

A Vygotskian sociocultural perspective on immersion education

The L1/L2 debate*

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An enduring issue in immersion education focuses on the appropriate use of the L1 in the one-way or two-way immersion classroom. In this article we discuss several key constructs (mediation, languaging, the cognition/emotion relationship, zone of proximal development) that are central to a Vygotskian sociocultural theory of mind perspective on second language learning and teaching. Each discussion of a theoretical construct is followed by a review of one or more key research studies from one-way or two-way immersion contexts whose findings we highlight or re-interpret in light of Vygotsky's insights. The theory and research yield three important guiding principles with the goal of helping educators to make decisions about their language use choices in the immersion classroom.

Additional abstract(s) at end.

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1. Introduction

A controversial issue when one-way immersion education programs began, and persisting to this day, is the question of first-language use during target-language instructional time. This issue is also relevant in two-way immersion programs. Immersion is an additive program, enriching the learner's linguistic repertoire (number of languages) without negatively affecting the first language (Lambert, 1975).

In one-way programs, first established in Canada in the mid-60s, groups of children who are often linguistically homogeneous,¹ encounter the target language (e.g., French, Ukrainian, Hebrew) for the first time on entry to the immersion program (Tedick, Christian, & Fortune, 2011, p.2). Entry points vary with early immersion beginning in Kindergarten or Grade 1, middle immersion beginning in Grade 4 or 5, and late immersion beginning in Grades 6 or 7. In the initial year of the immersion program, at least half but often all of the instructional time is spent teaching in the medium of the target language. In two-way programs, majority-language learners (i.e., English-speaking students in the U. S. and minority-language learners, e.g., Korean-speaking learners in the U.S.) come together to learn each other's language while studying the curriculum. In the two-way context, from 50 to 90 percent of the instructional time is initially spent in the minority language (e.g., Korean), depending on the program design. By Grade 5 or 6, half the time is devoted to instruction via each language, and each language is the target language for a group of learners in the class. In these immersion contexts, the question of which language should be used by whom and under what conditions is complex.² Furthermore, the question of whether and how the use of the classroom languages makes a difference to the learning of the target language remains unaddressed.

2. The debate

Teachers' views on the L1/L2 debate can be invoked to frame the discussion. Consider the following contrasting teacher voices from one-way immersion programs, reflecting the polarization of views on the optimal use of the L1. First we hear from Becky, an early French immersion teacher with 15 years of experience and a teacher educator. She adheres as strictly as possible to the principle that only the target language should be used in the immersion classroom by the teacher. She makes it a practice to answer the phone in the target language (French, in this instance), address visitors to her classroom only in French, and, even in casual encounters in the schoolyard or in the street, she addresses students, parents and community members initially in French. Here is her view:

French instructional time in immersion classrooms should be largely, almost entirely in French; it is feasible for teachers to use French from the very beginning — that's what makes it immersion! The reason to use English should *never* be because "it is too hard" in the target language. The reason should *never* be because the students don't understand a topic; any topic can be taught in the target language. (Becky, 15 years of experience in early French immersion, elementary grades)

Frank, a late French immersion teacher with 10 years of experience, holds a similar view; he said:

If ...they [the students] knew that ... as soon as someone wrinkled their brow, then you were going to say it in English, they'll just wait. (Frank, late French immersion, Grade 7, 10 years of experience; see McMillan & Turnbull, 2009, p. 22)

Becky and Frank are committed to maximal use of the target language; in fact, Frank believes not only that he should use the target language exclusively when he instructs his students, but that the students too should use French exclusively in interactions with him. He explains that some English use among the children is to be expected, but none is permitted when students address him:

Just kind of easing them into it without being the language police, right? And even now, I know some teachers really have a lot of angst over hearing the kids talk English amongst themselves, well I don't think you can take that away in a few months or a year. As long as they're not talking English to *me*. (McMillan & Turnbull, 2009, pp. 32–33)

Midway along the continuum of beliefs about L1 use, we find Pierre, a late French immersion teacher (Grade 7) with 10 years of experience. Pierre often asks students for the French equivalent of a word they have been learning, providing the target word in English and asking in French for the translation. In the initial, early months of his late immersion program, he uses the L1 “systematically” (McMillan & Turnbull, 2009, p. 24) to check on his students' comprehension of what they are learning. While teaching, Pierre often speaks in English, then models the French equivalent, and finally asks students to repeat the phrase or sentence in the target language. He explains:

If I wanted to, I could teach completely 100% in French, but I just find it [using some English] ...good for the students. It helps me to know if they've understood what's going on and also to make them use French, which is the goal, to have them speak French. (Pierre, late French immersion, Grade 7, 10 years of experience; see McMillan & Turnbull, 2009, p. 25)

Finally, Mary, an early immersion teacher with 13 years of experience, represents the extreme end of the continuum. She expresses the view that it takes too much time to convey complex concepts in the target language; she also suggests that teachers feel intimidated by the Grade 3 provincial (Ontario) testing in English and math and so the teachers spend time using English to prepare students for the testing.

It's hard to keep French going all the time especially at Grade 3 with EQAO testing [provincial testing of English and mathematics in Ontario]. French is taking

a beating by Grade 4. We need to cover content and this goes faster if I do it in English. (Mary, 13 years of experience, Grade 2–3 immersion teacher)

These four teachers express views ranging across a wide spectrum of opinion. Becky and Frank believe in using the target language exclusively, while Pierre uses L1 frequently with his late immersion students, transitioning after several months into the target language. Mary relies heavily on the home language (English) in class. Given the diversity of opinion, it is important to develop theoretically-based principles for, rather than an ad hoc approach to, L1 and L2 use in immersion contexts. We distinguish between the use of L1 and L2 by teachers and by students.

Throughout this article we will focus on one-way and two-way immersion contexts. We will present several key constructs (mediation, languaging, the cognition/emotion relationship, zone of proximal development) that are central to a Vygotskian sociocultural theory of mind perspective on second language learning and teaching. Each presentation of a theoretical construct is followed by a discussion of one or more key research studies from one-way or two-way immersion contexts whose findings we highlight or re-interpret in light of Vygotsky's insights. The sections on research are followed by implications informing our guiding pedagogical principles about L1 and L2 use that flow from the discussion of each construct.

3. Mediation and languaging

3.1 Theory

Why might it be useful to talk about immersion education from Vygotsky's theoretical perspective? How might it be helpful in developing guidelines for the use of the first and target languages? To answer these questions, it is essential to discuss the concept of mediation. Vygotsky (1978) saw language as a psychological tool, that is, as a tool that mediates the mind. He argued that our most important mediating tool is language.

