui tombe d'une grande hauteur.

***les inondations** (f.)- Grande quantité d'eau qui submerge un endroit. *Les pluies abondantes ont provoqué des inondations.*

une catastrophe naturelle- Évènement dramatique.

***une marée noire-** Déversement d'une importante quantité de pétrole brut ou de produits pétroliers lourds dans la mer.

le pétrole- Énergie fossile tirée du sous-sol (sous forme liquide).

***les pluies acides** (f.)- Pluies qui contiennent des acides formés par la pollution atmosphérique.

***la pollution de l'eau-** Action de polluer l'eau.

l'eau potable (f.)- Eau qu'on peut boire sans danger.

les maladies (f.)- Fait d'être malade

***la surconsommation**- Trop consommer.

la consommation- Fait de consommer. *Elle veut réduire sa consommation d'électricité.*

la quantité- Ce que l'on peut mesurer.

***la surpêche** (f.)- Prendre trop de poissons

les fruits de mer (m.)- Crustacés et coquillages comestibles.

les poissons (m.)- Vertébrés aquatiques

le Feu (et l'énergie)

une source d'énergie- Ce qui produit de l'énergie. *Le pétrole et le gaz sont des sources d'énergie.*

***l'énergie géothermique (**f.)- Énergie qui utilise la chaleur interne de la Terre.

la chaleur (…de la terre)- Température élevée. Contraire: le froid.

l'eau chaude (f.)- Liquide incolore, inodore et sans saveur dont la température est élevée

la vapeur- Fines gouttelettes d'eau en suspension dans l'air.

***l'énergie nucléaire** (f.)- Synonyme : « énergie atomique »; non renouvelable

une centrale nucléaire- Usine qui utilise l'énergie nucléaire pour produire de l'électricité

les déchets radioactifs (m.)- Déchets extrêmement toxiques, produits par une centrale nucléaire.

des radiations (f.)- Rayonnement invisible qui peut présenter un danger.

l'uranium (m.)- Métal gris et dur utilisé dans l'industrie nucléaire.

une usine (…nucléaire) Établissement industriel où l'on utilise des machines pour fabriquer des objets.

l'énergie solaire (f.)- Énergie qui provient du soleil

l'électricité (f.)- Forme d'énergie qui permet de se chauffer, de faire marcher des appareils et des moteurs. *Le Québec produit de l'électricité grâce à d'énormes barrages.*

les rayons (m.)- Bande de lumière. *Un rayon de soleil.*

le soleil (m.)-Etoile qui produit la lumière et la chaleur nécessaires à la Terre. *La Terre tourne autour du Soleil.*

***les incendies** (m.) **/ les feux de forêt** (m.)- Grand feu.

le feu- Flamme et chaleur dégagée par ce qui brule. *Les pompiers luttent contre les feux de forêts.*

la Terre (et les solides)

***les déchets** (m.)- Ordure, résidu qu'on jette à la poubelle. *Certains déchets peuvent être recyclés.*

les bouteilles (…en plastiques, en verre) (f.)- Sert à contenir un liquide. ex : *la bouteille de jus d'orange.*

une décharge- Endroit où l'on jette les ordures / les déchets. *Dans cette décharge, on trie les déchets pour les recycler.*

l'emballage (m.)- Matériel servant à emballer. ex : *l'emballage des cadeaux.*

le métal / les métaux- Matières brillante qui conduit bien la chaleur et l'électricité. *L'aluminium et l'or sont des métaux.*

les ordures (f.)- Objets qu'on jette à la poubelle. Synonyme: *déchets*

le recyclage (…des ordures)- Action de recycler. *Le recyclage du verre, du papier.*

le traitement des déchets- Opérations pour organiser et s'occuper des déchets.

