ESL Strategy Use and Instruction at the Elementary School Level: A Mixed Methods Investigation

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Abstract

In Québec, Canada, an education reform instigated a program which makes language learning strategies integral to the ESL curriculum and requires teachers to teach strategies and to assess students' strategy use. Nevertheless, to date, few studies have investigated children's strategy use and, even fewer, the effects of strategy instruction on success in ESL amongst children. The assessment of strategies among children also offers a particular challenge to researchers, as traditional assessment methods are not always applicable. The research questions for this mixed methods study aim to investigate children's learning strategy use and to assess the effects of instruction on student strategy use. The study will focus on the impact of strategy use on oral interaction tasks in an authentic context. The setting is the elementary ESL classroom in Québec.

The study is comprised of two parts; a) a general survey study and b) a case study. The survey study was carried out among participants from 6 different classes of Québécois 6th graders (n=138) with the aim of identifying and describing general patterns of strategy use among them. The results showed that the children, as a whole, used mainly affective and compensatory categories of strategies, such as asking for help and risk-taking. There were also significant effects for proficiency level, with the high proficiency learners reporting using more affective and cognitive strategies than the low proficiency learners; motivation (liking English) was also a significant variable that influenced the children's overall strategy use.

For the case study, a sub-group of the participants from the survey study was used. The goals were to investigate the effects of instruction on students' strategy use in the ESL class, and to assess the impact of their strategy use on success in ESL oral interaction tasks. Two intact, similar groups of participants from two different schools served as a treatment group (n=27) and a control group (n=26) in the quasi-experimental part of the research.

Care was maintained to apply rigorous assessment methods to the data collection and analysis of this study. Quantitative and qualitative data (e.g., questionnaires and videotapes of classroom proceedings) provided seven sources of evidence to support the findings of this investigation, which lasted four months. Innovative techniques were

devised for teaching and assessing strategies among children. Assessment techniques took into account the nature of children, and the context in which these participants were studying English, especially with regard to ongoing assessment for learning, as advocated by the Québec Ministry of Education.

Findings of this study indicate that: a) strategy awareness and use were enhanced following instruction; b) the strategy intervention group showed statistically significant gains on the oral interaction measure from pre- to post-test; and c) the strategy intervention group outperformed the control group in a planned comparison statistical analysis of post-test oral interaction results.

This study has implications for the fields of research methods, language teaching pedagogy, learning strategies, strategy instruction, and strategy assessment, among children who are learning a second or foreign language. The literature in these areas among children who study ESL as a required school subject is scant and this research begins to fill the gap.

Résumé

Au Québec (Canada), une réforme éducative a mis en place un programme faisant des stratégies d'apprentissage une partie intégrante du curriculum d'anglais, langue seconde (ALS), et demandant aux enseignants d'enseigner des stratégies et d'évaluer l'utilisation de ces dernières. Cependant, à ce jour, peu d'études ont investigué l'utilisation de stratégies par les enfants, et encore moins, les effets de l'enseignement de stratégies sur les succès des élèves en ALS. De plus, l'évaluation de l'utilisation de stratégies chez les enfants offre un défi particulier aux chercheurs en ce que les méthodes d'évaluation traditionnelles ne sont pas toujours applicables. Cette étude se concentrera sur l'impact de l'utilisation de stratégies sur des tâches en interaction orale dans un contexte authentique, soit la classe d'ALS du primaire au Québec.

Cette étude se compose de deux parties; a) un sondage général d'étude et, b) une étude de cas. Le sondage d'étude s'est déroulé auprès de participants de six classes différentes d'élèves de la sixième année du Québec, n=138, avec l'objectif d'identifier et de décrire des patrons généraux dans l'utilisation de stratégies chez ces élèves. Les résultats ont démontré que dans l'ensemble, les enfants utilisaient surtout les catégories de stratégies affectives et compensatoires, comme par exemples : demander de l'aide ou prendre des risques. Le sondage d'étude a aussi produit des effets significatifs au niveau de la compétence, les élèves de compétence forte rapportant utiliser davantage de stratégies affectives et cognitives que les élèves de faible compétence, et la motivation (aimer l'anglais) était une variable signifiante qui a influencé l'utilisation des stratégies en général.

En ce qui concerne l'étude de cas, un sous groupe de participants provenant du sondage d'étude a été utilisé, et les objectifs étaient d'investiguer les effets de l'enseignement de l'utilisation de stratégies dans la classe d'ALS ainsi que d'évaluer l'impact de l'utilisation des stratégies sur le succès des tâches d'interaction orale en ALS. Deux groupes entiers, composés de participants similaires et qui provenaient de deux écoles différentes, ont servi de groupe témoin (n=27) et de groupe contrôle (n=26) dans la partie quasi-expérimentale de la recherche.

Un souci a été maintenu afin d'appliquer des méthodes d'évaluation rigoureuses à la collecte de données et à l'analyse de cette étude. Des données quantitatives et qualitatives (par exemple, des questionnaires et des enregistrements vidéo de démarche en classe) ont fourni sept sources d'évidence soutenant les conclusions de cette enquête qui a duré quatre mois. Des techniques innovatrices ont été conçues pour enseigner et évaluer les stratégies des enfants. Ces techniques d'évaluation prenaient en compte la nature des enfants et le contexte dans lequel ces participants étudiaient l'anglais, particulièrement au regard du principe de l'évaluation comme soutien à l'apprentissage prôné par le Ministère de l'Éducation, du Loisir et du Sport (MELS).

Les conclusions de cette étude indiquent que : a) la connaissance de stratégies et son utilisation ont été rehaussées à la suite de l'enseignement; b) le groupe d'intervention de stratégies ont démontré des gains statistiquement signifiants au niveau de la mesure en interaction orale du pré-test au post-test; et c) le groupe qui a reçu l'enseignement de stratégies était plus performant que le groupe contrôle dans une analyse planifiée de comparaison statistique des résultats du post-test de l'interaction orale.

Cette étude a des conséquences sur les domaines suivants : les méthodes de recherche, la pédagogie de l'enseignement des langues, les stratégies d'apprentissage, l'enseignement des stratégies ainsi que l'évaluation de stratégies chez les enfants qui apprennent une langue seconde ou étrangère.

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"No man is an island entire of itself;
every man is a piece of the continent,
a part of the main..."
Meditation XVII, John Donne

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Table of Contents

List of Tables

List of Figures

List of Abbreviations and Acronyms

AFL	Assessment for learning
CBA	Classroom-based assessment
ESL	English as a second language
EFL	English as a foreign language
FL	Foreign language
FSL	French as a second language
LES	Learning and evaluation situation
L2	Second language
L3	Third language
MALQ	Metacognitive Awareness Listening Questionnaire
MELS	Ministère de l'Éducation, du Loisir et du Sport
MM	Mixed methods
RSQ	Reading Strategy Questionnaire
SI	Strategy intervention/Strategy instruction
S^2R	Strategic Self-Regulation
SILL	Strategy Inventory of Language Learning
TESL	Teaching English as a second language

Chapter 1: Introduction

Statement of Inquiry

The theme of this dissertation is looking at children's strategies through the lens of an authentic context. It will examine strategy use and strategy instruction, and their effects on ESL success among children in the context of the ESL elementary classroom. Research suggests that learning strategies, defined as "… steps or actions that learners use with some degree of consciousness to enhance their own learning" (Yamamori, Isoda, Hiromori, & Oxford, 2003, p. 381), influence students' success in learning a second language (O'Malley & Chamot, 1990; Oxford, 1990; Cohen, 1998; Cohen & Weaver, 2005; Oxford, 2011). For more than two decades, nonetheless, researchers have consistently affirmed that not all learners use strategies effectively, and that low proficiency learners often have difficulty matching appropriate strategies to task demands, thereby leading to ineffective strategy use and disappointing outcomes (Abraham, & Vann, 1987; Chamot & El-Dinary, 1999; Vann & Abraham, 1990; Yamamori, Isoda, Hiromori, & Oxford, 2003). If some learners use strategies effectively, while others do not, a logical question would therefore be how to teach all categories of learners to apply strategies in an effective way so that their learning is enhanced. This raises the issue of the teachability of strategies, a topic which is much debated, with some researchers claiming positive results (Cohen, 1998; Lee & Oxford, 2008; Nakatani, 2005; Naughton, 2006; Rost & Ross,1991), and others questioning the benefits of devoting time to teaching strategies in an ESL classroom (Dörnyei, 2005; Rees-Miller, 1993; Rossiter, 2003).

In order to investigate these topics, it is imperative that reliable ways be found to assess strategies and their effects on learning outcomes. The problem of assessing strategies is a complex one, however, because "… strategies are, for the most part, not directly observable since they refer to internal, mental processes, and researchers must rely on learner accounts as indirect indicators of these mental processes" (White, Schramm, & Chamot, 2007, p. 93). This has led researchers and teachers to employ various self-report measures, such as questionnaires and interviews, for identifying the strategies learners use. Nevertheless, as with most research involving self-report of human behaviours or mental processes, learners' reporting and

mental recall might not be accurate (Cohen, 1998). In order to counter the problem associated with mental recall, a few studies have employed task-based strategy assessment. Oxford, Cho, Leung and Kim (2004), who conducted one of the few existing studies using this methodology, referred to task-based strategy assessment as a "new direction in strategy assessment" (p. 2). They state that students may use different strategies to accomplish a particular task and suggested that "For this reason, task-based strategy assessment seeks to anchor strategy use within the context of a particular task, thus allowing for more detailed, more contextualized analysis of L2 strategy use" (p. 2). This would suggest that task-based strategy assessment could be very suitable for assessing strategy use and the effects of strategy instruction on learning outcomes in the authentic context of the ESL classroom.

Context

The Québec curriculum. The Québec Ministry of Education carried out a major reform in education at the beginning of the 21st century. This reform resulted in the implementation of the Programme de formation de l'école québécoise (2001), hereafter referred to as the Québec Education Program. Strategies are a mandatory component of this program, which requires that they be taught and assessed. The Québec Education Program, a competency-based program, defines competency as "… the capacity to carry out activities or tasks by drawing on a variety of resources, including knowledge, skills, strategies, techniques, attitudes, and perceptions" (*Policy on the Evaluation of Learning*, 2003, p. 2). In the area of ESL, the program is designed to help students use strategies in order to develop three ESL competencies: a) to interact orally in English, b) to reinvest understanding of oral and written texts in English, and c) to write texts in English. In the section explaining the meaning of the first competency, to interact orally in English, it is stated that the students "… are immersed in the dynamics of oral interaction … As they develop the competency, students spontaneously use functional language, compensatory and learning strategies, and visual and linguistic resources (Québec Education Program, p. 100). In the meaning of the second competency, to reinvest understanding of oral and written texts it is said that this competency enables students to "… make use of various types of texts … in a dynamic way. They develop appropriate strategies for effective listening

and reading; they learn how to derive meaning from oral and written texts…; and they show their understanding in meaningful tasks" (p. 102). This implies that students apply knowledge gleaned from texts to perform tasks, such as enacting a skit using information and vocabulary from the text they listened to or read. The third competency, to write texts, refers to a writing process that enables students to write for significant purposes. With regard to this writing process the program states, "To develop this competency, students prepare to write texts using strategies, compose texts using strategies and revise their texts using strategies" (p. 104). Each competency has "key features," all of which involve the use of strategies. For instance, the key features of the first competency are: "The student takes the initiative to transmit oral messages using strategies. The student reacts to messages using strategies. The student maintains oral interaction using strategies" (p. 101). In addition, the program's evaluation components and the end-of-cycle outcomes highlight use of strategies. This program identifies 18 compensatory and learning strategies to be taught explicitly. Examples are: asking for help or clarification; self-monitoring, which implies checking and adjusting one's ongoing performance; self-evaluation, which means reflecting on what one has learned; planning, which signifies thinking about a task and its requirements and preparing accordingly; and practicing, which includes repeating and rehearsing. To assess learning, the program advocates ongoing classroom-based assessment of children's development in their ability to use their L2, English, to carry out tasks, using strategies.

Although Québec's educational policy-makers are aware of the importance of ESL learning strategies and of teaching these strategies, a great need exists for studies of young children's L2 learning strategies. The decision taken by the Québec Ministry of Education to integrate strategies into the elementary ESL curriculum was based on research conducted with adult and adolescent learners (Cohen, 1998; Cyr, 1995; O'Malley & Chamot, 1990; Oxford, 1990). To date, only two studies identifying strategy use have been conducted with the population of Québec children who are taught with this curriculum, namely the two studies I conducted for my master's thesis (Gunning, 1997); to my knowledge, no research has been done concerning task-based, classroom-based assessment of children's language learning

strategy use, or the effects of strategy instruction on success on ESL tasks among this population.

My experience in the Québec context. In accordance with the Québec Education Program, I have contributed to developing ministry approved textbook materials that integrate strategy training in ESL teaching at the elementary level (Gunning, Lalonde, Schinck, & Watts, 2000, 2001, 2002, 2003; Gunning, Lalonde, & Watts, 2006, 2007). In addition to these teaching materials, I also co-authored a teacher-training module (Brook, Gunning, Lahey, & Lassire, 2002), sponsored by the Québec Ministry of Education, and have given workshops in various regions of the province to help teachers understand how to integrate strategy instruction into their ESL teaching. My research endeavours for my master's thesis produced a questionnaire, The Children's SILL, which was the first adaptation for children of Oxford's Strategy Inventory of Language Learning (SILL), the most widely used strategy questionnaire across the world (Chamot, 2004). The Children's SILL has now been translated into four languages (English, French, Chinese and Spanish) and adapted for use in other international contexts (Jimenez-Garrido, 2010; Lan, 2004; Lan & Oxford, 2003).

What Led Me To This Research?

The topic of children's learning strategies in the ESL classroom has captivated my interest for many years, even prior to my MA study in 1997, and my passion for this field has grown through my long experience teaching ESL at the elementary level. In addition, my experience as a pre-service teacher trainer at the university level, coupled with my profound interest in enhancing language teaching methodology, especially for children in the public school system who are obliged to take English as a second language as part of their required curriculum, led me to research methods of how to help learners help themselves. To sum up, my work as a researcher of strategies among children and my experience as a teacher and teacher trainer are the motivating factors that led me to this research. I, personally, have used the materials previously mentioned in my career as an elementary school ESL teacher to implement strategy instruction in my teaching. The anecdotal

successes of my students led me to probe deeper for studies related to children's L2 strategy use, and the impact of strategy training on their achievement, but research on this topic with children is scant. Moon (2005) highlights some concerns expressed by teachers at a seminar in Madrid sceptical about implementing strategy instruction in their primary classroom, such as "Parents' attidudes – wasting their children's time" and "Takes time/Lack of time to finish work" (p. 174). It is reasonable to believe that a lack of adequate research in the field can contribute to doubt on the part of practitioners as to the effectiveness of integrating strategy instruction into the curriculum, so the need for such research is profound.

Although, as mentioned earlier, the Québec Education Program prescribes the teaching of strategies, some ESL teachers do not integrate strategy instruction into their teaching for various reasons. As with the Madrid sample cited above (Moon, 2005), some Québec teachers claim that they do not have enough time to cover the ESL content in the curriculum, and they see strategy instruction as an additional challenge. On the other hand, others simply have not had enough training in how to conduct strategy instruction as this may not have been part of their pre-service preparation, and time is often limited for in-service training. The Québec reform in education represented a major change for teachers as it required them to shift from an objective-based curriculum (Québec Education Program, 1997) to a competency-based one (Programme de formation de l'école québécoise, 2001), so a great deal of energy has been devoted to facilitating this transition. Strategy instruction represents another new element to integrate, and one that has not been tested with the target population. If strategy instruction is perceived as taking time away from ESL instruction, it is understandable that teachers would resist it, given that the majority of Québec elementary pupils receive only 60 to 90 minutes of ESL instruction per week. Conversely, my experience conducting strategy instruction amongst children of this population convinced me that ESL teaching which integrates strategy instruction conducted in the L2 helps to maximize the learning because it equips the children with strategies that they can draw upon to function in English even when their vocabulary is limited and, as they persevere in English and use available resources to solve

their linguistic problems, they gain in fluency and accuracy. Nevertheless, in order to investigate this objectively, my theory and strategy instruction procedures needed to be tested empirically, and this required a case study with one class. Seeing that no study identifying Québec children's strategies had been done since my 1997 study, a broad survey study was also needed to describe the children's strategy use.

The Study

This study is divided in two parts. Part one is a descriptive survey study of the learning strategy use of students in six different classes of learners at the grade 6 level, who study ESL as part of the required elementary curriculum in Québec. Part two, which involves a sub-group of the participants from the survey study, examines the effects of strategy instruction intervention on strategy use and the impact of strategy use on ESL achievement in the classroom.

Grade 6 was chosen as that level represents the end of elementary school in Québec, and at the time of the study the participants had been exposed to the Programme de formation de l'école québécoise (2001), which integrates the teaching of strategies across the entire curriculum, for several years. Some homeroom teachers who use this curriculum integrate strategy instruction into their teaching of various subject matters, but others do not. One could speculate that if the students had been exposed to some sort of implicit or explicit strategy instruction at any point during their schooling from K-6, there might possibly have been some transfer to ESL, but L1 to L2 transfer of strategies is not the objective of this investigation. Whether this transfer occurred or not, I felt that it was important to get a general snapshot of the profile of students' actual strategy use in ESL because descriptive research on strategies could inform instructional strategies (Chamot, 2008). This motivated Part 1 of this investigation, the survey study.

While acknowledging the benefits of descriptive strategy research, given my interest in language teaching pedagogy I felt that the field also needed to go beyond the descriptive and to include a segment of strategy

intervention research, which, as Chamot (2008) points out, "[o]ver the years ... has taken a backseat compared with descriptive strategy research" (p. 275). In her call for future research, Chamot affirms, "It is difficult to understand why this should have been the case, given that pedagogical application has always been stated as the major driving purpose for research in this area" (p. 275). In accordance with this call, Part 2 of this study deals with strategy instruction intervention.

In order to investigate the effects of integrating strategy instruction into the curriculum, a case study including a quasi-experimental component was designed. For the case study, two intact classes of 6th graders were secured, an experimental group that received strategy instruction and a control group that did not. As will be discussed in Chapter 3, attention was given to ensuring that the classes were as similar as can be expected in an authentic context in all respects; that is, to control for variables that could affect outcomes, other than the strategy instruction. I was also interested in developing an approach that would make strategy instruction efficient and accessible to ESL teachers. To do this, I thought it necessary to involve the teacher of the experimental group in the planning of the research, similar to Yin's (2009) social interaction theory, whereby the practitioner (teacher) and the researcher would work hand-in-hand to identify a problem that needed to be addressed, and to develop lesson plans integrating strategies that would address the problem, which will be described further in Chapter 3. The result of this collaboration was that we integrated the strategy instruction into her regular curriculum and I observed and videotaped the implementation over the course of the study. It was expected that the studies described above would help fulfil the research objectives outlined below.

Research Objectives

Given the dearth of research in the area of children's L2 strategies, and the fact that educators in Québec are required to integrate strategy training and assessment into their teaching of English as a second language, this study aims at addressing the following research questions: 1.What are the patterns of strategy use amongst children enrolled in the Québec elementary ESL

program at the 6th grade level? 2. What are the effects of strategy instruction on student strategy use? 3. What is the relationship between student strategy use and achievement as measured by success on ESL tasks? In order to adequately answer these questions, a mixed methods design, using an adapted version of the triangulation design, convergence model, developed by Creswell and Plano-Clark (2007), was chosen. According to this design, which will be described in detail in Chapter 3, qualitative and quantitative data are converged in order to draw valid conclusions about the issue being investigated.

With the first research question, I am interested in describing children's strategy use, with or without strategy instruction. The aim of this survey study is to identify the following issues related to the children's strategy use: a) the most and least used strategy categories among 6 strategy categories; that is, the memory, cognitive, metacognitive, compensation, affective and social strategy categories; b) the most and least used individual strategies; c) the impact of gender and proficiency on strategy use; and d) the relationship between motivation and strategy use.

In investigating research question 2, I was interested in finding out: a) what evidence exists, if any, of strategy awareness following strategy instruction; b) what effects strategy instruction may have on students' strategy use, including any links that emerge between strategy instruction and students' ability to match strategies to task demands; and c) how children's strategy use in an authentic context could be reliably assessed.

With research question 3, my aim was to look into the impact of strategy use on achievement. Finally, I wanted to use the results of this study to explore preliminary causal paths between strategy use and achievement in ESL.

Overview of the Thesis

The thesis is divided into six chapters. Chapter 1, the present chapter, presents the statement of inquiry, a description of the context of the study and my experience in the field, factors that led me to this study, and the objective of the study, including the

research questions. Chapter 2 contains a review of pertinent literature, starting with a historical overview of language learning strategy research, followed by patterns of strategy use among adults, adolescents, and children, strategy instruction, methods of assessing strategies, and strategy research in various contexts, including the Québec context. Chapter 3 provides a detailed description of the research design of this mixed methods study. It includes the research questions, an in-depth description of the data collection and analysis, the participants and the instruments. It also explains the rationale for the case study, strategy intervention approach, and the choice of participants. Chapter 4 presents the results of the survey study and Chapter 5 the results of the case study. In Chapter 6, there is an interpretation and discussion of the findings. The interpretation and discussion rely upon a combination of the findings from the qualitative and quantitative data, that is, a mixed methods approach. Chapter 7 looks at the implications of the study and suggests future directions in strategy research, especially with regard to the elements covered in Chapter 2, the literature review, particularly with regard to children's strategies.

Original Scholarship and Contribution to Knowledge of the Thesis

This study displays original scholarship and contributes to knowledge in the areas of strategy research, strategy assessment, and language teaching methodology with regard to children learning a second language in an authentic context. The strategy survey study and strategy intervention study were carried out in classrooms involving intact classes, where the only criteria for participation were parental, school, and participant approval. The approach to strategy instruction and strategy assessment was developed as a result of many years of research and experience, and adjusted with the collaboration of the teacher participant, using a bottom-up approach. This makes the resulting approach accessible to teachers, who are responsible for integrating strategy instruction into the ESL curriculum, among large classes of students who are required to study English as a second language, as opposed to students who have a choice in the matter. Original tools and approaches adapted to children were used for the strategy assessment in order to create a seamless link among the teaching, learning and evaluation components. This contributes to the field of assessment for learning, which is in harmony with the evaluation approach advocated by the Québec Ministry of Education.

Chapter 2: Review of the Literature

Introduction

The present study aims to describe children's patterns of strategy use, to conduct strategy instruction among children, to assess their strategy use during instruction and the impact of this on learning within an authentic context, that is, the elementary classroom in public school in Québec, Canada. This chapter will therefore provide a review of the literature on the topics of learning strategies, strategy instruction, strategy assessment, and strategy instruction and assessment within the context of Québec. First, a historical overview will be provided of learning strategy research, including discussions regarding the nature and definition of the key term, learning strategy, followed by research on the patterns of strategy use among adults, adolescents, and children. Next, a review of the literature regarding strategy instruction will focus on the effects of strategy instruction, methods of conducting strategy instruction, including the way children learn and how strategy instruction has been adapted to reflect this. Finally, a review of strategy assessment will look at methods that have been used for assessing strategies, depending on the purpose and the nature of the assessment, and the inherent problems associated with strategy assessment, especially among children. Possible solutions to these problems proposed by scholars in the field will close this part of the discussion. The final section of this chapter will examine strategy instruction and assessment in the Québec context.

This review will situate the research on children's strategies and their impact on learning, as investigated in this study, within the broader context of learning strategy research.

Definitions and Theoretical Concepts

The construct, *strategies*, has been defined in different ways by various scholars in the field of language learning strategies and is still the subject of much debate (Dörnyei, 2005; Griffiths, 2008; Oxford, 2011). In order to operationalize the construct, it is important to understand the nature of strategies, as described through three decades of research in the field. The field of second language learning strategy research emerged in the mid 1970s, when scholars turned their interest to the role of the learner in the language learning process. This led to research into learner insights

and behaviours that contribute to language learning success. Early research by Rubin (1975) focused on the concept of the "good language learner," whose learning behaviours could be identified and classified, in order to impart them to less successful learners. Rubin defined strategies as "… the techniques or devices which a learner may use to acquire knowledge" (p. 43). Rubin's definition, and the concept of the good language learner, were later seen as a turning point by O'Malley and Chamot (1990), who claimed that the resulting "… redirection of linguistic thought … can be seen as all the more important because it occurred independent of the stimulus from cognitive theoretical developments that dominated the late 1970s…" (p. 100). O'Malley and Chamot added that the ground-breaking work by Rubin to redefine the factors that led to successful language learning was a departure from conventional wisdom at the time, which claimed that success in language learning was simply attributable to ability, motivation, and opportunity for practice. In a follow-up study, Naiman, Fröhlich, Stern, and Todesco (1978) also focused on attributes of the good language learner which lent support to Rubin's suggestion that such behaviours could be classified and imparted to less successful learners. Griffiths (2008), who recently re-introduced the concept of the good language learner and questioned whether we could conclude that by helping students develop a wider repertoire of strategies we would promote good language learning, concluded, however, that "... 30 years of experience has shown that the reality is not quite so straightforward" p. (93).

In effect, the pioneer studies mentioned above laid the foundation for subsequent research in the field and for attempts to develop a theoretical framework for the concept of learning strategies, but later on, research into the strategies of the unsuccessful language learner showed that there was no single portrait of the good language learner. In fact, this research revealed that unsuccessful language learners also employed some of the same strategies as successful language learners, but successful language learners analyzed the requirements of the task and matched their strategies appropriately to task demands (Abraham & Vann, 1990; Vann & Abraham, 1987). These developments led other scholars in the field to draw upon cognitive psychology and examine the concept of strategies from the perspective of mental processes, in particular, metacognition (Wenden, 1987a). Wenden viewed strategies in terms of learners' knowledge of task and self, their ability to assess the requirements of the task and to choose appropriate strategies for the task. This places great

importance on metacognitive strategies, such as planning, monitoring and evaluating, which several researchers consider as a necessary component for the appropriate use of strategies (Anderson, 2002; Cohen, 2007; O'Malley & Chamot, 1990; Oxford, 1990; Wenden, 1999). Metacognitive strategies are defined by Wenden as general skills through which learners manage, direct, regulate, and guide their learning. Anderson (2002) described learners who are metacognitively aware as having strategies for finding out or figuring out what they need to do, adding that "[t]he metacognitive ability to select and use particular strategies in a given context for a specific purpose means that the learner can think and make conscious decisions about the learning process" (p. 1). O'Malley and Chamot (1990) also based their definition of strategies in cognitive theory, describing strategies in terms of procedural skills, whereby learners use an IF/THEN clause to analyze the task and their subsequent course of action; that is, if the task requires this and I am unable to do it, I will use this strategy. For example, "IF the goal is to comprehend an oral or written text, and I am unable to identify a word's meaning, THEN I will try to infer the meaning from context" (p. 52). Specifically, they defined strategies as "the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1). In other words, they claim that "[l]earning strategies are special ways of processing information that enhance comprehension, learning, or retention of the information" (p. 1).

Oxford (1990) elaborated on this definition by going back to the Greek military term to describe a strategy as a "plan, step, or conscious action toward achievement of an objective" (p. 6). This led her to a broad definition of the term learning strategies, which she described as "… specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). According to this definition, the term "strategies" implies conscious movement towards a learning goal and, as Oxford, Cho, Leung, and Kim (2004) later note, "[m]ost theorists and researchers agree that some degree of consciousness or awareness is essential in strategy use" (p. 1). Chamot (2004) also subscribes to this view, and sums up a description of strategies by stating:

> Learning strategies are the conscious thoughts and actions that learners take in order to achieve a learning goal. Strategic learners have metacognitive

> knowledge about their own thinking and learning approaches, a good understanding of what a task entails, and the ability to orchestrate the strategies that best meet both the task demands and their own learning strengths (p. 14).

This view is shared by the majority of respondents in the Cohen (2007) survey, who "… agreed that any given strategy has to have a metacognitive component whereby the learner consciously and intentionally attends selectively to a task…" (p. 32). Although Cohen's survey revealed "some disagreement regarding the level of consciousness necessary for a process to be considered a strategy" (p. 33), several, including Cohen himself, subscribe to the view that when a strategy is so habitual that it is no longer within the learner's conscious awareness and control, it becomes a process (Cohen, 1998). Griffiths (2008) provides some nuance to the idea of consciousness by claiming that, "[a]lthough they are consciously chosen, the choice can operate anywhere on a continuum from deliberate to automatic..." (p. 87). However, Oxford (2001) claims that "[w]hen the learner consciously chooses strategies that fit his or her learning style and the L2 [second language] task at hand, these strategies become a useful toolkit for active, conscious, and purposeful self-regulation of learning" (p. 359). Thus, researchers in the field affirm, learning strategies help learners control and regulate their own perception, storage, retention, and retrieval of new information (Cohen, 1998; O'Malley & Chamot, 1990; Oxford, 1990).

With regard to the variety of definitions in the literature, Lafontaine (2006) contends that it is difficult to draw comparisons across learning strategy studies because there is no consensus among researchers as to the concept of *strategy*. Macaro (2006), who also suggests that the variety of definitions leads to confusion, avoids defining strategies and proposes instead a theoretical framework for the concept of strategies, based on cognitive psychology and information processing. According to this, he describes strategies as "… having a series of essential features rather than defined…" (p. 325). These features include describing strategies in terms of a goal, a situation, and a mental action, which are "the raw material for cognitive processing, and their effectiveness or noneffectiveness derives from the way they are used and combined in tasks and processes" (p. 325). He posits that strategies need to be distinguished from subconscious activity. Oxford (2011) weighs in on the debate

regarding the quest for a theoretical framework for strategies and proposes a Strategic Self-Regulation (S^2R) Model of L2 learning characterized by interdisciplinarity. In this recent work, Oxford defines self-regulated language learning strategies as "... deliberate, goal-oriented attempts to manage and control efforts to learn the L2... These strategies are broad, teachable actions that learners choose from among alternatives and employ for L2 learning purposes..." (p.12). Oxford addresses the problem of defining the construct by taking a two-tier approach in which she makes a distinction between learning strategies and tactics, defining the latter as " ... the particular applications of strategies or metastrategies in real-life situations for specific purposes and needs" (p. 41).

Griffiths (2008), in acknowledging a need to define the construct, synthesizes several elements from three decades of debate to offer the following definition: "Activities consciously chosen by learners for the purpose of regulating their own learning" (p. 87). This definition encompasses the following key elements: an active approach to learning, a certain degree of consciousness, an element of choice by the learner, and the use of strategies for the purpose of regulating or controlling learning, the goal of strategy use being to facilitate learning.

Cohen (2003) distinguishes between language learning strategies, which are used by learners with the explicit goal of improving their knowledge and understanding of a target language, and language use strategies, which help students utilize the language that they have already learned to whatever degree (e.g., strategies for retrieving information about the language already stored in memory, strategies for rehearsing target language structures). Griffiths (2008) also makes a distinction between language learning strategies, which are aimed at learning, and communication strategies, which are "... intended to maintain communication" (p. 87). The Québec Education Program (2001) supports this view as they distinguish between compensatory (communication) and learning strategies, but they list both in the same section under the heading "Strategies" (p.107). As Griffiths (2008) points out, citing Tarone (1981), this distinction is made mainly on a theoretical level, and is not always as clear in practice. Coyle and Valcarcel (2002) do not distinguish between learning and communication strategies because they subscribe to the view that in the foreign language primary classroom focusing on communicative language tasks, "... the

realization of classroom activities which focus on the use of the FL, all the strategies employed by the pupils will necessarily contribute to their FL learning" (p. 436).

Despite this important ongoing theoretical debate regarding the nature and definition of strategies, many scholars in the field of language teaching methodology have embraced strategies as an enabling factor in language learning (Brown, 2007), the premise being that "... pupils need awareness of how they carry out learning tasks (of the strategies they use) in order to improve and develop more flexible ways of working" (Moon, 2005, p. 172).