Vygotsky demonstrated through his research with children how language comes to function as a psychological tool that mediates, that is, regulates or organizes, our thinking (Lantolf & Thorne, 2006; Luria, 1982). He observed that the behavior of infants and young children is initially regulated by concrete objects in their surroundings. For example, a parent tells his child, Kathy, to find her favorite toy, a ball. While searching for the toy, Kathy sees her teddy bear and begins to play with it. Kathy's actions here are object regulated, in this case, by her teddy bear. As time passes and Kathy learns English (her L1), her behavior comes to be regulated by it. Thus, later in Kathy's development, when her parent tells her to go

and get her favorite toy, she does so. This is known as other regulation, regulation of Kathy's behavior through the language of another person.

As time passes, the language used in interaction with others or with Kathy, which has functioned to focus Kathy's attention, as well as to help her organize and plan her behavior, is used by Kathy herself to accomplish these high level mental functions. So Kathy now says to herself: "I want my favorite toy. I'll go to my bedroom because that's where I last saw it," and she does so, undistracted by all her other toys. This process is known as self regulation. What has happened is that the functions language serves have been internalized, that is, they have moved from the social plane to the psychological plane — what Vygotsky referred to as movement from intermental functioning to intramental functioning. With this shift of language functions from the social to the individual, that is, from the social to the psychological, a qualitative leap takes place. Instead of language being used simply to communicate something to another person, now language also mediates — that is, it functions to focus the attention of, to develop, to organize, to control — one's own higher mental functions. When language is used for these purposes, we refer to it as "linguaging" (Swain, 2006; 2010).

Linguaging is the use of language to mediate cognition and affect. When one languages, one uses language, among other purposes, to focus attention, solve problems and create affect. What is crucial to understand here is that language is not merely a means of communicating what is in one person's head to another person. Rather, language serves to construct the very idea that one is hoping to convey. It is a means by which one comes to know what one does not know.

Let us try to unpack this dense theoretical statement with a concrete example. The example comes from two Grade 7 early immersion students (Swain & Lapkin, 2002). Here is what the two students, Nina and Dara, were observed to be doing while working on a collaborative task. Together, based on a set of pictures, they wrote a short story in French about a young girl who fell asleep even after her alarm clock had woken her. They wrote in their story "*Il est maintenant 6:01 et elle s'endort sans bruit*" (It is now 6:01 and she falls asleep without a sound). Later on, a teacher/reformulator, decided to 'correct' the phrase *sans bruit* to *dans le silence*, which slightly altered the meaning of what Nina and Dara had written. Nina and Dara's version puts the emphasis on how the girl in their story falls asleep — without a sound, that is, silently. But the teacher's version highlights the state of the room; that the room, itself, is silent.

When the two students saw how the teacher had reformulated their story, Nina tried to explain why she did not like the teacher's correction. In order to do so, she explained to Dara and the researcher the differences in meaning between the two versions. Of course, she had to use language to provide this explanation. In this case, Nina used her first language, English, as a tool to mediate her

understanding of the difference between the two meanings. Nina said: “I think *sans bruit* is more...she...she...fell asleep and she didn’t make any noise. But *silence* is like everything around her is silent.”

Nina’s friend Dara agreed with this interpretation. Still later, when Dara and Nina each rewrote the story independently, they each cleverly made use of the feedback the teacher had given them by using the lexical item *silence*, but they adapted it to make it mean what they had originally meant. Dara wrote “*elle s’endort silencieusement*” and Nina wrote “*elle s’endort en silence*.” We would argue that Nina and Dara would not have reached these ingenious solutions of making use of the teacher’s feedback while still sticking to their own story, had it not been for their use of English to mediate their understanding intertwined with their determination to preserve their own meaning.

Their languaging, in the form of collaborative dialogue, mediated their understanding of the differences in the meaning the teacher had imposed on an aspect of their story, and the meaning they, themselves, had intended. Collaborative dialogue is a type of languaging, defined as “the joint construction of language — or knowledge about language — by two or more individuals...it’s where language use and language learning can co-occur” (Swain, 1997, p. 115; see also Swain, 2000, and Swain & Watanabe, 2013). As we saw, through their language-mediated collaboration, Nina and Dara came to understand that *sans bruit* and *dans le silence* had different meanings in the context of their story. Their collaborative dialogue was mediated in English, their solutions were in French. Their use of English was essential in working out these subtle differences of meaning in its localized context. By using English, they were able to focus their attention, organize their thoughts, and internalize (learn) aspects of the meaning of *sans bruit* and *dans le silence*. The evidence is that, much later, each was able to use on her own in French what they had collaboratively worked out in English. As Vygotsky stated: “in learning a new language one does not return to the immediate world of objects and does not repeat past linguistic developments, but uses instead the native language as a mediator between the world of objects and the new language” (Vygotsky, 1986, p. 161).

Languaging may also take the form of private speech, that is, speech for the self, speech that most often occurs covertly, but may surface when an individual needs to take control of his/her mental processes (Lantolf & Thorne, 2006). It signals an attempt to regain self-regulation. It is often spoken softly and is abbreviated and shortened from what one might say were an audience present. However, much of what is observed as social speech also functions as private speech in that the individual’s talk is mediating his/her thinking. Consider, for example, a recent attempt by a colleague to explain a complicated concept to her students. The explaining, itself, helps to form an understanding of the concept (e.g., Chi, Leeuw, Chiu & Lavancher, 1994). In other words, languaging, in the form of collaborative

dialogue or private speech, constitutes part of the process of formulating the idea; it mediates the formulation of the idea. Indeed, it is when language is used to mediate conceptualization and problem-solving, whether that conceptualization or problem-solving is about language-related issues or science issues or mathematical ones, that languaging takes place.

In immersion education, the goals are to learn content and to learn a target language.³ Languaging is relevant to both. As we have already seen at a microgenetic level⁴ with Nina and Dara, languaging in the L1 mediated their understanding of context-specific meanings of the target language. At a micro level, what occurred was the internalization of a small semantic aspect of language.

Let us now consider in detail how languaging is relevant to the internalizing of content, that is, the subject material students are taught. The first example we will use does not come from an immersion context, but rather is about the learning of biology in a regular classroom. Specifically, the goal of the study was to teach students about the circulatory system. There are a variety of ways that a teacher might choose to teach about the circulatory system. For example, one might lecture to the students, or one might ask students to read the relevant part of a biology textbook, or one might draw the circulatory system and label the parts, and so on.

In a study conducted by Chi et al. (1994), students were taught about how the human circulatory system works. The students were in Grade 8 (about 14 years old). Each student was given a passage to read about how the circulatory system works, including information about arteries, veins, the heart, oxygen and carbon dioxide, etc., and how they all work together as a functional system. There were 101 sentences in the passage the students read.