***la déforestation**- Action de destruction de la forêt, principalement par les humains.

les arbres (m)- Grande plante fixée en terre par des racines et dont le tronc porte des branches.

la destruction- Action de détruire. *Un feu de camp est à l' origine de la destruction de la forêt.*

la forêt (…amazonienne)- Grand terrain couverte d'arbres. Ex : *une forêt d'épinettes*.

l'oxygène (m.)- Gaz invisible et inodore dans l'air. *L'oxygène est nécessaire à la vie.*

la photosynthèse- Quand les plantes absorbent du gaz carbonique, fabriquent des substances nutritives et rejettent de l'oxygène

***la désertification**- Transformation d'une région en désert.

le désert- Région très sèche, sans végétation et avec peu d'habitants. *Le Sahara est le plus grand désert du monde.*

la sécheresse- Longue période où il ne pleut pas. Contraire : *humidité*

l'érosion (f.)- Enlèvement des particules du sol par l'eau et le vent.

le sol- Surface de la terre.

***l'énergie fossile** (f.)- Énergies formées il y a des millions d'années. Ex : *charbon, gaz, pétrole*.

le charbon- Roche noire combustible que l'on extrait du sol et qui produit de l'énergie. (Sous forme solide).

la décomposition (…de plantes, d'animaux, etc.)- Action de décomposer.

l'énergie non renouvelable (f.)- Source d'énergie qui met des millions d'années à se reformer.

le gaz naturel- Une ressource fossile combustible utilisée pour le chauffage. Ex : *une cuisinière au gaz.*

le pétrole- Énergie fossile tirée du sous-sol et utilisée comme source d'énergie. (Sous forme liquide).

la révolution industrielle- Passage d'une société à dominante agricole et artisanale à une société commerciale et industrielle; aux États-Unis c'était au 19^{e} siècle.

***les produits chimiques** (m.)- Objet fabriqué grâce à la chimie. Ex *herbicide, insecticide, pesticide*

Appendix E: Detailed Instructional Unit Timeline

Day	**Activities & Tasks**
Stage 1: Introduction	
1	▪ Bellringer (think of the Environment theme we're starting; write down examples of French words they remember connected to this theme) ▪ Introduction to Environment unit ▪ "5 Questions" card #1 ▪ What do you know? (English brainstorm using subcategories: *Terre, Air, Feu, Eau*) ▪ Music Video: Copenhagen 2010 "Beds Are Burning" ▪ HW: Rank top 5 environmental theme interests
2	▪ Bellringer (What do these words refer to in English?) ▪ *La Terre* o vocabulary o simple content comprehension questions with visual aids o causes & effects puzzle activity o visual aids comparing waste content in France vs. from local waste management facility (in Rodman, NY) ▪ HW : « *Problèmes environnementaux* » matching
3	▪ Bellringer (Review: description and example matching) ▪ "*5 Questions*" card #1- 2 ▪ *L'Air* o vocabulary o simple content comprehension questions with visual aids o causes & effects puzzle activity o short film: "Replay" ▪ HW: « *Sources d' énergies* » bar chart with questions
4	▪ Bellringer (Review: description and example matching) ▪ short film: "Replay" student predictions, finish watching, comprehension & opinion questions ▪ *Le Feu* o vocabulary o simple content comprehension questions with visual aids o causes & effects puzzle activity
5	▪ Bellringer (Review: choose 3 concepts from list & illustrate) ▪ *L'Eau* o vocabulary o simple content comprehension questions with visual aids o causes & effects puzzle activity o current event videoclips ▪ HW: « *La déforestation*» information map with questions ▪ Pass out questionnaire #1 to complete

6	▪ "*5 Questions*" card #2- 3 ▪ Review Stations: o A- SmartBoard term & picture matching game o B- *Devinettes* read clue on index card to guess the term being defined o C- *Livre* use book to answer describe selected pictures' environmental themes, images & locations o D- *Pictionnaire* take turns picking random card and trying to illustrate concept for partners' to guess o E- *Les Tableaux* picture & pie charts with questions o F/G- *Ordinateur* SmartNotebook game grouping items based on various categories (ex. renewable vs. nonrenewable) o H- *Vrai / Faux* create 3 TRUE environmental facts and 1 FALSE fact to be used later to test students' knowledge ▪ HW : « *Exemples* » matching issues to local & global examples
7	▪ Bellringer (Review: 2 environmental cartoons' main ideas) ▪ Continue Review Stations: (same as previous day) ▪ HW : « *Catégories* » (grouping terms by category)
Stage 2: Expert Group Research Project	
8	▪ Bellringer (Review: unscramble terms & use in sentence) ▪ Expert Group Project o Introduction o Groups o Distribute folders (with organizational chart and project rubric) & content books o Begin research / exploration
9	▪ Bellringer (Review: look at cartoon and describe main idea) ▪ Expert Group Project o Review information from yesterday o Distribute folders (with organizational chart and project rubric) & content books o Continue research / exploration
10	▪ Bellringer (Review: read 3 statements written by peers, decide if they are true or false, correct false statements) ▪ Expert Group Project o Review information o Distribute folders (with organizational chart and project rubric) & content books