As the focus of this thesis is mainly language teaching methodology, which seeks ways of identifying and transmitting behaviours that facilitate learning, and as the context for the research is Québec public schools, the definition of strategies that will be used here is the one embraced by the Québec elementary ESL curriculum through the MELS *Strategies in the ESL Classroom* (2002) handbook for teachers; that is to say, Oxford's (1990) broad definition referred to earlier; that is, strategies are "… specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). In order to teach and assess strategies, however, it is important to classify and describe them in concrete terms that practitioners can understand, so I will now turn my attention to examining how strategies have been classified by various researchers.

Classification Systems

Over the course of the past three decades, there have been many strategy taxonomies and classification systems proposed (Cohen, 1998; O'Malley & Chamot, 1990; Oxford, 1990; Stern, 1983). However, the classification systems most widely used in research in the field are those of O'Malley and Chamot (1990) and Oxford (1990). O'Malley and Chamot (1990) stated that they initially used a two-part strategy system including cognitive and metacognitive strategies but in a study investigating the strategies of beginning and intermediate level ESL students at the high school level (O'Malley, Chamot, Stewner-Manzanares, Küpper, and Russo, 1985a) the students reported using 638 strategies, almost all of which were classifiable into the two categories, except for some strategies that were obviously social or affective and did not seem to fit the two-category system. Therefore, these researchers developed a much smaller third category, social mediation strategies. Twenty-three sets of

strategies were then listed under the three broad strategy categories, with most strategies listed as cognitive and metacognitive, and a couple listed as social mediation. The resulting classification system (O'Malley & Chamot, 1990) was adapted from O'Malley, Chamot, Stewner-Manzanares, Küpper, and Russo (1985a).

Oxford (1990) established a more comprehensive strategy system containing six main strategy groups: a) memory strategies, such as using imagery or rhyming, mainly used for surface-level memorization of vocabulary; b) cognitive strategies, such as analyzing, summarizing, outlining, and highlighting, all of which facilitate deeper language processing; c) compensatory strategies, such as guessing from the context or using gestures, which enable learners to continue learning and communicating despite knowledge limitations; d) metacognitive strategies, such as planning, organizing, and evaluating, which are tools for managing one's own learning in a general sense; e) affective strategies, such as using humour or breathing deeply, which help learners control motivational and emotional states; and f) social strategies, such as asking questions for clarification or verification, which involve working with others in learning the language. Oxford (2011) has now revised her 1990 six-category strategy classification system in favour of three main categories: cognitive, affective, and sociocultural-interactive, from which flow tactics identifying how a strategy is to be used. According to this system, metastrategies (metacognitive, meta-affective and metasociocultural-interactive) help learners control and manage the three corresponding categories of strategies. Examples of differences between this system and her 1990 system are that memory strategies are now included in the cognitive category, the compensatory strategies used for speaking are now incorporated into the sociocultural-interactive category, and the 1990 compensatory strategy of *Guessing meaning from context* is now classified as a tactic related to the cognitive strategy, *Going beyond the immediate data*, with the basic function of *inferring* (p. 113).

These classification systems, among others, have formed the basis of research by several scholars into strategy use patterns of successful and unsuccessful learners.

I will now summarize some of the relevant research into successful and unsuccessful students' patterns of learning strategy use, and children's use of language learning strategies.

Patterns of Strategy Use

Strategy-use patterns of successful and unsuccessful learners.

Much of the research on successful and unsuccessful language learners has been conducted with university and high school students. Early research examining the language learning strategies of "good language learners" indicated that these learners actively sought out opportunities for language practice, were willing to take risks, were accurate guessers, tolerated uncertainty, were strongly motivated to communicate, handled the emotional demands of language learning, paid attention to form, and checked their own progress (Rubin 1975; Naiman, Fröhlich, Stern, & Todesco, 1978). Rubin (1975) also suggested that good language learners were unafraid to make mistakes or appear foolish in language production. Lafontaine (2006), in a study of 310 grade 11 Francophone learners from Québec, followed up on the work of these early researchers and identified thirteen strategies, based on the O'Malley and Chamot (1990) taxonomy, that distinguish the good language learner from the poor language learner. These included eight metacognitive strategies, two cognitive and one socio-affective.

Other studies have indicated, however, that the qualities and strategies of the "good language learner" are not monolithic and as such cannot be summed up in a single profile. In adult studies previously alluded to, more effective language learners did not always use more strategies than their less effective peers (Ehrman & Oxford, 1990; Oxford & Ehrman, 1995). Rather, more effective learners often understood the demands of the task, chose strategies that suited the task (Abraham & Vann, 1987; Chamot & Küpper, 1989; Vann & Abraham, 1990), and understood their own learning preferences (Oxford, 2001). In a study involving Japanese seventh-grade adolescents, more successful learners used strategies that addressed the demands of the task, while less successful learners frequently failed to understand the requirements of the task at hand and therefore were not able to choose strategies appropriately (Yamamori et al., 2003). In this study, unsuccessful learners sometimes used more strategies than successful learners but their strategies were chosen in a haphazard, desperate manner, which did not facilitate their language learning. Similar results were found in a Canadian study of seventh-graders studying French as a second language (Vandergrift, 2003). In addition, the above studies found that the nature of the strategies used by successful learners and those employed by unsuccessful learners

was different. Successful language learners tended to use more sophisticated top-down strategies, whereas their unsuccessful counterparts generally selected more bottom-up strategies (Vandergrift, 2003; Yamamori et al., 2003). Other research has shown that successful learners also have an ability to combine particular groups of strategies that are effective in promoting learning (Kojic-Sabo & Lightbown, 1999). This led Kojic-Sabo and Lightbown to conclude that "… it may be that quality, rather than sheer quantity, of strategy use determines success for particular students in specific situations" (p. 190). Although several studies show that high proficiency learners draw from a wider repertoire of strategies than low proficiency learners (Dreyer, 1992; Griffiths, 2008; Jimenez-Garrido, 2010), the literature suggests that the way learners manage their strategy use is more salient than the sheer numbers. As Chamot (2008) points out, "... simple counts of learning strategy use can be misleading – it is how learning strategies are used that determines how useful they are" (p. 266). The importance of effective management of strategies has been repeatedly highlighted by scholars in the field (Anderson, 2002; Wenden, 1999).

In light of these three decades of research on the topic, Griffiths (2008) updates the notion of the 'good language learner' by pointing out certain characteristic behaviours of good language learners, who "use a large number of language learning strategies, or activities consciously chosen for the purpose of regulating their language learning..." (p. 92). Good language learners' strategies cited by Griffiths are strategies to manage their own learning (metacognitive), expand their vocabulary, improve their knowledge of grammar, and strategies involving use of resources and all language skills (reading, writing, listening and listening).

Children's strategy-use patterns.

Although most existing studies of language learning strategy use involve adults or adolescents, some address children's language learning strategies. Seeing that the current study deals with language learning strategies among children, I will now present an overview of specific studies of children's strategy use in bilingual classrooms, foreign language immersion classrooms, and core foreign language classrooms, along with a description of each respective program type. In some bilingual classrooms, students learn content in their native language, while developing their skills in the majority language. The intent is that this will help them to transition to a curriculum in the majority language without additional deficiencies in the content

areas. In other bilingual classrooms, the two languages are developed simultaneously, in a balanced manner. In foreign language immersion classrooms, subject-matter instruction is carried out through the medium of the foreign language and students often share the same first language. Language instruction is conducted as needed. Foreign language immersion classes are offered as special programs and access is restricted to students who are able to enrol in them, according to various criteria established by the school jurisdiction. In core foreign language classrooms students study the prescribed foreign language curriculum for a set number of periods per week, which represents the basic program that is the mandatory minimum language instruction requirement for everyone in a particular school jurisdiction. Nevertheless, in the interest of simplicity, the strategies of the children in all of these settings will be referred to as second language learning strategies.

Children's strategy use in bilingual and second language classrooms. In the United States, some students study English as a second language involving the development of literacy skills, whereas others study English in bilingual classrooms. U.S. studies of young children's strategy use in second language or bilingual classrooms often highlighted learning strategies involving social interaction. For example, Wong Fillmore (1976) found that among native Spanish-speaking children learning ESL, a highly superior child used socially-interactive learning strategies, such as initiating conversation and ignoring linguistic limitations in order to communicate. Wong Fillmore, Ammon, McLaughlin, and Ammon (1985) found that Hispanic and Chinese elementary school children learning ESL in grades 3 to 5 used very different learning strategies: the Chinese students' learning strategies avoided social interaction, while the Hispanic students' learning strategies largely centered on social interaction. A different study (Chesterfield & Chesterfield, 1985) found that 14 Mexican-American children in a bilingual English-Spanish classroom frequently used learning strategies involving social interaction.

Singapore was the site of three more recent studies involving children's learning strategies in bilingual classrooms. In the first, a pilot study, Gu, Hu and Zhang (2005a) elicited strategies from 18 lower elementary students in Singapore, using a 'probed think-aloud' method. The researchers found that children as young as grade 1 were capable of describing their thinking in rich detail and that by age 11 most

children “are able to articulate their perceptions, opinions, and beliefs” (p. 296). In this study, older children reported using more strategies than their younger counterparts, high achieving students had a wider range of strategies than low achieving students, and the strategies of high achieving students were qualitatively different from those of low achieving students. The former employed top-down strategies, such as anticipating the development of a story based on prior knowledge, and chose effective strategies for the task, whereas the latter generally used bottom-up decoding strategies and ineffective strategies for the task.

The second and third studies from Singapore focused on children’s strategies related to specific skill areas, namely reading strategies and listening strategies respectively, and were part of a 3-year investigation of primary school children’s strategies (Rao, Gu, Zhang, & Hu, 2007). The reading strategies study was a case study for which the research questions sought to identify patterns of reading strategy use by successful and less successful primary school learners, and ways in which these learners differed from one another in their use of reading strategies. The participants were six functionally bilingual grade 6 students from three public schools, and the researchers used individual ‘think-aloud interviews’ to elicit the strategies they used while carrying out four reading tasks. The children were then asked to retell everything they remembered about the texts, without referring to them. The interview sessions were videotaped and audio-taped, and the data coded according to evidence of surface-level and deep-level reading strategies, and subjected to qualitative and quantitative analysis. Findings showed clear differences in patterns of strategy use between successful and less successful learners, with the majority of the successful learners using mainly deep-level processing strategies, such as using their prior knowledge to facilitate comprehension, predicting what would come next in the texts, guessing meaning of new words from context, looking for logical links, assessing their own interpretation and making critical judgements about the texts. Less successful learners, on the other hand, used mainly surface-level processing strategies, such as re-reading sentences they found difficult and questioning their meaning. The retellings of the more successful learners contained most of the important information in the texts, including main ideas and details, while those of the less successful learners were scant. The researchers concluded that the more successful learners focused on comprehending the message of the texts whereas the less successful learners directed

their attention to comprehension at the sentence level. They inferred that strategy use is strongly linked to proficiency, and echoed the proposal by Green and Oxford (1995) that this relationship be viewed not as one of cause and effect but rather as an ascending spiral whereby active use strategies enhance proficiency, which in turn leads to a greater likelihood that students will select these strategies.

The next skill-specific study from Singapore was a large-scale (*n*=3618) investigation of listening strategies among children from bilingual classrooms (Gu 2008). The researcher investigated patterns of listening strategy use among children from grade 4 to grade 6, the relationship between listening strategies use and English language results, and whether strategy use changed from one grade to another. The instrument used was a listening strategy questionnaire, which was subjected to a rigorous process from the creation of the questionnaire items to validation, piloting, and final administration. Findings revealed that good listeners drew from a wider repertoire of strategies, used listening strategies more often, and orchestrated their strategy use more effectively than poor learners. Poor listeners, on the other hand, experienced decoding problems, used mainly bottom-up decoding strategies, used wild guessing to compensate for a lack of understanding, and seldom monitored or orchestrated their strategy use in a meaningful way. Differences in strategy use according to grade level were less prominent but the researcher cautioned that these differences may have been more pronounced if children from younger grades had been included in the study.

In a study investigating the effects of bilingualism on average language learner strategies use among 30 6th grade Spanish bilingual children learning ESL as a second or third language, Jimenez-Garrido (2010) found differences, not by grade level, but according to whether the learners were beginners or advanced language learners. This supports findings by other researchers (Chamot & El Dinary, 1999) suggesting that more advanced learners used more strategies than less advanced ones. In the Jimenez-Garrido study, however, beginners used more compensatory strategies, to make up for a lack of knowledge, and use of this category of strategies decreased as learners progressed from beginner to upper proficiency levels. The children in this study reported their strategy use on a questionnaire, Children's SILL (a Spanish translation of Gunning, 1997, to be discussed below in the section on children's strategy use in core second or foreign language classrooms), using a 5-point Likert scale, based on

Oxford's 1990 SILL scale which interprets strategy use as follows: 3.5 to 5.00 high use; 2.5 to 3.4 average use; 1.0 to 2.4 low strategy use. In general, among the children in this study, the affective category was the strategy category with the highest reported use (3.91), followed by the metacognitive category (3.49), and the compensatory category (3.31). The overall strategy mean was 2.98, which is considered average strategy use. This study, however, found no significant difference in strategy use whether English was the L2 or L3, but gender made a difference; overall, females used more strategies than males.

Children's strategy use in foreign language immersion classrooms. Chamot and El-Dinary (1999) conducted a six-year longitudinal study of learning strategies used by 44 elementary-school students learning various foreign languages (French, Japanese, and Spanish) in immersion settings. Tasks included activities in reading and mathematics. Regardless of proficiency level, all children were able to describe their learning strategies in detail, thus showing early-age metacognitive awareness. Strategies included, among others, using mental imagery, planning, identifying prior knowledge, questioning for clarification, mentally rehearsing, employing resources, and self-assessing. Compared with less proficient students, more proficient students generally chose strategies suited to particular learning tasks and demonstrated greater flexibility in the use of strategies. On a reading task, high-proficiency learners focused more on sophisticated learning strategies, such as using background knowledge and making inferences, while low-proficiency learners depended on the strategy of phonetic decoding. This is similar to findings of other studies of adolescents and children cited earlier, which showed that high proficiency learners used top-down strategies, whereas low proficiency learners used bottom-up strategies (Gu 2005; Vandergrift, 2003; Yamamori et al., 2003).

Children's strategy use in core second or foreign language classrooms. Some studies have investigated children's strategy use in core second or foreign language classrooms. In a quantitative study using a questionnaire based on Oxford's (1990) six-category system, Gunning (1997) surveyed 102 fifth-grade Canadian Francophone children. The questionnaire was written in the students' first language, French, in order to enhance its comprehensibility to the children, thereby making the

questionnaire self-explanatory. This study found that the students, in general, reported significantly more frequent use of strategies in the compensatory category than those in the affective category, and also significantly more frequent use of strategies in the affective category than those in the metacognitive category, which in turn, were more frequently used than those in the cognitive, social and memory categories. The overall mean strategy use was 3.5, which is on the low end of high use, in accordance with Oxford's 1990 SILL scale described above. Pupils did not show a significant difference in their use of strategies in the cognitive, social, and memory strategy categories. No significant gender differences were revealed. In terms of proficiency, analysis of a significant interaction effect between proficiency and strategy category revealed that high proficiency students reported more frequent use of affective strategies than did average or low proficiency learners. More specifically, post-hoc analysis revealed that high proficiency learners were able to draw upon relaxation strategies whenever they were faced with language anxiety.

In a qualitative study, Gunning (1997) also interviewed 20 fifth-grade Canadian francophone children, a subset of the participants involved in the survey study. Results indicated that high achievers were able to orient their learning strategies to task requirements, whereas low achievers had difficulty in this regard. In addition, high achievers were self-directed in their language learning efforts, while low achievers were directed by parents.

In another interview study, Kiely (2002) probed the language learning strategies of 12 fifth- and sixth-grade Irish students. Strategies mentioned fell into cognitive, metacognitive, and social-affective categories. The expected linear relationship between strategy use and proficiency was not found, as average proficiency learners reported using strategies most frequently, while high proficiency learners reported the lowest frequency. The reasons for this were not investigated but there could have been a curvi-linear relationship, or other explanations, some of which I will now discuss. Although linear relationships between strategy use and proficiency have been identified in several studies (Dreyer & Oxford, 1996; Lafontaine, 2006; Lan & Oxford, 2003; Park, 1997), nonlinear relationships between these two variables were also found among adults (Green & Oxford, 1995; Phillips, 1990) and adolescents (Yamamori et al. 2003). Takeuchi, Griffiths and Coyle (2007) offer possible reasons why some studies yielded significant relationships between proficiency and strategy

use, while others did not. They suggest that other variables, such as affective variables or the nature of the assessment, could have played a role in the results, and like other researchers (Cohen, 1997, Oxford et al. 2004), they also argue that "… what determines learning outcomes is not the frequency with which strategies are used, but the flexibility of strategy use in a specific context" (p. 75). They add that "… measuring strategy use in terms of frequency count only furnishes part of the picture, and serious consideration needs to be given to the appropriateness of strategy use for the given context" (p. 75). Appropriateness of strategy use is also influenced by metacognitive awareness of effective strategy choices.

Yamamori et al. (2003), who used a questionnaire to identify the learning strategies of 81 seventh-grade Japanese learners of English as a foreign language (EFL), found that low achieving learners were very motivated (strong will to learn) and used many strategies, but their efforts did not enhance their learning of English. The researchers concluded that "… strategies, as well as other factors such as the will to learn, do not always operate in a simply additive, or linear, manner" (p. 403). Low achievers lacked the necessary metacognitive awareness that helped high achievers choose their strategies effectively.

Taiwan was also the site of other studies of children's strategies used for learning EFL, a core subject. Lin (2001), in a study of seven elementary school students, identified 73 vocabulary learning strategies, synthesized into 18 major strategies and classified as cognitive (11 strategies, mostly related to rote memorization), metacognitive (4) and social-affective (3). Lan (2004), in a mixed-methods study, also investigated vocabulary learning strategies of 12 Taiwanese 6th graders and found differences in the nature of strategy use among high, mid and low proficiency learners. High proficiency learners used more analyzing strategies and association strategies than did mid or low proficiency learners but low proficiency learners used more strategies to understand the meaning of words than did the other two groups. However, for all categories of these Taiwanese learners, the most frequently used vocabulary learning strategy was spelling out words quietly in their minds.

In another Taiwanese study, Su (2002) researched the strategies of 932 elementary-school learners. They responded to a questionnaire containing three of Oxford's (1990) six strategy categories and three more added by Su. Association

(memory) strategies, assistance strategies (e.g., flashcards), and constructive strategies (being enthusiastic and active) were added to the three original SILL categories; namely the cognitive, social and compensation categories. The overall strategy-use mean was 2.9 out of 5, or medium use. Association strategies, especially using rhymes to remember English words, were most often used and assistance strategies least often used. Significant relationships were found between a) strategy use and b) parental involvement, liking of English, gender, English-learning experience, self-rated proficiency, and perceived usefulness of teaching methods and curriculum.

In the third Taiwanese study, Lan and Oxford (2003) investigated the strategies of 379 children using the Taiwanese Children's SILL, adapted from Gunning (1997), originally adapted from Oxford's 1990 SILL with its six-category classification system. Overall mean strategy use was 2.9, or medium use, the same as in Su's (2002) study. Average strategy-category means were highest for the affective and compensatory categories, very similar to Lan's (2004) follow-up newly adapted Children's SILL study conducted with 1,191 fifth and sixth graders, and similar in some respects to findings by Gunning (1997). In a pilot study, conducted among 88 6th graders in 2008 in preparation for the current study, I used another version of the Children's SILL adapted to reflect the strategies in the Québec Education Program. In the adaptation, the eighteen strategies in the program were included and others from the original Children's SILL were excluded in order to keep the total number of questionnaire items to thirty-two and administration time to thirty minutes, which was shown by previous studies to be adequate for the age of the participants (Chamot & El Dinary, 1999; Gunning, 1997; Lan & Oxford, 2003; Lan, 2004). In that study, a 4-point Likert scale was used and the overall mean strategy use was 2.73, which is also considered medium strategy use according to the new scale. As with the studies by Su (2002), Lan and Oxford (2003), and Lan (2004), the affective strategy category was the category with the highest mean use (3.13). Contrary to other researchers (Jimenez-Garrido, 2010; Lan, 2004; Lan & Oxford, 2003; Su, 2002), no gender differences were found. Su (2002), Lan and Oxford (2003), and Lan (2004) found, in addition to gender and proficiency differences, significant relationships between strategy use and liking English (the most significant relationship).

The importance of motivation in children's strategy use was also highlighted in a Spanish classroom-based longitudinal study of eight children between the ages of

eight and ten, identified as 'good language learners' (Coyle & Valcarcel, 2002). Their study also found that, in addition to being motivated, these highly effective learners managed their own learning, monitored their use of EFL, and enjoyed cooperating with their peers. This is contrary to Lan's (2004) study, which found that Taiwanese children rarely used social strategies. These findings point to cultural differences in children's preferences in learning strategies. This means that in strategy use, one size does not fit all and, in addition to being adapted according to the age of the participants, research also has to be culturally adapted.

To sum up, research describing patterns of children's strategy use shows that the children were very capable of identifying their strategies, some cultural differences were shown according to specific geographic settings, and strategy use in some studies was associated with attitudes towards English, among other factors. The studies outlined in this review reveal similarities and differences between children's strategy use and strategy use reported by adults and adolescents. These differences point to the need for more age-specific research that probes the learning strategies of young learners, especially those enrolled in core language programs because they represent the majority of learners in a school jurisdiction. Gaining a better understanding of children's patterns of strategy use will help researchers and teachers to deepen their understanding of learning strategies as they relate to children, and develop age-specific techniques to be used in training students to use the strategies.

In response to Rees-Miller's (1993) critique that the field of learning strategies defines strategy categories so broadly that "it is questionable whether they can be specified in terms of observable, specific behaviours that could be taught or assessed in students" (p. 681), a clear understanding of the construct of each strategy category is also necessary. This will help teachers tailor their techniques and identify evidence of specific behaviours by which to gauge the success of their intervention. Teachers will then be able to observe students performing the techniques, or assess students' strategic behaviours by means other than observation, and know that the behaviours indicate that the students are using the strategies taught. However, in order to develop effective teaching techniques for strategy instruction, it is important to investigate the methods that have been used thus far. Seeing that there is a scarcity of research into methods for teaching second language learning strategies to children, I will review strategy instruction investigations with adults, adolescents and children.

Strategy Instruction

Through the studies above, and many others, the use of strategies by high achieving learners to facilitate learning has been well documented but how to convey strategies to learners, the area of strategy research related to language teaching methodology, is the subject of a smaller body of research. As this is my primary interest, I will now turn to a review of the literature on strategy instruction.

Effects of strategy instruction on affective variables.

Strategy instruction (SI) and strategy use can improve an individual's self-efficacy, that is, the level of confidence that he or she can successfully complete a task or a series of tasks (Zimmerman & Pons, 1986). Research demonstrates that changes brought about by strategy instruction can have a cumulative effect on motivation (Nunan, 1997), on self-concept and self-esteem (Chamot et al., 1996; Pintrich & Schunk, 2002), and generally help learners take control of their learning and feel empowered and motivated to reach their goals (Vandergrift, 2002). Nevertheless, not everyone subscribes to this point of view. An opposing view was expressed by Rossiter (2003), whose Canadian study on the effects of consciousness-raising and training in affective strategies did not reveal any significant benefit on self-efficacy or L2 performance. The results of that study prompted Rossiter to question the wisdom of devoting valuable ESL content instruction time to the teaching of affective strategies. However, in that study there were similarities between the instruction received by both the SI experimental group and the control group. Close examination of the teaching practices involved revealed that affective factors were already part and parcel of the control group teacher's teaching practices; for example, using humour (joke of the day), positive self-talk (give yourselves a pat on the back, etc.), empathy and strong group cohesion, the first two of which were also among the strategies being taught to the experimental group. Furthermore, the same methodology was maintained throughout the duration of the strategy instruction, but other researchers and scholars recommend a different approach; that is, first demonstrating and practising the strategy, and then removing the scaffolding once the students have understood the process (Chamot, 2008; Creswell, 2000; Moon, 2005). This approach has been shown

to be efficient and beneficial to learning in empirical strategy instruction (SI) research (Creswell, 2000).

Effects of strategy instruction on performance in the areas of language competencies or skills.

Oral interaction. Oral interaction is defined as "... the collaborative exchange of thoughts, feelings, or ideas between two or more people, resulting in a reciprocal effect on each other" (Brown, 2007, p. 212). *The Québec Education Program* (2001) describes oral interaction, the cornerstone of the program, as a collaborative process, the dynamics of which involve transmission, reception, action, reaction; or simply put, the students participate in oral exchanges, reacting to messages, initiating messages, and maintaining interaction. This process implies collaboration between two or more interlocutors. As oral interaction is given the most weight of the three competencies in the Québec elementary ESL program, the curriculum used for the present study, this section will focus primarily on two studies showing the effects of strategy instruction on oral interaction (Nakatani, 2005; Naughton, 2006).

Strategy instruction was shown to have benefits on oral interaction by Nakatani (2005) in a study demonstrating that explicit instruction in communication strategies (similar to the compensatory strategies in the Québec Education Program) helped adult Japanese learners with low English speaking ability in an experimental group figure out what to do to stay in a conversation when they did not know the words they wished to say. The learners were instructed in the communication strategies referred to as achievement strategies, which represent "learners' active behavior in repairing and maintaining interaction" (p. 81). Examples are help-seeking and self-solving strategies. For other examples and explanations of some of these strategies, see Table 1, at the end of this section. In this study, both the experimental and the control groups received ESL instruction using the communicative approach but, in addition, the experimental group received strategy instruction while the control group was given extra communicative learning instruction, without the strategy instruction. In post-tests of ESL communication, the SI group outperformed the control group, which received the additional instruction in ESL content. Findings indicated that the learners in the experimental group used strategies to maintain oral interaction, whereas those in the control group abandoned the conversation when they

did not know the words they wanted to say. The positive impact of strategy instruction on oral interaction learning outcomes is also supported by Naughton (2006) in a study of cooperative strategy instruction and oral interaction amongst Spanish adults in an ESL classroom. In this study cooperative strategies were also described as interaction strategies, defined by the number of times the students engaged in asking follow-up questions, requesting and giving clarification, self- or other-repair, and requesting and giving help; see Table 1 at the end of this section for explanations of some of the strategies. Findings showed significantly more frequent use of cooperative strategies by the experimental group, as opposed to the control group, which also received a treatment of additional discussion activities.

In spite of the differences in terminology, there are similarities among some of the instructed strategies in these two studies and some of the compensatory and learning strategies intended to enhance outcomes in oral interaction in the Québec Education Program, as Table 1 shows. Column 1 of the table contains the compensatory and learning strategies in the Québec Education Program, along with an explanation of each one. A horizontal comparison of each row of the table shows similarities among each of these strategies and the corresponding explanations of the communication strategies in Nakatani (2005) and cooperative strategies in Naughton (2006). The latter investigations have tremendous implications for any curriculum focused on oral interaction, such as the Québec ESL elementary curriculum, but as these studies were designed for adults, adaptations would have to be made to apply the methodology to children, especially in the strategy assessment, which will be further discussed below, in the section dealing with strategy assessment.

Table 1
Similarities Among: Compensatory and Learning Strategies (Québec Education Program), Communication Strategies (Nakatani), and Cooperative Strategies (Naughton)

Québec Education Program (2001) Compensatory and Learning Strategies	Nakatani (2005): Communication strategies *(achievement strategies)*	Naughton (2006) Cooperative strategies *(interaction strategies)*
Asking for clarification - Requesting a repetition or precision	*Modified interaction strategies:* - Student signals for negotiation in order to overcome difficulties; e.g. confirmation and comprehension checks, clarification requests	*Requesting and giving clarification* - Important in negotiation in order to deal with communication breakdown by encouraging speaker to restructure or give additional information
a. Self-monitoring - Checking and adjusting one's ongoing performance *b. Cooperation* - Working together, learning together, helping each other	*a. Self-solving strategies* - Restructuring an incorrectly stated sentence	*Repair* - Learners recast: a. their own, or b. another's non-target-like utterances in a target-like way
Asking for help - requesting assistance	*Help-Seeking strategies* - appealing for help when a word is not known - asking for repetition	*Requesting and giving help* - appealing for help when a word is not known - provision of help
Delay speaking - Buying time to think out a response	*Time-gaining strategies* - Buying time to think and keep the communicational channel open when speakers have difficulty expressing an idea	- Not included
Circumlocution - Making up for the lack of a precise word or expression	*Self-solving strategies b)* - Paraphrasing; e.g. using a circumlocution when the intended term is not known - Using an approximation	Not included

Other skill areas. Studies in other skill areas also show that SI enhances learning in listening and speaking (as in oral production, as opposed to oral interaction as defined in the preceding section) on classroom-based tasks (O'Malley and Chamot,

1990). In a study of adolescent learners, the highest gains were from the group that was given instruction in metacognitive strategies. A different study involving adult university students, in which students were instructed in strategies for enhancing speaking (Cohen, Weaver and Li, 1996, in Cohen, 1998), also revealed benefits for strategy instruction. Results showed significant gains in grammar and vocabulary in most cases and greater self-confidence on the part of the strategy experimental group. Similar positive results were found in SI in the skill area of listening; specifically strategies related to asking clarification questions, which led to greater comprehension on listening tasks among adult Japanese learners (Ross & Rost, 1991), and reading tasks among adult Korean learners (Lee, 2007).

In one of the rare studies involving second language SI among children, specifically the effect of guided reflection on children's awareness of the listening process, Vandergrift (2002) investigated the effect of SI on success on listening tasks among 420 4th- to 6th-graders from 17 different French as a Second Language (FSL) classes in Canada. The qualitative data from this study were analyzed for evidence of "three forms of metacognitive knowledge, that is, person knowledge, task knowledge and strategic knowledge" (p. 565). Conclusions based on this analysis regarding the effect of guided reflection on student awareness of the listening process revealed "evidence of metacognitive knowledge, in particular the behaviours underlying the metacognitive strategies of planning, monitoring and evaluating" (p.566). It was concluded that students appeared to understand the requirements of listening tasks and how to overcome difficulties related to them. This study is relevant to my present study as it involved strategy training with intact groups of children and classroom-based assessment of the effects of this training on second language achievement.

Strategy instruction has also been found to enhance L2 writing by Cresswell (2000), referred to earlier, who taught adult near proficient learners to self-monitor global content and organization in writing, using annotations, to which the teacher responded in writing. The researcher/teacher modelled the self-monitoring strategy explicitly, explained the rationale to the students, had them look at annotated self-monitored examples of student writing and discuss in groups the purposes of the annotation in students' drafts. They then engaged in self-monitoring practice and evaluation. As the students demonstrated understanding of and confidence in the process, the scaffolding was gradually removed. The findings indicated that "… after

training, self-monitoring students prioritize so that their reviewing includes focus on the areas of composition held to be most effective for quality by research" (p. 241). Benefits were also found for instructing students in self-monitoring in a web-writing project (Sano, 2002) to help intermediate Japanese adult learners self-monitor and improve their writing style.

Effects of strategy instruction on management of the learning process.

Although studies show that strategy instruction benefits learning outcomes in the areas of various skills and competencies, strategies also help learners take charge of the learning process, which has an impact on affective variables, such as motivation, self-efficacy, and management of strategy use, and further enriches learning. Cohen (1998) affirms that "…the ultimate goal of strategy training is to empower students by allowing them to take control of the learning process" (p. 70). In order to find out the impact of strategy instruction on management of the learning process, Chen (2007) conducted an investigation among adult university EFL learners from Taiwan in an effort "... to identify patterns or categories according to changes in the participants' learning processes and behaviours" (p. 23). Participants engaged in an eight-week period of listening strategies instruction and maintained diaries of their listening strategies. They also participated in unstructured interviews. The findings from the qualitative data indicate that the strategy training enhanced the participants' awareness of listening comprehension strategies, and "… helped to make the learners' listening process more purposeful and more proactive" (p. 24). Learners also managed to develop a personal strategy repertoire, and they transferred the strategies learnt to other skill areas, such as reading and speaking. Improvements in motivation and self-efficacy were noted as well. These findings led Chen to conclude that "[t]he impact of strategy training on the learner not only leads to the improvement of language proficiency, but, more importantly, engages with the dynamic internal changes in the learning processes" (p. 26).