Students were taught using one of two techniques. Either (1) they read the passage over several times and then answered comprehension questions, or (2) they did what Chi et al. refer to as “self-explanation” or “generating explanations to oneself.” Self-explanation is a concept that is the cognitive science version of languaging. The students were asked to read the first sentence out loud and to explain what the sentence meant. Then they did the same thing with the second sentence, then the third, and so on until they had explained all 101 sentences. The researchers observed the students making inferences, that is, going beyond the material they were presented with and generating ideas that were not presented and were new for them. The students were also observed monitoring their comprehension, justifying their actions, and connecting their new knowledge to prior knowledge. They also summarized and paraphrased (Chi, Bassock, Lewis, Reimann, & Glaser, 1989).

Chi et al. (1994) found that the students who self-explained also displayed a deeper understanding of the human circulatory system than those who read the passage twice. Furthermore, among those students who generated explanations,

those who provided more explanations displayed greater understanding than those who made fewer explanations.

So what does that mean? It means that languaging, using language to mediate their thinking about the circulatory system, was an important part of the learning process. Similar sorts of studies, where self-explaining has been the object of interest, have been conducted in content areas such as science (Davis, 2003) and geography (Kastens & Liben, 2007) with comparable results. In fact, there is now about a 20-year history of empirical evidence of the positive impact of languaging on learning in non-L2 knowledge domains.

We conducted a study that was similar in design (see Swain, Lapkin, Knouzi, Suzuki & Brooks, 2009 for details). However, in our case, the students were university students studying French, and they languaged about the grammatical concept of voice in French. They learned about the active, middle and passive voices by explaining the meaning of a 36-sentence passage about these voices, sentence by sentence. They also had access to other artifacts: a set of example sentences in French and two diagrams illustrating the relationships among the voices. Our findings were analogous to those of Chi et al. (1994). We observed our students connecting new knowledge to prior knowledge through integration and elaboration. They formed hypotheses, going beyond the ideas that were presented to them. The students were also observed paraphrasing, analyzing, self-assessing, re-reading, summarizing, and justifying their actions.

Like Chi et al., we found that the students who languaged more also learned more about the grammatical system of voice. Furthermore, they were better able to apply their knowledge to their use of French in follow-up tests. Heidi was one of the students in our study. Below is an excerpt from Heidi's languaging. During her languaging she infers from previous information in the text, a function of the middle voice in French: it is used to "make a general statement." It is important to note that the text never provided this information; rather it was through Heidi's languaging that she discovered, indeed created, this idea that was new for her. Heidi's self-congratulatory enthusiasm is also noteworthy (see the section on the cognition/emotion relationship below).

The sentence Heidi read aloud was the 25th out of 36. She read it aloud as follows: "For *Le saumon se mange froid*, English uses the passive: Salmon is eaten cold."

...I think that for English speakers it's a bit confusing when they say *Le saumon se mange froid* because you're thinking that the salmon, you think in your head that the salmon might be eating something? Instead of uh, the, the salmon is eaten cold... I can see that if I was really tired and reading this, I might easily be confused and think that the salmon was eating something cold, so when I see the **English**, it uh just reaffirms for me that okay, so I know what's going on. I was

right with what I thought about that and now I can see the practical use of it because normally I would just see that and I would say why would anybody say that in, in French, but then you see, salmon is eaten cold. Oh well okay if that's what it means in English, then I can understand why someone might want to say *Le saumon se mange froid* because it's really, it's nice and simple. And I think reading it in English and then reading it in French gets an idea of how you can use this tense yourself when you're speaking, not just understanding it... I just get from this a practical use of this phrase instead of just oh, this is, this changed into middle. It's like oh this is why it's changed into middle because they're just making a general statement about salmon. No one necessarily has to be eating it cold, just in general. (Swain, 2010, pp. 123–4)

In both the Chi et al. (1994) study and the Swain et al. (2009) study, the students' first language, English, was used, and Heidi (in Swain et al.) was constantly making cross-linguistic comparisons. But what happens when students are asked to do such difficult, complex thinking in a second language as in immersion classes? We turn now to research from immersion contexts that addresses this question.

3.2 Research

What happens when immersion students are put into pairs or small groups and asked to carry out a task? Which language do they use? And for what purposes do they use each? In 2000, we documented how Grade 8 French immersion students used their L1 in completing two collaborative tasks: a dictogloss and a jigsaw task. The task entailed writing a narrative together in French based on a series of pictures (jigsaw), or based on a series of notes taken while the story was read aloud (dictogloss). As one analysis of the data, we identified all turns in which the students used English, the students' first language. This amounted to approximately 25% of all turns taken as the students engaged in collaborative dialogue, which supported their story writing.⁵ Based on the students' use of their L1, we developed a taxonomy of the functions for which the students used English.⁶

We found that English was used by the students for three main functions. We labeled the first one "moving the task along." Included under this category was the use of English to manage the task, that is, to understand precisely what the students were supposed to do. Also included under the category of moving the task along was the students' use of English to develop an understanding of the story and to figure out the order of the events in the story. The second main function was labeled "focusing attention." This included the students using English for lexical searches, focusing on form, 'framing' problematic grammatical points, and explaining grammatical information. For example, one student focused on form in the following utterance: "I have a perfect verb *réfléchi* [reflexive]. OK.

Maintenant...elle s'endormit" (Swain & Lapkin, 2000, p. 260). Students had learned about reflexive verbs, and this student was excited about using one (the form is slightly incorrect and should be *s'endort*). Students' use of English to frame problematic points is well illustrated in the following utterance: "Is it *la réveil* or *le réveil*?" (p. 260). Here the student uses English to frame or highlight the problem (correct gender selection for the noun).

The third function that we identified was "interpersonal interaction." The students occasionally used English to disagree with each other, and to use the local vernacular. Blanco-Iglesias, Broner and Tarone (1995) also noted the use of the local vernacular for terms learners did not know in the target language: 'whatever', 'who cares?', 'wicked!', 'stupid', and so on.

We also focused on the relationship between the amount of L1 use and the quality of the stories as well as variability in task performance related to L1 use. Regarding the relationship between story quality and amount of L1 use, students whose stories received lower ratings used more L1 in their collaborative dialogues. As DiCamilla and Antón (2012) stated: "The fact that lower achieving students presumably have a greater need for using L1 is not at all surprising if we consider the first language as a psychological tool used in moments of cognitive difficulty" (p. 166). Further, with respect to variability in task performance, we compared two dyads who made similar use of the L1, but whose story ratings differed. The dyad who wrote the stronger story used L1 to move the task along, while the dyad who wrote the weaker story used L1 for lexical searches. These findings suggest two conclusions. First, as L2 proficiency increases, it may be used for a wider variety of functions. Second, as L2 proficiency increases, there is less and less need to use the L1 as a cognitive tool; the L2 can 'stand alone.' As DiCamilla and Antón suggest, once the L2 plays a significant role in the students' interactions, then no longer is it "just the system to be learned," but L2 is "the system deployed for learning" (p. 184).