	○ Finish up research / exploration ○ Choose how to divide key aspects of topic amongst group ○ Start deciding on the key 8 facts about group topic to include in presentation ▪ HW : « __*ment* » & « __*ion* » sentence completion choosing correct term (all either ending with –*ment* or –*ion*).
11	▪ Bellringer (Review: read 3 statements written by peers, decide if they are true or false, correct false statements) ▪ "*5 Questions*" card #3-4 ▪ <u>Expert Group Project</u> ○ Distribute folders (with organizational chart and project rubric) ○ Distribute content books as needed to finish up research ○ Computers- work on creating a Glog (an interactive online poster) on Glogster (free online program) with key 8 facts on specific aspect of group topic chosen ▪ HW : « Glogster »
12	▪ <u>Expert Group Project</u> ○ Distribute folders (with organizational chart and project rubric) ○ Computers- work on Glogster (interactive online poster) with key 8 facts on specific aspect of group topic chosen ▪ HW : « Glogster »
Transition from Stage 2 to Stage 3	
13	▪ Bellringer (Review: read 3 statements written by peers, decide if they are true or false, correct false statements) ▪ "*5 Questions*" card #4-5 ▪ Introduction to *l'Imperatif* & Solutions ▪ Solutions activity (looking at picture representing different environmental problems, telling people what they can DO as a possible solution) ▪ <u>Expert Group Project</u> ○ Meet with expert group to plan for presentations tomorrow ▪ HW : « Glogster »
14	▪ Bellringer (Review: read 3 statements written by peers, decide if they are true or false, correct false statements) ▪ <u>Expert Group Project</u> ○ Glogster presentations ▪ Pass out questionnaire #2 to complete

Stage 3: Solutions & Final Project	
15	▪ Bellringer (Review: Write what to say to convince a cousin and a teacher to be more environmentally conscious, based on 2 images) ▪ Review & continue solutions activity from Day 13 ▪ Video clips (advertisements and Public Service Announcements / PSAs pertaining to what people can DO to help the environment)
16	▪ <u>Solutions Group Project / Final Project</u> o Distribute & read over project rubric o Brainstorm ideas for projects on the theme of "Solutions to save the planet" / "How to inspire others" o Choose project groups o Create "To-Do" list to divide and conquer project tasks
17	▪ Bellringer (Review: Write what to say to convince others to DO various environmentally-friendly actions ▪ <u>Solutions Group Project / Final Project</u> o Review project rubric o Discuss; go over project decisions; answer any questions o Work on project ▪ HW: Work on final project
18	▪ Bellringer (Review: Read PSA cartoon & describe what is being discussed) ▪ Discuss this week's schedule (science collaboration; projects) ▪ <u>Solutions Group Project / Final Project</u> o Work on project ▪ HW: Work on final project
19	▪ <u>Science Collaboration</u> o Review & edit Expert Group Project Glogs to present tomorrow to science class ▪ <u>Solutions Group Project / Final Project</u> o Work on project ▪ HW: Work on final project
20	▪ <u>Science Collaboration</u> o Distribute station presentation charts to complete o Present Expert Group Glogs to science class / travel around stations to visit others' presentations ▪ HW: Work on final project
21	▪ <u>Science Collaboration</u> o Same structure as previous day (if students presented yesterday, they visit others' stations today or vice versa) ▪ HW: Work on final project
22	▪ <u>Solutions Group Project / Final Project</u>