The studies in strategy instruction reviewed above support the notion that strategy instruction is valuable because it helps the learner to become an active participant in the learning process as he/she chooses strategies to solve learning problems, thereby improving learning outcomes, which in turn enhances affective factors such as motivation and self-efficacy. As these findings show, the time spent on

strategy instruction can enrich, rather than detract from language learning. However, the success of SI involves the adoption of effective practices, so I will now examine ways in which strategy instruction has been carried out.

Methods of conducting strategy instruction.

There has been much discussion in the field about the best way to conduct strategy instruction. Although there have been some successful cases of teaching strategies through a how-to-learn course (Cohen, in Oxford, 2011), many scholars and researchers of language learning strategies are of the opinion that, in the majority of cases, SI is most effective when it is explicit and integrated into the curriculum, rather than being taught as a separate how-to-learn course (Chamot, 2008; Cohen, 1998; Harris and Grenfell, 2004; O'Malley and Chamot, 1990; Oxford, 1990). Several models for SI have been developed (Chamot, 2005; Cohen, 1998; Cohen in Oxford, 2011; Cohen & Weaver, 2005; Harris & Grenfell, 2004; Harris & Prescott, ND; Lee, 2007; Lee & Oxford, 2008; Nakatani, 2005; Naughton, 2006; O'Malley & Chamot, 1990; Oxford, 1990, 2011). Two prominent models are the Styles and Strategies-Based Instruction (SSBI) model (Cohen, 1998; 2009) and the Cognitive Academic Language Learning Approach (CALLA) model (Chamot, 2008; Chamot & El Dinary, 1999). In the SSBI model, the teacher starts with *strategy preparation*, a process of finding out about students' prior knowledge of the strategies they use. In the second step, *strategy awareness-training*, the teacher explicitly helps to heighten learners' awareness to the nature of the task, their learning style preferences, strategies suggested by teacher or classmates, expectations in terms of their responsibility and approaches to strategy assessment. The third step involves explicit *strategy training* by the teacher regarding the declarative (knowing what a strategy entails), procedural (knowing how to use it), and conditional (knowing when to use it) knowledge of the strategies, including how strategies can be combined for optimal effect. The fifth stage is *strategy practice*, when students are given numerous occasions to practise using the strategy in context. The final step is the *personalization of strategies*, when students do a self-assessment of their strategy use and explore ways in which they can transfer their strategies to new situations.

Similarities can be found in the CALLA model (Chamot, 2008; Chamot et al., 1999), which involves *preparation* (whereby strategies being used by students are

identified), presentation (whereby the strategy is modelled and explained), *practice* (involving practice first scaffolded by the teacher, and later with less support), *self-evaluation* of strategy use by the student, *expansion* (involving the transfer or clustering of strategies) and *assessment*, when the teacher evaluates students' use of strategies and the effect of their strategy use on learning outcomes. Grenfell and Harris (1999) and Oxford (2001) add another dimension to strategy training, whereby the learners are placed in a situation to use a strategy and then the strategies they used are elicited by the teacher with the goal of raising their awareness of strategies.

Unanimity is difficult to attain in any field but, as Harris and Grenfeld (2004) claim, "[i]t is now possible to refer to commonalities, if not consensus, on an agreed sequence of steps established for strategy instruction" (p. 122). Most models for SI generally involve:

- identifying students' needs;
- selecting strategies appropriate to the task;
- presenting, explaining and modelling the strategies;
- providing students with opportunities to practise them;
- having students evaluate the strategies they used, and their usefulness in accomplishing the task and identify possibilities for transfer to new situations (Chamot, 2005; Cohen, 1998; Harris and Grenfell, 2004; O'Malley and Chamot, 1990; Oxford, 1990).

The approach described above is also the one recommended by the MELS for strategy instruction to children in Cycles Two and Three (i.e., grades 3-6) in Québec schools (Brook, Gunning, Lahey, & Lassire, 2002). In Cycle One (i.e., grades 1-2) another approach is prescribed by the Québec Education Program (2006) for that level. This program states that "[a]s facilitators, teachers … introduce to students the use of strategies by asking them to imitate specific actions while engaging in activities and tasks" (p. 8). With this approach, strategies are not taught explicitly, as in the model described above, but rather strategy awareness is developed through self-monitoring segments, which are conducted at regular intervals during each class period, to help the students regulate their learning. Guided through scaffolding by the teacher, students are invited to reflect on their learning behaviours, including their use of strategies, such as *directed attention*, after each class activity. The MELS *Self-Monitoring Handbook* (2007) for Cycle One states that, "[a]fter checking their

performance students verify their actions, guided by the teacher, who reminds them of what was expected. This leads the students to adjust or correct their performance immediately" (p. 4). Drawing upon the work of Chamot, Barnhardt, El-Dinary and Robbins (1999) the MELS handbook claims that students use self-monitoring "to measure their effectiveness while working on a task" (p. 5) and that "[t]his metacognitive strategy is a process involving a higher level of consciousness, which enables students to control and improve their learning" (p. 11). A two-year pilot testing of this program, reported in the *Rapport d'expérimentation* (2005-2006), suggests that even at this young age, students' efforts in self-regulation, in which they reflect upon and adjust their learning, seem to have a positive effect on ESL learning. In addition, this report states that in interviews, the homeroom teachers of the students involved in the pilot testing claimed that the students transferred their use of *directed attention*, *risk-taking*, and *problem-solving* strategies learnt in their ESL class, to their homeroom tasks. This supports Harris and Grenfell's (2004) suggestion of language learning strategies as an area of possible cross-curricular collaboration in British public schools, where the teaching of strategies is also prescribed for all school subjects. Chamot (2008) also recognizes the potential for cross-curricular transfer of strategies by stating that in an ideal situation, all teachers in all classes would teach strategies, which she says is being applied in two school districts in the Washington D.C. area.

The development of metacognitive models for strategy instruction has been proposed by some researchers (Anderson, 2002; Wenden, 1999). Chamot (2004) also uses a metacognitive model of SI that includes four recursive (rather than sequential) processes: planning, monitoring, problem-solving, and evaluating. According to this model, teachers select strategies to teach based on student needs related to learning tasks. Examples of task-based learning strategies related to this model are grouped into four categories: use what you know, use your imagination, use your organizational skills, and use a variety of resources (pp. 18-19). To help students use what they know, and to convey appropriate strategies for a task to young learners, Rubin, Chamot, Harris and Anderson (2007) suggest that teachers could start with a class discussion about suitable strategies that the students already use. Teachers could then present new strategies by thinking aloud as they model the task. Rubin et al. (2007) suggest that students also be trained to think aloud, so that they can explain

their strategies to their peers, thereby enhancing self-efficacy. One innovative method used to train fifth-grade children to think aloud was devised by Cohen and Gomez (2002), who trained the children to 'telephone themselves' using a cardboard cell phone, and to explain their procedure to themselves. Other children in the class benefitted from hearing their classmates' inner voices. To sum up, as Chamot (2008) states, "... current models of language learning strategies instruction are solidly based on developing students' knowledge about their own thinking and strategic processing and encouraging them to adopt strategies that will improve their language learning and build proficiency" (p. 271). However, in order to enrich learning and build proficiency in situations in which time for ESL teaching is very limited, such as Québec public elementary schools, where the majority of students receive only 1 to 2 hours of ESL instruction per week, it is vital to find ways to make SI efficient. In order to accomplish this, the question of the language of instruction is crucial.

Language of instruction.

The topic of the language to be used in SI is an important one and as Chamot (2004) remarks, "[f]ew researchers have addressed the issue of language of instruction in teaching learning strategies to second language learners" (p. 20). The dilemma raised by Chamot is the following:

> Beginning level students do not yet have the L2 proficiency to understand explanations in the target language of why and how to use learning strategies. Learning strategy instruction should not be postponed until intermediate or advanced level courses because beginners also need strategies that can make their language learning more successful and increase their motivation for further study (p. 20).

Ross and Rost (1991) also encountered this problem in their study involving the teaching of the strategy *asking for clarification* to Japanese adult learners. They used the L2 to explain the strategy to the intermediate learners but supplemented explanations with the use of L1 to teach the strategy to the beginner level learners.

From my experience, I have taught strategies to beginners using the L2 because my beginner learners received only one hour of ESL instruction per week, and I felt they needed English input for the entire hour, so I should not take time away from that hour to present the strategies in their L1. The advantage with conducting SI with

children is that pictograms and props can be used to support the teaching of strategies, using the L2, so no time is taken away from ESL instruction as the language of instruction is English. This process is described in the MELS Self-Monitoring Handbook (2007) for Cycle One, whereby teachers use flashcards for consciousness-raising of the strategies, and the students use self-monitoring handouts to "record if the targeted behaviour occurred" (p. 9). These tools help to make the strategies concrete for young learners, an idea that is also supported by Rubin, Chamot, Harris and Anderson (2007). In order to maintain instruction in the L2, Gunning, Lalonde, Schink and Watts (2001-2003) and Gunning, Lalonde and Watts (2006; 2007) used simplified names on strategy posters to facilitate comprehension in the L2; for example, the strategy poster for *Circumlocution* was labelled *Say it in a different way*.

Another approach most suitable for children, but which facilitates SI in the target language, is using mascots to model the use of the strategies in English, which students then imitate (Gunning & Lalonde, 1995; Gunning, et al., 2001, 2002; Gunning, et al., 2006, 2007). Chamot and Robbins (in Robbins, n.d.), also use cuddly mascots as they capitalize on children's inherent attachment to stuffed animals to create an SI program that attempts to make these abstract concepts tangible to young learners. Students learn to associate certain stuffed animals with corresponding strategies; for example, Planning Panda with planning or organizing strategies. The mascots help the students to relax and remember the strategies.

An important principle to keep in mind when conducting SI with children is to adapt the strategies and the strategy instruction to their age and culture. Puppets and mascots are part of young children's culture, so capitalizing on these devices for strategy instruction will make them feel happy and secure, and as Moon (2005) states in her book, *Children Learning English*, "[i]f they are happy and secure, they are more likely to enjoy and benefit from their language learning" (p. 9). However, for older children, posters and flash cards are more appropriate because children in grades 5 and 6 like to work and feel like grown-ups (Curtain & Dahlberg, 2004). My co-authors and I (Gunning et al. 2000, 2001, 2002, 2003, 2006, 2007) provided as props for SI among children: a puppet with posters for grades 1 and 2, posters with illustrations of a mascot for grades 3 and 4, and posters with illustrations of pre-adolescent characters for grades 5-6. This helps teachers adapt the strategy instruction to the children's

changing nature and culture. Culturally adapted strategy instruction is pertinent for learners of any age.

Culturally adapted strategy instruction.

Whatever approach to strategy instruction is used, cultural compatibility between the students and the approach is an important issue to consider, as pointed out by some researchers in the field (Chamot, 2008; Lee, 2007; Oxford, 2011). Lee (2007) was conscious of this as she adapted her colour-coding strategy instruction technique and diary writing for Korean students, in order for them to perceive the strategy instruction as facilitating, rather than as wasting their time. The reaction of the participants was positive. Cultural mismatch between learners and the approach, on the other hand, can lead to negative reactions from the learners. Rossiter (2003) received negative signals from a group of mainly Asian participants in a study in which she played music while students worked to teach affective strategies. Oxford (2011), who has always called for culturally adapted SI, proposes her S^2R model, which "... defines strategy assistance as any type of help (a) that is appropriate to the learner's culture and relevant to his or her needs and (b) that the learner receives to improve the use of self-regulated L2 learning strategies", adding that "... excellent strategy assistance, whether provided by a teacher, a website, or some other means, embodies both cultural appropriateness and cultural openness" (p.176).

In addition to SI, strategy assessment should also be adapted to the age of the learner. I will now examine methods of strategy assessment, and the issue of age-appropriate strategy assessment.

Strategy Assessment

"It is not a straight-forward matter to get inside the 'black box' of the human brain and see what is going on." (Grenfell & Harris, 1999, pp. 36-37)

The problem of assessing strategies is complicated by the fact that some strategies are observable and others are not. This has led researchers and teachers to employ various self-report measures for identifying the strategies learners use because, as Chamot (2005) affirms, "Although self-report is always subject to error, no better way has yet been devised for identifying learners' mental processes and

techniques for completing a learning task" (p. 113). For example, if a learner decides to draw upon prior knowledge in order to infer meaning from a text, the mental process involved might not be observable to a researcher or teacher, and the learner needs to provide clues that open a window on this mental process. However, as with most research involving self-report of human behaviours or mental processes, learners' reporting and mental recall might not be accurate (Cohen, 1998). This implies that self-report cannot be fully relied upon, so observation still has its place in assessing the more overt strategies. For example, if a learner decides to use a visible resource such as a dictionary or word bank to look up the meaning of words in a text, the resourcing strategy would be observable, and could be assessed using observation. This is a time-consuming process from the standpoint of a researcher (Cohen, 1998), but Macaro (2001) points to the potential of observation in "looking for traces" of strategy use in classroom-based strategy assessment (p. 66). Some researchers suggest that combining self-report with observation procedures while learners complete a task can "reveal further complexities about strategies which function as traces of cognition as in noting down, writing out, listing, and underlining" (White, 1995a, in White, Schramm & Chamot, 2007, p. 98).

Another issue which compounds the difficulty with strategy assessment relates to the fact that the goal of strategy instruction is to lead learners to use strategies autonomously but if they are indeed used autonomously, the choice of strategies becomes personal and depends upon various factors such as learning styles, individual needs, and learner idiosyncratic approaches to a task. This means that all learners in a group might not need to use the same strategies to accomplish a particular task, so the assessment should not be limited to the use of a specific strategy. Furthermore, strategy use will vary depending on the nature of the task, which implies that strategies are not inherently good or bad (Oxford, 2011), but their effectiveness depends upon how they are applied to a task.

Strategy assessment must take into account all these factors, so a combination of methods is important for making the assessment valid and reliable. Various quantitative and qualitative methods have been devised in order to address the challenges raised and to refine the field of strategy research. These include self-report measures such as questionnaires (O'Malley & Chamot, 1990; Oxford, 1990; Vandergrift, Goh, Mareschal & Tafaghodtari, 2006); verbal protocols (Anderson &

Vandergrift, 1996; Chamot & El Dinary, 1999; Cohen, 1998), colour-coding (Lee, 2007; Lee & Oxford, 2008), interviews (Gunning, 1997; Lafontaine, 2006; Lan, 2004; Lan & Oxford, 2003; Naiman, Fröhlich, Stern & Todesco, 1978; Rubin, 1975; Zimmerman & Pons, 1986), diaries (Lee 2007; Nakatani, 2005; Oxford, Lavine, Felkins, Holloway & Saleh, 1996; Rubin, 2003), and observation (O'Malley, Chamot, Stewner-Manzanares Russo, & Küpper, 1985; Rubin, 1975).

The method or methods used will depend upon considerations such as the objective of the study according to the research questions, concerns about reliability and validity of the method (Cohen, 1998), and the purpose of the strategy assessment. Purposes could include identifying strategies typically used by learners, strategies being used by learners for a given task, strategies not being used that might be helpful to enhance learning on specific tasks, strategies that are culturally appropriate for a particular group of students, and planning and assessing the effects of strategy instruction (Oxford, 2011). The purpose of the strategy assessment will help to determine whether the strategy assessment should be general, referring to strategies learners typically use, or task-based, which "... involves reporting the strategies for an authentic task; e.g. reading a passage in the L2" (Oxford, 2011, p. 143).

The assessment of children's strategy use, and the effects of strategy instruction on learning outcomes among children, have been sorely under examined in the field of second language learning strategies. Despite this lack of research in the field, teachers in the province of Québec are required to teach and assess children's strategy use but, as Rees-Miller (1993), pointed out, in order to figure out whether the strategy instruction has been successful, teachers need to devise valid and reliable methods of identifying and assessing strategies.

I will now present an overview of the literature on strategy assessment, by first addressing the issues of the purpose and nature of the assessment. This will be followed by a review of methods that have been employed by researchers for assessing participants' strategy use and the effects of strategy instruction on learning outcomes, and an examination of how these relate to strategy assessment among children.

Purpose and Nature of the Assessment

Oxford (2011) raises two key issues regarding the purpose and nature of strategy assessment. The first is whether the assessment should be general or specific, and the second is whether it should involve self-report or other-report procedures.

General or specific strategy assessment.

General strategy assessment has been the purpose of most research identifying strategy use among adults, adolescents and children (Cohen, 1998; Gunning, 1997; Lafontaine, 2006; Naiman, Frölich, Stern & Todesco, 1978,1996; O'Malley & Chamot, 1990; Lan, 2004; Lan & Oxford, 2003; Oxford, 1990; Rubin, 1975; Su, 2002). This type of assessment provides us with insight into learners' habitual behaviours. The method of choice for investigating learners' broad, general strategy use is questionnaires, and the strengths and limitations of this method will be discussed below in my examination of each type of strategy assessment method. However, one obvious limitation is cited by Oxford, Cho, Leung, and Kim (2004), referring to the work of Cohen (1998), "Cohen cautioned that respondents in a task-free strategy assessment might over- or under-report the frequency of strategy use because of memory problems or other issues" (p.17). This prompted Oxford et al. (2004) to recommend specific strategy assessment, such as task-based strategy questionnaires, which are administered soon after the completion of a given task. An examination of this method of specific strategy assessment will also be discussed later, in the section of this review dealing with types of assessment methods.

Self-report or other-report.

Self-report indicates "… the learner's reporting, regardless of whether this occurs orally or in writing," whereas other-report refers to "someone else's observations of the learner's learning" (Oxford, 2011, p. 140). The points raised earlier with regard to the nature of the assessment suggest that both self-report and other-report measures can be combined to address some of the inherent challenges of strategy research. Some researchers use a combination of both in order to benefit from the advantages of each type (Lee, 2007), as one type of assessment supports the other. I will now examine various methods that researchers and teachers have employed to

carry out both self-report and other-report strategy assessment, reviewing at the same time the strengths and weaknesses of each type.

Strategy assessment methods.

Other-report: observation.

In early learning strategy research, scholars found that observation took a long time and did not yield a great deal of information (Naiman, Fröhlich, Stern & Todesco, 1978; Rubin, 1975) because of the difficulty of tapping into mental processes. As Cohen and Scott (1996) point out, "The major challenge in attempting to apply observational techniques to language learning strategies is that much of the interesting information cannot be observed because it is mentalistic and not behavioristic" (p. 93). Nevertheless, more recently, researchers have used observation in various ways to support their strategy assessment because "… external records may help to lend a more impartial, objective perspective to the research study, rather than having to rely solely on data provided by learners" (Cohen, 1998, p. 33). Impartial observations, therefore, counteract the criticism levied at research in the field, which claims that strategy research is very subjective because it is mainly based on self-report measures, which can be open to social desirability, meaning that participants report what they perceive to be the desired response.

In planning the observations, Cohen (1998) recommends that the researcher consider the nature and number of observations to be carried out. He suggests that several observations would help participants to overcome the distractions of the presence of a researcher, which sometimes can distort learner behaviour. With several observations, the participant would presumably become accustomed to the presence of the researcher and act more naturally. With regard to the nature of the observation, choices include structured or unstructured observations. Unstructured observations involve the researcher or teacher simply observing student behaviour and taking field notes on their general strategy use. This method guards against bias as the researcher does not have pre-conceived ideas of strategy use that might influence the interpretation of what is being observed. For efficiency when using unstructured observations, especially when assessing strategy use in a large class, it would be wise to heed Cohen's (1998) advice that it is more beneficial for researchers to observe the strategic behaviour of a class, than for them to wait for one particular learner or a

group of learners to exhibit the use of a strategy, because the latter could be very time consuming. Structured observations, on the other hand, entail the use of an observation tool, such as a strategy checklist, which the researcher uses to check off particular strategies as they are observed (Oxford, 1990). This type of observation would be particularly useful in classroom-based strategy assessment, when a researcher or teacher wants to check whether or not students are using strategies that have been taught. It could also be used for individual strategy assessment. In addition to field notes and checklists, audio and video recordings of participants have been used to provide traces of strategy observation that can be used for statistical analysis at a later date (Oxford, 2011).

In a study comparing adults' and children's task-related strategies, Pinter (2006) observed differences among a group of college students and a group of 10-year old children in a state primary school as they carried out an information-gap 'spot the differences' task. The participants were audio-taped to support the observations and the resulting strategies were classified according to Oxford's 1990 strategy categories. Pinter found that "… the children did not use the same sort of strategies to the same extent spontaneously as the adult learners did" (p. 627). However, she too experienced difficulty in observing strategies because of the fact that they are mental processes, which prompted her to conclude that "[o]bserving task performances without asking the learners, therefore, cannot give a full picture of the strategies used" (p. 627).

Videotape is more powerful than audiotape as this method captures visual clues to support observations of student strategy use. Oxford (2011) states that "[v]ideotaping of observations allows repeated review of videotapes later, which provides further detail" (p. 145). This method proved to be particularly useful in two studies involving oral communication strategies (Nakatani, 2005; Naughton, 2006), which provide valuable lessons for strategy research. I will now review the methodology used in these two studies, with particular emphasis on the Nakatani study. The review of these two data-based studies will be followed by a suggestion from another researcher for classroom-based strategy assessment of similar strategies (Macaro, 2001). It is important to clarify at this point that in my review the terms "communication strategies", "oral interaction strategies" and "compensatory strategies" are used synonymously. These terms all refer to strategies used by learners to solve problems related to maintaining oral interaction and to make up for

insufficient knowledge of the second language. The three terms are maintained according to the choice of each of the three authors referred to in this section.

Nakatani (2005) chose video-supported observation to assess the effects of awareness-raising training on oral communication strategy use, and on student performance. Transcripts were made of the pre-test and post-test videotapes. An independent rater reviewed the transcripts while watching the videotapes, and analyzed participants' discourse. Learner performance was rated in terms of the quantity of speech production measured by length of significant utterances and evidence of communication strategy use, as exemplified by student behaviour in repairing and maintaining interaction. A coding scheme was used to identify evidence of the following categories of strategies, which were deemed to facilitate oral interaction: *help-seeking, modified interaction, modified output, time-gaining, maintenance, and self-solving* strategies. According to the coding scheme, the following descriptions of the strategy categories were provided: *help-seeking strategies* included an appeal for help and asking for repetition; *modified interaction strategies* encompassed signals for negotiation by the learner to overcome communication difficulties, such as confirmation checks, comprehension checks, and clarification requests; *modified output strategies* included rephrasing in response to a request for clarification; *time-gaining strategies* consisted of the use of fillers to gain processing time; *maintenance strategies* entailed providing active responses, such as conversation gambits, and repeating parts of an interlocutor's utterance to show understanding; *self-solving strategies* included those used by the learner to compensate for their own insufficient knowledge of the language, such as using circumlocutions or paraphrasing. The transcripts were then reviewed by a second independent rater, and the ratings of the two reviewers were compared to increase the reliability of the results. Interrater reliability on the post-test, estimated by Cronbach's alpha, was .92. In addition to the videotapes, audiotapes were made of the oral interaction tasks and following the tasks, the participants listened to their audiotapes and commented on their strategy use. This meticulous observation procedure gives this particular study a high degree of reliability.

Video-supported observation was also employed by Naughton (2006) in a study to assess the effect of a cooperative strategy instruction program on interaction patterns amongst groups of university students in an oral discussion task. The

strategies involved some of the same oral interaction strategies as those in the Nakatani (2005) study, and assessment involved "… use of interaction strategies, as defined by the number of times the students engaged in asking follow-up questions, requesting and giving clarification, self-or other-repair, and requesting and giving help" (p.173). An observation tally form was used by two independent raters to tally the data, and inferential and descriptive statistical analyses were later performed on them. Video-supported observation was a well-chosen method for these two studies as they involved oral interaction strategies, which are largely observable.

Classroom-based observation. Macaro (2001) suggests an approach to observation that is practical for teachers, but the results would be more difficult to analyze from a research standpoint than the two previous studies. The Macaro approach advocates classroom-based assessment, whereby teachers "look for traces of strategy use," such as students moving their lips during a questioning period, indicating that they are preparing themselves to speak, students buying time to think by using discourse markers such as 'uh' or 'well', or students employing the compensatory strategy of circumlocution when they do not know the exact word they wish to say. This type of observation, he suggests, "… offers the busy teacher an opportunity to make a start with thinking about how their learners are learning" (p. 66). This suggestion is very practical, and also congruent with the approach of ongoing assessment recommended by the MELS. However, given the possibility of misinterpretation of what is being observed, teachers or researchers would be well advised to double check assumptions of strategy use with the learner before drawing conclusions, as Pinter (2006) noted, and as my own experience in a pilot study showed.

For my pilot study in 2007, I conducted classroom-based observation of student strategy use, following explicit strategy instruction by the teacher in the use of the compensatory strategy, *Asking for help*. My observation was supported by videotaping, which I later used for stimulated recall during a post-task self-report in which a small sample of the students viewed their video and commented on their strategy use. During my classroom observation, I presumed that a student was making a non-verbal appeal for assistance during a speaking task. However, upon viewing the videotape, the participant reported that he had simply frozen in the direction of his

team-mate, who noticed his predicament and offered him unsolicited assistance. It is possible that this represented a sub-conscious appeal for help but, if we agree that strategy use involves some degree of consciousness, this would be an example of one of the limitations of observation. This type of limitation led researchers in the field of language learning strategies, such as Oxford (2011), to caution that "[o]ne major difficulty with any observational technique is that many strategies may occur mentally and cannot be seen through ordinary observation. Hence it is helpful to combine observation with querying learners about their strategies through an interview, questionnaire, or simple *member check*" (p. 145). Some of the other means of strategy assessment that could be used for this purpose fall into the category of self-report measures, discussed below.

Self-report.

I will first discuss the concept of self-report, and then examine various self-report methods used in strategy assessment. Self-report constitutes an important way of verifying strategy observations with learners and providing various means of triangulation. However, learners may have difficulty remembering their strategies, especially if there is a lapse in time between the process being reported on and the self-report. As a result, students may report using a particular strategy when it is not used at all, and by the same token, strategies that are used may not be reported (Singhal, 2001). Learners may also have varying degrees of ability to express their strategy use, either in written or verbal forms. As Oxford (2011) points out, validity of the results can vary in comparisons of learners at varying degrees of proficiency, as high proficiency learners might be better able to verbally express what they are doing. Pinter (2006) notes that this is particularly true of children who, she claims, might have difficulty verbalizing their strategies. This difficulty could, however, also be related to the proficiency levels of the children. Other studies of children's strategies (Chamot et al. 1999; Gu, Hu & Zhang, 2005a; Gunning, 1997, Vandergrift, 2002), found that high proficiency children were able to reflect upon and explain their strategies. I believe the selection of participants for Pinter's study might have affected the validity of her comparisons, as the adults in her study were drawn from a population of college students, whereas the children came from a class of elementary students in a public school. College students are required to have a certain grade point

average to be admitted to an institution of higher education, so there is a selection process, whereas an intact class of elementary school children would probably have a greater range of ability levels as they are not selected. This inherent difference between the two groups of participants reduces the validity of the comparison. My own experience, from my 2007 and 2008 pilot studies and from teaching elementary students, suggests that children are capable of reporting their strategies, albeit in childlike, simplified terms, and mainly in their L1. However, this would have to be confirmed by more research involving self-report among children.

Despite the limitations mentioned, self-report remains an essential element of strategy research (Chamot, 2004). A review of the main types of self-report measures follows.

Interviews.

Retrospective interviews, which ask learners to reflect on their past learning experiences, were among the earliest methods used by researchers to elicit language learning strategies used by good language learners (Naiman, Frölich, Stern & Todesco, 1978,1996; Rubin, 1975), and they are still widely used as a method of self-report "because of the flexibility they afford the interviewer to seek clarification and elaboration from learners" (White, Schramm & Chamot, 2007, p. 94). The degree of flexibility will depend on whether the interview is structured, meaning that the researcher asks the learner specific questions, or unstructured, meaning that the learner reports freely on his or her learning strategies. Structured interviews have the advantage of guaranteeing that participants will not report their activities unrelated to the topic of the research, which makes them more efficient than unstructured interviews. However, one disadvantage of this type of interview is that the participants are limited to the specific questions asked and there is a danger of social desirability, in that they might report what they perceive to be the 'right answer'. Unstructured interviews do not have these limitations but they are time consuming and if there is no particular task involved, the researcher might have to intervene in order to keep the participants on the topic of reporting their strategies (Cohen & Scott, 1996).

Naiman, Frölich, Stern & Todesco (1978) used a combination of a structured interview with an unstructured component in their adult interview study investigating the strategies of good language learners. The first part of their interview consisted of

specific questions about the participants' language learning, and the second part entailed a free retrospective report of what the participants had done in the past to enhance their language learning. Gunning (1997) used a version of a similar interview to probe the language learning strategies of eleven-year-old children. This version, modelled on the Naiman, Frölich, Stern & Todesco 1978 interview, comprised of a structured part involving specific questions and an unstructured part in which the participants, who had been in the process of preparing for an end-of-year test, were shown a practice sheet that they had been given a week earlier and asked to relate how they were using the sheet to prepare for the test. The unstructured part of this interview offered the advantage of having the participants talk about the strategies they were actually using at the time of the interview, thereby avoiding the pitfall of participants not accurately remembering strategies they used in the past. This part of the interview also allowed me to gain insight into participants' strategy use, as it revealed nuances of personal strategies that were not pre-determined by the researcher. For example, the high proficiency learners in this study understood the nature of the task, which was preparing for an oral comprehension test, and adapted their strategies accordingly, whereas the low proficiency learners used ineffective strategies for the task. Details given by the participants indicated that the high proficiency learners all practised aloud, using various idiosyncratic strategies, such as practising with a dog, playing school in English on the telephone with a cousin, and pretending the study sheet was a person and engaging in a conversation with it in order to assess what was known and what needed more practice. The low proficiency learners all used strategies unsuited for the task, such as silent reading of the review sheets and word-for-word translation. I believe that when there is a specific task involved and participants are commenting freely on their strategies related to that task, as in this study, the chances are greater that they will remain on topic and not report activities irrelevant to the research question. However, another way of keeping participants on topic while giving them some leeway for elaborating on their strategy use is through the use of semi-structured interviews, which have been used by some researchers (O'Malley et al., 1985).

A semi-structured interview refers to "… the extent to which your interview questions are 'fixed' in your mind or on your interview prompt sheet and to what extent you allow your interviewee to diverge into other areas" (Macaro, 2001, p. 56).

O'Malley et al.'s questionnaire was used to investigate the strategies that high school students used for specific ESL tasks, such as pronunciation, oral grammar drills, vocabulary learning, following directions, communication outside the classroom, listening, and oral presentations. The researchers provided students with a questionnaire guide so they could prepare their answers. Each question on the questionnaire was given a context; for example, setting the scene in class, and telling the students that the teacher wants them to pronounce words correctly so he/she says the words and asks the class to repeat them. This particular item was followed up by three questions, the first of which required a yes/no response: *Do you do this in class?* The third question allowed the participants to elaborate: *What special ways do you have to make sure that you copy the teacher's pronunciation?* The context supplied helped to ascertain comprehension by the respondents and, in the absence of a task, provided a point of reference for them. The interviews were audio-taped and transcribed, and the results analyzed for evidence of strategies that had already been identified in the literature. Participants' responses allowed the authors to uncover new strategies that had not been identified in their previous taxonomy. This type of interview has the advantage of allowing the participants to clarify responses regarding various aspects of their strategy use that might not be clear to the researcher.