Other immersion researchers such as Fortune (2001) and Broner and Tedick (2011) have also examined the functions for which the students' L1 is used. The analysis of their data, collected in classrooms, revealed additional contexts affecting the use of L1/L2, such as the interlocutor (teacher or peer), and type and complexity of subject matter content. Fortune (2008) reported that the L1 was used more frequently for social purposes than academic purposes, and that the frequency of L1 use was very high when it was used to express feelings.

Thus, based on the research concerning L1 use and function, as Vygotsky would predict, the students made use of their L1 as a tool that mediated their understanding of task and content, and that supported their co-construction of the target language. What we do not know is if any use of the L1 by the students is essential; if it expedites the learning process or is simply the easier route to take.

A study conducted by Storch and Wigglesworth (2003) suggests that it may, in some cases, be the latter. Their study did not involve immersion students, but rather students undertaking content-based tasks. The students were learning English in Australia in a university-based program. The interesting part of the study for our purposes was that the first three pairs of students who did the tasks, despite sharing an L1, rarely used it to complete the tasks. Therefore, the researchers gave the next three pairs somewhat different instructions, telling each dyad to use their L1 if they thought that doing so would be helpful in completing the task. Two of these three pairs used their L1 extensively under these conditions (approximately 38% of the time) although the experience of their colleagues showed that they did not need to do so. The researchers did not indicate if the students who used more L1 were more or less likely to produce a completed and superior final product.

Returning to immersion contexts, we now consider two further studies. The first one suggests the necessity of using the L1 when the content is complex, and the second suggests that the use of the L1 supports L2 learning and performance. The first study was conducted by Turnbull, Cormier and Bourque (2011) with Grade 7 late immersion students who started their program in Grade 6. The students were being taught a science unit on earthquake and volcanic activity, which included a basic understanding of tectonic plate movement. Students completed a semi-structured interview about the content of the unit. The interviews were conducted in French both before and after the teaching of the unit. The students were asked to answer such questions as “*Qu’est-ce qui cause un volcan?*” (What causes a volcano?) and “*Où se produisent les volcans et pourquoi?*” (Where do volcanoes occur and why?).

Each turn of the students’ oral responses from the post-interview was coded as French only, English only or as including both English and French. Also each turn was coded to assess the level of complexity of the content. The complexity scale was inspired by Bloom’s taxonomy of complexity (1980) and ranged from 0 to 7 with 7 being the most complex. For example, Level 3, “complex description and linkages” was assigned when “the student provides a descriptive response with at least two details not provided in the interviewer’s question, and the student provides at least one link between the details,” (p. 198), and Level 6, “complex explanation and application to another context” was assigned when “the student provides a descriptive response with at least two linked details not provided in the interviewer’s question. Response goes beyond a simple cause-and-effect or comparative explanation. Student explains how to apply the explanation to another context or situation” (p. 198).

The hypothesis was that there would be a relationship between the complexity of the students’ responses and the language used to mediate the responses. In this case, the hypothesis was that the more complex the response, the more likely the

student would need to make use of the L1, English, in order to mediate his/her response. This is indeed what the researchers found: the L1 was used for the more complex turns, and French was used for the less complex ones. This suggests that when the content material became too complex, the students needed to switch to their L1 to complete the task (see also Centeno-Cortés & Jiménez-Jiménez, 2004). This is precisely what Vygotsky would predict at a micro level: the switch to L1 was needed to mediate the learner's thinking when the content was still too complex to be processed in the L2. In other words, the L2 was not sufficiently developed to mediate complex ideas, and thus the task could not be completed without L1 mediation. From this study we may conclude that as the content increases in complexity over time and grade level, even at advanced L2 proficiency levels, it may be necessary to use the L1 to mediate thinking.

The second study was a small-scale one carried out by Behan, Turnbull and Spek (1997) (see also Behan, Spek & Turnbull, 1995). Behan, the teacher of a Grade 7 late French immersion class, was concerned that the level of her students' French was not sufficiently advanced for the rather difficult and complex content she was expected to teach using French, although she knew her students would have no difficulty carrying out the activities in English. Until she and her colleagues undertook this action research, Behan had meticulously followed the classroom monolingual rule: "we only speak French in this class."

Behan's students had been searching for information about the lifestyle of First Nations people in Canada. In small groups, they were to engage in collaborative dialogue to combine the information each had in order to understand the relationships between the climate, the food the First Nations people ate, the clothes they wore, and so on. The next day they would make an oral presentation in French based on their notes. It was made clear to the students that, as always, they should use French in their groups. In spite of this, all groups made considerable use of their L1, English.

Both the collaborative dialogue of the students as they worked on this task, and their oral presentations the next day, were tape-recorded. Behan and her colleagues examined the uses of English in the students' collaborative dialogues. They found that English was most often used in relation to vocabulary searches, and "to structure the activity and to respond to or deal with the cognitive challenges it presented" (Behan et al, 1995, p. 14). Their next step was to identify examples in the oral presentations where it could be argued that the students' languaging in English during the preparation for the oral presentation in French had been transferred to the oral presentations. They found a number of instances in which the results of vocabulary searches during the preparation time were carried forward into the presentations, providing evidence of learning. They also found examples where English had been used to deal with the cognitive challenges presented by

the task that were transferred to the oral presentation. An example from Behan et al. (1995, p. 18) follows:

Z: You've got lots of coniferous trees...it's good for?

J: I don't know what it's good for.

Z: To build houses such as the long house and stuff like that.

J: So what about to build totem poles?

Z: Yeah to build totem poles!

In the notes for their oral presentation, Z and J's group wrote: "*les indigènes... habite dans grandes maisons, fait de cedre...et coup les arbres pour construire les totems*"⁷ (Behan et al., 1995, Appendix).

In this example, it is clear that the students had the L2 proficiency to express their ideas in French, but English mediated the development and coherence of them. In effect, their use of English helped them to focus on the task at hand and organize their thoughts; it scaffolded their presentation in French. Independent raters listened to the recordings of each of the presentations, and Z and J's group were given the highest ranking of all groups in both quality of language and cognitive sophistication. Behan, Turnbull, and Spek (1997) concluded that "L1 use can both support and enhance L2 development [and function] as an effective tool for dealing with cognitively demanding content" (p. 41).

The Turnbull et al. (2011) and Behan et al. (1995, 1997) studies do not tell us that the use of the L1 expedites the L2 learning process, but they do suggest that when the 'going gets tough' in the L2, the L1 is an important cognitive tool which helps learners organize their thoughts, focus their attention, and scaffold their understanding and production of the L2. We need many more studies which attempt to connect the L1 languaging process with L2 learning.

3.3 Implications for guiding principle 1

Vygotsky argued that language mediates cognitively complex thinking, and that the first language is the most powerful tool for doing so. For this reason, students should be permitted to use their L1 for the purpose of working through complex ideas as occurred in the Behan et al. study. It may well be futile to ask students not to use their L1 when working through cognitively/emotionally complex ideas, "as they will do so covertly if not allowed to do so overtly" (Swain, Kirkpatrick, & Cummins, 2011, p. 13; see also Scott & de la Fuente, 2008). An advantage of the students doing so overtly is that the teacher can listen to what the students are saying and build immediate target-language curricular activities that integrate language and content teaching on that basis (Swain, 2011).