	○ Work on project ▪ HW: Work on final project
23	▪ Bellringer (Review: Read PSA advertisement & describe what it is talking about) ▪ <u>Solutions Group Project / Final Project</u> ○ Group presentation ▪ Music Video "*Aux arbres, citoyens !*" ▪ HW : « *Mon empreinte carbonique* »
24	▪ Bellringer (Review: Read environmentally-based proverb; what is it saying?) ▪ <u>Solutions Group Project / Final Project</u> ○ Group presentation ▪ Jeopardy review game ▪ HW : « *Economisez l'eau!* » picture match with questions
25	▪ Bellringer (Review: Try to remember and complete previous day's proverb, with pictures to help) ▪ Solutions Review Stations: ○ A- <u>SmartBoard</u> 4 recycling activities to complete ○ B- <u>*Devinettes*</u> read clue on index card to guess the environmental job from the list being defined ○ C- <u>*Vidéoclips*</u> listen to the 2 environmentally-related music videos and answer corresponding questions ○ D- <u>*Dessins*</u> 4 cartoons with corresponding questions ○ E- <u>*Conseils*</u> 6 pictures of people doing different environmentally unfriendly things; write what 2 phrases of advice you would give them for what to "DO" or "DON'T DO"! ○ F/G- <u>*Ordinateur*</u> "*Empreinte Écologique*" online survey to find out YOUR ecological footprint and it can be reduced ○ H- <u>Questions</u> write 3 solutions-based questions our class can ask the francophone 2nd graders in Montreal to help them be "*un(e) écocitoyen(ne)*"! ▪ HW : « *Terre & air* » content review fill-in-the-blank sentences
26	• Continue Review Stations: (same as previous day) • HW : « *Eau & feu* » content review fill-in-the-blank sentences
27	• Bellringer (Review: Use pictures to help you describe what these environment solution phrases are telling people to DO) • <u>Solutions Group Project / Final Project</u>

	○ Any remaining group presentations • Interactive solutions websites *or* Jeopardy review game
28	• Bellringer (non-environmental Advent calendar activity) • "*5 Questions*" card #5-6 • Listening comprehension quiz with environmentally-themed passages read, followed by comprehension questions. • Pass out questionnaire #3 to complete

Appendix F: Example Homework

Homework #3 (Stage 1: Day 3)

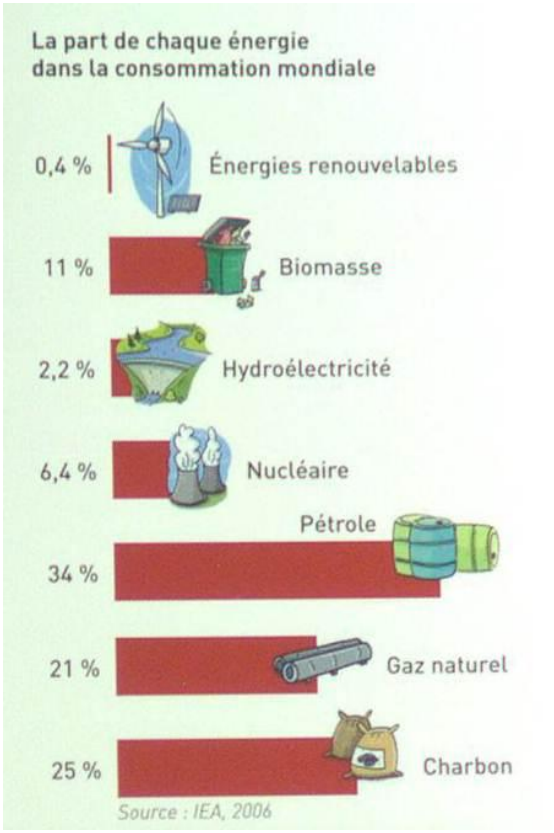

Figure 4. Nicolazzi's (2009) *La part de chaque énergie dans la consommation mondiale* (p. 45).