Classroom-based interviews. Vandergrift (2002) also used a semi-structured group interview in a classroom-based French as a second language (FSL) strategy assessment study with intact classes of Canadian children in grades 4 to 6. Whole class interviews were conducted in order to have the participants engage in a group reflection about the strategies they used for specific L2 listening tasks. The students responded to questions such as "*What helped you to understand? Did it help you to listen for key words? What hints or clues helped you? Why? Could you understand the message without understanding every word?*" (p. 560). The group reflection was led and recorded on a single questionnaire by the teachers involved. The resulting qualitative data were analyzed for evidence of "three forms of metacognitive knowledge; that is, person knowledge, task knowledge and strategic knowledge" (p. 565). Evidence of strategic knowledge was further analyzed for strategies that enhance second language listening, based on the taxonomy of O'Malley and Chamot (1990). Conclusions were then drawn regarding the effect of guided reflection on student

awareness of the listening process. I find this process interesting from the point of view of consciousness-raising by a teacher or for noticing 'traces of strategy use' as suggested by Macaro (2001) but I think that, for research purposes, the group reflection would need to be recorded on audio or videotape, in order to ensure the veracity and completeness of the statements noted down by the teacher. Some of the students' responses were rather long and, from my own teaching experience with children of the same age group as the participants in this study, I find the feasibility of leading a whole class discussion and taking notes on the interview questionnaire at the same time dubious. This interview was supported by a written strategy checklist that each child completed but I believe that in a class discussion, they would perhaps say much more than they would write on a checklist and some information might be missed if the only traces of the discussion are the teacher's notes. A recording would have supported the teacher's field notes and contributed to the reliability of the procedure.

Think-aloud protocols.

Think-aloud protocols are defined as verbal introspective self-reports consisting of "… stream-of-consciousness disclosure of thought processes while the information is being attended to" (Cohen & Scott, 1996, p. 96). Think-aloud protocols have the advantage of being concurrent with the task for which the language learning behaviours are being reported, which diminishes the incidences of learners' forgetting what they did and reporting their strategies inaccurately. However, this procedure is cognitively demanding as participants are required to verbalize their thought processes while carrying out a task. Learners, especially children, have to be trained in the procedure.

Chamot and El Dinary (1999) used think-aloud protocols to elicit the strategies of children enrolled in a language immersion program. They trained the children in the following way. The teachers first explained the purpose of the research and the think-aloud procedure to their classes. A team of researchers developed a scripted interview guide and used it to train the interviewers, who then met with each participant. Prior to starting the think-aloud process, the interviewer explained and modelled the procedure while solving a picture puzzle. Participants were then asked to restate the explanation, and given a reward for correctly explaining the procedure. The students practised the

procedure and then engaged in the tasks, which consisted of ten minutes of reading and ten minutes of writing. During the tasks, interviewers gave students open-ended prompts to encourage the think-aloud process. In this study, the terms think-aloud interviews and think-aloud protocols were used synonymously, which hints at a fundamental problem with using this type of methodology with children; namely, the degree of prompting that is necessary with this age group. Examples of the prompts provided in the notes seem to be contrary to the dictum which states that "… verbal reports of mental processes should avoid the usual social conventions of talking to someone" (Brown & Rodgers, 2002, p. 55). Note 2 of the Chamot et al. (1999) article, which describes the prompts, shows that these prompts used with the children would elicit a conversational response as the interviewer said, "*Before reading, what are you thinking about? ... Why do you think that?"* (p. 333). In fact, there was so much probing involved in these 10-minute introspective sessions that it is my opinion that they do not qualify as real think-aloud protocols. However, from my teaching experience with children, I believe this degree of prompting was essential because of the ages of the participants in the study. The researchers could perhaps have coined another term for the procedure. This experience points to a need for assessment methods adapted to the age of the participants.

Gu, Hu and Zhang (2005) concur with this analysis. In their report of a think-aloud study whose purpose was to uncover the problems in eliciting strategies from lower primary school pupils in Singapore and to present findings on these learners' strategy use, they mentioned that although Chamot et al. (1999) did not report their problems in conducting their research, it was ascertained through personal communication with Chamot that they had, indeed, experienced similar difficulties to those encountered by Gu and his colleagues in using think-aloud protocols with young children. Gu et al. (2005) stated that many of the children in their study had difficulty verbalizing while performing a language task and that their research team "… had to ask questions constantly to probe for information that could reveal their mental processes and strategies. Consequently, we did not obtain think-aloud protocols as such but verbal reports elicited through intensive probing" (pp. 288-289). Gu et al. stated that because the participants were children, they tended to forget the requirements of the verbalisations so the researchers affirmed, "Our experience with using the think-aloud procedure with adults and children suggests that the most salient

difference between adults' and children's performance is the amount of probing needed" (p. 297). As a result, Gu and his colleagues used new terms for this method when applied to research with children, namely 'probed think-aloud' or 'probed introspective verbal report' (p. 286). I support the use of these new terms as I believe that they avoid confusion and clarify the necessity of probing when applying this procedure to research with children. However, when probing, the researcher should exercise caution in order to avoid undue influence in the reports given by the children. As Gu et al. point out, "… in asking specific questions, there was a real danger of putting the researcher's strategies into the child's mouth," which might result in an overestimation of the child's strategies (p. 259).

Another problem with employing think-aloud protocols with children that was revealed by this study relates to the power relationship that exists between adults and children. Gu et al. found that the presence of an adult might put pressure on a child. One child in their study broke down crying when the researcher prompted her with *"What do you want to do now?"* The child, who was accustomed to adults telling her what to do, interpreted this question as a message that she had done something wrong, not that the researcher wanted her to give an opinion. These researchers therefore recommended as a possible solution that research assistants be trained in dealing with children, or that teachers who are used to dealing with children be recruited to carry out future research. Another solution proposed by Gu et al. (2005) for overcoming the problem of the power relationship between adults and children could be to involve peer groups or self-chosen friends, in order to give the participants a supportive and enabling feeling. For the same reason, they advocate that research with children be conducted in their own classrooms. In spite of the acknowledged difficulties associated with the methodology of this study, Gu et al. managed to uncover general patterns of strategy use among children, including distinctions among elementary school children in the younger grades, and those in the older grades; for example, Primary 1 children used mainly the strategy, *Asking for help*, while children in the older grades had a wider variety of strategies. This study also corroborated the findings of other studies with adolescents, adults and children, which revealed differences in strategy use between high and low proficiency learners, with the former using more top-down strategies and the latter using more bottom-up decoding strategies. In writing, high proficiency learners used planning strategies, whereas low

proficiency learners did not. Finally, Gu et al.'s 'probed think-aloud' study also showed that the children were able to perform the think-aloud tasks with assistance, and that "even lower primary school pupils have impressive introspective abilities to verbalise their mental processes" (p. 296).

A classroom-based adaptation: colour-coding. Lee (2007) used think-aloud protocols with some of her participants but in order to assess the strategy use of all of her students, who were from a large ESL university class of 40 students or more in Korea, she made another innovative, simplified adaptation of this technique. She trained the students to colour-code the strategies they used while reading; for example, "… when they learned the first reading strategy, *Predicting,* they were trained to tag the parts (e.g. words, phrases, tables, and pictures) where they made predictions, using a red flag" (p. 66). Each of the six reading strategies included in the strategy instruction had its own colour, and the colour-coding was used to raise students' awareness of them. This method was efficient and effective. It allowed the researcher/teacher to assess the participants' use of these strategies as they engaged in specific reading tasks on seven different occasions throughout a 14-week semester, and to gain qualitative insight into the manner in which they applied the strategies to the tasks. For classroom-based strategy assessment purposes, I think this method is practical for teachers and researchers alike. It would be interesting to see if colour-coding could be applied to strategy assessment at other levels, such as secondary or elementary levels. I will now discuss another efficient self-report measure for conducting strategy assessment on a large scale, questionnaires.

Questionnaires.

Questionnaires are the most frequently used methods for identifying language learning strategies because they allow researchers to examine the strategy use of large numbers of participants (White, Schramm, & Chamot, 2007). As mentioned earlier, some questionnaires are designed to elicit participants' general strategy use, while others are linked to a specific task.

General strategy questionnaires. There are several questionnaires for eliciting learners' general strategy use but "[t]he greatest numbers of descriptive studies have

utilized a questionnaire developed by Oxford (1990), the Strategy Inventory for Language Learning (SILL)" (Chamot, 2004, p. 16). The SILL for learners of English as a second language is a 50-item questionnaire which reflects the six-category strategy system devised by Oxford, in 1990; that is Memory, Cognitive, Compensatory, Metacognitive, Social and Affective strategies. Students respond on a 5-point Likert scale about the frequency of their use of each of the strategies on the questionnaire. The SILL has been used by many researchers across the world to identify the strategy use of language learners, and the relationship between strategy use and variables such as learning styles, proficiency and gender (Dreyer & Oxford, 1996; Green & Oxford, 1993; Oxford & Burry-Stock, 1995).

Despite the SILL's international appeal, it has been criticized in recent times by Dörnyei (2005) because he says the questionnaire focuses on strategic behaviours and the scales indicate frequencies. He claims that the items are behavioural so the scores cannot be cumulative or be assumed to have a linear relation between individual item scores and total scale scores. For example, one can be a good memory strategy user but score low on some of the items in the memory scale (e.g., acting out a word or using flashcards). However, the purpose of the SILL is to provide a snapshot of the individual learner's typical strategy use and, in general, reliability tests administered on it have yielded high results, especially when it is administered in the L1 of the participants. The SILL embodies several learning theories, such as cognitive theory concerning declarative and procedural knowledge, and the theory of metacognition (Oxford, 2011). Hsaio and Oxford (2002) tested 15 strategy classification models, each reflecting a somewhat different theory of language learning strategies. Based on Hsaio's confirmatory factor analysis involving 517 university-level English language learners, the researchers claimed that Oxford's six-factor system, on which the SILL is based, was most consistent with students' actual patterns of strategy use.

It must be mentioned, however, that Oxford has always advocated the adaptation of tools, such as the SILL, to make them culturally relevant to the participants (Oxford, 2011). Yamamori, et al. (2003) suggest that "… since strategies are always used in a particular context and since contextual differences are likely to influence strategy use, research methods must be context-sensitive" (p. 383). This concern for making strategy research relevant for various contexts has led to several

adaptations of the SILL for different age levels and cultures (Gunning, 1997; Jimenez-Garrido, 2010; Lan, 2004; Lan & Oxford, 2003; Su, 2002; Yamamori et al., 2003).

The first adaptation of the SILL for children, The Children's SILL (Gunning, 1997), is a 30-item questionnaire that was originally written in French for Francophone children from Québec. The initial version was field-tested with a group of my own grade 5 students. The children were invited to add strategies they had been using that were not mentioned on the questionnaire. As a result, strategies such as practising English on the computer were added to make the questionnaire culturally relevant. The new version was submitted to the author of the original SILL, Rebecca Oxford, for expert consultation. Modifications were made according to her suggestions and the resulting questionnaire was piloted with five grade 5 classes by another teacher from Québec, in order to guarantee comprehensibility of the strategy items by the children. Suggestions from the pilot testing were incorporated and the final version of the questionnaire was used in my 1997 master's study with five other classes. The Children's SILL Version 2.0 has now been updated to include the eighteen strategies in the Québec Education Program (2001) and the new 32-item version was once again field-tested for comprehensibility to children in my pilot studies in 2007 and 2008. Both versions 1 and 2 of The Children's SILL were translated into French for the Québec children, and verified by a native Francophone teacher for authenticity of the translation. The Children's SILL Version 1.0 was adapted for Taiwanese children and the resulting Taiwanese Children's SILL was translated into Chinese and piloted (Lan & Oxford, 2003). Following the pilot testing, it was readapted for a dissertation study (Lan 2004) with that population. The Taiwanese Children's SILL was reviewed by experts in the field of learning strategies and practitioners working with Taiwanese children to increase its validity and to ensure that it would be culturally appropriate for Taiwanese children. The Children's SILL Version 1 (Gunning, 1997) has also been translated into Spanish and used in a study of Spanish 6th graders' strategy use (Jimenez-Garrido, 2010).

Despite the efficiency of general strategy questionnaires, such as the SILL and the Children's SILL, in assessing large numbers of participants' general use of strategies, their limitations, which are also inherent in most survey studies, relate to the fact that the data gathered are dependent on participants reporting accurately. In fact, participants may report their behaviours incorrectly, forget what they actually do,

or misinterpret some of the items on the questionnaire. Oxford, Cho, Leung and Kim (2003) also found that in the absence of a task, participants in some cases reported greater or lesser use of strategies than in the presence of a task. This prompted them to advocate the use of task-based questionnaires, in addition to the general questionnaires.

Task-based strategy questionnaires. Oxford, et al (2003) define *task* as "… an instructional plan that requires learners to move toward an objective or outcome using particular (teacher-given) working procedures or processes" (p. 7). They add that "when a specific task is present as part of strategy assessment, L2 questionnaire respondents are explicitly asked to focus on the strategies they used with regard to that particular task" (p. 16). Chamot (2004), in her support of task-based questionnaires administered immediately after respondents have completed a task, reasons that "… students will be more likely to remember and report accurately if little time has elapsed" (p. 15).

For their task-based questionnaire study, Oxford et al. (2004) used an adapted version of the Reading Strategy Questionnaire (RSQ) designed by Ikeda and Takeuchi (2000). This adaptation included rewording to make the questionnaire suitable for learners from various L1 backgrounds, and separation of items that contained more than one reading behaviour. The resulting questionnaire contains 35 reading strategy items, and students respond using a 6-point Likert scale. Oxford and her colleagues carried out an exploratory study with adult college and university students using this questionnaire. The study was conducted in three phases (No Task, Easy Task, and Difficult Task). Task difficulty of the reading passages used was defined in terms of their "readability" based on the Flesch Reading Ease Scale, which gauges difficulty on a 100-point scale; the higher the score, the easier it is to read the text. The Flesch indices for the reading passages used in the Oxford et al. study were 74.2 for the easy passage and 39.8 for the difficult passage (p.19). Repeated measures ANOVAs (with task condition as the within-subject factor and proficiency the between-subjects factor) were conducted on the data to determine the mean frequencies of strategy use across the three task conditions for high and low proficiency learners. As this study involved repeated-measures ANOVAs, the authors were careful "…to ensure that the sphericity assumption was not violated…", so they conducted the Mauchly Test of

Sphericity, "to ensure that, for the RSQ, the correlation between Time 1 scores and Time 2 scores was roughly equivalent to (1) the correlation between Time 1 scores and Time 3 scores and (2) the correlation between Time 2 scores and Time 3 scores" (p. 22). Results showed that the sphericity assumption had not been violated. In order to find out if high and low proficiency learners reported different frequencies in strategy use within each of the task conditions, the authors used multiple analysis of variance (MANOVA), with proficiency level as the independent variable (p.22).

This study revealed a significant interaction effect between task condition and proficiency levels. It is interesting to note that the low proficiency learners' strategy use increased across the three task conditions. This means that as the task became more difficult, they used more strategies. In contrast, the high proficiency learners' strategy use decreased across the same three task conditions. The detailed analyses of the data from task-based strategy questionnaire in the Oxford et al. study helped the researchers to glean insight into the quality and quantity of the participants' strategy use according to the complexity of the task. Post-hoc tests revealed that the high proficiency learners became selective in their strategy use when the task presented them with a challenge. They demonstrated metacognitive awareness as they chose top-down reading strategies, such as predicting and guessing meaning from context, to accomplish the task. The low proficiency learners, on the other hand, simply increased their strategy use when the challenge increased, without matching them to the demands of the task. Their strategies, as opposed to those of the high proficiency learners, tended to be "… of a more mechanical, "bottom-up" nature that used very basic analysis rather than more sophisticated inference, involved translation into the native language, and depended on the phonic support of reading aloud" (p. 34). This study supports other studies showing that the frequency and number of learning strategies are not necessarily indicators of success on tasks (Cohen, 1998; Vandergrift, 2003). This led Oxford et al. to comment that "the study also underscored the great need to look at individual strategies, not just at the mean on a total strategy questionnaire and not just at means of various strategy categories" (p. 35). I consider the qualitative information revealed by this study to be of great benefit to teachers and curriculum developers in the planning of strategy instruction for accomplishing reading tasks, as they can train low proficiency learners select appropriate strategies according to the nature and difficulty of the task.

In order to probe learners' strategies related to a different skill area, listening, another task-based questionnaire was developed by Vandergrift, Goh, Mareschal and Tafaghodtari (2006), The Metacognitive Awareness Listening Questionnaire (MALQ). This questionnaire was designed to be administered after the completion of "an authentic listening activity, so that students would have a specific task on which to base their responses" (p. 441). The MALQ is based on a theoretical model of metacognition that encompasses three categories of knowledge: person knowledge, task knowledge and strategic knowledge. It was subjected to rigorous validation procedures. First it was reviewed by expert judges for redundancy, content validity, clarity and readability. It was then field tested, revised, and piloted with almost 1000 adults and adolescents from Canada, Singapore and The Netherlands. The resulting questionnaire is a 21-item measure, based on constructs such as metacognition and self-regulation, and learners respond on a six-point Likert scale. The MALQ is designed "for researchers and instructors to assess the extent to which language learners are aware of and can regulate the process of L2 listening comprehension (p. 432). It is also intended to serve as a self-assessment tool for helping learners assess their awareness of the listening process and to reflect on their L2 listening strategy use. The language of the MALQ is very simple, making it a suitable tool for this purpose, as the following examples illustrate: (Directed attention) Item 2: *I focus harder on the text when I have trouble understanding*, and Item 12: *I try to get back on track when I lose concentration.*

After reading about task-based strategy questionnaires, and being convinced of their value, I searched in vain for such questionnaires designed for children. Given this void, I created three task-based questionnaires for grades 5 and 6 Francophone children learning ESL in Québec, and tested them in pilot studies in 2007 and 2008. These questionnaires are related to the three ESL competencies in the Québec Education Program (2001); that is, oral interaction, accomplishment of tasks based on listening and reading comprehension, and written production. The content of the questionnaires was reviewed by a scholar from the field of language assessment, Carolyn Turner, and one from the field of learning strategies, Rebecca Oxford. An elementary school ESL teacher and two ESL curriculum consultants from Québec, who are very familiar with the curriculum and elementary school children, also reviewed them for their readability and fidelity in reflecting the strategies in the

Québec Education Program. The questionnaires were then translated into French and one of the consultants, a Francophone, verified the translation. The resulting task-based questionnaires contain 14 items each and participants respond using a yes/no scale. They were initially field-tested in 2007 with a group of grade 5 students and in 2008 with a group of grade 6 students. In both cases, the teachers who administered the questionnaires reported that the children found them to be clear. I was present on one occasion when the one based on an oral interaction task (see Appendix G) was administered and the children completed it in about five minutes. I concluded that the questionnaires were comprehensible to children and adapted to the task, which makes them practical for teachers and other researchers who might wish to use them. Taken together, these questionnaires lend support to the general strategy questionnaire, The Children's SILL 2 (Version for the Québec Education Program). As with other questionnaires, teachers or researchers from other cultures who might wish to use these questionnaires in the future should adapt them to make them culturally relevant.

Task-based strategy checklists. Cohen, Weaver and Li (1998), who also highlight the value of strategy assessment linked to a specific task, used task-based strategy checklists to assess the impact of strategies-based instruction on speaking performance among university students enrolled in foreign language classes. In that study the participants, divided into experimental and comparison groups, were given three speaking tasks, namely a self-description, a story-telling and a city description, to complete in a language laboratory in pre- and post strategy instruction test situations. They were allowed rehearsal time and in the case of the story-telling and city description tasks, they were also provided with resources, such as vocabulary lists. They were asked to complete strategy checklists, designed to yield data regarding the participants' strategy use in preparation for the task, self-monitoring during the task, and self-reflection following the task. Each checklist was linked specifically to one of the three speaking tasks above and participants completed the respective checklist before, during and after each of the speaking tasks. Examples of strategies on the checklists included rehearsal, note-taking, prediction of potential difficulties, self-encouragement, word substitution, attention to grammatical forms, reflection on task performance, and plans for future learning.

There was a positive finding with regard to the question concerning the impact of strategies-based instruction on speaking performance on the third task, the city description, as the experimental group outperformed the comparison group on the post-test. On the other two speaking tasks, however, post-test results did not find a significant difference between the two groups, but the authors suggested that the short duration of the treatment (ten weeks) may have contributed to this. With regard to the assessment method, the strategy checklists provided detailed information about the relationship between the use of specific strategies and task performance. For example, for the experimental group, an increase in the use of certain preparatory and monitoring strategies related to higher results on certain elements of the rating scales, such as self-confidence, grammar, vocabulary, and identifying and ordering elements in a story. The data from the comparison group, on the other hand, revealed more examples of strategies that correlated negatively with elements of speaking performance, such as skipping parts of a description which called for words that participants did not recall, which related to a lower rating in vocabulary and grammar. According to the researchers, these examples suggested that the participants in the comparison group were less adept at choosing certain strategies to enhance their speaking performance. With regard to the strategy checklists they concluded that strategy assessment linked to a specific task "...seemed to capture the dynamics of strategy use..." and "... the strategy checklists proved themselves effective as a measure in linking task-specific strategies with improved task performance..." (p. 145).

This literature review will now turn to another type of specific self-report measure, diaries.

Diaries.

Diaries have been used in strategy research to provide personal accounts of learners' experiences that help researchers gain insight into their strategies and other learning behaviours. As Oxford, Lavine, Felkins, Holloway and Saleh (1996) state, "Language learning diaries are a type of self-report, which allows learners to record on a regular basis numerous aspects of their learning process, including but not limited to the use of specific learning strategies" (p. 20). Some diary studies involve free-form writing (Carson & Longhini , 2002), while others are of a structured nature (Lee,

2007). Cohen and Scott (1996) point to two serious drawbacks with diary studies; namely, the volume of data produced, and the potentially random nature of free-form entries by the participants. However, if the participants understand the objective of the diary study, their diaries can reveal a wealth of information. As Oxford et al. (1996) note, "Diaries and recollections offer rich pathways into students' minds" (p.34). A good example of this is the free-form diary study reported by Carson and Longhini (2002). In this study the sole participant, Carson, a linguist from the United States, documented the strategies she used in an immersion setting while learning Spanish in South America. Her diary provided rich qualitative data, demonstrating that her learning style remained unchanged throughout the period of her study but her strategies varied according to the situation.

Diary strategy assessment has certain limitations already mentioned regarding self-report studies because reporting is subject to the participants' memory and interpretation. In addition, Cohen and Scott (1996) point to the difficulty in applying quantitative measures to diary studies. However, they cite the exception of Oxford et al. (1996), who used content analysis to identify and classify the strategies mentioned by the learners in one diary study. A frequency count was done and the authors then conducted chi-square tests to assess differences in strategy use amongst males and females. Nevertheless, diary studies do by nature lend themselves more readily to qualitative analysis, so it is more common for researchers to choose this form of analysis. For example, in a second diary study reported, Oxford et al. (1996) found that the participants wrote very creatively so the researchers opted to conduct a qualitative analysis of their strategies, rather than a frequency count.

Diaries can be useful in raising learners' awareness of their strategies and their progress as they write reflectively about their learning (Oxford et al., 1996). As Lee (2007) points out, however, students might have difficulty writing reflectively in contrast to descriptively, so she opted for a structured diary study in which the Korean adult learners in her study were asked to respond to specific questions about their strategy use.

Simard, French and Fortier (2007) also support the view that diary writing should be structured. In an earlier free-form diary study to promote metalinguistic reflection among grade 6 ESL learners in Québec, Simard (2004) found that it was difficult to get the children to stay on the topic of the research. She trained them to

reflect on their learning in their English class, by eliciting examples and writing prompts on the board to guide their reflection. The children wrote freely for ten minutes in their L1 at the end of each English period. Their diary entries were disappointing in terms of metalinguistic reflection as the children wrote more frequently about other issues. Nevertheless, the diaries revealed important information regarding the participants' impression of their learning and their opinions about the methodology of the study. The diaries showed that the children thought they had learnt nothing, even when it was clear to the researcher that learning had taken place, which led Simard to conclude, "A possible explanation for this situation is related to the difference between implicit and explicit knowledge development. In this specific case the students simply cannot report their implicit knowledge" (p. 45).

This diary study sheds light on these children's learning processes, which can guide future research with this population. With regard to the methodology, Simard discovered through the children's diaries that they became bored with the testing method, which required them to do the identical test on three different occasions. The children became disengaged and their reporting of their learning processes decreased each time they took the test. Another drawback reported by Simard was related to the fact that the test she employed was from a textbook series used with the previous Québec curriculum, which did not match the curriculum in place at the time of the study. The test was a listening comprehension measure, with a reflection component at the end. There was no oral interaction component, and oral interaction is the major competency in the current Québec Education Program (2001), the curriculum used by the participants in the study. This led the researcher to note that it would have been preferable to devise a new test with the teacher's collaboration.

Through the findings reported here, and from my own experience teaching grade 6 learners similar to the participants in the above study, I concur with Simard that in addition to learning, the children also need to perceive that they are learning. This means that explicit training is important with this population, and the children have to understand the rationale for the training in order to perceive its benefits. I also agree with her conclusion that testing methods need to be congruent with the curriculum in place. In order to design research for this population, it is therefore essential to understand the assessment context and principles according to the current Québec curriculum.

Conclusion

In conclusion, I have reviewed key concepts and empirical research in the fields of language learning strategies and strategy instruction. Specifically, definitions and strategy classification systems were explained, followed by patterns of strategy use among adults, adolescents and children. Some researchers suggest that a more precise definition and a simplification of terms are needed in the field (Cohen & Macaro, 2007; Macaro, 2006; Oxford, 2011). This review of the literature demonstrates that a simplification of terms would facilitate comparisons across studies, as pointed out by Lafontaine (2006). This was evidenced by my attempt at comparing the strategies in the Québec Education Program (2001) with those in studies by Nakatani (2005) and Naughton (2006); see Table 1. Most of the literature so far has dealt with describing learners' strategies, as opposed to exploring the effects of strategy instruction, as this review showed. These descriptive studies are important because finding out what strategies students are using informs instruction. As Cunningham-Florez (2000) concluded, "... knowing about and understanding the learning strategies of the learners allows the teacher to make more informed decisions about what instructional strategies are likely to be most effective" (p. 1). However, a need for more attention to the area of strategy instruction research was highlighted.

Empirical research reviewed demonstrated the beneficial effects of strategy instruction in the areas of various skills and competencies and, contrary to the variation in the strategy classification systems alluded to above, the models of strategy instruction described showed that there are many commonalities among researchers regarding procedures. Nevertheless, gaps in this area of research remain, especially with regard to classroom-based strategy instruction. O'Malley and Chamot (1990) called for research in strategy training that is practical and classroom-based, in order to increase the chances of its acceptance by teachers. The studies reviewed illustrate that research in this area has been scant, particularly with regard to children.

Next, the ways in which strategies have been assessed were reviewed and, given the inherent difficulty of assessing them because they are largely mental processes, this review suggests that the most reliable avenue would be to combine several assessment methods in order to increase the sources of evidence to support the assessment, as suggested by the mixed-methods study conducted by Lan (2004).

In conclusion, this literature review shows that considerable work has been done in the area of identifying strategy use among adults and adolescents but there are gaps in the literature concerning the identification of children's strategies. With regard to research on classroom-based strategy instruction and assessment among children learning ESL as a compulsory school subject, the gap is even more pronounced. The rest of this thesis begins to fill these gaps by describing classroom-based research focusing on strategy use and instruction among children in the province of Québec where strategies have an integral role in the curriculum. Culturally relevant materials and methods were used, in order to empirically examine Francophone children's strategy use and the effects of strategy training and students' subsequent strategy use on their learning of ESL.

The rest of this thesis will describe a study situated in the Québec context where strategies have an integral role in the curriculum. Chapter 3 will explain the methodology and propose a methodological framework that will take into account lessons learnt from the empirical research reviewed here and from my teaching experience. It is my hope that this study will fulfill some of the needs expressed above and provide information to policy makers, teachers, and researchers regarding children's strategy use and methods found to be effective and efficient for teaching and assessing young learners' strategies in actual classroom situations.

Chapter 3: Methodology

Introduction

This chapter will present the methodological framework for my study, starting with the purpose of the study and the research questions, followed by a description of the research design, the context, the participants, the instruments, the data collection procedure and the procedure for analysis. Seeing that the study was conducted in two phases, the methodology for Phase 1, the survey study, will first be described and then Phase 2, the case study.

Aim of the Study and Research Questions

As the review of the literature in Chapter 2 demonstrates, there is a dearth of research in the area of children's L2 strategies, and even less in strategy instruction and assessment among children. This study seeks to provide empirical research to contribute to the literature. The need for this is particularly acute in Québec, where the curriculum requires teachers to integrate strategy training and assessment into their teaching of English as a second language. This study, therefore, aims to examine strategy use and strategy instruction, and their effects on ESL success among children in an authentic context; that is, the ESL elementary classroom. In order to achieve this aim, the following research questions are addressed:

1. What are the patterns of strategy use amongst children enrolled in the Québec elementary ESL program at the 6th grade level?
2. What are the effects of strategy instruction on student strategy use?
3. What is the relationship between student strategy use and achievement as measured by success on ESL tasks?

Context: Strategies and the Québec Curriculum

The Québec Education Program (2001) reflects a competency-based curriculum, in which competency is defined as "… the capacity to carry out activities or tasks by drawing on a variety of resources, including knowledge, skills, strategies, techniques, attitudes, and perceptions" (*Policy on the Evaluation of Learning*, 2003, p. 2). There are three competencies: 1) to interact orally in English, 2) to reinvest understanding of oral and written texts, and 3) to write texts. The weighting for the 3rd

Cycle (that is, grades 5 and 6) is 45% for Competency 1, 35% for Competency 2, and 20% for Competency 3. Most weight is placed on Competency 1, oral interaction (45%), which is considered the 'backdrop' to the other two competencies because students carry out classroom tasks related to all three competencies in a socio-constructivist environment; they develop their three competencies while working and interacting with peers. The teaching and assessment of strategies are integral components of the Québec Education Program.

In this program, teaching and evaluation go hand in hand. The framework for *The Evaluation of Learning* (2002) states that, "… teaching, learning and evaluation are not considered in sequence as distinct points in the pedagogical process, but rather in dynamic interaction" (p. 6). Evaluation is carried out through observation of student performance as they engage in learning and evaluation situations (LES) involving complex tasks which require the use of resources, knowledge, and processes, such as strategies, as students develop the three ESL competencies. During these tasks teachers are required to assess strategies, according to the prescribed evaluation criteria related to each of the three competencies, which all include *Use of strategies.*

The synergistic relationship among teaching, learning and evaluation in the context of this program is similar to a relationship called an "assessment bridge" by Colby-Kelly and Turner (2007), who define this term as "… the area of classroom-based assessment encompassing *assessment* (where learners are in their learning), *teaching* (where they need to go and how best to get there), and *learning* (action on the part of the learner) (p. 11). As strategies are intricately linked to all aspects of the 'assessment bridge' in the framework of the Québec curriculum, classroom-based strategy assessment for learning is advocated. Seeing that very little research exists that combines these elements of strategy assessment, and none among Francophone children from Québec who study ESL according to this curriculum (except for my pilot studies), research into age- and context-specific methods of strategy assessment is greatly needed to fill this gap in the literature. As Lafontaine (2006) points out, very little strategy research has been conducted among Francophone learners, especially those who are less educated than university students, and who have to study ESL as a compulsory school subject.

Participants

The participants of this study involved six classes of sixth graders in the Québec public school system who studied ESL following the prescribed curriculum described above. Specifics concerning the participants for Phase 1 and Phase 2 will be given below in the respective sections dealing with each phase of the study.

Methodology

General Design.

This study followed a mixed methods design. In the *Journal of Mixed Methods Research,* Tashakkori & Creswell (2007b) define MM as "research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or program of inquiry" (p. 4).