Permitting the students to use their L1 to language (at times when the complexity of the task makes it necessary to do so) still allows for the target language to play a key role in the activity. It is of utmost importance that the students are required to produce an end oral or written product in the target language (Fortune, 2001, p. 340; Swain, 2001, p. 59). Doing so means that the end goal of a target language product will prioritize language learning processes, such as cross-linguistic comparisons in form and meaning and target language vocabulary searches.

4. The cognition/emotion relationship

4.1 Theory

Let us continue our exploration of how Vygotsky's theoretical perspective is helpful in developing guidelines for the use of L1 and L2 in immersion classrooms. As we have seen, the most important reason is Vygotsky's understanding of language. Vygotsky did not see language as only a means by which we communicate with others, but as a means by which we communicate with ourselves, as a psychological tool. Furthermore, he saw cognition and affect not as two separate distinct processes, but rather as totally interwoven, as inseparable. Vygotsky (1934) asserted: "[t]he separation of the intellectual side of our consciousness from its affective, volitional side is one of the fundamental flaws of traditional psychology. ...thinking...is separated from all the fullness of real life, from the living motives, interests and attractions of the thinking human" (cited in Wertsch, 1985, p. 189). As DiPardo and Potter (2003) explain: "[t]he emotions develop in concert with the whole of a person's cognitive and social life, continually constructed through social interaction and progressively internalized" (p. 320). In what follows, we will observe that emotion and cognition together drive learning.

Remember that immersion students Nina and Dara remained committed to the meaning they had co-constructed in their story about a girl who was sleeping silently. We observe both cognitive and affective aspects in Nina's subsequent reflection on this episode: "[s]ome of the corrections, they seemed like they changed the story sort of, and so it wasn't really ours" (Swain & Lapkin, 2002, p. 299). In other words, Nina's efforts to explain the differences in meaning were not just mediated by her use of English, but were motivated by her desire to maintain the storyline she and Dara had established. That is to say, in Nina's use of English to mediate her explanation, it would be difficult to separate the roles of affect and cognition as they are so tightly intertwined.

Research and theory in the field of second language acquisition over the last few decades has prioritized cognition (Swain, 2011). One can find work on

affective constructs such as language anxiety, personality characteristics, willingness to communicate and so on (for a review, see Imai, 2012). However there is surprisingly little research in our field that treats cognition and affect within the same study, making the link between these constructs explicit.

In revisiting the example of Nina and Dara's arriving at a solution that combines their intellectual and emotional commitment to retaining their meaning, we are looking at the transcribed data through a Vygotskian lens, rather than the more limited way in which we originally interpreted those data. We see that the use of English represented a fusion of cognitive and emotional goals for these students. As we discuss studies in the literature relating to L1 use by learners and teachers, we will interpret already rich findings in light of this Vygotskian insight. We make a transition now to research concerning immersion teachers who established an emotional tone in their classrooms that was associated with their instructional language choices.

4.2 Research

In Ballinger and Lyster's (2011) study on student and teacher oral language use in a two-way Spanish-English immersion school, one main research question asks how two-way immersion teachers encourage their students to communicate in the target language of the minority group (Spanish). Notice how the verb 'encourage' implies affect, though the researchers did not make affect a focus of the study.

In the two-way immersion program under study, the instructional time was divided evenly between English and Spanish. At the Grade 1 level, the teachers had decided to reorganize the way the program was delivered from the 'one teacher, one language' model to a system where one teacher stayed with the class all year long; the language of instruction changed on a weekly basis. One motivation for this decision was to address "the emotional and academic needs" (p.293) of the students by remaining with only one class of students for the entire year. This objective reflects the importance of considering both affect and intellect in accommodating bilingual and monolingual students in the two-way program.

In the Ballinger and Lyster study, classroom observations (over a four-week period) involved taking extensive field notes on several aspects, including teachers' language use. The teachers were also interviewed during the study and their opinions on language use in the classroom were solicited. Through the detailed descriptions of classroom interactions, the reader can identify more and less effective uses of the instructional languages. Thus, for example, the researchers point out that one of the Grade 1 teachers almost always used Spanish in the Spanish portion of the instructional day, with the main exception being teaching new vocabulary items. That teacher also managed the classroom through Spanish. The

researchers conclude that that teacher “seemed to consistently use English for a clear purpose, and she returned to speaking Spanish as soon as she had accomplished that purpose” (p.296).

At the Grade 3 level, half the instructional time was spent with an English teacher and half with a Spanish teacher. The Grade 3 teachers were consistent in their use of Spanish during the Spanish instructional periods and English during the English parts of the program (alternating weeks were spent in each language). The researchers quote Ms. Ramírez as follows:

It’s very important that they speak Spanish to one another, but it’s a process... It’s a difficult process... because from the point of view that the children are so saturated by English, that makes it difficult [for them to speak Spanish]... Teachers must... help [the student] to construct this other language without pressure so that they feel relaxed. (p.296)

In this quote we observe the teacher’s sensitivity to the affect of her students in her concern that they feel relaxed which she believed would support the difficult cognitive process of learning a second language. Her concern is consistent with Vygotsky’s understanding that learning involves “*a unity of affective and intellectual processes*” (Vygotsky, 1987, p. 50, emphasis in original).

A major finding of the Ballinger and Lyster study was that “teachers’ own language use [of Spanish] and their expectations of students’ Spanish use were... linked to student Spanish use” (p. 303; see also Fortune, 2001). That is, when the teachers expressed clearly the expectation that one language or the other should be used, the students understood and respected that expectation. Making one’s expectations clear to learners is as much affective as it is cognitive: Ms. Ramírez formed the kind of relationship with her students that encouraged them to speak Spanish with her all the time, and they succeeded in doing so.

A second study relevant to the intertwining of cognition and emotion is the McMillan and Turnbull (2009) investigation of the language use patterns of late immersion teachers Pierre and Frank, whom we encountered in the introductory part of this article. Both were teaching in the initial year of a late French immersion (one-way) program at the Grade 7 level, and they had different beliefs about the role of the first language in the classroom. Earlier we heard Frank and Pierre’s voices. Their strongly held opinions were based on beliefs that developed over time. Frank was influenced by the way he was taught in an immersion-type program at the university level where all instruction was in French. Frank told his students and their parents at ‘Meet the Teacher Night’ that there would be uncertainty, ambiguity and frustration at the beginning of the late immersion program, but that the students would ‘figure it out’ in time.