1. Les trois énergies fossiles, en totale, consomment quelle pourcentage d'énergie utilisées au monde?

2. Quelle est l'énergie la plus utilisée au monde?

3. Quelle est l'énergie la moins utilisée?

4. Ton opinion: Quelle énergie renouvelable à la plus de potentielle dans notre future? Pourquoi?

Appendix G: Consent Letter for High School Principal

LETTER FOR PRINCIPAL AT HIGH SCHOOL

Dear [redacted],

I am writing to request your support in asking the High School French teacher to participate in a classroom intervention study with her two French III classes which would take place in fall 2011. The study will address two well-known pedagogical difficulties that French foreign language teachers experience: integrating meaningful and purposeful content into the language curriculum and helping students to master French grammatical gender attribution.

The participating teacher and I will work together to co-design a unit on the environment with a primary focus on content and a secondary focus on language. I will provide a list of instructional activities we can choose from which are designed specifically to focus on content and/or language in interesting ways that are supported by current theories of second language learning. The teacher will also be asked to include specific counterbalanced instruction techniques (scaffolded questioning, specific types of feedback, etc.) that research has found helps push students' second language acquisition. During the instructional intervention unit, I would attend classes in order to observe, help out, and video tape lessons in both French III sections, with the teacher's permission. Before the intervention, I would also attend classes to observe the previous French unit of study. Participating students with parental consent would together be tested in class for about thirty minutes before, directly after, and approximately one month after the intervention unit; a subsample of students would be asked to be interviewed after the intervention.

I hope that [redacted] High School will be interested this classroom intervention study designed to assess the effects on students' second language acquisition (SLA) of integrating a primary focus on meaning into a predominantly form-focused foreign language classroom. I foresee that such collaboration will be beneficial to teachers and students alike.

Sincerely,

Joy Morgan
M.A. Thesis Student in Second Language Education
Department of Integrated Studies in Education, McGill University
joy.morgan@mail.mcgill.ca
Adviser: Roy Lyster, PhD
roy.lyster@mcgill.ca

Appendix H: Consent Letter for High School French Teacher

LETTER OF INFORMED CONSENT FOR HIGH SCHOOL FRENCH TEACHER

Dear [redacted],

I am writing to request your consent to participate in a classroom intervention study with your two French III classes which would take place in fall 2011. The study will address a well-known pedagogical difficulty that French foreign language teachers experience: integrating meaningful and purposeful content into the language curriculum.

If you agree to participate, you and I will work together to co-design a unit of the environment with a primary focus on content and a secondary focus on language (gender attribution). I will provide a list of instructional activities we can choose from which are designed specifically to focus on content and/or language in interesting ways that are supported by current theories of second language learning. You will also be asked to include specific counterbalanced instruction techniques (scaffolded questioning, specific types of feedback, etc.) that research has found helps push students' second language acquisition.

During the instructional intervention unit, I would attend classes in order to observe and video tape lessons in both French III sections, with your permission. Before the intervention, I would also attend classes to observe the previous French unit of study. Participating students with parental consent would together be tested in class for about forty minutes before, directly after, and approximately one month after the intervention unit; a subsample of students would be asked to be interviewed after the intervention. In addition, I would ask to interview you before, during, and after the intervention unit in order to hear your thoughts and feedback.

As is appropriate in research studies such as this, neither your name nor the name of the school will be mentioned in any research reports, and only I will have access to any identifying information. Also important to stress here is that the videos will not be seen in any context other than my research office for the purpose of data analysis. Your participation in this project in voluntary and you may withdraw your participation at any time.

I hope that you will be interested in this classroom intervention study designed to assess the effects on students' second language acquisition (SLA) of integrating a primary focus on meaning into a predominantly form-focused foreign language classroom. I foresee that such collaboration will be beneficial to teachers and students alike.

If you would like any further information, please call me at 315-782-9931 or email me at joy.morgan@mcgill.ca. You may also contact my adviser, Roy Lyster, PhD in the Second Language Education Department at McGill University, by e-mail at roy.lyster@mcgill.ca or by phone at 514-398-5942. If you have any questions or concerns regarding your rights or welfare as a participant in this research study, please contact the McGill Ethics Officer at 514-398-6831 or at lynda.mcneil@mcgill.ca.