The study was conducted in two phases. In Phase 1, a survey study, a strategy questionnaire was administered on two occasions to children in the sixth grade in five schools in Québec, and the results were analyzed. In Phase 2, a case study on strategy instruction was conducted, including a quasi-experimental component, with a subset of the participants from Phase 1. Quantitative and qualitative data were collected simultaneously in both Phase 1 and Phase 2, as will be described in the data collection procedure below, and results were analyzed using a mixed-methods approach.

The mixed methods design used for this investigation was triangulation, with a convergence model and concurrent data collection, adapted from the model proposed by Creswell and Plano Clark (2007) as illustrated in Table 2, below. The data were, however, analyzed sequentially; the Phase 1 quantitative survey data were analyzed independently and then triangulated with the qualitative and quantitative data from Phase 2.

Table 2

Mixed Methods Design

Design Type	Variant	Timing	Weighting	Mixing	Notation
Triangulation	Convergence	Concurrent data collection for Phases 1 and 2 (with a sequential component during the data analysis)	Relatively equal	Phase 1 survey data analyzed independently. Phase 2 data analyzed and combined with Phase 1. Data merged during the analysis and interpretation.	Phase 1: QUAN; Phase 2: QUAN + QUAL

Adapted from Creswell & Plano Clark, p.84

This design is also called parallel mixed data analysis by Teddlie and Tashakkori (2009), who describe the concept as follows:

> Parallel mixed data analysis involves two separate processes: QUAN analysis of data, using descriptive/inferential statistics for the appropriate variables, and QUAL analysis of data, using thematic analysis related to the relevant narrative data. Although the two sets of analyses are independent, each provides an understanding of the phenomenon under investigation. These understandings are linked, combined, or integrated into mega-inferences. (p. 266)

Because of the complexities in assessing strategies revealed by the literature review, and the multi-faceted nature of this investigation, it was felt that a combination of data sources was needed to assess the phenomenon of the issue outlined in the aim of the study above (i.e., children's strategy use, strategy instruction, and their effects on ESL success among children in an authentic context); so a triangulation design was deemed appropriate. In order to answer Research Question 1 (Phase 1 of this study), I investigated patterns of strategy use amongst children in a population of 6th graders in Québec in order to describe the children's general strategy use (i.e., what the children were doing generally without the planned intervention). The method of choice was, therefore, a general survey quantitative study.

The Québec curriculum prescribed by the Ministry of Education mandates the teaching of eighteen strategies in elementary ESL classes but the effects of this strategy instruction had not been tested empirically with children, so in order to answer Research Questions 2 and 3 (Phase 2 of this study), I conducted a case study to investigate the effects of the implementation of this policy; that is, the effects of SI on children's strategy use and of their strategy use on ESL achievement. The case study involved the concurrent collection of various sources of quantitative and qualitative data, such as a strategy log, a task-based strategy questionnaire, videotape of interviews and various types of classroom activities involving the strategy instruction intervention, for a period of four months, in addition to pre- and post-test oral interaction performance. All these data sources were pulled together during the analysis and interpretation phases in order to explain the overarching issue that is the aim of the study outlined above. The use of several sources of evidence in combination to assess the same phenomenon has the advantage of addressing potential problems of construct validity (Yin, 2009).

Phase 1: The Survey Study

Setting and Participants for Phase 1.

The curriculum used by the participants in this study was the Québec Education Program (2001), which was previously described. The students attended school in two school jurisdictions, in five towns, near Montreal, where the population is mainly Francophone, with the five towns having a range of between 80% and 96% of the population whose mother tongue is French (according to Statistics Canada 2006 census); a predominant number of these are unilingual. This means that, although the curriculum refers to English as a second language, the majority of the children in this study function entirely in French, and seldom hear English spoken as a language of communication outside of the classroom. The five teacher participants identified the oral interaction competency as being their biggest challenge in the classroom because the children were reticent to speak English.

The participants from Phase 1 of the current research involved 138 sixth graders from six classes in five different schools in the Québec public school system. Those from four of the six schools studied English as a second language for 1 to 2.5 hours per week, which is considered core ESL, meaning that the students in this

program follow the basic curriculum. Participants from the remaining two schools studied intensive English for two days per week, divided into one full day and two half-days. This means 9 hours per week, or 40% of their school week, was spent studying English as a second language, and 60% was spent studying the other subjects such as French, mathematics and science. There are many models of intensive English in Québec but (40%) concentration of ESL study is the minimum amount of time required for an academic program to be classified as intensive English according to this system. All six classes followed the Québec core curriculum for Francophone schools that is compulsory for all students in the system, but the intensive classes also engaged in enriched activities.

The minimum time allotment for ESL in the Québec education system is 60 minutes per week. Almost all of the participants started studying English in grade 3 and in the year prior to this study, all of the participants were in core groups and received 90 minutes of ESL instruction per week. The six groups of participants, therefore, were at similar levels of English when they started grade 6 in September. At the time of the Time 1 test in October their teachers confirmed, after viewing the exemplars for the MELS competency levels, which range from the level 1 (the lowest) to level 5 (the highest), that the majority of their top students could be expected to fall into the level 3 category. This means that in general, their level of oral interaction proficiency was fairly low.

The first language of the majority of the participants (n=119; 86%) was French, while for three students (2.2%) it was English, and for 13 students (9.4%) it was a language other than French or English. Three students did not answer the question related to native language on the background questionnaire. Most of the participants had little or no exposure to English outside of school. They were from intact classes and the only condition for selection was acquiring signed parental authorization to participate in the study. A total of 68 females and 70 males participated.

Instrumentation for Phase 1.

Strategy assessment. The strategy assessment questionnaire used for the survey study was the C*hildren's Strategy Inventory for Language Learning (Children's SILL)* Version 2, adapted from the original version of the Children's SILL (Gunning, 1997)

to include the strategies in the Québec Education Program (2001); (see appendices A and B). The original Children's SILL was an elementary school adaptation of the *Strategy Inventory for Language Learning (SILL)* (Oxford, 1990) for adults and adolescents, the most widely used strategy questionnaire in the world (Chamot, 2004). The *Children's SILL* was translated into French. The final translation of this instrument was checked by a native Francophone teacher from Québec for authenticity. It was then translated back into English by an impartial Anglophone teacher to verify the validity of the translation and to guarantee that no aspect of the spirit of the original *SILL* had been lost in the translation.

The original *Children's SILL* (Gunning, 1997) went through an extensive validation process (cf. Gunning, 1997). A first draft of the questionnaire was developed and field-tested with four classes of fifth-grade pupils (approximately 115 students). As a result of insights arising from the field-testing, appropriate modifications were introduced to the questionnaire, such as adding an example to clarify an item. The final version was field-tested with a different set of four classes of fifth graders from another school. The aim was to guarantee validity and facilitate comprehension of the questionnaire by the target group. The questionnaire proved to be self-explanatory to the children.

In the *Children's SILL* (Gunning, 1997), the six broad categories found in the original *SILL* (Oxford, 1990) were maintained, but the number of strategy items was reduced to from 50 to 30 because of the age of the learners. The ratio of individual items per strategy category was worked out and maintained. After consultation with Rebecca Oxford, the author of the original SILL, and taking into consideration my years of teaching experience with children of this age, the following criteria were used to make the questionnaire appropriate for use with children: simplicity, comprehensibility to children, and relevance to children. Examples were sometimes added to give the children additional information about a particular strategy item. As with the original SILL (Oxford, 1990) students were asked to respond using the following five-point Likert scale: (1) I never or almost never use this strategy, (2) I usually do not use this strategy, (3) I sometimes use this strategy, (4) I often use this strategy, and (5) I always or almost always use this strategy.

The following examples demonstrate how the original *SILL* was adapted for children. An item on the original *SILL*, "I practice the sounds of English," was

changed to "I practice the sounds of the letters of the alphabet in English". Another original *SILL* item, "I read for pleasure in English," was changed to "I read English books or I work with English programs on the computer."

The following item shows how an example was added to the *Children's SILL* to clarify questions for the pupils, thereby maintaining the self-explanatory nature of the *SILL*. An original *SILL* item, "If I can't think of an English word, I use a word or phrase that means the same thing," was changed to "If I can't think of the expression I want to use in English, I try to find another way of saying what I want to say (synonym, description, etc.)."

The reliability co-efficient for the overall *Children's SILL* (Gunning, 1997) was .94 (Cronbach's Alpha test of reliability), which is high. This is consistent with the reliability test results for the original *SILL* (Oxford, 1990) which is between .89 and .98, depending on whether the students took the *SILL* in their native language or in the target language (Oxford & Burry-Stock, 1995), with higher reliability occurring when the questionnaire was in the native language. The *Children's SILL* was in the participants' native language.

For the current study, I adapted the *Children's SILL*, Version 1 (Gunning, 1997) to include the 18 strategies in the Québec Education Program. The result was the *Children's SILL*, Version 2, for the Québec Education Program (see Appendix B). The strategy categories were the same as the *Children's SILL*, Version 1, namely six categories comprising of memory strategies, cognitive strategies, compensatory strategies, metacognitive strategies, affective strategies, and social strategies. The ratio of items for this version of the Children's SILL could not be maintained because of the desire to focus on the 18 strategies in the Québec curriculum, and to limit the number of items to 32 as previous studies showed that the time needed to complete between 30-32 items was adequate for the age of the participants (Gunning, 1997; Lan, 2004; Lan & Oxford, 2003). Teacher participants reported that the survey took 30 minutes to administer, and that the items were self-explanatory. The questionnaire was once again administered in the participants' L1, French. The reliability co-efficient for the overall *Children's SILL* Version 2 was .82 (Cronbach's Alpha test of reliability). This result, although adequate, sacrifices some reliability from the original Children's SILL (Gunning, 1997) but more closely reflects the local context of the Québec Education Program, the curriculum being used with the participants of

the study. The overall reliability co-efficient was reported in *Children's SILL* (Gunning, 1997; Lan, 2004; Lan & Oxford, 2003) and other *SILL* studies (Ehrman & Oxford, 1995; Oxford & Nyikos, 1989); therefore this procedure was deemed appropriate by the researcher.

Examples of modifications from the Children's SILL, Version 1 to Version 2 are as follows: Category A: Memory strategies. Item 1: *I associate new English words with what I already know*, and item 2: *I associate the sound of a new English word with a sound or a word that I already know*, were combined to produce *I use what I already know to help me understand new English texts or words*, thereby reflecting the Québec Education Program strategy, *Use of prior knowledge*, explained as drawing on one's background as a source of information. Category B: Cognitive strategies. Three items from the original Children's SILL were deleted; namely, item 6: *When I speak in English, I try to imitate English-speaking people, in order to pronounce the words correctly;* item 7. *I often practice English alphabet sounds; and* item 14. *I try to discover grammar rules of the English language.* It was necessary to delete some items in order to maintain the number of items in the overall questionnaire (for reasons already mentioned) and there were no equivalent to these strategies in The Québec Education Program. On the other hand, one item in the original Children's SILL was divided because it represented two separate activities engaged in by children learning ESL; namely item 9, *I read books in English or I work with computer programs.* This item became item 7: *I read books in English* and item 8: *I work on the computer in English (Internet, games, programs, etc.).* Three items were added to this category to respect the strategies in the Québec Education Program; namely, item 13*: I look for specific details when I listen to or read a text* representing the strategy, *Scanning*; item 14: *I use resources (dictionaries, word banks, posters in my class, etc.) to help me with my English* (representing *Resourcing*; and item 15: *When I listen to or read a text, I write down the important information*, representing *Note-taking.* Category C: Compensatory strategies. The original four items were maintained, and two items were added to reflect the Québec Education Program; namely, item 20: *If I can't think of a word when I am speaking English, I take a little extra time to think and then I continue speaking;* and item 21: *I try to guess what will come next in a story, or a conversation.* Category D: Metacognitive strategies. One item in this category was deleted from the original Children's SILL to make room for

a new item reflecting a different strategy from the Québec Education Program; i.e. item 20: *I look for occasions to speak English*, and this was replaced by item 24: *When I am doing an activity in English, I plan what to say or write and how to say or write it.* Item 23*, I analyze the errors I have made and try not to repeat them*, was replaced by item 26: *I check my own work and try to correct my errors during an English activity.* After consultation with two ESL consultants and a teacher, who were accustomed to working with the Québec Education Program, it was felt that this modified self-monitoring item more closely reflected the self-monitoring strategy in the program and practices in effect in Québec schools. Part E: Affective strategies. This section was modified in the following way: Item 25*: I am ready to take risks: guess the meaning of a word or sentence, try to speak English even if I make mistakes* was replaced by, item 29: *I take a chance and speak English even when I am afraid of making mistakes*. Item 26 in the original Children's SILL was deleted and replaced by item 28. *If I don't understand everything I listen to or read in English, I don't worry. I go for the general meaning*. The items in the social category of the original Children's SILL were maintained, as is.

Taking into account evolutions in assessment and suggestions in the literature on questionnaire design and scale development (Malhortra, 2006) concerning decisions a researcher has to make regarding Likert scale development, consultation with an expert in the field of assessment, Carolyn Turner, my PhD advisor, was held. Following this, the rating scale used with the original Children's SILL (Gunning, 1997) was revisited. As Malhortra suggests, there is no optimal number of categories, but I decided to force a positive or negative choice because it was expected that the children would have an opinion, so the neutral point was removed and the five-point scale was reduced to four. The rationale for the change in scale also took into account the age and education level of the participants. As a result, the following modifications were made:

<u>Children's SILL Version 1</u>

1. Never or almost never
2. Usually not
3. Sometimes
4. Often
5. Always or almost always

<u>Children's SILL Version 2</u>

1. Strongly disagree
2. Rarely agree
3. Often agree
4. Strongly agree

Participants therefore responded to the Children's SILL using the 4-point Likert scale and the following interpretation of the scores was used: 3-4 high strategy use; 2-2.9 moderate use; 1-1.9 low use. The following procedures were carried out for validation purposes:

1. Content analysis by expert judgement specific to the instrument. In addition to endorsements from Rebecca Oxford and Carolyn Turner, the final version was also reviewed by two prominent Québec ESL consultants and an experienced elementary ESL teacher with thorough knowledge of the Québec Education Program.

2. Analysis of the language of the questionnaire (French) by two Francophone ESL consultants in order to ensure authenticity of the language.

3. Initial piloting was done for testing feasibility, comprehensibility and appropriateness for the population. The questionnaire was first piloted with an intact group of fifth graders in 2007.

4. Additional piloting was done with five groups of sixth graders in 2008 to examine the administration procedure.

For the present study, the survey was administered twice; Time 1in October and Time 2 in March.

Background questionnaire. A brief background questionnaire was comprised of questions seeking information about age, sex, grade, and native language. This questionnaire was included on the answer sheet for the Children's SILL which was given to the children. The background questionnaire included with Children's SILL administered on Time 2 had an additional question; namely, *Do you like English?* The children had the option of a binary response, 1=yes; 2=no.

Oral interaction achievement assessment. In addition to the strategy questionnaire, a pre-test of English oral interaction proficiency (as defined below) was administered. The test involved an info-gap activity adapted from White and Turner (2005), which was originally used in research with children of the same age. It was felt that this activity would have face validity as it was similar to activities the children were accustomed to doing in class. However, the original rating scale used by White and

Turner was replaced by an oral interaction rubric, in order to reflect the spirit of the competency-based curriculum that is now in place in Québec. According to this curriculum, the criteria for assessment of the oral interaction competency are: use of functional language; use of strategies; participation in exchanges; and pronunciation. These criteria are applied to the way in which the students initiate, respond to, and maintain interaction, the same points that are attended to in the teaching of oral interaction in the curriculum. This represents a shift from assessing speaking as 'information transfer' to assessing speaking involving negotiation of meaning, turn-taking, collaboration among partners, and co-construction of speaking, or interactional competence (Ducasse & Brown, 2009). (See Appendix C for an example of the oral interaction rubric.)

The oral interaction rubric was developed according to the competency scales for elementary school established by the Québec Ministry of Education. It grades students on the following 5-point scale, which is also used by the Québec Ministry of Education: 1 minimal competency development; 2 partial competency development; 3 acceptable competency development; 4 thorough competency development; 5 advanced competency development. For the purpose of placing participants into three categories of high, mid, or low English achievement, the following system was used: 1 to 2 low; 2+ to 3 mid; 3+ to 5 high. A decision was made to include 3+ in high achievement because of verbal reports from the Ministry of Education representative who produced exemplars illustrating the competency levels, stating that most grade 6 children in the province who received less than two hours of English instruction per week did not achieve higher than a level three on the competency levels (Schmidt, 2007, personal communication). This was also confirmed by the teachers from two groups of sixth graders, who piloted the test for my 2008 pilot study. For the purposes of this paper, the resulting categories of achievement will be referred to as low, mid, and high proficiency levels.

Teacher participants. The five teachers of the six classes above participated in the study. One teacher had two of his classes participate as they functioned in an open-area homeroom, meaning that there were no walls separating the two classes and their homeroom teachers engaged in team-teaching. Although the ESL teacher received each of the two classes separately, the students could sometimes be mixed, so some of the participants who took the Time 1 tests with group 1 ended up taking the Time 2

tests with group 2, and vice versa. All five teachers were trained ESL teachers, who had between 5 to 32 years of teaching experience.

All five participants completed a Teacher background questionnaire, which sought to gain information about their training and beliefs with regard to strategy instruction. Of the five, all but one had had some form of in-service training in how to conduct strategy instruction. One teacher said she integrated it regularly into her teaching, and believed this to be beneficial to her students. Interestingly, she was the one whose grade 6 class had the least amount of time for ESL (60 minutes per week, with an additional 60 minutes every two weeks). One other teacher participant said she tried conducting SI but had difficulty integrating it, especially in oral interaction activities. The other two thought SI would take time away from English content instruction, so they did not integrate it into their teaching. One of these two expressed the view that if all the ESL teachers did it, the students would become accustomed to it and it would not take so much time to accomplish. All five teacher participants were aware that the curriculum mandated it and some were a bit reticent about answering the question until I assured them that this was purely for research and their responses would be confidential.

Permissions to conduct Phase 1.

Ethical approval. Ethical approval to conduct the study was first obtained from McGill University, by submitting a description of the proposed study and all documents to be used to the ethics committee. After studying my documents, the committee issued an ethics committee certificate, which I then presented to school officials, in order to gain access to the schools.

Gaining access to the schools. In an effort to have a random selection of teacher participants, I first contacted ESL consultants in various school jurisdictions asking for their help in finding teachers who would be willing participants, and they sent out general letters to teachers requesting volunteers. This turned out to be more difficult than I had anticipated as I did not receive a single volunteer. I then decided to abandon the principle of random selection and simply ask teachers I knew if they would be willing to participate. The response to this was much more productive. Once I had secured willing teacher participants, I sent them an official letter to be signed, along with a letter presenting the project to the school principals and requesting

permission to conduct the study in their schools, and letters to the parents requesting authorization for their children to participate. The study did not start until all authorizations were granted and signed by school officials, teachers, and parents.

Data collection procedures for Phase 1.

The *Children's SILL* was administered to the children by their respective ESL teachers and me during regular class time. Administration took about 30 minutes. Students were advised that the purpose of this research was to find out more about the way in which children learn ESL and that their responses would not affect their course grades. The *Children's SILL* was, indeed, self-explanatory and we did not need to intervene. The participants in Phase 1 completed the Time 1 survey in October, 2008, the exact date depending on when the protocol for obtaining teacher, school and parental authorization was completed. The Time 2 survey was completed in March, 2009.

The oral interaction test was administered mainly by me, with the collaboration of the respective ESL teachers during regular class time in October, 2008. Before the test day, I met with each teacher and we studied the oral interaction rubric to be used for grading the students' performance. We then viewed the Ministry of Education video of the exemplars for the competency levels, and agreed on typical profiles of students that matched the descriptors on the oral interaction rubric. On test day, the ESL teacher explained the test to the class and modelled the expected interaction, so that the test matched teaching practices. The test was a paired oral interaction test, so the students came to my desk in pairs and did the activity quietly, while the rest of the class completed the Children's SILL questionnaire. Each pair was allotted 5 minutes and their teacher collaborated by acting as a second rater for the first 5 pairs. We then compared our ratings, in order to guarantee rater reliability, and I continued rating the remaining students. The oral interactions were audio-taped for all of the classes, except one in which the teacher refused to allow her students to be taped. As a compromise, she accepted to be a second rater with me for all of the students in the class, not just for the first five pairs. In addition to the assessment with the rubric, I wrote down qualitative field notes regarding the evaluation criteria for each participant, as is customary during in-class oral interaction assessments related to the Québec competency-based approach. I had a great deal of practice in doing this

efficiently during my years as a classroom teacher using this curriculum. Table 3 below shows an example of field notes I wrote down for one low proficiency student. The qualitative data supported my judgement in assigning students to a category on the rubric.

Table 3

Example of Qualitative Field Notes from Oral Interaction Assessment

Asked for help in L1; used partial phrases; "*card* on the wall" (wrong word); cart (wrong word for carpet); Asked for help in L1 a lot.

Analysis of the data procedures for Phase 1.

Phase 1 of the study sought to describe patterns of children's strategy use, in answer to Research Question 1: *What are the patterns of strategy use amongst children enrolled in the Québec elementary ESL program at the 6th grade level?* Consequently, the question was first broken down into sub-questions as follows:

1a. What are the most used and least used strategy categories?

1b. What are the most and least used individual strategies?

1c. What is the impact of gender and 'proficiency' on strategy use?

1d. What is the relationship between strategy use and motivation?

These questions guided the analysis procedure. The children were graded for oral interaction proficiency (High, Mid, Low), according to their results on the oral interaction measure, and background information regarding their proficiency, age, native language, and program type (core or intensive), along with their responses on the Children's SILL were recorded on a spreadsheet. Descriptive and inferential statistics were obtained using the Statistical Package for the Social Sciences (SPSS). Means and standard deviations were calculated for the participants' answers to the 32 items on the Children's SILL and the six strategy categories, in order to find out the most and least used individual strategies and strategy categories. For the last two sub-questions, analysis of variance (ANOVA) was used. Table 4 below shows the plan that was used for the analysis procedure.

Table 4

Plan for Data Analysis Procedure

RQ1. What are the patterns of strategy use amongst children enrolled in the Québec elementary ESL program at the grade 6 level?		
Sub-questions	Instrumentation: General questionnaire	Tests, analyses
1a.What are the most used and least used strategy categories?	(Survey – general- 6 groups) CSILL Time 1: October 2008	- Descriptive statistics: frequency test: means and standard deviations
1b. What are the most and least used individual strategies?	(Survey – general- 6 groups) CSILL Time 1: October 2008	- Descriptive statistics: frequency test: means and standard deviations
1c. What is the impact of gender and proficiency on strategy use?	(Survey – general – 6 groups) CSILL Time 1: October 2008	Two-way ANOVA - DV: CSILL - IVs : Gender and proficiency based on Time 1 (oral interaction proficiency test administered at Time 1)
1d. What is the relationship between motivation and strategy use?	Time 2: March 2009	One-way ANOVA -DV: CSILL - IV: Motivation; based on CSILL Time 2 background questionnaire: liking of English

Phase 2: The Case Study

Rationale for the case study research and selection of the case.

In order to answer research questions 2 and 3, which sought to investigate the effects of the implementation of the policy to integrate strategy instruction into the ESL curriculum in Québec, it was clear that a strategy intervention classroom-based study was needed. I had observed the beneficial effects of both strategy instruction and strategy use by students through my teaching experience but empirical evidence was needed for scientifically-based conclusions to be drawn. I also wanted to examine all "rival explanations" (Yin, 2009, p. 133) for the results so I decided to include a quasi-experimental dimension with two similar classes; one class would serve as an experimental group and the other a control group.

Rationale for the selection of the case. I will first give some background information regarding my experience with SI, which led me to select an intensive English class for the strategy intervention experiment. The students I taught for over three decades were similar to the general research population described in Phase 1, except that my students were all in a core program, so they received 1-2 hours of ESL instruction per week and I generally taught the same students from grade 3 to grade 6. The SI procedure I used during my experience as a primary ESL teacher involved a gradual approach. In grades 3 and 4 I introduced the strategies, focusing on declarative and procedural knowledge for each one; I presented and explained the strategies and the students used them with my guidance. In grade 5 the focus was on procedural and conditional knowledge; that is, reviewing how to use them and focusing on when to use them so the students would learn to match their strategies to task demands. In grade 6 the focus was again on procedural and conditional knowledge, but in addition, I tried to lead the students to greater autonomy; this means I would give them a repertoire of strategies from the MELS program, explain the task and have the students: a) discuss amongst their peers appropriate strategies for the task; b) select and use strategies; and c) evaluate the effectiveness of their strategy use individually or with the class through post-task reflections. This procedure was published in pedagogical works co-authored by me (Gunning, Lalonde, Schinck & Watts, 2002; 2003), but not tested empirically. Anecdotal positive effects were observed over the period of time from grade 3 to grade 6 and the gradual approach seemed effective. As the literature review shows, it takes many practice opportunities for strategy use to be integrated into a learner's repertoire of learning tools (Cohen, 1998). I found that the children in general could readily identify and explain the strategies, but it took considerably more time for them to apply these in a meaningful, autonomous way to their language learning. Consequently, my question was how to replicate this procedure in an efficient research environment. The gradual approach that I had found effective in my teaching presented many research challenges, which I will now explain.

In order to test the effects of the strategy intervention empirically, and to control for spurious elements or variables that can come into play during a lengthy study spanning several years in an authentic context (different mix of children in classes, attrition, changes in teaching personnel, etc.) a shorter study had to be conducted, so a

case study with students who received more hours of English instruction than 1-2 hours per week was needed, in order to use a similar gradual approach but with the same class, and over a period of a few months, not years. Consequently, a decision was made to conduct the present case study with this population of two intensive ESL classes that received 9 hours of English instruction per week. One class served as the experimental group that received the strategy intervention, and the other as the control group that continued their regular curriculum. As the description of the population below shows, with the selection of this case, I managed to find two classes that were very much similar, thereby controlling for several variables which could support a rival explanation that whatever effects might emerge would be likely to occur because of variables other than the strategy intervention; in fact, both classes were similar in terms of teacher experience, school jurisdiction, curriculum, pedagogical materials, socio-linguistic conditions in both towns and exposure to ESL outside of school. Of the two classes, the one chosen for the strategy intervention was the one whose teacher, principal and parents accepted for me to visit the class and videotape the teacher and the children in class proceedings on a regular basis over the course of several months.

Participants for Phase 2.

Student participants.

Phase 2 involved two classes representing a subset of the participants from Phase 1. Participants were from the two intact intensive English classes described in Phase 1, and the only condition for selection was acquiring signed parental authorization to participate in the study. The experimental group consisted of 28 students and the control group, 26 participants. The results of one student from the control group were eliminated because the teacher reported that he had severe learning disabilities and his data were incomplete. The two classes were as similar as can be expected in an authentic setting, in that they were from two schools in the same school jurisdiction, they volunteered for the intensive ESL program, and there was no selection on the basis of grades to be in the intensive class. Both of these groups also had a similar 40% intensive program, their teachers attended the same professional planning meetings for ESL teachers, and they used the same basic teaching materials.

Both groups followed the Québec core curriculum for Francophone schools that is compulsory for all students in the system, but they also engaged in enriched activities.

In the experimental group, there was a small embedded unit of analysis consisting of 6 students. Three of these participants were identified as being of high, medium, and low proficiency at the beginning of the intervention by their teacher and this was confirmed by their pre-test results. The other three were selected because the reflections on their strategy use that I observed and videotaped during class proceedings proved to be of interest in analyzing the data.

Almost all of the participants in these two groups started studying English in grade 3 and in the year prior to this study, they were in core groups that received 90 minutes of ESL instruction per week. The two groups of participants, therefore, were at similar input levels in English when they started grade 6 in September. As with the participants in Phase 1, their level of English was fairly low at that point.

The first language of the majority of the participants (n=42; 77.8%) was French, while for one student it was English, and for 10 students (18.5%) it was a language other than French or English. The Francophone students were evenly distributed in both groups (21 students each). One student did not answer the question related to native language on the background questionnaire. The two schools were located in two towns with a Francophone population of 80.43% and 80.1% respectively and most of the participants had little or no exposure to English outside of school. A total of 53 students, of which 31 were females and 23 males, participated. In the experimental group the gender distribution was equal; that is 14 males and 14 females. The majority of the participants (87%) were 11 years old at the time of the pre-test in October.

Teacher participants. (The names used are pseudonyms.) The two teachers in this study were trained ESL specialists with more than 20 years teaching experience each. The teacher of the experimental group, Mrs. Joy, had a Bachelor of Arts in English Literature and a Diploma in Education with a focus on Teaching English as a second language. She had been teaching for 22 years at the time of the study. On the days when she was not teaching her intensive class, she taught ESL to core groups of grades 5 and 6 students. The teacher of the control group, Mrs. Bliss, had a Bachelor of Education and a Certificate in TESL. At the time of the study, she had been teaching for 24 years, 17 of which were spent teaching English as a Second Language.

On the days when she was not teaching her intensive class, she worked as Vice Principal at her school.

Both teacher participants completed a Teacher background questionnaire, which sought to gain information about their training and beliefs with regard to strategy instruction. The teacher of the experimental group had not had any training in how to conduct strategy instruction but the teacher of the control group had attended an in-service workshop on the subject. Both teachers were aware that the curriculum mandated it. Both participants were concerned about the time it might take away from the teaching of the ESL content but expressed a positive attitude towards integrating it into their teaching. The teacher in the control group had tried it but experienced difficulty integrating it, especially in oral interaction activities.

Permissions to conduct Phase 2.

Ethical approval. Ethical approval to conduct the study was first obtained from McGill University, by submitting a description of the proposed study and all documents to be used to the ethics committee, as with Phase 1. The ethics requirements for Phase 2 were more stringent in terms of the expressed written permissions I needed to obtain for videotaping the children in the experimental class. The parental permission letter had to state explicitly that the parents consented to having their children filmed. After studying my documents, the committee issued an ethics committee certificate, which I then presented to school officials, in order to gain access to the schools.

Gaining access to the schools. This procedure bore similarities to the process of gaining access to the schools for Phase 1. In an effort to have a random selection of teacher participants, I first contacted ESL consultants in various school jurisdictions requesting their help in finding intensive ESL teachers who would be willing participants, and they sent out letters to teachers requesting volunteers. As with Phase 1, this turned out to be more difficult than I had anticipated as I did not receive a single volunteer. I then decided to abandon the principle of random selection and simply ask teachers I knew if they would be willing to participate. The response to this was much more productive but the task of finding willing teachers of two intensive ESL classes with a similar model, coupled with a similar process for selecting the children for the intensive program, and located in a similar socio-linguistic district,

proved to be very difficult. Indeed, I encountered the following challenges. Some schools selected the students on the basis of grades, whereas others did not. Some started their intensive program in September, whereas others started in February. Some schools offered the intensive program in grade 5, whereas others offered it in grade 6. Some schools were located in very bilingual areas of Montreal, whereas others were located in unilingual areas of Québec. Once I had finally secured the two similar classes, I sent the teacher participants an official letter to be signed, along with a letter presenting the project to the school principals and requesting permission to do the study in their schools, and letters to the parents requesting authorization for their children to participate. The study did not start until all authorizations were granted and signed by school officials, teachers, and parents.

Instrumentation for Phase 2.

As the intervention in Phase 2 was done in gradual steps the instruments used for strategy assessment varied according to the steps of the intervention. The steps of the intervention are described below. I will now describe the instruments used for the assessment.

Documentation. The pre- and post-test results (from Phase 1) of the ESL oral interaction measures, plus field notes regarding students' strategy use, use of L2, use of L1, and the general strategy questionnaire, the Children's SILL, were used to support the strategy assessment instruments from Phase 2.