Frank believed that the L1 did not belong in his classroom; he viewed it as a source of interference with the target language and he did no translation activities. Students were new to the school in Grade 7, and so some of Frank's beginning-of-the-school-year administrative instructions were in English. Within several weeks, however, he was speaking initially simple and then increasingly complex French to the students. By using cognates and the occasional English word, Frank managed to conduct his class almost entirely through the L2.

Frank also showed concern for the affective climate in his classroom. Although he was strict with himself about using French consistently, he understood that students sometimes needed English to complete their work. Frank initially accepted student use of English among themselves (though not with him), but had high expectations eventually for almost complete target-language use on the part of his students:

I think they have to know what my expectation is. So as long as I'm doing 100% or 99.9%, then they'll come up to meet me. Whereas I think if you brought in any little bit of English then their French is going to fall back. That's always been my philosophy. (p. 33)

Frank's notion of the students coming up "to meet" him indicates that he expects an emotional as well as cognitive response from his students who want to meet his expectation.

In contrast to Frank, at the beginning of the late immersion program, Pierre used a lot of translation initially at least, estimating that during the first two months of the school year, he used 30 to 40 percent French, moving to 80 to 90 percent in November. Pierre was bilingual, used to natural code-switching among fellow community members, and was trained as a teacher of francophone students. Pierre disliked ambiguity and wanted to avoid student frustration; hence his deliberate decision to transition gradually from considerable to very little use of English in his classroom:

It's just in September there are a lot of people who think 'Oh, completely in French...' — it's impossible. You can do it, but it's very frustrating for the students, so for me, I like to show them a base, we do a lot of repetition, then every day I incorporate new words then eventually we're completely in French. (McMillan & Turnbull, 2009, p. 25)

In this quote, Pierre is acknowledging his wish to minimize student frustration in the early stages of their late immersion program. He also states: "If I were a student, how would I want to learn? With as little stress as possible..." (p. 29).

Frank and Pierre had both internalized their beliefs over time and had been influenced by their backgrounds and schooling experiences. Vygotsky held that the

life histories (ontogenesis) of individuals were key: because of Frank and Pierre's dissimilar experiences in the social world, they have internalized different beliefs. Those beliefs mediate their behavior. Therefore, the information made available in McMillan and Turnbull (2009) about the life histories of the two focal teachers is important in understanding their approaches to teaching in late immersion and their beliefs about L1 use. Importantly, for both Frank and Pierre, their use of L1 and L2 was motivated by perspectives that blended cognition and affect.

4.3 Implications for guiding principle 2

Argue, Lapkin, and Swain (1990) showed in their videotaped presentation of effective immersion teaching (at the Grade 8 level) the importance of creating a sense of security. Clear expectations and a set of flexible 'rules' contribute to the collective sense of security. Vygotsky would posit that a confident (Mahn & John-Steiner, 2002, p. 46), secure learning community is conducive to learning. Both Frank and Pierre, though holding different beliefs about the role of L1 in the immersion classroom, established a good rapport with their students.

Reflecting on Frank's statement about his expectations provides us with an important principle of good teaching and good immersion teaching, including agreeing on classroom practices around the use of L1. Making expectations clear to students creates a comfort level in the classroom relating to when, how much and for what purposes the L1 is to be used. Clear expectations are also relevant to establishing a target-language environment in the classroom. As we saw in the Ballinger and Lyster (2011) study, routines can be established via the target language (Littlewood & Yu, 2009). Practices relating to the use of the L1 can be cooperatively negotiated between the teacher and his/her students (Levine, 2011). Negotiation involves affect because involving students in developing classroom procedures means that student input is important to decision making in the classroom. Taking students' views into consideration in building a classroom community is part of creating zones of proximal development, which are discussed in the next section.

5. Zone of proximal development (ZPD)

5.1 Theory

At first glance, the name of the concept, zone of proximal development (ZPD) can mislead the reader to think of the ZPD as a space (zone=space). However, Swain, Kinnear and Steinman (2011) suggest that the ZPD is more productively viewed

as an activity (p. 20). If this is so, then rather than talking about working within a ZPD, the more appropriate approach is to think of co-constructing knowledge during a ZPD. The authors define a ZPD as follows: a ZPD is “an interaction during which, through mediation, an individual achieves more than she could have achieved if she had been working alone” (p. 153). Such activity may occur for example, when learners work in pairs or during teacher-led instruction. We saw an example of a ZPD earlier when Nina and Dara languaged about the difference in meaning between part of their written story and the teacher’s reformulation of it. During their collective ZPD, “intellect and affect are fused in a unified whole” (Vygotsky, 1987, p. 373).

A construct closely associated with the ZPD is scaffolding⁸ where a more expert learner or a teacher helps another person to go beyond what he/she can do alone in, for example, linguistic expression, conceptual understanding, or performing an action. An example from Swain, Kinnear and Steinman (2011, p. 26) illustrates a ZPD during which scaffolding occurs. The context is a Grade 4 French immersion class whose teacher had just gone into the hallway to confer with the principal. Prior to her leaving, the class had been behaving badly and the teacher had threatened to tell the principal about their bad behavior. Brock, one of the students, initiated this ZPD during which the participating students internalized a correct French structure. Notice that Brock started the interaction with an emotion-laden L1 utterance. The function of the L1 here has been referred to in the literature as ‘off-task’ (e.g., Swain & Lapkin, 2000); in fact we would be more inclined today to label the function ‘interpersonal’ as it involves letting off steam, or in-group talk (Tarone & Swain, 1995). After Brock’s kick-start, the ‘French only’ rule of the classroom came into effect and Sarah moved into French:

“She’s telling on us,” Brock whispers to the class.

“*Elle raconte sur nous.*” [Sarah] said, not thinking about [her] French.

“*Elle dénonce de nous,*” worries Maggie.

“*Elle nous dénonce!*” cries Kyle.

“*Elle nous dénonce! Elle nous dénonce!*” cries everyone in unison.

Sarah’s *elle raconte sur nous* was modelled directly on the English ‘to tell on someone.’ Maggie generated the appropriate verb in the next turn, *dénoncer*, but used an incorrect prepositional structure (*de nous*) following the verb. Kyle was correct in the next turn when he exclaimed *elle nous dénonce!*, and the class repeated the correct structure for the intended meaning triumphantly. The learners here created a ZPD during which several of them scaffolded each other’s language such that at the end, the group showed that they had internalized the well-formed structure (Swain, Kinnear, & Steinman, 2011, p. 26).

5.2 Research

How might a ZPD be instantiated during a teacher-fronted lesson? Let us consider the case of Leonard, who taught in a middle immersion program beginning at Grade 5. In that program, half the day was devoted to learning in French for half the curricular subjects.

During the late 80s, Hart, Lapkin and Swain (1988) conducted a study involving 26 Grade 8 immersion classrooms in four school districts in the Greater Toronto Area. From among the classes that performed best on a multi-skills French test package, the researchers selected the four top-scoring classes. The teachers of those classes, including Leonard, agreed to be videotaped the following year.