Sincerely,

Joy Morgan
M.A. Thesis Student in Second Language Education
Department of Integrated Studies in Education, McGill University
joy.morgan@mail.mcgill.ca

Please keep the above information for your personal records and detach the section below to turn in.

Consent Form

I, _____am aware of the purpose of the research project and agree to participate. I also hereby agree to be videotaped during the instructional interventions, as well as to participate in audio taped interviews.

Signature: _____Date:_____

Appendix I: Consent Letter for Parents and Students

CONSENT LETTER FOR PARENTS AND STUDENT PARTICIPANTS

Dear Students and Parents/Legal Guardians:

I am pleased to inform you that [redacted]'s French class has been selected to participate in a research study being conducted at [redacted] High School in conjunction with McGill University. The study, which has been approved by Principal [redacted], has been designed to provide language teachers with helpful information about effective language teaching strategies in foreign language classrooms.

[redacted] has agreed to participate in this study and will co-design and integrate into this year's regular curriculum an instructional unit which contains activities designed specifically to help students improve their French in interesting ways that are supported by current theories of second language learning.

I would like to be able to video tape these activities in order to help me complete my classroom observation notes. I would also like to administer a test to student participants in class for a period of approximately 30 minutes on three different occasions. In addition, students will be asked to answer a 6-item questionnaire on a weekly basis during the instructional unit. After the end of the unit, some students will be asked to be interviewed in order to offer their opinion on the unit and provide valuable feedback.

The purpose of this letter is to request your permission to have you / your child participate in (a) the testing; (b) a weekly questionnaire; (c) the videotaping; and (d) the audio taped post-interview. The tests have been designed in such a way that students will likely find them stress-free. They will be used for research purposes only and will not be used by the school in the calculation of any French grades. Similarly, the videos will be used only by myself for research purposes, and will not be used to evaluate any individuals nor shown in any context other than for data analysis in my research office.

As is appropriate in such research studies, neither student names nor the name of the school will be reported, and only I will have access to any identifying information. Moreover, even if you agree to participate or have your child participate, participants may decide to withdraw from the study at any time.

If you would like any further information, please call me at 315-405-7697 or email me at joy.morgan@mcgill.ca. In addition, you may contact my adviser, Roy Lyster, PhD in the Department of Integrated Studies in Education at McGill University, by e-mail at roy.lyster@mcgill.ca or by phone at 514-398-5942. If you have any questions or concerns regarding your /your child's rights or welfare as a participant in this research study, please contact the McGill Ethics Officer at 514-398-6831 or at lynda.mcneil@mcgill.ca.

Sincerely,

Joy Morgan
M.A. Thesis Student in Second Language Education
Department of Integrated Studies in Education, McGill University
joy.morgan@mail.mcgill.ca

Please keep the above information for your personal records and detach the section below to turn in.

Please return to _Madame Morgan_ before _Monday October 10, 2011_

I agree / will allow _____ (name of student):

- to participate in the 3 tests administered to the whole class.

  Yes_____/No_____
- to participate in the weekly questionnaires administered to the whole class.

  Yes_____/No_____
- to appear on the video tape during the unit's instructional activities.

  Yes_____/No_____
- to be recorded on audio tape during a post-unit interview.

  Yes_____/No_____

Signature of Parent / Legal Guardian: _____ Date:_____

Signature of Student: _____ Date:_____

Appendix J: Questionnaire from end of Week 1

Student Participant Questionnaire- Week 1 Nom:_____

1) On a scale from 1 (= not at all interesting) to 5 (very interesting), **how did you like this past week's activities**? Please circle the number.