Field notes. Qualitative field notes of class proceedings on each of the nine days that I was present during the Phase 2 intervention were taken by me in a notebook and later transferred to the computer using a word processor.

Video recordings. I videotaped the participants on eight occasions; pre-tasks (as they received pre-task strategy instruction), during tasks (as they executed classroom tasks), and post tasks (as they engaged in the teacher-led post-task reflection regarding their strategy use). These were later captured on the computer and prepared for digital analysis, as described in the data analysis below.

Task-based questionnaire. The task-based questionnaire (Appendix G) on strategy use related to oral interaction tasks was designed by me to assess the children's strategies immediately following an oral interaction task. It contained

fourteen items that paralleled items on the Children's SILL, and the equivalent strategies in the Québec Education Program. An example of this is as follows:

> *Task-based questionnaire, item 2:* If I am saying something but I can't think of a word, I take a little extra time to think (example: I say, *Hum-m-m… just a minute,* etc.) and then I continue speaking.
>
> *Children's SILL, item 20:* If I can't think of a word when I am speaking English, I take a little extra time to think and then I continue speaking.
>
> *Québec Education Program (2001), compensatory strategy:* Delay speaking (buying time to think out a response), (p. 107).

For a complete list of the relationship among the items on the task-based questionnaire, the Children's SILL and the Québec Education Program, see Appendix I.

A first draft of the task-based questionnaire was field tested in 2007 with one class of 5th grade students. In this version, the 4-point Likert scale from the Children's SILL was used. However, taking into account insight arising from the field-testing, and after consultation with Carolyn Turner regarding an appropriate scale to address the particularities of this questionnaire which related to a particular task, a decision was made to have the children give a binary response of *yes* or *no*. The questionnaire was reviewed by Rebecca Oxford, two ESL consultants and an ESL elementary teacher from Québec, and the new version of it was field-tested with an intact group of 6th graders in 2008. The questionnaire proved to be self-explanatory and administration time was five minutes. For the present study, the questionnaire was administered once in January, 2009.

Strategy log. The strategy log (Appendix H) contained the eighteen strategies in the Québec Education Program, written on the log in simple language that was accessible to the children. This simplification was based on the terms used in pedagogical material I co-authored (Gunning, Lalonde, Schinck & Watts, 2002, 2003), which was motivated by discussions with experts in the field at the time of writing (Oxford, 2002; Chamot, 2002, personal communications). Examples of the simplification are illustrated in Table 5 below. The categories of answers on the strategy log were *I plan to use* and *I used*.

Table 5

Simplification of Strategies in the Québec Education Program

Strategy names in the Québec Education Program	Examples of simplification
Delay speaking	Stall for time
Circumlocution	Say it in a different way
Self-monitoring	Check my own work
Use of prior knowledge	Use what you know
Inferencing	Guess intelligently
Resourcing	Use resources
Risk-taking	Take risks
Scanning	Scan for information
Accepting not being able to understand everything listened to or read	Go for the general meaning

The principle of the strategy log was adapted for children from Nakatani (2005). In the Nakatani study, adult learners were given a list of oral communication strategies with a definition of each one. After being given a description of the task to be performed, the students discussed the strategies that could be helpful with that task, and then set goals for their strategy use. Following the task, they assessed their strategy use by writing in their diaries. For the current study, this process was simplified in the following way because of the age of the children. The teacher explained the task, had the children look at their strategy log and discuss in small groups strategies that could be helpful for the particular task. They then set goals by checking off on the log, in the column *I plan to use,* the strategies they thought they would use. Immediately following the task, the teacher asked the children to check off in the column *I used*, the strategies that they actually used to perform the task. She then led them in a post-task reflection on their strategy use, requiring them to report the strategies they had checked off on the strategy log, and to support their reporting with specific examples. I videotaped the process. The children completed six strategy log entries at the intervals described below from mid-January to the latter part of March and I collected them for qualitative and quantitative data analysis.

Interviews. In-class open-ended interviews were conducted with selected students from the embedded unit of analysis asking them to explain the strategies they were using at that point to execute the task at hand. These were videotaped.

Data collection procedures for Phase 2.

The *Children's SILL* and oral interaction achievement test from Phase 1 were used as pre-test and post-test data for the purposes of comparison between the two groups. The Time 1 tests (pre-tests) were administered on October 2 and 3, 2008 to the control group and the experimental group respectively. Phase 2 of this study, the strategy instruction, focused on the first competency, *to interact orally in English,* because it is the competency that receives the most attention in this curriculum, and the ESL teacher involved wanted to give it the appropriate emphasis. The SI was conducted in the experimental group while the control group continued their normal curriculum (that is, the Québec Education ESL Program) with their teacher and without any intervention from me. The SI lasted four months, from late October to late March, omitting the month of December because the teacher wanted to have the class engage in holiday projects. The Time 2 tests (post-tests) were administered on March 26 and 27, 2009 for the experimental group and the control group respectively.

Methodology for the strategy intervention procedure.

The first step was to test the procedure and the instruments, which I did in a six-week pilot project conducted with two 6th grade classes in the spring of 2008. Following the pilot study, and based on my experience, I developed a hypothesized model for the strategy intervention; see Figure 1 below. The framework of the strategy intervention model as presented in Figure 1 is adapted from the framework of an example of a hypothetical school intervention logic model provided by Yin (2009) as an illustration of Wholey's (1979) program logic model. Yin's example involved a school intervention (extra school activities), which provided an immediate outcome (students worked collaboratively), the result of which led to an intermediate outcome (increased understanding and satisfaction), which produced an ultimate outcome of increased learning and higher test scores (p. 150). I will now explain the steps of the hypothesized strategy intervention model I developed.

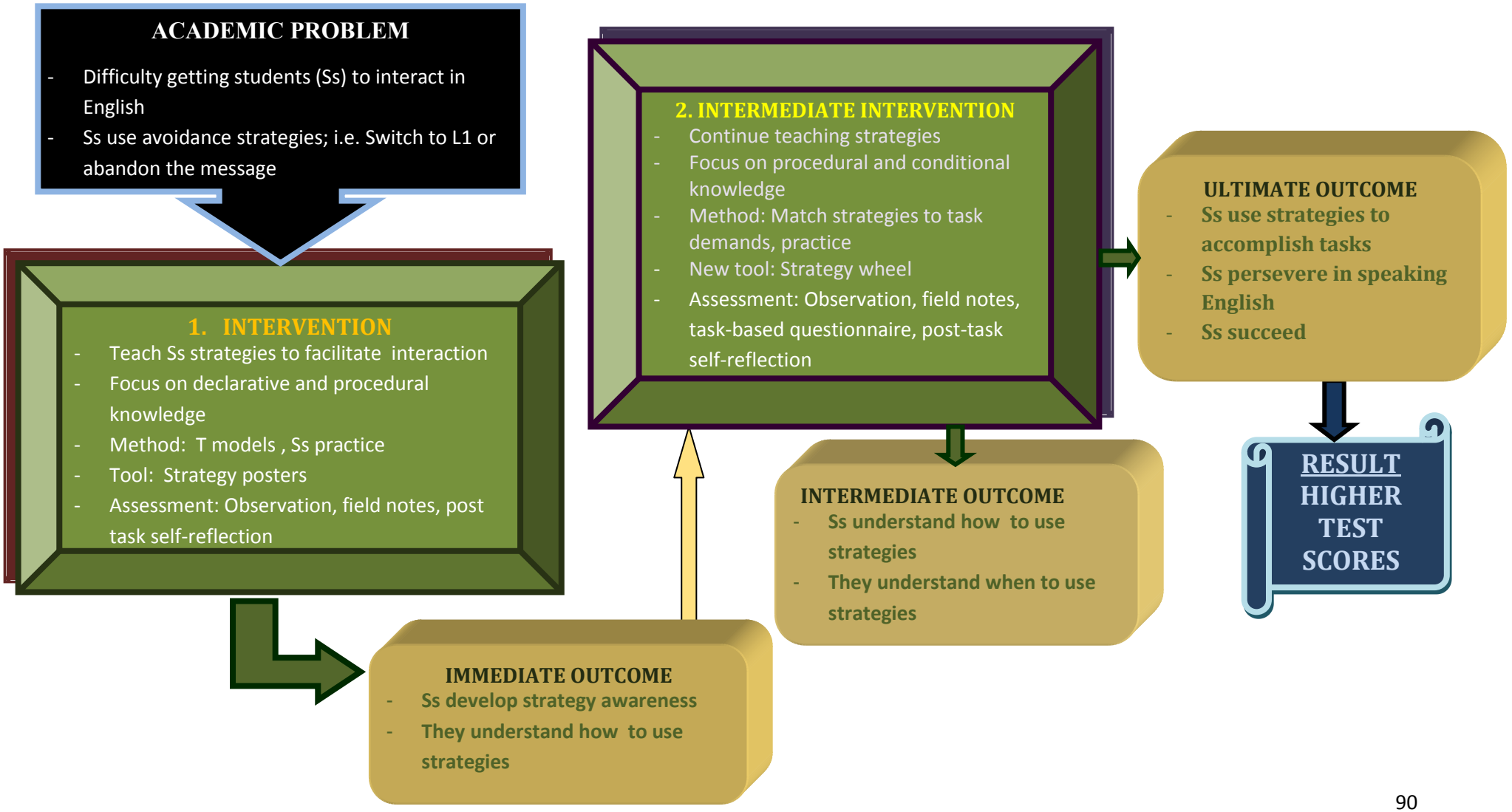
The Pre- Strategy Intervention Model (as it was hypothesized).

The following steps of the hypothesized strategy intervention model are presented in Figure 1 below. According to this hypothesized model, the aim of the first intervention would be to help the students understand the strategies and how to

use them. The teacher would explain and model the strategies in the L2, with the help of strategy posters, and the students would practise them. It was anticipated that they would understand them and develop their strategy awareness, and this would be assessed using observation, field notes and post-task reflections. The next step of the intervention would aim to help the students recall how to use the strategies, understand when to use each one, and they would write on their strategy wheel immediately following a task the activity for which the strategy they used had been helpful. It was anticipated that they would develop their understanding of the strategies and when to use them. This would be assessed using observation, field notes, post-task reflections, and a task-based strategy questionnaire based on strategies that could facilitate oral interaction. This step would be repeated regularly so that the students would get many practice opportunities and eventually learn to match their strategies to the demands of a task. It was expected that the students would use the strategies, persevere in speaking English, and improve in oral interaction during class activities and in the Time 2 test (post-test).

Figure 1: Strategy Intervention Model – Hypothesized Pre-intervention

Based on my experience and pilot project (logic model adapted from Yin, 2009, p. 150)



Planning the Strategy Intervention.

Introduction. I wanted to conduct practical classroom-based research so that teachers would want to carry out the SI (O'Malley & Chamot, 1990). I therefore decided to involve the ESL teacher participant from the planning stages of the research. The process was similar to that of Yin's (2009) 'social interaction' theory, whereby "... researchers and practitioners work together, customizing an elongated process of problem identification and solution testing ("social interaction") (p.139). I started off by having the teacher identify a problem she wanted us to address. She identified as a major challenge getting her students to interact in English, which was similar to the problem identified by the teacher participant in my 2008 pilot study. She expressed a desire to focus on this because oral interaction is the competency that receives the most weight in the Québec Education Program. Both the teacher and I worked out ways of integrating strategy instruction into her curriculum, in collaboration with each other. We agreed to discuss and adapt along the way, according to the outcome of each step of the intervention. We also agreed that I would spend an entire morning, from 8:45 a.m. to 11:45 a.m. in her class each time I visited for the strategy intervention period, and that we could adjust this as needed.

The procedure we decided to follow was based on the hypothesized SI model described above. For each strategy intervention period, the teacher would inform me ahead of time of the activities she planned to do with her students and I would then suggest ways of integrating SI into those activities, and provide her with the necessary tools for doing so (strategy posters, etc.). A gradual SI approach would be adopted, similar to the procedure I used as an ESL teacher. We anticipated that we would go through the steps faster than in my class because the case study class received more hours of English instruction per week than my classes did, as I previously mentioned.

The above hypothesized SI model comprised specific ongoing intervention steps, with each new one being dependent upon the successful completion of the previous one. In light of this, and given the fact that the Québec Education Program is based on a principle of success for all, in which teaching, learning and evaluation are intricately linked, an assessment theoretical framework congruent with the Québec Policy for the Evaluation of Learning was adopted. In a document

explaining the specifics of the evaluation criteria for each competency, the Québec Framework for the Evaluation of Learning (2010) states that for assessing the evaluation criterion "Use of strategies" the student must be provided with feedback on their progress but the criterion must not be considered for determining a mark for the report card. Formative, classroom-based assessment (CBA) was therefore chosen as a theoretical framework because it supports learning, is ongoing, and provides feedback to the learner. As Turner (forthcoming) states, CBA "... comprises a repertoire of methods and the reflective procedures that teachers and students use for evidence to gauge student learning on an ongoing basis. In this way teaching is adjusted to meet student needs". As CBA is "a contextually-bound and socially-constructed activity involving different stake-holders in learning" (Turner, forthcoming), a sociocultural approach was adopted with teacher, students, and researcher working together using assessment practices that reflected "the ecology of the classroom", as has been used in previous research in CBA (Rea-Dickens, p. 260).

The Strategy Intervention Model (as it was implemented in this study).

The SI model in this study followed the hypothesized model (see Figure 1) exactly for the first two intervention steps. However, a third step was added (2nd intermediate intervention). As the procedure below shows, in the third step, we expanded the model, and extended the duration of the study in order to take this expansion into account. As with the hypothesized model, the description of the model represents my adaptation of Yin's (2009) logic model for a school intervention, and the assessment reflects the principles of CBA outlined above. All names used are pseudonyms.

October 30, 2008

Intervention. Aim: to help students develop declarative and procedural knowledge of strategies.

Overview. The teacher had the students engage in several Halloween activities involving oral interaction, and prior to each activity, she taught them an appropriate strategy for the task, or reminded them of the strategies she had taught earlier that morning. (In all, she taught three strategies that morning.) I will

explain the first task and the procedure she used in detail because for many of the subsequent tasks, the SI followed a similar pattern.

Task 1: The first activity was a paired cooperative crossword task. Student 1 had the down clues and Student 2 had the across clues. The students had to interact orally in order to complete the crossword.

SI: The teacher used a gradual approach to introduce the concept of strategies. She started with a strategy that was already encouraged in class; namely, Use resources. She told the students that using resources is a strategy that could help them do the task in English, and she elicited from them examples of resources they could use. They responded by naming resources, such as dictionaries and their *Word by Word* textbook. The teacher then told them that there are other strategies they can use to help them do the activity in English, and she introduced a new strategy, Stall for time, according to the steps in Table 6 below. This follows a widely accepted procedure in the literature on learning strategies, which is also recommended by the MELS in the Strategy Handbook and in the strategy training module (based on the steps for teaching a learning strategy proposed by Oxford, 1990). For the step "present and explain the strategy" the teacher used an equation technique developed by Jennifer Lahey-Arseneault and published in the MELS strategy training module, *Strategies for Success in ESL* (Gunning, Brook, Lahey-Arseneault, Lassire, 2002). The equation used on this occasion was STOP + THINK = STALL FOR TIME. For each component part (stop, think) and for the strategy (Stall for time), she used posters I had given her, in order to present the strategy in the L2; see Appendix D for examples of the posters. We felt that the visuals would facilitate comprehension.

Table 6

Steps for Teaching a Learning Strategy (adapted from Oxford, 1990)

Steps for teaching strategies (Oxford, 1990)	Application to current SI research: Research protocol (Gunning, 2008)
Determine students' needs.	To interact in English during classroom tasks.
Select strategy and a significant context.	Compensatory strategies; e.g. Stall for time; Ask for help or clarification, to be used during oral interaction class tasks; e.g. info-gap activities.
Present, **explain** and **model** the new strategy	Present the strategy in English, using strategy posters and component cards* (equation); explain by examples; model using think-aloud procedure. (*For example of strategy posters, component cards, and equation, see Appendix D).
Guide students' initial use of the strategy and provide adequate **practice** with appropriate tasks	Have Ss do several oral interaction activities that provide opportunities for practice of the strategies throughout the period of the study and encourage them to interact in English, using the strategies to help them maintain the interaction in their L2. Prior to and during tasks, remind students to use the strategies, as needed.
Encourage students to reflect on their use of the strategy, on how well they are doing, and on their difficulties and successes	Lead the class in post-task reflections following oral interaction tasks. Ask students which strategies they used and to give examples of how they helped.
Reflect on the way you presented the strategies	Teacher and researcher discuss this and make adjustments as needed.
	Immediate outcome among students: Teacher and researcher discuss students' progress and decide on the next step in the intervention.

Once she had presented and explained the strategy, the teacher then modelled it by thinking aloud while performing a task.

Seeing that the students were already accustomed to asking for help, the teacher capitalized on this to also present the strategy, Ask for help or clarification. She used the same technique above. She then told the students that they were expected to speak only English during the activities, and that they should use resources, stall for time, or ask for help or clarification, but they must make an effort to persevere and not

switch to French. Prior to setting the task in motion, she posted two evaluation criteria on the board: Speak only English; Use strategies. She drew the students' attention to them. This follows the assessment for learning tradition in the MELS competency-based approach, which states that the evaluation criteria for an activity must be transparent so that the students can understand how they are being evaluated. During the task, the children interacted, while the teacher and I circulated and took field notes regarding the children's oral interaction and strategy use. We also prompted students whenever necessary to use their strategies and speak English.

Post-task reflection. After the task, the teacher led the students in a post-task reflection, according to the following procedure. She called out one strategy at a time and asked for a show of hands if the students had used them. She then asked for a few examples. This was done in an informal way and I recorded field notes.

Task 2: This second activity was a Halloween cooperative acrostic crossword group activity. The clues were divided so that each group member had a part of each clue. The group was required to interact orally in order to put the clues together and solve the puzzle.

SI. The teacher drew the students' attention to the strategy posters on the board corresponding to the three strategies she had explained in the previous activity (Use resources, Stall for time, Ask for help or clarification), and she reminded them to use the strategies as needed for the present group task, and to remember to speak English only. She set the task in motion and the students interacted to complete the crossword.

Post-task reflection. After the task, the teacher led the students in a post-task reflection, according to the procedure in task 1. A few reported asking for help and clarification, while many of them reported using resources.

Task 3: The teacher worked on a direct teaching vocabulary activity in which she elicited vocabulary items and then the children did vocabulary seat work. The strategy posters were still on the board but there was no explicit strategy instruction during this activity. However, as the teacher was circulating and monitoring the task, she noticed a student, Andrew, using the strategy, Use resources, autonomously so she stopped the activity briefly to draw the students' attention to this example of

independent strategy use, and she reminded them to do the same. They all followed his example and used resources to complete the task.

Assessment of the immediate outcome. The students were asked to demonstrate their initial strategy awareness as they participated in the post-task reflection. For example, several reported using Use resources, Stall for time, Ask for help or clarification. The teacher asked for a few examples. An example of a response that a student gave for how she used Ask for clarification is that she asked her partner, *Can you repeat that please?* (This is congruent with the explanation of this strategy in the Québec Education Program.) The teacher gave feedback to the students about their strategy use that she noticed and their efforts to speak English. She was encouraged and decided to leave the strategy posters on the board after my departure, and she agreed to continue reminding the students to use them during future tasks, even when I was not there.

Sources of evidence. Observation, field notes and post-task reflection of strategies and how they helped. I wanted the students and teacher to become comfortable with me so I did not videotape this first intervention session.

November 6, 2008

First intermediate intervention. Aim: To help the students develop procedural and conditional knowledge of strategies; see Figure 1.

The teacher used a modified version of the MELS learning and evaluation situation (LES), *Clowning Around*, for a series of activities. A learning and evaluation situation is a complex task involving a series of activities carried out over several class periods. The teacher had been introduced to this LES at an in-service workshop. She liked it and wanted to use it with her class but it was originally intended for grade 4 core groups, so it needed modification to make it suitable for grade 6 intensive. I assisted her with the modification; see my proposal for the modification in Appendix E. However, as my intention was not to influence any aspects of her teaching, other than the integration of strategies, she maintained ultimate control over whatever activities I assisted her with, so she chose the ones she liked and did them in the manner she wanted.

As we were encouraged by the outcome of the first intervention, we decided we could move on to the next step of the hypothesized model for the strategy

intervention, the intermediate intervention, that is, reminding students of previously taught strategies and helping the students to match their strategies to task demands. The strategy wheel (see Appendix F) was therefore introduced. Guided by the teacher, the students practised matching the strategies to the demands of the task so that they would understand when it was helpful to use each one. At the end of an activity, after using a strategy, the students wrote the activity for which the strategy was useful on their strategy wheel, below the name and pictogram of that strategy.

Task 1. The first activity was a cooperative clown graffiti small group activity that required the students to activate prior knowledge of various aspects of clown-related activities, costumes, makeup, etc. (see Appendix E for example). Students worked in groups of four.

SI. The teacher elicited examples of the strategies she had previously taught them, which helped them with previous oral interaction activities. Some students said Use resources, so the teacher asked for examples of resources they used. The students provided examples, such as their textbook and the dictionary. The teacher then asked for the name of another strategy that had been helpful and some other students responded, Ask for help or clarification. The teacher then asked for examples of expressions they had used when they asked for help or clarification. Volunteers said, *How do you say ... in English?* and *Can you repeat that, please?* No one mentioned Stall for time so the teacher reminded the students how to use this strategy by giving them examples of it and saying expressions they could use, such as "Hum ... let me think".

The teacher felt that the students might have prior knowledge of clown-related practices, so she presented one new strategy, Use of prior knowledge, using the strategy posters as she did in the first intervention. She encouraged the students to use the strategies as they executed the cooperative graffiti activity, and reminded them to speak only English.

Post-task reflection. The teacher once again asked for a show of hands for the strategies the students used, and she followed up by asking for examples. The students also looked at their strategy wheel and volunteered other strategies they had used that had not been part of the SI, such as Risk-taking and Cooperation. The strategies were written in simple terms with illustrative pictograms on the strategy wheel (e.g. Take

risks; Cooperate), so the children figured out some of them without the teacher's intervention. The teacher went with the flow of the class and reinforced those students' suggestions. She then asked the children to write the activity, cooperative graffiti, under the name and pictogram of whichever strategy had helped them.

Assessment. This was done using observation, field notes and post-task reflection of strategies and how they helped. I also videotaped, in turn, parts of the teacher's presentation, segments of the student-to-student interaction, and of the post-task reflection.

November 20, 2010

First intermediate intervention, continued. The teacher continued doing the Clowning Around LES, and using the strategy wheel and strategy posters.

Task 1. Clowning Around. This was a group guessing game that required oral interaction. The teacher reinforced the strategies taught by modelling them again and giving examples. She encouraged the students to use them for the activity and to speak only English.

Post-task reflection. The teacher proceeded as above and had the children write the activity under the name and pictogram of the strategy that helped them the most.

Task 2. This was another oral interaction task, in which the students were given a clown card. Each clown card had a matching pair. The children's task was to circulate and ask questions of their classmates regarding their clown's physical appearance, clothing, etc., until they found their matching clown.

SI. There was no explicit strategy instruction related to this activity but the four strategy posters were still on the board.

Post-task reflection. The teacher conducted the post-task reflection in the manner described above, and the students wrote the name of the activity on their strategy wheel, under the strategy they thought had helped them the most. This time, the students started becoming curious and asking about strategies on the strategy

wheel that had not previously been presented or discussed, such as Take risks and Skim. I will elaborate on this in the results chapter.

Task 3. This was a paired info-gap Find the differences activity. The students had two different clown's closets and they had to interact orally to find the differences.

SI. After modelling the task, and doing a brief review of the vocabulary, the teacher reminded the students of strategies they could use to carry out the interaction in English only. She reminded them of using resources, and told them that for this activity, it was very important to ask for clarification as some of the illustrations were similar.

December, 2008. Holiday break. No strategy intervention.

January 15, 2009.

First intermediate intervention, continued. This was the first strategy intervention session after the holiday break. The same procedure as November, 2008 was planned.

Task 1. This was a Battleship-type pair activity. Each pair had: a) a similar series of illustrations of faces expressing various emotions at different places on a grid; and b) a blank grid to fill in the location of the faces on their partner's grid. The pairs had to interact in order to find out where the faces were located on their partner's grid to complete the task.

SI. The teacher modelled the task, but after the holiday break, she felt she wanted help in incorporating the SI, so she requested my help in reminding the children of the strategies. I gave her minimal support (a few minutes) to jump start the SI. I elicited from the students strategies that could help them play and they said Ask for repetition and Use resources. I accepted these suggestions and reminded them of Stall for time and Circumlocution, which had been part of a discussion in response to a question during a post-task reflection before the holiday.

Task 2. The teacher read the students a storybook called *Snow Day* (by Lester L. Laminack) and then, in pairs, the students interacted in order to complete a graphic organizer reconstructing what they remembered of the story.

SI. The teacher encouraged the students to use resources, but not the story because she did not want them to simply copy lines they did not understand. She wanted them to negotiate orally in order to combine what they remembered of the story. They could, however, use a dictionary to look up words.

Task 3. This was a task whereby the students had to respond to prompts related to the story, such as: This story reminds me of the time when ...; b) What surprised me most about the story was ... They first wrote down their personal responses, and used their personal responses to engage in a small group discussion about the same two prompts. They discussed in groups of four and later reported interesting points from their discussions to the class.

SI. The teacher reminded the students to use their strategies (Stall for time, Ask for clarification, etc.) to help them speak only English during the discussions.

Assessment of the 1st intermediate outcome: The students were required to demonstrate through the activities and their post-task reflections if they understood how and when to use various strategies, and whether they could account for their strategy use by giving examples.

Sources of evidence. Observation, field-notes, videotape, and task-based questionnaire. The result of students' increased awareness of strategies and practice in matching their strategies appropriately to tasks was tested immediately following this activity, using the task-based questionnaire based on oral interaction tasks. Administration time was 5 minutes. The quantitative results of the task-based questionnaire will be reported in Chapter 5, the case study results chapter. Task 4 below was used for qualitative assessment of the children's use of strategies and their success on ESL tasks. This involved a global formative assessment of their oral interaction and use of strategies during the planning stages of the skit (described in Task 4 below), and a formal assessment by the teacher of the students' individual performance during the presentation of the skit. The criteria she used were use of English only, fluency of the delivery and use of strategies. For the last criterion, she noticed any strategies they used but paid particular attention to the two strategies

taught; namely, Plan and Practice. It was expected that if the students had planned well and practised enough, they would have been able to present their skit using English only and that they would say their lines relatively fluently and not read them from their planning sheet. I did not have access to the students' grades but I videotaped the performances for qualitative assessment.

Task 4. The final task in the storybook lesson was a group task in which the students had to create a short skit based on the book. The students worked in groups of four. They had to discuss and come to a consensus about the story modification. They had to modify: a) the characters; b) the activities they would do in the event of a snow storm; c) the ending. They then had to practise and present their skit to the class.

SI. The teacher presented and explained the strategies, Plan and Practice, following the technique in the first intervention.

Post-task reflection. The teacher did not follow the usual post-task reflection protocol in which she would ask students to report their strategies because, whereas everyone planned their skit, some groups practised and did very well but some did not practise and did poorly in their presentation. The teacher therefore used the post-task reflection time to give feedback on this and to reinforce the importance of the strategy, Practice.

Sources of evidence for assessment. Field notes, post-task reflection, and videotape to record selected class proceedings (explanations, oral interaction during planning, and presentation of the skits).

January 29, 2009

*2nd Intermediate intervention***:** Aim: To continue to help students develop procedural and conditional knowledge of strategies and to lead them to making autonomous choices.

Encouraged by the first intermediate outcomes of the students, I developed a second intermediate intervention aimed at helping students learn to set goals and make autonomous strategy choices. This second intermediate intervention represented an expansion from the hypothesized model of strategy intervention referred to earlier.

Procedure. The teacher would give the students a repertoire of the strategies in the MELS program (a strategy log), describe the task, have the students look at their strategy wheel, discuss in groups the strategies that might help them do the task and then individually set goals by checking off on their strategy log the ones they planned to use. After the task, the children would then check off the strategies they had in fact used during the task, and use their strategy log for reporting their strategy use during post-task reflections. This was intended to be a teaching tool for the teacher (see Appendix H for instructions given to the teacher and a copy of the strategy log).

It was anticipated that the children would develop their ability to independently choose appropriate strategies for tasks, and this would be assessed using the same task-based strategy questionnaire that was used to assess strategy use in the first intermediate intervention.

Task 1. This was a modified jigsaw crossword activity. The children worked in groups of four to combine parts of clues in order to complete the crossword. This was similar to an activity they had done on January 15.

SI. The teacher presented the task. She then presented the strategy log and asked the students to refer to their strategy logs and discuss in their groups which strategies they thought could help them do the task. She explained that they did not need to come to a consensus. They should check off their strategies on their own log. The students then planned and checked off their strategies as instructed and engaged in the task.

Post-task reflection. The teacher first asked the children to check off the strategies that they actually used for the activity, whether they had planned to use them or not. She then asked volunteers to look at their strategy log and report the strategies they used. At first the children tended to read off a list of strategies from the log but the teacher intervened immediately to say she did not want a list; she wanted specific examples of how they used the strategies and how they helped. The children took this very seriously and started reporting details about their strategy use.

Sources of evidence for the assessment. Observation, field notes, strategy logs, post-task reflection, and videotape of selected class proceedings (explanations and student-to-student interactions, in particular discussions by some of the students in the

embedded unit of analysis as they talked about strategies that might be helpful for the task and checked them off on their strategy log). When I noticed how much accountability was generated by the use of the strategy log, especially during the post-task reflection, I modified the previously planned strategy assessment involving the task-based questionnaire to use the strategy log instead as an assessment tool. I also observed that, in addition to accountability, it provided a seamless link among the teaching, learning and assessment, which is congruent with the MELS assessment approach. Upon realizing the potential for assessment for learning (AFL) of strategies, and the additional quantitative and qualitative evidence I could gather from the use of the strategy log, I consulted with the teacher and obtained her agreement to extend the study to the end of March, in order to take advantage of its full potential. The original SI period was planned for three months, so we had planned to continue until the end of February, taking into consideration that we had skipped the month of December because of the holiday projects. She agreed, so the SI period was extended, and data collection procedure expanded to obtain quantitative and qualitative evidence from the use of the strategy log.

Task 2. This was a read-and-summarize pair activity. The children had similar short texts about a different animal. Their task was to read the text, turn the paper over, and summarize the text to their partner so that they would both learn about the two animals. The teacher told the students that she did not want them to read the text to their partner, but rather, she wanted them to simply give an oral summary to their partner. Partners were encouraged to ask questions for clarification.

SI. The pairs discussed appropriate strategies for the task and planned their strategies by checking off on the strategy log those they planned to use. They engaged in the task and the teacher circulated and monitored the oral interaction and the students' comprehension of the texts.

Post-task reflection. The teacher invited the students to check off the strategies they actually used, and she conducted the post-task reflection following the model described in Task 1 above. She demanded increasing accountability when the students reported their strategies.

Sources of evidence for the assessment. Observation, field notes, strategy log and post-task reflection, videotape (of selected class proceedings, including teacher explanations, student-to-student interaction, and post-task reflection).

February 12, 2009

Task. The teacher had started a group project the previous day, so the class continued working on it. This was a complex long-term project that involved either a) inventing an animal or b) researching a real animal, and c) presenting the animal to the class and responding to questions teachers or students might pose about the animal.

SI. The teacher asked the students to check off on their strategy logs the strategies they planned to use for their project. By this time, the students were developing their curiosity about the strategies on the strategy log that had not yet been discussed. They asked several questions about various strategies before checking off those they planned to use; for example, Jeanne asked for an explanation of scanning (which was called *Scan for information* on the strategy log). The teacher responded to their requests by explaining the strategies they asked about. She then elicited strategies they thought could help them and which they might check off. The children made suggestions, then they checked off strategies they planned to use, and they engaged in the task.