The videotaping occurred over a full week during which time observers also took extensive notes. We conducted one interview with Leonard, and the observers regularly talked to him during breaks or after school during the observation period. Lessons integrating language (relevant vocabulary, pronominal verbs and the passive voice) and science content (the greenhouse effect) provided the data that we analyzed in some detail (Lapkin & Swain, 1996); in fact the specific lesson in question was spread over two instructional days for about 20 minutes each day.

Leonard was an experienced teacher, having taught multiple grades in both core French as a second language (where the target language is the subject of instruction usually delivered in short daily periods) and French immersion programs. At the time of the videotaping, he had taught that particular Grade 8 class since the students had been in Grade 5, so had a three- to four-year history with them. He was a caring teacher and made a habit of eating lunch with his students in the classroom so that they could converse informally in French about everyday topics during this relaxing time. The positive relationship he enjoyed with his students was evident to the observer; discipline, hard work, humour and affection were all clearly present in the classroom interactions. We will see below that the shared history of the students and their teacher, the affective climate that prevailed in the classroom, and the way in which the teacher clearly built on knowledge that had been co-constructed earlier that month all contributed to the ZPD created jointly. As Holzman (2009) writes, “[r]ecognizing that learning is emotional and reconceptualising the zpd to incorporate the affective dimension is a welcome reform...” (p. 47). And as Wells (1999, p. 331) suggests: [l]earning in the ZPD involves all aspects of the learner — acting, thinking, feeling.”

One of the teacher’s goals during this ZPD was to teach a complex syntactic structure. The structure in English is ‘we are advised [by someone to do something]’; since the passive voice is not frequent in French and indeed tends to be avoided (Connors & Ouellette, 1996), one strategy for translating it is to begin an active-voice sentence with the pronoun ‘one’ or *on*. As we will see, the structure

that Leonard wants to teach his students is *on nous conseille de [faire quelque chose]*, and he does so by scaffolding the interaction using a sentence fragment in English, his students' L1.

At the time we were analyzing the data, we did not count or quantify Leonard's use of English (L1) in class because it was so rare. The few exceptions are consistent with the literature on functions of first language use by the teacher; for example, vocabulary and grammar instruction can draw on the students' L1, in this case English, which mediates learning (e.g., Polio & Duff, 1994; Hall & Cook, 2012). Consider Leonard's limited use of translation in the following excerpt:

	Zpd Interaction	Translation
Leonard	Nous avons étudié la voix passive. C'est vrai? Comment est-ce qu'on dirait 'we are advised'? Vous vous souvenez: La voix passive qu'on emploie pour exprimer des expressions anglaises qui sont impossibles en français.	We studied the passive voice. Right? How would one say 'we are advised'? You remember: the passive voice that one uses to say some English expressions that are impossible in French.
Carrie	On est avisé?	We are advised [incorrect lexical item]
Leonard	Non, le verbe n'est pas 'adviser'.	No, the verb is not 'adviser'.
Jim	On est conseillé?	We are advised? [correct lexical item]
Leonard	Mais ce n'est pas correct. 'Conseiller' est le bon verbe. Avec 'on', on emploie le verbe...	But that isn't correct. 'Conseiller' is the right verb. With 'one', you use the verb...
Margie	On conseille?	One advises?
Leonard	Oui, 'we are advised'? Quelqu'un?	Yes, 'we are advised'? Someone?
George	On nous conseille.	One advises us/we are advised.
Leonard	On nous conseille et il faut une petite preposition.... C'est 'conseiller à quelqu'un...'	We are advised and you need a little preposition. It's to advise someone...
Jim	de faire	to do
Leonard	De faire quelque chose.	To do something.

This is an excellent example of the selective use of a small amount of English to point out that French tries to avoid the passive by using an active-voice construction with the verb *conseiller*. The second time Leonard uses the English sentence fragment 'we are advised', he emphasizes the 'we' so that the students will realize that another element (*nous*) is required in the French construction. By the end of this excerpt, Leonard has taught the two-place verb construction⁹ (*conseiller à quelqu'un de faire quelque chose*); he writes it on the blackboard and eventually the students include it in their notebooks.

This excerpt from the transcripts of Leonard's classroom interactions with the students constitutes an illustrative case of scaffolding in the target language. The complete lesson involves teaching scientific content about the greenhouse effect and about the lexis and syntax of French using metalinguistic concepts such as prepositions and passive voice. The ZPD Leonard and his students enacted was part of the process of internalizing a complex grammatical structure. Later the structure was used in context as the students discussed and wrote about the greenhouse effect. The sentence co-constructed by Leonard and his students was: *Les médecins nous conseillent de mettre de l'écran solaire pour protéger contre le cancer de la peau* (We are advised by doctors to apply sunscreen to protect us from skin cancer.¹⁰). The context for this is the thinning ozone layer associated with the greenhouse effect.

5.3 Implications for guiding principle 3

During a ZPD, one is always building from a known linguistic structure or concept, complexifying in some way the language or concept. Leonard initiated his lesson on the greenhouse effect by referring his students to a previous lesson focusing on the passive voice in French. Having reminded them of that lesson, Leonard gave a short (three-word) prompt in the L1, 'we are advised' and the lesson continued until the students had reconstructed the relatively complex syntactic structure of the two-place verb, *conseiller*. He used the student's L1 to provide a cross-linguistic comparison (see Cummins, 2007) of an English passive verb and the French equivalent using the impersonal *on*. His limited use of a short English sentence fragment constituted "planned use of the L1" (Swain, Kirkpatrick, & Cummins, 2011, p. 2). Furthermore, with Leonard's mediation, the students achieved more than they could have without it.

6. Conclusion

Our exploration of several of Vygotsky's theoretical insights concerning mediation, the relationship of cognition and emotion, and the ZPD have provided us with a basis for suggesting principled uses of the L1 and target language in immersion programs. The theory and research reviewed in this article yielded three main guiding principles. The first one focused on students, the second on the relationships between teachers and students, and the third focused on the teacher:

1. Students should be permitted to use their L1 during collaborative dialogue or private speech in order to mediate their understanding and generation of

complex ideas (linguaging) as they prepare to produce an end product (oral or written) in the target language. However, as student proficiency in the L2 increases, students should increasingly be encouraged to language using the L2 as a mediating tool. Further, when new and complex material is introduced within and across grades, students should again be allowed to make use initially of their L1 to language, that is, to mediate their thinking.