	←not at all interesting ---------- very interesting→				
• T- Introduction Brainstorm	1	2	3	4	5
• T- Music Video	1	2	3	4	5
• T & Th- "l'Environnement" 5 ?s	1	2	3	4	5
• W, Th & F- Intro Matching Review	1	2	3	4	5
• M- Intro Drawing Review	1	2	3	4	5
• Daily Vocab. Comprehension Check	1	2	3	4	5
• Daily Topic ?s (with pics)	1	2	3	4	5
• Daily- « Cause & Effet » Puzzle	1	2	3	4	5
• W- Rodman landfill tour (**Period 2 only**)	1	2	3	4	5
• Th & F- Air animated video and ?s	1	2	3	4	5
• F- Energies Grouping (**Period 1 only**)	1	2	3	4	5
• M- Water topic videos	1	2	3	4	5

2) On a scale from 1 (= nothing) to 5 (enormously), how much do you feel this past week's **activities helped you learn French**? Please circle the number.

	←nothing ---------- enormously→				
• T- Introduction Brainstorm	1	2	3	4	5
• T- Music Video	1	2	3	4	5
• T & Th- "l'Environnement" 5 ?s	1	2	3	4	5
• W, Th & F- Intro Matching Review	1	2	3	4	5
• M- Intro Drawing Review	1	2	3	4	5
• Daily Vocab. Comprehension Check	1	2	3	4	5
• Daily Topic ?s (with pics)	1	2	3	4	5
• Daily- « Cause & Effet » Puzzle	1	2	3	4	5
• W- Rodman landfill tour (**Period 2 only**)	1	2	3	4	5
• Th & F- Air animated video and ?s	1	2	3	4	5
• F- Energies Grouping (**Period 1 only**)	1	2	3	4	5
• M- Water topic videos	1	2	3	4	5

3) On a scale from 1 (= not at all) to 5 (certainly), how much do you feel what was covered in this past week's **activities can be applied/used in your life beyond the French classroom**? Please circle the number.

	←not at all ---------- certainly→				
• T- Introduction Brainstorm	1	2	3	4	5
• T- Music Video	1	2	3	4	5
• T & Th- "l'Environnement" 5 ?s	1	2	3	4	5
• W, Th & F- Intro Matching Review	1	2	3	4	5
• M- Intro Drawing Review	1	2	3	4	5
• Daily Vocab. Comprehension Check	1	2	3	4	5
• Daily Topic ?s (with pics)	1	2	3	4	5
• Daily- « Cause & Effet » Puzzle	1	2	3	4	5
• W- Rodman landfill tour (**Period 2 only**)	1	2	3	4	5
• Th & F- Air animated video and ?s	1	2	3	4	5
• F- Energies Grouping (**Period 1 only**)	1	2	3	4	5
• M- Water topic videos	1	2	3	4	5

4) What did you learn this past week?

5) What did you not understand from this past week?

6) What would you like to learn about as a result of this past week's activities?

Any additional comments:

Appendix K: Part 4 Qualitative Test Results

	Pre-test List	Post-test List	Delayed Post-test List
Student #17	• Global warming- ice caps melting / temp changes • The Greenhouse effect (I just know I've heard of this) • oil spills • Recycle	• green house effects- ozone depletion • global warming- ice caps melting • oil spills kills fish and plant life in H2O • depletion of the ozone- caused from greenhouse gases • recycling • reduce reuse recycle repair • CO2 emissions- cause global warming	• Oil spills • deforestation • landfills – CO2 emissions • forest fires • Global warming- melting ice caps • greenhouse effect- greenhouse gases • O-zone layer depletion • Waste treatment • wind and solar energy to save fossil fuels
Student #4	• Global warming o greenhouse gases o carbon dioxide o cars o exhaust o ozone • Pollution o cities o cars o transportation o smog • Habitat destroying o rainforests o extinct animals • Green energy o nuclear power o wind power o solar power o water power	• Fire o nuclear energy is nonrenewable, but produces lots of energy o toxic radiation, but no air pollution o nuclear power plant in Oswego, over 400 in world • Wind o wind power o windmills o alternative energy • Earth o geothermal- uses energy from deep inside earth o Fossil fuels- coal, petroleum, natural gas o fossil fuels are non renewable • Water	• Global Warming o result of depletion of ozone layer o burning fossil fuels ⇧ depletion of ozone and ⇧ global warming • Fossil fuels o petroleum o coal o natural gas • renewable resources o solar power o wind power o water power • alternative source of power is nuclear energy o + = lots of energy o - = dangerous, shouldn't be located where earthquakes are found