Post-task reflection. The teacher conducted the post-task reflection, as she did on January 29, insisting on even more accountability each time. The children became accustomed to this and started volunteering specific examples and details about their strategy use.

Sources of evidence for the assessment. Observation, field notes, videotape of selected class proceedings, interviews with some students from the embedded unit of analysis. During the planning of the project, I circulated and asked some students from the embedded unit of analysis within the larger case study to respond to the following open-ended prompt: *Please tell me about the strategies you are using to do the task*. The children spoke freely and I videotaped the interviews. I also collected the strategy logs with the data from the previous days so that they could be subjected to

statistical analysis. (Research reality: I also thought it was important to collect the strategy logs at the mid-point as I knew from my teaching experience that children sometimes lose important papers.)

February 26, 2009

Task 1. This task involved a guessing activity that students did in small groups, in preparation for singing a song by Billy Jonas called *What kind of cat are you?* (see Appendix J for lyrics). Each group was given two envelopes: one with the questions and another with the answers. The students had to interact orally, in order to put the questions with the right answers; e.g.

What kind of cat hangs out in your house? HOUSE CAT!
What kind of cat hangs out in the alley? ALLEY CAT!
What kind of cat is a chocolate candy bar? KIT KAT!
(Retrieved September 2, 2010 from http://www.billyjonas.com/index.php?page=songs&display=66)

SI. The teacher distributed new copies of the strategy log. She explained and modelled the cat matching activity. She then elicited from the children strategies they thought they could use for this activity. They made suggestions. The teacher then explained and modelled the strategy, Inferencing (labelled *Guess intelligently* on the strategy posters and strategy log), following the technique for presentation of a strategy referred to earlier (October, 2008). The teacher solicited my assistance in finding an explanation of this particular strategy in order to make it comprehensible to children. I gave her the following procedure:

- Post the strategy poster, *Guess intelligently,* on the board.

- Explain to the children that they can guess by: a) using clues from the text; or b) using what they already know about cats or anything else, in order to guess the answers.

- Do an example, as follows, to illustrate each of these two procedures for guessing.

    a) Do an example using clues from the text and talking out loud what you are thinking to guess the answer;

b) Use prior knowledge (labelled *Use what you know* on the strategy poster and on the strategy log) to guess by doing the following: Post the strategy poster, *Use what you know,* beside *Guess intelligently* and do an example, thinking aloud how you are using something you know about cats to guess the answer.

The teacher used this procedure to demonstrate the strategy, and she strongly recommended to the students to use it. In addition, she drew the students' attention to other strategy posters from previous lessons (Planning and Circumlocution – labelled *Say it in a different way* on the strategy poster) and to the strategy log, and elicited strategies they thought they might use. The students volunteered suggestions, and then they checked off the strategies they planned to use for the activity, independent of their peers and teacher. They then got into their groups and did the cat activity.

Post-task reflection. The teacher led the class in the post-task reflection in the usual way. She asked the children to check off on their strategy log strategies they had actually used to accomplish the task, and then she asked volunteers to report their strategy use, always supporting the strategies they reported with specific examples, and saying how they helped in those instances.

Immediately following, the teacher ended this activity by playing the recording of the song. The children listened to the questions in the song and joined in by singing the answers (the kind of cat).

Sources of evidence for the assessment. Observation, field notes, videotape of class selected proceedings (explanations, student-to-student interaction, interviews), strategy log.

Task 2. This activity involved cave man tools. The children were given a sheet with illustration of tools used by cave men. The activity had two parts: a) Groups of 4 had to negotiate and come to a consensus about what they thought each tool might have been used for; b) They had to pair off and then think creatively, discuss, and invent another use for each of the tools. The teacher explained that before she used to give them examples of sample language to use but that, for this activity, she wanted them to use the language they knew to carry out the discussion.

SI. The teacher drew the students' attention to the strategy poster, *Use what you know*, on the board. She showed them something familiar (a shell) and asked them

what they thought it could be used for. They used their prior knowledge of articles made with shells to suggest uses for the shell. The students got into groups and engaged in the task, using language they knew to interact in English only.

Sources of evidence for the assessment. Observation, field notes, videotape of selected class proceedings, strategy log.

March 12, 2009

Task. The students finished the animal project started on February 12, practised their presentations, and presented their projects. After each presentation, there was brief question and answer period when the presenters answered questions from other students spontaneously. If other students did not ask questions, the teacher did. Everyone had to engage in some spontaneous oral interaction.

SI. There was no explicit strategy instruction for the planning and practice segments of the class but the strategy posters were on display on the board and the children worked independently, applying their strategies freely. However, just prior to the oral presentation of their animal projects, the teacher led the students in a review of strategies they could use, if needed, during their presentations. In particular, she urged them to use two strategies, Stall for time and Circumlocution (labelled *Say it in a different way* on the strategy poster and strategy log), rather than avoidance (as a child suggested), if they forgot a part of their text. The transcription in Table 7 below of the videotape of this selected class proceeding shows this teacher to student interaction.

Table 7

Transcription of teacher to student interaction prior to class presentations

(N.B. All names in this transcript are pseudonyms)

Teacher: Before we start, er... I just want to remind you that you planned, practised ... I think everybody practised ... Just remember when you are presenting, if you can't find a word ... what do you do? Raise your hand. *(Calling on a student with her hand raised)* Claudine, if you can't find a word you ...?

- Claudine: Say it in a different way.
- Teacher: (*repeating to confirm*) Say it in a different way.
- Teacher: (*Eliciting another strategy*) If you can't remember something, what do you do? If you can't remember something .... Susie?
- Susie: Practise.
- Teacher: (*Showing that she thought Susie was probably thinking about during preparation time*) No...When you are in the front to present ... If you can't remember something, what can you do?
- Marie: Skip it.
- Teacher: Skip it? No! If you forget something, what can you do, other than skip it? *(gesturing disapproval)* You don't skip it... If you don't remember something in your text ... I don't know ... You can't ask me 'cause I don't know... What, Mark?
- Mark: Ask for help?
- Teacher: Well, ask for help ... or what do you do sometimes when you need to think (*pointing to her head and gesturing the act of thinking*) about something, you do what? (*Calling on student with her hand raised*) Roxane?
- Roxane: Stall for time.
- Teacher: (*Repeating to confirm*) Stall for time. You can stall for time ... you can stop and you can say, "One minute, please" ... and you can think. And I don't want you reading. It's not a reading thing. It's an oral presentation; you're telling me. You're not reading to me. And so it's important ... you planned, you practised... It's time to breathe (*gesturing*) ... to relax... It's not time to get nervous. If you forget something, stall for time. If you can't think of a word, say it in a ...? (gesturing to the class)
- Class: (in unison) ... different way!
- Teacher (confirming): Say it in a different way ... don't just skip it. That's the easy way out.

Sources of evidence for the assessment. Observation, field notes, videotape of selected class proceedings (explanations, student-to-student interaction, class presentations). I did not have access to their grades but I videotaped the class presentations for qualitative assessment of their use of strategies and ESL task success.

March 19, 2009 (last day of SI)

*Task 1.*The task was a pair activity involving an info-gap crossword puzzle on the topic of telling time. Student 1 had the down clues and Student 2 had the across clues. The students had to interact in order to complete the crossword.

SI. The teacher explained the task and asked the students to check off, on their strategy log, the strategies they planned to use during the activity. The children checked them off and then the teacher elicited from students strategies they planned to use. Volunteers said which ones they planned to use. The teacher then reminded the students of the task and to keep the strategies in mind while they worked. The students then executed the task.

Post-task reflection. The teacher conducted the post-task reflection, as usual, asking students to report their strategies, and requiring accountability in the form of specific examples and how the strategies helped them.

Sources of evidence for the assessment. Observation, field notes, strategy log, videotape of selected class proceedings (parts of the explanations, segments of student-to-student interaction and of post-task reflection) and post-task reflection.

Task 2. This small group jigsaw activity was to complete a floor plan according to information on a card. The children worked in groups of 5 and each one had a card with a piece of information that would help them complete the floor plan; e.g. This room is next to that room. The members of the group took turns reading their information. Everyone had their own sheet with the floor plan and wrote on it as soon as a member of the group read out the location of a room. The group then interacted as they compared answers and tried to complete the task.

SI. The teacher told the students to take out their strategy logs, and she repeated the instructions for the procedure. She told them to check off the strategies they planned to use and then she elicited the strategies they planned to use. Volunteer students gave examples. The students executed the task.

Post-task reflection. The teacher led the class in the post-task reflection, as usual. She called on students to report their strategy use, pushing for specific examples and explanations of how the strategies helped them.

Sources of evidence for the assessment. Observation, field notes, strategy log, videotape of selected class proceedings and post-task reflection.

Assessment of ultimate outcome. The ultimate outcome of the strategy intervention was assessed using the results of the experimental class' progress, as evidenced by their in-class performance on the videotapes, their strategy logs, and their results on the Time 2 oral interaction test and the Children's SILL, which served as post-tests. These tests (post-tests) were administered on March 26 and 27, 2009 to the experimental group and the control group respectively. The pre- and post-tests provided documented, quantifiable evidence of progress for the experimental group, and additional quantitative data for comparisons with the control group, in order to support the assessment and to further examine the rival explanation that the results may have been affected by variables other than the strategy instruction.

Data analysis procedures for Phase 2.

Phase 2 of the study sought to investigate the effects of strategy instruction, in order to answer the following two research questions:

Research Question 2*: What are the effects of strategy instruction on student strategy use?*

Research Question 3: *What is the relationship between student strategy use and achievement as measured by success on ESL tasks?*

Each of these research questions was further broken down into sub-questions which guided the analysis procedure.

Research question 2, which sought to investigate the effects of SI on student strategy use, was broken down into the following sub-questions:

2a. What evidence exists of strategy awareness following instruction?

2b. What are the effects of strategy instruction on student strategy use? What are the links between strategy instruction and students' ability to match strategies to task demands?

2c.How can children's strategy use in an authentic context be reliably assessed?

Research question 3, which looked into the effects of student strategy use on ESL achievement, was broken down as follows:

3a. What are the relationships between strategy use and ESL task success?

3b. To what extent are causal paths evident among strategy instruction, strategy use, and success in ESL?

Analytic approach and technique.

The analytic approach for the analysis of this case study is based on theoretical assumptions from the review of the literature showing: a) that strategy use facilitates language learning; and b) that explicit strategy instruction also enhances strategy use. The first assumption, directly related to the Québec Education Program, is that this public program, which makes the teaching of strategies an integral part of the curriculum, is intended to produce an outcome whereby strategy instruction and subsequent strategy use by the children will enhance success in ESL learning. This assumption is supported by investigations mainly amongst adults and adolescents (Cohen, 1998; Nakatani, 2005; Naughton, 2006; O'Malley & Chamot, 1990; Oxford, 1990), and to a lesser extent, amongst children (Chamot & El Dinary, 1999; Vandergrift, 2002). Indeed, there are serious gaps in the literature as there are very few studies on the effects of strategy instruction amongst second language elementary school children (Chamot, 1999; Vandergrift, 2002), hardly any on second language elementary school children's strategy use in authentic contexts, and just a handful of investigations on assessment of children's L2 strategies (Gu et al, 2005; Gunning, 1997; Jimenez-Garrido, 2010; Lan & Oxford, 2003; Lan, 2004). To my knowledge, there is no case study involving SI among children in an authentic context, in which the SI is developed around a theory of 'social interaction' (Yin, 2009), whereby the researcher and the practitioner develop the intervention in collaboration with each other. This data analysis also: a) combined qualitative and quantitative data to explain the findings, and b) examined rival explanations for the results, in order to answer the research questions addressed in section entitled "Data analysis procedures for Phase 2", above. This approach represents my adaptation of Yin's (2009) analytical strategies for case studies.

The basis of the analytic technique used was inspired by Yin's (2009) hypothetic example of a logic model involving a school intervention aimed at improving students' academic performance. As explained previously in the section on the methodology for the strategy intervention procedure, this model represented a series of events involving a pedagogical intervention of additional school activities

(*intervention*), which led to students collaborating on academic exercises (*immediate outcome*), the result of which led to increased understanding and satisfaction on the part of students and teachers (*intermediate outcome*), which in turn resulted in enhanced learning which is demonstrated in higher test scores (*ultimate outcome*) (p.150). According to Yin (2009), "as an analytical technique, the use of logic models consists of matching empirically observed events to theoretically predicted events" (p. 149). I developed a hypothetical model of SI, based on the literature review, my pilot study (2008) and my teaching experience (Figure 1). The empirically observed events of the SI model in Phase 2 of this study (see Figure 14 at the end of Chapter 5) were matched to the hypothetical model.

The steps of the data analysis for Phase 2.

The quantitative data from Phase 1, analyzed previously, were combined with the qualitative and quantitative data from Phase 2 during the data analysis for Phase 2. This adds a sequential component to the data analysis. All quantitative and qualitative Phase 2 data were entered into the computer using software appropriate for each type of data (SPSS, Excel, HyperResearch and Word) and organized in a case study database.

Research questions. The research questions for Phase 2 guided the analysis procedure, which was organized according to the steps of the strategy intervention model described above: *academic problem; intervention; immediate outcome; first intermediate intervention; intermediate outcome; second intermediate intervention; ultimate outcome; result*. Topics were identified from the sub-categories of each research question, and operationalized as shown in the *Examples of evidence from case study database* column in Table 8, Case Study Analysis Plan, following the sources of evidence section below.

Sources of evidence.

The data yielded the following seven sources of evidence to support the findings:

1. Test results: Pre- and post-test ESL oral interaction tests; plus field notes regarding students' strategy use, use of L2, use of L1.

2. General questionnaires: Children's SILL pre- and post-test (from Phase 1);

3. Eight video recordings of the participants as they received pre-task strategy instruction; during tasks as they executed classroom tasks; post tasks as they engaged in the teacher-led post-task reflection regarding their strategy use;

4. Observation, plus qualitative field notes from class proceedings;

5. A task-based questionnaire on strategy use related to an oral interaction task, administered in mid-January;

6. Six strategy logs, recording students' strategy use for ESL tasks, at various intervals, from mid-January to the latter part of March.

7. Interviews: In-class open-ended interviews with selected students from the embedded unit of analysis asking them to explain the strategies they were using at that point to execute the task at hand.

The analysis of each source of evidence will now be explained.

1. *Pre- and post-tests of oral interaction*: Quantitative data from the Time 1 and Time 2 oral interaction tests from Phase 1 served to establish proficiency levels for the participants of both the experimental and control groups in Phase 2, pre- and post-intervention, respectively. The results were analyzed using the SPSS statistical package. For comparisons within the SI intervention group on the one hand, and the control group on the other hand, these data were analyzed using paired samples (repeated measures) *t*-tests, and for comparison between the experimental and the control groups the analysis was done with analysis of variance (ANOVA) with planned comparisons.

   Field notes of recorded and unrecorded pre- and post-test data: Qualitative field notes from the oral interaction test for each participant were jotted down on a class list during the oral interaction tests, and then entered into the computer using a word processor and examined for: a) use of strategies; b) use of English; and c) use of L1. Selected transcriptions were done for some students from the embedded unit of analysis who changed proficiency levels from pre-test to post-test. As detailed field notes were taken for the control group, which I was not permitted to audiotape, the analysis depended on those notes instead of the audiotape.

2. *Pre- and post-tests of general strategy use:* Quantitative data from Time 1 and Time 2 Children's SILL questionnaire provided a general assessment of the children's strategies pre-intervention and post intervention. The results of this questionnaire were analyzed using the statistical package, SPSS, as described in the data analysis procedure for Phase 1.
3. *Field notes of class proceedings.* Qualitative field notes of class proceedings during the intervention were typed using a word processor, entered into the case study database, and analyzed for evidence of the topics that had previously emerged from my 2008 pilot study, and were identified as being related to the research questions; e.g. strategy awareness, strategy use, task success, etc.
4. *Videotapes.* Videotaped data were entered into the computer in chronological order. Using the HyperResearch software, segments of the videos were tagged and coded for evidence of the research question topics, and the results entered in the case study database. Examples of the coding for the topic, strategy awareness, included: a) during teacher to student pre-task interaction: students' responses to the elicitation of strategies; b) during student-to-student interaction: when a student was able to explain a strategy to another during discussions of possible strategies that they could use during a task, in order to check off on the strategy log those they planned to use; and c) during the post-task reflections; when a student was able to explain to the teacher how a strategy helped. For other examples, please see the Case Study Analysis Plan, below. Selected segments of the videotapes were later transcribed to illustrate a particular topic or an example.

Table 8
Case Study Analysis Plan

Theme: Looking at children's strategies through the lens of an authentic context			
RESEARCH QUESTION	**TOPIC**	**SOURCES OF EVIDENCE**	**EXAMPLES OF EVIDENCE FROM CASE STUDY DATABASE**
2. What are the effects of strategy instruction on student strategy use?			
2.1. What evidence exists of strategy awareness following instruction?	Strategy awareness	1. Documentation: pre-test and post-test qualitative results 2. Audiotape of pre-test 3. Field notes during class 4. Videotape	1. **Pre-test** of oral interaction field notes (qualitative): 18/28 students (Ss) switched to L1 when they didn't know a word. 2. **Post-test** of oral interaction field notes (qualitative): No one switched to L1. Ss drew on strategies instead of switching to L1. **In class** field notes and videotape: 3. During elicitation of strategies; Ss' responses to teacher (T). During early post-task reflections: examples given and questions asked by Ss. 4. S/S discussions about which strategies on the strategy log might be helpful with a task (during goal setting); 5. Interviews during tasks: (Case studies – embedded unit of analysis) Specific Ss explaining strategies in response to researcher's question, *Tell me about the strategies you are using now*.
2.2. What are the effects of strategy instruction on student strategy use? What are the links between strategy instruction and students' ability	Strategy use	1. Observation: field notes 2. 8 Videotapes 3. Task-based questionnaire 4. 6 Strategy logs	**In class** field notes and videotape: 1. During classroom activities; Observation of traces of strategy use; Videotapes: Traces of strategy use on videotapes; e.g. Child looking up a word in the dictionary (Using resources). 2. During post-task reflection: Ss reporting strategies they used

to match strategies to task demands?			for the task. 3. Quantitative results from task-based questionnaire for oral interaction. 4. Quantitative results from strategy logs.
2.3. How can children's strategy use in an authentic context be reliably assessed?	Strategy assessment	1. Field notes 2. Observation 3. Videotapes 4. Task-based questionnaire 5. 6 Strategy logs 6. General quest. – CSILL 7. Interviews	1. **Principle: Yin - Use several sources of evidence:** In this study, 7 sources of evidence were used: **1. Test results:** Pre- and post-test ESL oral interaction measure field notes regarding Ss' strategy use during tests; **2. Questionnaires:** CSILL pre- and post-test of general strategy use; **3. Eight video recordings** of the participants as they received pre-task strategy instruction; during tasks as they executed classroom tasks; post tasks as they engaged in the T led post-task reflection of their strategy use. **4. Observation + field notes** of strategy use during classroom tasks. **5. A task-based questionnaire** on strategy use related to an oral interaction task, administered in mid-January; **6. Six strategy logs** documenting Ss strategy use immediately following classroom tasks, supported by specific examples during post-task reflections. **7. Interviews:** In-class open-ended interviews with case study Ss (embedded unit of analysis) asking them to explain the strategies they were currently using to execute the task at hand.

			2. **Principle: Gunning - Match assessment techniques to the age and context of participants**: (Selected examples from case study database) **Observation:** Ongoing assessment for learning; congruent with MELS policy on evaluation (Assessment for Learning); assessment of students' strategy use using during classroom tasks; e.g. student-to-student interaction. **Accountability**: - a) During post-task reflection: Ss reporting strategies they used for the task; T insisted on examples of how they used the strategy and how it helped. b) During interviews: During in-class interviews, researcher probed for specific examples during interviews with specific case studies (embedded unit of analysis) 3. **Self-report: Use self-report measures adapted for children:** i. CSILL L1 – facilitated comprehension; questionnaire adapted for and piloted with participants of same age group as participants of this study. ii. Competency 1 Task-based questionnaire. Piloted with participants of same age group as participants of this study. (Children's nature – focus on the immediate; here and now.) When Ss completed the task-based questionnaire immediately following the oral interaction task, they gave definitive binary answers: yes or no. However, the data from a reading task-based

			questionnaire administered by T could not be calculated for this study because she gave it to students the day following the reading task and they had forgotten which strategies they had used the preceding day, as evidenced by the fact that several of them checked between the yes and no boxes, in a non-committing fashion. **Rival explanations**: Using the strategy of rival explanations, (as recommended by Yin). • Social desirability factor: The children might have reported what they thought the researcher wanted to hear; <u>Response to rival explanation #1:</u> Accountability was assured by the insistence of having students give examples of how they used the strategies they claimed to use and how they helped. • Other factors: The improved post-test results could have been caused by variables other than the strategy use; e.g. Teacher factor, time on task, program, curriculum, school board, etc. <u>Response to rival explanation #2:</u> A quasi-experimental segment was included; several factors were controlled for: Pre-test proficiency of both groups, teacher factor, time on task, program, curriculum, school jurisdiction, etc.
RESEARCH QUESTION	**TOPIC**	**SOURCES OF EVIDENCE**	**EXAMPLES OF EVIDENCE FROM CASE STUDY DATABASE**
3. What is the relationship between student strategy use and			

achievement as measured by success on ESL tasks?			
3.1 What are the relationships between strategy use and ESL task success?	ESL Task success	1. Pre-post tests of oral interaction 2. Videotapes 3. Audiotape 4. Observation 8. Field notes	1a. Quantitative: - SPSS analysis of treatment group's pre-post results; - Field notes of treatment group's pre-post strategy use – contrast evasion strategies in pre-test (reverting to L1, abandoning the message) with strategies to get the task done successfully in post-test. (Select examples from case study database; e.g. from children who were embedded units of analysis). 1b. Quantitative: - SPSS analysis of treatment group's pre-post results vs control group's pre-post results 1c. Qualitative: - Field notes contrasting strategies of both groups during oral interaction pre and post-tests. 2. Videotapes of student performance during class – relate to strategy use; e.g. Jan. 15 – skit. T taught strategies Plan and Practice. All Ss planned and came up with a storyline for their skit; some Ss practised while others did not. Those who practised performed their skit well; those who did not practise performed poorly according to the teacher's criteria. T modified the post-task reflection protocol to give this feedback to Ss. She encouraged them to use the strategy Practice in the future.
4.1. To what extent are causal paths evident among strategy instruction,	Causal paths	1. Strategy logs; field notes	1. Do only a preliminary qualitative path analysis using the two flow charts (Figures 1 and 14) to make inference of causal path. 2. Main case study – experimental class: Match hypothesized SI

strategy use, and success in ESL?			intervention model to the post intervention model. Use both models to show the preliminary path from strategy awareness to strategy use, to the ultimate task success. 3. Track strategy use in some Ss from the embedded unit of analysis: 1 high, 1 mid, 1 low; Ss who changed proficiency levels (especially those who went up by 2 proficiency levels – from low to high) 4. In discussion, recommend more detailed path analysis for future research.

4. *Observation, plus field notes of class proceedings.* Field notes of observations, which had been made in a notebook, were transcribed and analyzed for evidence regarding the topics that corresponded to each research question.

5. *A task-based questionnaire*. This questionnaire on strategy use related to an oral interaction task was administered in mid-January. The data from this questionnaire were entered into an Excel spreadsheet and quantitatively analyzed using the 'Count ifs' statistical function, which quantified frequencies in the following way: a) the number of students who reported using each strategy and the number that said they did not use it; and b) the number of students by proficiency level who reported using each strategy and the number that said they did not use it.

6. *The strategy log.* Six strategy log entries corresponding to students' use strategies for particular ESL tasks, at the intervals mentioned in the previous section from mid-January to the latter part of March, were collected. The categories of answers on the strategy log were *I plan to use* and *I used*. These data were entered into an Excel spreadsheet and quantitatively analyzed using the 'Count if' statistical function, which quantified frequencies overall, and then 'Count ifs' which quantified frequencies of strategy use by proficiency level according to: a) the number of students who planned to use each strategy; b) those who reported planning and using each strategy; c) the number that said they did not plan to use it and did not use it; and d) the number that said they did not plan to use it but ended up using it. In order to calculate use of a strategy, the responses of categories b (planned to use and did use) and d (did not plan

to use but used) were collapsed. The results were then charted and graphically represented using Excel's chart function. The results of the children who moved up by two proficiency levels on the post oral interaction measure were calculated and charted in order to see how they adapted their strategy use to the tasks associated with the six strategy log entries.

7. *Interviews:* In-class, I conducted open-ended videotaped interviews with selected students from the embedded unit of analysis in which I asked them to explain the strategies they were using at that point to execute the task at hand. Students were asked the following: *Please tell me about the strategies you are using to do this activity.* The students responded in the way they wanted; for example, in preparing the research project on animals (introduced February 12, 2009), a student explained to me how she was using resources: she was using the Internet to look up the habitat of the animal that she was planning to present. A low proficiency student had trouble remembering the names of the strategies, so he used a resource, his strategy log, for support. I did not say explicitly that the children could use the language of their choice to respond but they had become accustomed to speaking English only in the class, so he used props and gestures to help with his explanation when he did not know all the words he wanted to say in English; for example, he said (*looking at the strategy log*), "Plan, and (*taking his sheet on which he had made a plan of the animal he was creating*) this is my plan. The videotapes were entered into the computer and the children's answers were analyzed and tagged for evidence of any of the topics on the analysis plan in Table 8.

Interpreting the results of Phase 2.

Mixing the quantitative and qualitative data. The next step in the analysis was to combine and interpret the quantitative and qualitative data from Phases 1 and 2, in order to explain the findings. The mixed data were fairly evenly converged, combining the qualitative evidence described above with the quantitative evidence from the pre- and post-test, the task-based questionnaire, and the quantitative results from the strategy logs in order to answer research questions 2 and 3, which investigated the effects of strategy instruction on students' strategy use and the influence of strategy use on ESL task success, respectively.

Examining rival explanations. Once the results were obtained, the data were carefully examined for the following rival explanations.

Rival explanation number 1: Social desirability, meaning that the children reported strategies they thought the researcher or teacher wanted to hear. The videotapes of the post-task reflections were carefully examined for any evidence of this, paying close attention to the ways in which the teacher pushed for accountability by insisting on specific examples of strategy use and how the strategies helped. One exchange between a student who tried to rattle off a list of strategies and the teacher who stopped him each time he started to talk, in order to insist on a specific example of a strategy he used and how it helped, was retained for transcription. Video clips of the student-to-student interactions when they were discussing which strategies might be helpful with a task, in order to check off on their strategy logs those they planned to use, were also tagged and carefully examined for evidence of social desirability. One particular video clip of an exchange between a boy, who suggested checking off a strategy he did not understand, and a girl who asked him to explain it, and then suggested that he should not check it off if he did not understand it, was also transcribed. In fact, the entire discussion among the members of that team on that occasion was retained for transcription because the students could be heard analyzing the meaning of the strategies before choosing to check them off.

Rival explanation number 2: Teacher effect or other variables may have accounted for the results. The data were carefully examined to identify all the variables that had been controlled for, especially taking into account the data from the quasi-experimental component of the study, such as the description of the student and teacher participants, the location of the schools, the type of program the students were in, the curriculum and the pedagogical materials they were using.

Tracing the causal path. In order to answer the last sub-question to my research question 3, "To what extent are causal paths evident among strategy instruction, strategy use, and success in ESL?" I compared the pre-intervention hypothesized SI model (Figure 1) with the post-intervention SI model (see Figure 14 at the end of the results chapter), in order to examine to what extent they matched and to see whether there was sufficient evidence in the data to trace a preliminary qualitative path from strategy instruction, to strategy use, and finally, to ultimate task success.

Conclusion

In conclusion, the data from both Phase 1 and Phase 2 were converged in order to obtain an overall picture of the children's strategies through the lens of an authentic context; that is, a 6th grade ESL class in Québec. The data from Phase 2 were examined to see whether, or to what extent, the results of the participants were generalizable to the population of Phase 1, and conclusions were drawn and limitations identified.

The results of Phase 1 are presented in Chapter 4 and those of Phase 2 are presented in Chapter 5.

Chapter 4: Results and Interpretation of Phase 1: The Survey Study

Introduction

This chapter reports the quantitative results of Phase 1, the survey study, which were obtained from statistical analyses using SPSS software. The instrument used for the survey was a questionnaire, the Children's SILL 2.0 (adapted from Gunning, 1997, which was originally adapted from Oxford, 1990). As described in the previous chapter, participants responded using the following 4-point Likert scale: 1 completely disagree; 2 rarely agree; 3 often agree; and 4 completely agree, and the following interpretation of the scores was used: 1-1.9 low use; 2-2.9 moderate use; 3-4 high use. Strategy categories in this report refer to the six categories on the Children's SILL: Memory, Cognitive, Compensatory, Metacognitive, Affective and Social, which were also the categories on the original SILL (Oxford, 1990).

Participants were assigned to oral interaction achievement groups based on an oral interaction achievement measure, an info-gap activity, (adapted from White & Turner, 2005), in which pairs of students participated at the time of the administration of the survey. As explained in the previous chapter, the rubric used to assess oral interaction graded students on the following 5-point scale, which is also used by the Québec Ministry of Education: 1 minimal competency development; 2 partial competency development; 3 acceptable competency development; 4 thorough competency development; 5 advanced competency development. For the purpose of placing participants into three categories of high, mid, or low ESL oral interaction achievement, the following system was used: 1-2 low; 2+ to 3 mid; 3+ to 5 high. For the purposes of this report, these levels of achievement will be referred to as low, mid, and high proficiency levels.

This phase, a descriptive study of children's general strategy use, sought to answer the following research question: *What are the patterns of strategy use amongst children enrolled in the Québec elementary ESL program at the grade 6 level?* This question was further broken down into the four sub-questions, which guided the analysis procedure and will form the basis of this report. This report will present the results of each one in the following order:

1.1 What are the most and least used strategy categories?

1.2 What are the most and least used individual strategies?

1.3 What is the impact of gender and 'proficiency' on strategy use?

1.4 What is the relationship between strategy use and motivation?

As explained in the preceding chapter, for sub-questions 1.1 to 1.3 the results of the children's strategy use were calculated based on data collected in October, 2008, which represented their Time 1 responses to the items on the Children's SILL, and for sub-question 1.4 their Time 2 results were calculated.

Results

What are the most and least used strategy categories?

The results of the children's strategy use were calculated based on data collected overall and by category. Means and standard deviations were calculated overall, and for each category of strategies on the Children's SILL. Table 9 displays these data. The overall mean strategy use reported was 2.87 (SD .41), which would be considered moderate strategy use according to the scale above. The pattern of strategy use by category reported by the participants was: Affective 3.18; Compensatory 3.00; Metacognitive 2.98; Cognitive 2.79; Memory 2.66; Social 2.63. This means that the students mainly used affective strategies, which assist in controlling emotions or anxiety level, and that they used this category to a high degree according to the scale above. The Compensatory category, consisting of strategies that help learners make up for a lack of knowledge, was also used to a high degree. The lowest category was the Social category, which was used moderately by these participants. There were no strategy categories in the low range. Taken together, these results mean that the children reported moderate strategy use overall, and they reported using all six strategy categories from a moderate to a high degree.

Table 9 (n=130)

Means and Standard Deviations Showing Frequency of Strategy Use Overall and by Category Time 1 – (No Intervention)

Strategy Category	Means	Standard deviation
Affective	3.18	.58
Compensatory	3.00	.49
Metacognitive	2.98	.52
Cognitive	2.79	.45
Memory	2.66	.61
Social	2.63	.61
CSILL Overall	2.87	.41

What are the most and least used individual strategies?