2. Teachers need to set clear expectations about L1/L2 use in order to create a secure classroom environment in which students are able to engage in interaction with confidence. For younger children, this goal can be accomplished through a teacher's consistent use of the L1 and target language. For older children, this goal can be further accomplished through teacher/student negotiation of a set of classroom practices relating to the use of the L1 and target language. Successful realization of this goal with older students will involve making beliefs explicit about the cognitive/emotive interface in language use and language learning, leading to a constructive climate of co-operation in the classroom.
3. For teachers, the target language always has priority because a policy goal of immersion education is to achieve a high level of proficiency in the target language. Use of the L1 should be purposeful, not random. Use of the L1 to illustrate cross-linguistic comparisons or to provide the meaning of abstract vocabulary items can mediate L2 development during ZPD activity in the target language.

As we have seen, research conducted within immersion programs has identified both the frequency and functions of L1 and target language use by students and teachers. The value in this research is that it helps us identify those contexts in which the use of the target language is maximized in order to reconstruct them in the future. Conversely, in preparation for activities where the L1 is frequently used, instructional materials can be developed which create optimal conditions for L2 use. For example, Fortune (2008) found that most of the time learners express emotions through their L1; thus a practical implication is that teachers need to teach learners how to express their feelings in the target language.

However, we need to extend the research conducted in immersion classes. With one possible exception (Behan et al., 1995, 1997), no research has traced the frequency and functions of L1 use by students or by teachers to target language proficiency outcomes. It is clear that the L1 is used for linguaging both cognition and affect, but what is the impact of this L1 linguaging on L2 development? We need both qualitative and quantitative studies, descriptive and experimental studies that focus on this issue. In the meantime, we hope that the theoretically-based

Guiding Principle 1 reassures teachers that students' L1 languaging may be an essential, beneficial and efficient route to L2 development.

We have discussed the importance of setting clear expectations in Guiding Principle 2. Teachers' consistent practices related to L1/L2 use are key. Understanding current practices will depend on research related to both teacher and learner beliefs. Cognition and affect are bound together in our belief systems and are based on our individual life histories. Beliefs about language learning and language use will mediate the negotiations that need to take place in immersion classrooms among older students around language use practices. Levine (2011) argues that the practices need to be made "accessible and operational to learners and teachers in the classroom" (p. 128). He encourages "critical reflection about human communication in general and classroom language use in particular" (p. 132) and suggests a number of activities designed to promote this type of reflection.

We have seen that effective teachers recognize that learning a second language is demanding. Vygotsky said that learning does not occur without a struggle. For the immersion teacher, making a commitment to use the target language as much as possible will also sometimes entail a cognitive and emotional struggle. As insiders, teachers, through action research, can explore their own language use practices relative to Guiding Principle 3, and try out different strategies to enhance their own target language use.

Notes

* As we were writing this paper, we consulted several individuals who are both teacher educators and immersion teachers: Stephanie Arnott, Wendy Carr, Susan Howell, Callie Mady, and Reed Thomas. We received feedback on the first draft of this paper from: the editors of this volume, Diane Tedick and Siv Björklund, and Lindsay Brooks, Marina Engleking, Yasuhiro Imai, Penny Kinnear, Roy Lyster, Mitsuyo Sakamoto, Neomy Storch, Linda Steinman and Miles Turnbull. Finally, we presented the Guiding Principles to SCOLAR, our SCT study group, for discussion. We thank each of these individuals for their thoughtful and thorough feedback.

1. Early immersion populations in Canada are increasingly diverse linguistically and ethnically; see Swain and Lapkin, 2005. In that article, we used the term L1s; however, in the present article, we use the term L1 to represent a single L1 or multiple L1s. In other immersion contexts, there may be multiple L2s (Björklund, Mård-Miettinen, & Mäenpää, 2012).
2. In the last decade there has been an explosion of research examining the issue of "own-language use" (Hall & Cook, 2012), but most of that research has been conducted in second and foreign language contexts with adults, not in immersion contexts.
3. A third goal is to develop intercultural understanding, to which languaging is also relevant; this goal is not addressed here due to lack of space.

4. Microgenesis is “[t]he processes involved in the formation and unfolding of a psychological process, for example, the internalization of the meaning of a word in a specific context” (Swain, Kinnear & Steinman, 2011, p. 152).
5. As rough comparisons (because the units of analysis and the contexts are different) to the Swain and Lapkin findings, Fortune (2001) followed four students in a Grade 5 one-way immersion classroom (two English L1, one Spanish L1, and one bilingual), and found that during Spanish instructional time, the students used Spanish 33% of the time. Potowski (2004) followed four students in a Grade 5 two-way immersion classroom (two Spanish L1 and two English L1), and found that their overall use of Spanish during Spanish instructional time was 56%.
6. In other contexts, such as foreign and second language classes usually for adults, the taxonomies of functions of L1 use by learners are similar to those found in immersion classes (e.g., Antón & DiCamilla, 1998; Brooks & Donato, 1994; De Guerrero & Villamil, 1994; Liebscher & Dailey-O’Cain, 2005; Scott & de la Fuente, 2008; Storch & Wigglesworth, 2003). For example, a recent study by DiCamilla and Antón (2012) involved 11 pairs of Spanish foreign language learners at two levels of L2 proficiency at the university level who wrote a text collaboratively. Their collaborative dialogues were coded by language and function. Their taxonomy identified four main functions of the L1 as follows (p. 171): content (what to say), language (how to say it), task management, and interpersonal relations, categories which overlap with those of Swain and Lapkin (2000).
7. These notes contain some grammatical errors.
8. Scaffolding is a controversial metaphor (see Lantolf & Thorne, 2006); Swain, Kinnear and Steinman (2011, p. 26) cite Wood et al. (1976, p. 90) who define scaffolding as “a kind of process that enables a child or novice to solve a problem... which would be beyond his unassisted efforts” to show the similarity between this definition of scaffolding to the Vygotskian ZPD.
9. *Conseiller* usually takes two objects, one indirect and one direct.
10. The more idiomatic translation is: Doctors advise us to apply sunscreen to protect us from skin cancer. However, in the context of Leonard’s lesson referred to in this article, the passive English sentence fragment ‘we are advised’ was what he used to contrast with the French structure.

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Résumé

Une question qui persiste dans le domaine de l'immersion touche à l'utilisation appropriée de la langue première (L1) dans les classes d'immersion qu'elles soient unidirectionnelles ou bidirectionnelles. Dans cet article, nous discuterons de plusieurs concepts clés (la médiation, « languaging », la relation entre cognition et émotion, la zone proximale de développement) qui sont intégraux à la perspective socioculturelle Vygotskienne basée sur la théorie des fonctions psychiques dans l'apprentissage et l'enseignement de la langue seconde. Chaque discussion d'un concept théorique sera suivie d'une revue d'une ou de plusieurs recherches clés dans des contextes d'immersion unidirectionnelle ou bidirectionnelle. Nous en mettrons en valeur les conclusions ou nous les réinterpréterons à la lumière des concepts de Vygotsky. La théorie et la recherche aboutissent à trois principes directeurs importants ayant pour but d'aider les enseignants à prendre des décisions quant à leurs choix de langue en classe d'immersion.

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