		○ renewable resource ○ hydraulics • Solaire ○ renewable ○ 2 types, heat, and light	○ - = radioactive waste that we can't get rid of very efficiently
Student #11	• Oil • Global warming • How can we gather energy without contributing to the environmental issues? • Preserving forests • Running out of water?	• Global warming • Solar energy is expensive but helpful • Wind energy is an alternative energy • Coal, natural gas, petrol- non-renewable • Oil spills kill millions of animals each year • Nuclear energy creates toxic products • Forest fires kill thousands of habitats each year	• Oil spills • forest fires • nuclear plants • use less oil • use solar power • use wind power
Student #16	• Ozone damage • Rivers polluting • Littering causing damage & pollution • Killing endangered species • Automobile over production • Waste deposits in landfills • Sea life dying out to pollution • Ice caps melting = habitat damaged • Forest fires	• global warming ○ Earth is heating up • Ozone depletion ○ chemicals are released and Ozone depletes • Factory and Car emissions need to cut back • Over production of waste ○ Landfills pollute through leaks ○ burning trash destroys ozone ○ Water pollution is caused by dumping trash • Forest fires are killing off habitats	• Air pollution • Water pollution • Forest fires • Landfill pollution • Electricity usage • Deforestation • Global warming

		• Ways to conserve energy with solar power • Windmills made to use energy naturally • Recycling would help the waste issue • Ways to use broken things again • Nuclear power plants are giving off radiation • Glaciers are melting as result of global warming • Electricity is over used	

Appendix L: Quantitative Questionnaire Results

	Activities	**Liked**	**Helped with French**	**Applicable to life outside the French classroom**
Questionnaire 1	**Intro Brainstorm**	3.35	3.58	3.25
	Music Video	4	3.13	3.29
	"5 Questions"	3.65	4	3.71
	Intro Matching Review	3.78	4.13	3.61
	Intro Drawing Review	3.74	3.61	3.48
	Vocabulary Comprehension Check	3.91	4.26	3.79
	Sub-Topic Questions (with visuals)	4	4.13	3.75
	Cause-Effect Puzzles	3.78	4.13	3.75
	Landfill PowerPoint (Period 2 only)	3.44	2.44	3.33
	Air video clip and Questions	4.42	3.39	3.67
	Energies Grouping (Period 1 only)	3.5	3.67	3.5
	Water topic videos	3.68	3.33	3.59
Questionnaire 2	**A: SmartBoard "Hot Spot"**	4.08	3.75	3.52
	A: SmartBoard 5 sentences	3.5	3.83	3.65
	B- "Who am I" clue guess	3.26	3.77	3.27
	C- Book activity	2.96	3.48	3.19
	D: Pictionary game	4.04	3.58	3.41
	E: Landfill charts	3.04	3.55	3.65
	F/G: Computer "Vortex" game	4.21	3.88	3.65
	H: T/F sentence creation	3.67	3.75	3.48
	French book exploration	3.54	4	3.83
	Glogster topic poster	4.21	4.3	4.3
	Bellringer Review	3.75	3.67	3.61
	"5 Questions"	3.71	3.92	3.74
	Solutions Brainstorm chart	3.38	3.54	3.52
Questionnaire 3	**Expert Station collaboration**	3.67	3.5	3.88
	French video clip solutions	4.16	3.74	3.6
	PSA Final Project	4.33	4.13	3.92
	PSA Presentations	4.16	4.09	3.8
	Puzzle Homework	3.42	3.75	3.62
	A: SmartBoard activities	3.92	4	3.92
	B: "Who am I?" guess	3	3.33	3.15
	C: Music videos	4	3.63	3.63

D: Solutions cartoons	3.92	3.69	3.48
E: Advice activity	3.75	3.71	3.46
F/G: "*Empreinte Ecologique*"	3.68	3.64	3.64
H: Questions brainstorm	3.2	3.32	2.96
Jeopardy review	4.04	3.92	3.71
Interactive websites	3.65	3.38	3.56

Note: Scale ranged from 1= "not at all" to 5 = "very interesting"