In order to understand which strategy items were the most and least favoured by the children, reported frequencies of individual strategy items on the Children's SILL were calculated, in descending order. Tables 9 and 10 show, in descending order, the five most and five least used individual strategies reported by the participants, the respective mean, and the corresponding questions on the Children's SILL. As the results show, the strategy item that was most frequently used by children was paying directed attention, (item 23) *When someone speaks to me in English, I listen attentively,* for which the mean use was 3.59 (SD.67), which is considered high use. Two strategy items from the two categories in the preceding section that were most frequently used also appeared among the top five favourite individual strategies; namely (from the Compensatory category, item 18), *When I don't know a word in English, I ask for help*, which had a mean use of 3.29, and (from the affective category, item 29), *I am willing to take risks by guessing the meaning of a word or phrase, and by speaking English even when I am afraid of making mistakes*, for which the mean reported use was 3.28, also high frequency use.

The least frequently used strategy item reported by the children is item 2 from the memory category, *I mime words to remember them (example: I touch my toes to remember toes),* which had a mean use of 1.97, which is at the high end of low use. The other four strategies that were among the least favoured by the children are strategies that refer to reading books in English, note-taking, efforts to learn about English culture, and finding practice opportunities.

Table 10 (*n*=130)

Most Used Individual Strategies Overall: Time 1 – (No Intervention)

Most used individual strategies	Corresponding item on the Children's SILL	Mean
1. Metacognitive 23	When someone speaks to me in English, I listen attentively.	3.59
2. Cognitive 12	I make an effort to understand the sense of what I read or what I hear without translating word for word.	3.38
3. Cognitive 11	I find similarities between French and English (example: table/table).	3.37
4. Compensatory 18	When I don't know a word in English, I ask for help.	3.29
5. Affective 29	I am willing to take risks by guessing the meaning of a word or phrase, and by speaking English even when I am afraid of making mistakes.	3.28

Table 11

Least Used Individual Strategies: Time 1 (No Intervention)

Least used individual strategies	Corresponding item on the Children's SILL	Mean
1. Memory 2	I mime words to remember them (example: I touch my toes to remember *toes*).	1.97
2. Cognitive 7	I read books in English.	2.12
3. Cognitive 15	When I listen to or read a text, I write down the important information.	2.38
4. Social 32	I try to learn about English culture.	2.45
5. Social 31	I work with my classmates to practice my English.	2.48

What is the impact of gender and proficiency on strategy use?

A two-way between groups analysis of variance (ANOVA), with gender and proficiency as the independent variables and the total strategy use as the dependent variable, was conducted to explore the impact of gender and proficiency (as defined by success on the ESL oral interaction measure) on the children's strategy use (as defined by their overall strategy use reported on the Children's SILL). The data analyzed represented the results for Time 1; i.e. with no intervention in any of the groups. There was no significant main effect for gender $F(1,120) = .119$, $p=.38$. There was, however, a significant main effect for proficiency $F(2,120) = 3.96$, $p=.02$ (partial eta squared =.06) and a significant interaction effect between gender and proficiency

$F(2,120) = .4.02$, p=.02 (partial eta squared = .06). These results are shown in Table 12.

Table 12 (n=130)

Gender and Proficiency vs Strategy Use on the Children's SILL
Tests of Between-Subjects Effects Time 1 – (no intervention)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2.617[a]	5	.523	3.497	.005	.127
Intercept	913.090	1	913.090	6100.244	.000	.981
Gender	.119	1	.119	.792	.375	.007
ESLTaskSuccessOral pretest	1.187	2	.593	3.964	.022	.062
Gender * ESLTaskSuccessOral pretest	1.205	2	.602	4.024	.020	.063
Error	17.962	120	.150			
Total	1061.149	126				
Corrected Total	20.579	125				

a. R Squared = .127 (Adjusted R Squared = .091)

In order to find out where the differences lay in strategy use amongst the three proficiency levels (high, mid and low), post-hoc tests of comparisons using Tukey HSD test were conducted. Comparisons indicated that the mean difference between the scores on the Children's SILL for the high and the low proficiency groups was .25, in favour of the high proficiency group, significant at the .02 level, as Table 13 below shows. The difference between the scores of the mid and high proficiency learners, and the mid and low proficiency learners were not statistically significant.

Table 13

Tukey HSD Proficiency vs Total Strategy Use on the Children's SILL: Time 1 – (No Intervention)

Multiple Comparisons						
(I) ESL Task Succ_pre-test	(J) ESL Task Succ_pre-test	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Low	Mid	-.1536	.08060	.142	-.3449	.0377
	High	-.2522*	.08998	.016	-.4657	-.0387
Mid	Low	.1536	.08060	.142	-.0377	.3449
	High	-.0986	.09957	.584	-.3349	.1377
High	Low	.2522*	.08998	.016	.0387	.4657
	Mid	.0986	.09957	.584	-.1377	.3349
Based on observed means.						

In order to find out which strategy categories made a difference in the above results, a one-way multivariate analysis of variance (MANOVA), with Proficiency (as defined by ESL task success) as the independent variable, and each of the six strategy categories (Memory, Cognitive, Compensatory, Affective and Social) as the six dependent variables, was performed. Preliminary assumption testing carried out to check for normality, linearity, outliers and homogeneity of variance did not reveal any serious violations. As Table 14 below indicates, when the dependent variables were considered separately, the categories that reached statistical significance were the cognitive category $F(2,123)=4.36$, $p=.02$ and the affective category $F(2,123)=3.22$, $p=.04$. Close examination of the means for each category indicated that high proficiency learners reported using more Cognitive strategies than low proficiency learners (3.00 high vs 2.70 low) and more Affective strategies (3.43 high vs 3.10 low).

Table 14

Tests of Between-Subjects Effects: Strategy Categories by Proficiency: Time 1(No Intervention)

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	TotalMemoryStrategies	1.789[a]	2	.895	2.422	.093	.038
	TotalCogStrategies	1.697[b]	2	.848	4.359	.015	.066
	TotalComStrategies	1.159[c]	2	.579	2.431	.092	.038
	TotalMetStrategies	1.399[d]	2	.700	2.635	.076	.041
	TotalAffStrategies	2.035[e]	2	1.017	3.220	.043	.050
	TotalSocStrategies	1.324[f]	2	.662	1.776	.174	.028
Intercept	TotalMemoryStrategies	805.316	1	805.316	2180.267	.000	.947
	TotalCogStrategies	883.043	1	883.043	4537.217	.000	.974
	TotalComStrategies	1008.433	1	1008.433	4231.447	.000	.972
	TotalMetStrategies	1006.564	1	1006.564	3790.744	.000	.969
	TotalAffStrategies	1159.736	1	1159.736	3669.715	.000	.968
	TotalSocStrategies	790.690	1	790.690	2122.213	.000	.945
ESLTask SuccessOral_pretest	TotalMemoryStrategies	1.789	2	.895	2.422	.093	.038
	TotalCogStrategies	1.697	2	.848	4.359	.015	.066
	TotalComStrategies	1.159	2	.579	2.431	.092	.038
	TotalMetStrategies	1.399	2	.700	2.635	.076	.041
	TotalAffStrategies	2.035	2	1.017	3.220	.043	.050
	TotalSocStrategies	1.324	2	.662	1.776	.174	.028
Error	TotalMemoryStrategies	45.432	123	.369			
	TotalCogStrategies	23.939	123	.195			
	TotalComStrategies	29.313	123	.238			
	TotalMetStrategies	32.660	123	.266			
	TotalAffStrategies	38.872	123	.316			
	TotalSocStrategies	45.827	123	.373			
Total	TotalMemoryStrategies	941.444	126				
	TotalCogStrategies	1007.139	126				
	TotalComStrategies	1165.472	126				
	TotalMetStrategies	1158.480	126				
	TotalAffStrategies	1332.000	126				
	TotalSocStrategies	927.222	126				
Corrected Total	TotalMemoryStrategies	47.221	125				
	TotalCogStrategies	25.635	125				
	TotalComStrategies	30.472	125				
	TotalMetStrategies	34.060	125				
	TotalAffStrategies	40.907	125				

	TotalSocStrategies	47.151	125				
a. R Squared = .038 (Adjusted R Squared = .022)							
b. R Squared = .066 (Adjusted R Squared = .051)							
c. R Squared = .038 (Adjusted R Squared = .022)							
d. R Squared = .041 (Adjusted R Squared = .025)							
e. R Squared = .050 (Adjusted R Squared = .034)							
f. R Squared = .028 (Adjusted R Squared = .012)							

To summarize, these results indicate that, according to the responses given by these children, gender does not influence strategy use but proficiency does. In total strategy use overall, the high proficiency learners reported using 25% more strategies on the Children's SILL than did the low proficiency learners. Further analyses were done to find out which categories of strategies made a difference between these two proficiency levels. The results of these analyses show that cognitive strategies, which help learners "... manipulate the language material in direct ways..." (Oxford, 2001, p. 48), and affective strategies, which assist in controlling emotions or anxiety level, were favoured by high proficiency learners over low proficiency learners.

What is the relationship between strategy use and motivation?

The literature on teaching ESL to children (Moon, 2005) suggests that children with a positive attitude towards English might adopt a constructive approach to learning the language, so the children were asked the question, *Do you like English?* and they were asked to give a binary answer (yes/no). I wanted to investigate whether their attitude towards English would influence their approach to learning, in terms of their strategy use. In order to explore the relationship between strategy use and motivation the participants' Time 2 data were used because a question related to this was added to the Time 2 background questionnaire.

What is the impact of motivation on strategy use? A one-way between groups analysis of variance was conducted to investigate the impact of motivation on overall strategy use, as measured by the Time 2 Children's SILL results. Participants were divided into three groups (1=yes; 2=no; 3=did not answer) according to their response to the question about liking English. There was a statistically significant difference at the ($p < .001$) level in overall strategy scores for these groups: F (2, 113) = 14.17. The

effect size, calculated using eta squared, was .20, which is large. Table 14 shows these results.

Table 15

Motivation vs Overall Strategy Use: Children's SILL Time 2 (SI Conducted by Teachers of 2 Groups; No SI Done By Teachers of the Other Groups)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.733	2	2.366	14.175	.000
Within Groups	18.864	113	.167		
Total	23.597	115			

Post-hoc comparisons using the Tukey HSD test (Table 16) show where the differences lay. The comparison between those who answered *yes* and those who answered *no* to the question will be the only one reported as the motive of the participants who did not answer is not known. The overall strategy use of those who answered yes to the question of liking English was significantly different from that of those who answered no, the mean difference being .45, or 45%, in favour of those who said they liked English, significant at the ($p < .001$) level.

Table 16

Tukey HSD: Motivation vs Total Strategy Use: Children's SILL Time 2 (SI Conducted by Teachers of 2 Groups; No SI Done by Teachers of the Other Groups)

(I) Likes English	(J) Likes English	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Yes	No	.44682*	.08485	.000	.2453	.6483
	Did not answer	-.01378	.18849	.997	-.4614	.4339
No	Yes	-.44682*	.08485	.000	-.6483	-.2453
	Did not answer	-.46061	.19608	.053	-.9263	.0051
Did not answer	Yes	.01378	.18849	.997	-.4339	.4614
	No	.46061	.19608	.053	-.0051	.9263

*. The mean difference is significant at the 0.05 level.

These results show that there is a major difference in overall strategy use between participants who said they liked English and those who said they did not. I then wondered whether there might be a difference in this result according to proficiency levels, so I investigated the following question:

What is the relationship between motivation and proficiency on strategy use?

A two-way between groups analysis of variance was conducted among a subset of the participants (n=118) to explore the impact of motivation and proficiency on overall strategy use, as measured by participants' responses on the Children's SILL Time 2. (One class was omitted from this analysis as the participants from that school did not take the Time 2 oral interaction achievement measure.) Participants were divided into three proficiency groups (high, mid, low) according to their results on the ESL oral interaction Time 2 task. As Table 17 shows, the main effect for proficiency level did not reach statistical significance, $F(2, 84) = .125$, $p=.882$ and the interaction effect between proficiency and motivation was not statistically significant, $F(4, 84)=.329$, $p=.858$. There was, however, a statistically significant main effect for motivation, $F(2, 84) =18.08$, $p=.000$ and the effect size was strong (partial eta squared = .30).

Table 17

Motivation and Proficiency vs Overall Strategy Use: Children's SILL Time 2 (SI Conducted by Teachers of 2 Groups; No SI Done by Teachers of the Other Groups)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5.439[a]	8	.680	5.072	.000	.326
Intercept	217.922	1	217.922	1625.641	.000	.951
Motivation	4.846	2	2.423	18.075	.000	.301
ESLTaskSuccess Oral_posttest	.034	2	.017	.125	.882	.003
Motivation * ESLTaskSuccess Oral_posttest	.177	4	.044	.329	.858	.015
Error	11.260	84	.134			
Total	784.146	93				
Corrected Total	16.700	92				

a. R Squared = .326 (Adjusted R Squared = .261)

Seeing that the results were not statistically different according to proficiency level, I decided to explore other variables. I wanted to see if perhaps the school the participants attended might have an impact on motivation and strategy use, so I explored that question.

What is the relationship between motivation and school on strategy use? I conducted a two-way between groups analysis of variance (ANOVA), with motivation and school as independent variables and overall strategy use as the dependent variable, in order to explore this relationship, as measured by the Time 2 Children's SILL results. The results, displayed in Table 18 indicate that motivation and the school they attended influenced the children's strategy use but the joint effect of these two variables did not. Participants (n=138) were divided into six intact groups according to the five schools they attended. There were significant main effects for motivation $F(2,103)=.3.93$, $p=.02$ with a moderate effect size (partial eta squared .07) , and for school $F(5,103)=2.46$, $p=.04$, also with a moderate effect size (partial eta squared= .17.). The interaction effect between school and motivation did not reach statistical significance $F(5,103)=.659$, $p=.66$.

Table 18 (n=138)

Motivation and School vs Overall Strategy Use: Children's SILL Time 2 (SI Conducted by Teachers of 2 Groups; No SI Done by Teachers of the Other Groups)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9.382[a]	12	.782	5.666	.000	.398
Intercept	311.028	1	311.028	2253.802	.000	.956
Motivation	1.084	2	.542	3.927	.023	.071
School	1.694	5	.339	2.455	.038	.106
Motivation * School	.455	5	.091	.659	.655	.031
Error	14.214	103	.138			
Total	947.514	116				
Corrected Total	23.597	115				

a. R Squared = .398 (Adjusted R Squared = .327)

In order to find out where the differences lay in strategy use and motivation amongst the six groups in School 1a, School 1b, School 2, School 3, School 4, School 5, post-hoc tests of comparisons using Tukey HSD test were conducted. These comparisons, as presented in Table 19, indicated the following:

The scores of School 1a and School 4 were significantly different, with a mean difference of .35, or 35%, in favour of School 4 ($p < .03$); so were the scores of School 1a and School 5, with a mean difference of .63, or 63%, in favour of School 5 ($p < .001$). School 1a did not differ significantly from Schools 1b, 2, or 3. Comparisons between the scores of School 1b and School 5 were significantly different, with the mean difference being .64, or 64%, in favour of School 5 ($p < .001$). School 1b did not differ significantly from any of the other schools. The scores of School 2 were significantly different from those of School 3, with a mean difference of .41, or 41% in favour of School 2, ($p < .05$), but they were not significantly different from the other schools. The scores of School 3 were also significantly different from those of School 4, the mean difference being .48, of 48%, in favour of School 4 ($p < .03$); they were also significantly different from the School 5's scores, the mean difference being .77, or 77%, in favour of School 5 ($p < .001$). There were no significant differences among the scores of School 3 and School 1a or 1b. As the figures above indicate, School 4 had significantly different scores from Schools 1a and 3, but not from Schools 1b, 2 or 5. The scores of School 5 were significantly different from Schools 1a, 1b and 3 but they did not differ significantly from those of Schools 2 and 4.

Table 19 (*n*=138)

Tukey HSD Multiple Comparisons of the Impact of School and Motivation on Strategy Use

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
School 1a	School 1b	-.0345	.12053	1.000	-.3846	.3155
	School 2	-.2844	.13085	.259	-.6644	.0956
	School 3	.1285	.13085	.923	-.2515	.5085
	School 4	-.3536*	.11306	.027	-.6820	-.0253
	School 5	-.6386*	.11306	.000	-.9670	-.3103
School 1b	School 1a	.0345	.12053	1.000	-.3155	.3846
	School 2	-.2499	.13085	.402	-.6299	.1301
	School 3	.1631	.13085	.813	-.2169	.5430
	School 4	-.3191	.11306	.062	-.6474	.0093
	School 5	-.6041*	.11306	.000	-.9324	-.2757
School 2	School 1a	.2844	.13085	.259	-.0956	.6644
	School 1b	.2499	.13085	.402	-.1301	.6299
	School 3	.4129*	.14041	.045	.0052	.8207
	School 4	-.0692	.12401	.993	-.4293	.2909
	School 5	-.3542	.12401	.057	-.7143	.0059
School 3	School 1a	-.1285	.13085	.923	-.5085	.2515
	School 1b	-.1631	.13085	.813	-.5430	.2169
	School 2	-.4129*	.14041	.045	-.8207	-.0052
	School 4	-.4821*	.12401	.002	-.8423	-.1220
	School 5	-.7671*	.12401	.000	-1.1273	-.4070
School 4 SI group	School 1a	.3536*	.11306	.027	.0253	.6820
	School 1b	.3191	.11306	.062	-.0093	.6474
	School 2	.0692	.12401	.993	-.2909	.4293
	School 3	.4821*	.12401	.002	.1220	.8423
	School 5	-.2850	.10507	.081	-.5901	.0201
School 5 Control group	School 1a	.6386*	.11306	.000	.3103	.9670
	School 1b	.6041*	.11306	.000	.2757	.9324
	School 2	.3542	.12401	.057	-.0059	.7143
	School 3	.7671*	.12401	.000	.4070	1.1273
	School 4	.2850	.10507	.081	-.0201	.5901

Based on observed means.
The error term is Mean Square (Error) = .138.

The two schools in the intensive program (schools 4 and 5) had results that were significantly different from some of the other schools, so I explored the impact of motivation and program type (intensive or core) on overall strategy use.

What is the relationship between motivation and program type on strategy use (as measured by the Children's SILL)? In order to explore the relationship between motivation and program type (intensive or core) on the children's strategy use, as measured by the Time 2 Children's SILL results, a two-way between groups analysis of variance was conducted on data from a subset of the participants (n=78; 50 intensive and 28 core). These participants were chosen because they represented two intact core groups and two intact intensive groups, of which the teacher of one core group taught strategies while the other did not, and the teacher of one intensive group taught strategies while the other did not. It was felt that this would create a balance. Participants were divided into two groups according to the type of ESL program in which they were enrolled (intensive or core). As Table 20 shows, there was no significant main effect for program type $F(1,72)=.307$, $p=.143$, neither for the interaction effect between program type and motivation $F(2,78)=.756$, $p=.47$. There was, however, a statistically significant main effect for motivation $F(2,78)=.5.63$, $p=.005$, and the effect size was medium (partial eta squared= .135).

Table 20

Motivation and Program Type vs Overall Strategy Use: Children's SILL Time 2 (SI Conducted by Teachers of 2 Groups; No SI Done by Teachers of the Other Groups)

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4.792[a]	5	.958	6.836	.000	.322
Intercept	181.392	1	181.392	1293.913	.000	.947
ProgramType	.307	1	.307	2.188	.143	.029
Motivation	1.580	2	.790	5.634	.005	.135
ProgramType * Motivation	.212	2	.106	.756	.473	.021
Error	10.094	72	.140			
Total	684.456	78				
Corrected Total	14.885	77				

a. R Squared = .322 (Adjusted R Squared = .275)

Conclusion

In this chapter, I have examined patterns of strategy use among children enrolled in six classes, in five different schools, on the South Shore of Montreal. In particular, I tried to identify their preferences in strategy categories and individual strategy items on the Children's SILL, Version 2 for the Québec Education Program. In addition, I explored variables, such as proficiency and motivation, which might affect their strategy choice.

Taken together, the pattern of strategy use which emerged from the data that these children reported is that, in general, they use mainly strategies from the affective category, followed by the strategies from the compensatory category. Their individual favourite strategy choices were paying attention when someone speaks to them, from the metacognitive strategy category, and trying to make sense of what they read or hear without translating word for word, from the cognitive strategy category. High proficiency learners used more affective and cognitive strategies than did low proficiency learners, regardless of whether they were male or female. In addition, the children's strategy use was significantly influenced by their attitude towards English, in particular, whether they liked it or not. This did not differ according to proficiency level or program type, but both motivation and the school they attended had an impact on their strategy use.

Chapter 5 will present the findings from Phase 2.

Chapter 5: Results and Interpretation of Phase 2: The Case Study

Introduction

This chapter reports the quantitative data from Phase 1, triangulated with the quantitative and qualitative results of Phase 2, the case study, which were obtained from the following seven sources of evidence used for data collection and described in Chapter 3 of this paper:

1. Quantitative test results of the pre- and post ESL oral interaction measure, plus qualitative field notes regarding students' test performance as it relates to strategy use, use of L2 and of L1 (from Phase 1), and partial data from audio recordings (from Phase 2);
2. Quantitative results from the general questionnaires based on the Children's SILL pre- and post-test data (from Phase 1);
3. Partial qualitative data from eight video recordings of the participants as they received pre-task strategy instruction, during tasks as they executed their classroom activities, and post task as they engaged in teacher-led post-task reflections on their strategy use (from Phase 2);
4. Observation, plus qualitative field notes from class proceedings (from Phase 2);
5. Quantitative results based on data obtained from a task-based questionnaire related to an oral interaction task (from Phase 2);
6. Quantitative results based on data obtained from 6 strategy log entries of students' strategy use for specific ESL tasks, at various intervals, from mid-January to the latter part of March (from Phase 2);
7. Qualitative data obtained from in-class open-ended interviews with selected students from the embedded unit of analysis, inquiring about strategies they were using at that time to execute specific ESL tasks (from Phase 2).

Research questions. The research questions for Phase 2 guided the analysis procedure, which was organized according to the steps of the post strategy intervention model; that is, *academic problem; intervention; immediate outcome; first intermediate intervention; intermediate outcome; second intermediate intervention; ultimate outcome; result* (see Figure 14 at the end of this chapter). This framework was based on a hypothesized pre-intervention model illustrated in Figure 1. Phase 2,

which sought to look at another aspect of children's strategies through the lens of an authentic context, namely the effects of strategy instruction in the context of an ESL class, addressed the following research questions:

RQ2: *What are the effects of strategy instruction on student strategy use?*

RQ 3: *What is the relationship between student strategy use and achievement as measured by success on ESL tasks?*

Topics were identified from the sub-categories of each research question, and operationalized. The report of the results in this chapter will be structured according to the framework of the post strategy intervention model. Each step of this SI model will be reported in light of the sub-categories of each of the above research questions, starting with research question 2, which was divided into the following sub-questions:

2.1 What evidence exists of strategy awareness following instruction?

2.2 What are the effects of strategy instruction on student strategy use? What are the links between strategy instruction and students' ability to match strategy to task demands?

2.3 How can children's strategy use in an authentic context be reliably assessed?

Research question 3 will follow. This question was subdivided as follows:

3.1 What are the relationships between strategy use and ESL task success?

3.2 To what extent are causal paths evident among strategy instruction, strategy use, and success in ESL?

Academic problem: The academic problem that the teacher had identified involved difficulty getting the students to interact in English and getting them to stop frequent switching to their L1.

Results

Pre-intervention: Oral interaction and Children's SILL pre-test.

The quantitative data were analysed using SPSS statistical software. These results, displayed in Table 21, confirmed the academic problem as they showed that at the time of the pre-test (Time 1) the overall level of the students' ESL oral interaction test score was low (M=1.64, *SD* = .78).

Table 21 (n=28)

Descriptive Statistics (Pre-test: Pre-Intervention)

	N	Minimum	Maximum	Mean	SD
ESL Task Succ_pre-test	28	1	3	1.64	.780
TotalStrat_CSILLPre	24	2	4	2.91	.384
Valid N (listwise)	24				

Although their overall Children's SILL results of their reported general strategy use show medium use (M=2.91, *SD* = .38), the qualitative data from the field notes indicate that when the students were in a specific situation that required them to apply strategies in order to execute an oral interaction task, a majority (18/28 = 64%) of them switched to the L1 when they did not know the words they wanted to say in English. This evidence points to a lack of awareness and use of specific strategies that could help them do the task in English.

What evidence exists of strategy awareness following instruction?

Definition and operationalization.

Awareness is defined as "having or showing realization, perception or knowledge" by the Merriam-Webster online dictionary (retrieved September 2, 2010 from http://www.merriam-webster.com/dictionary/awareness?show=1&t=1284110961), and as "having knowledge or understanding of a subject, issue or situation" by the MacMillan online dictionary (retrieved September 2, 2010 from http://www.macmillandictionary.com/dictionary/british/awareness).

Strategy awareness was therefore operationalized to refer to evidence of declarative and procedural knowledge of strategies. Evidence selected from data showed instances in which the students realized that there were specific strategies they could use to facilitate the execution of particular tasks and that they understood how to use these strategies. Sources of evidence were based on: a) a comparison between their pre- and post-oral interaction tests, according to the quantitative results and qualitative data from the field notes from those tests and pre-and post Children's SILL results; b) the qualitative field notes of their strategy awareness during classroom tasks; and c)

the videotapes of classroom procedures showing strategy awareness. The following situations on the videotapes were coded as instances of strategy awareness, using the HyperResearch software: students' responses to teacher elicitation of strategies previously taught, and examples of how they were used; students responding appropriately, verbally or non-verbally, during post-task reflections on strategy use; and students discussing strategies that would be appropriate for a task. The results of this question will now be presented as evidenced at each step of the strategy intervention model.

Intervention and immediate outcome.

The documentary evidence from the pre-test of oral interaction prior to the strategy intervention indicated that a majority of the children seemed unaware of strategies that they could utilize to help them complete the oral interaction task in English, because they reverted to their L1 when they were faced with a problem related to a lack of knowledge of the L2, or abandoned the message by simply stopping the idea they were trying to express or switching to something else.

Day 1 of the intervention. The sources of evidence for this step in the intervention were observation and field notes. For the first oral interaction task presented on the first day of the intervention, the cooperative crossword, the teacher started by eliciting examples of a strategy that was familiar to the students because she had previously encouraged it in class, that is, Use resources. Qualitative data from the field notes of this exchange indicated that volunteer students showed awareness of this strategy by naming resources, such as a dictionary and their *Word by Word* textbook. After explicit presentation of the new strategies, Stall for time and Ask for help or clarification, and the consciousness-raising in which the teacher made the students aware that using these three strategies would help them solve problems related to a lack of knowledge of English words, and do the task in English, the students engaged in the task, using strategies. Their use of strategies will be reported in the section which deals with the research question related to strategy use.

Post-task reflection. Qualitative data from field notes show that the teacher first requested a non-verbal response by calling out, in turn, the three strategies she had introduced and asking for a show of hands if the students used each of them. The majority of the students showed nonverbal strategy awareness by raising their hand

when the name of the strategy they had used was mentioned. Many claimed to have used the instructed strategies, Stall for time and Ask for help or clarification. The teacher wanted evidence of their understanding, however, so she asked for examples of how the students had used each strategy. Several students verbally demonstrated their strategy awareness by providing examples of expressions related to the strategy that they had used. For example, a student who raised her hand to indicate that she had used Ask for help or clarification, reported that she asked her partner to repeat what she had said by asking, *Can you repeat that please?* Her partner subsequently repeated what she had said, and she then understood. This example is congruent with the explanation of the strategy, Asking for help or clarification, according to the Québec Education Program; that is, "... requesting assistance, repetition or precision" (p. 107), and demonstrates the student's understanding of this.

On that day, after that initial task, the SI continued for two more oral interaction activities, prior to each of which the teacher reinforced the three strategies taught and reminded students to use them, and the children practised using these strategies to execute the tasks in English only. By the third task, which involved direct teaching of vocabulary, initial signs of growing strategy awareness were evident; for example, a student, Norman, autonomously used a resource, a dictionary, instead of switching to the L1 when he did not know a word. The teacher drew the other students' attention to this and encouraged them to do the same.

Immediate outcome. The students started to show developing strategy awareness following strategy instruction by succeeding in participating in the early post-task reflections about their strategy use, either by a) raising their hand when the strategy they used was named; b) naming the strategies they used; or c) giving examples of how they used the strategies and expressions they used in applying them to tasks when they did not know all the words they wanted to say.

First intermediate intervention and intermediate outcome.

The sources of evidence for this intermediate intervention step (with regard to the topic of strategy awareness) were observation, field notes and videotape. Seeing that the students demonstrated declarative and procedural knowledge and understanding of the strategies taught, as was illustrated in the qualitative data from the intervention above, the teacher proceeded to the first intermediate intervention,

focusing on the procedural and conditional knowledge of strategies, in addition to the declarative knowledge of new strategies. The teacher distributed a new tool, the strategy wheel (Appendix F), to each student. The strategy wheel contains the 18 strategies in the Québec Education ESL Program; its purpose is to help students understand how to match strategies to task demands. They would write down in the designated space on the wheel (under the name of the strategy they used during the task) the activity for which it had been useful, so that they would remember *when* it is helpful to use that strategy (conditional knowledge).

Day 1 of the first intermediate intervention. In this first intermediate intervention, the teacher once again started with the familiar by eliciting students' knowledge of the strategies taught in the previous step. Students identified the strategies, Use resources and Ask for help or clarification. Field notes data indicate that they demonstrated their awareness of these strategies by actively participating in the elicitation, providing examples of each one, such as examples of possible resources to use (dictionaries, textbook, notebooks) and expressions to ask for help or clarification that they remembered from the earlier intervention segment. Examples of expressions provided by two students to show their understanding of this strategy were: *How do you say ... in English?* and *Can you repeat that, please?* No one mentioned Stall for time so the teacher reminded them of expressions they can use to stall for time; e.g. *Hum ... let me think*. The teacher explicitly presented a new strategy, Use of prior knowledge (labelled *Use what you know* on the strategy poster and on the strategy wheel), and she encouraged the students to practise using it, as well as the other strategies, as they engaged in an oral interaction group task that required them to activate and pool their prior knowledge on the theme of clowns.

During the task. Data from the videotape of the student-to-student interaction show evidence of strategy awareness when Mario, a low proficiency student, proudly showed me that he was using a resource as he looked up a word in the dictionary in order to do the task in English.

Post-task reflection. The teacher conducted the post-task reflection as before, but this time the students provided verbal responses. When the teacher elicited the strategies they had used to accomplish the task in English, qualitative field notes data indicate that volunteer students responded by naming the strategies they used. They

named the instructed strategies: Use what you know; Use resources; Ask for help; Stall for time. Nevertheless, some students reported using other strategies that they had independently become aware of by looking at the strategy wheel, namely, Take risks and Cooperate. The teacher originally wanted them to write the name of the activity beside the strategy, Use what you know, on their strategy wheel but upon noticing the students' growing awareness of other strategies, she changed the instruction and told them to write the name of the activity under the name of the strategy that had been most helpful for the task.

Day 2 of the first intermediate intervention. The sources of evidence on this day were the videotape of selected class proceedings and field notes. This was the second time the students used the strategy wheel. After modelling the activity to be done, the teacher reminded the students of strategies that could help them do the task in English as she pointed to the strategy posters on the board and corresponding functional language posters on the wall with expressions for asking for help and stalling for time in English. The students' strategy use as they engaged in the guessing game about clowns will be reported in the immediate outcome section below, which deals with the students' strategy use.

Post-task reflection. The teacher led the post-task reflection by pointing to the strategy posters, one at a time, and asking who used that strategy. Alternately, she also asked the children to look at their strategy wheel and say which strategy they used. The following exchange in Table 22 shows examples of this:

Table 22

Teaching Leading Post-task Reflection

Teacher: Look at your strategy wheel. Which strategies did you use? *(pointing to the appropriate strategy poster)* Ask for help or clarification ... who used this one? Volunteer students raised their hands. Teacher: *(pointing to the next strategy poster)* Who used this one, Stall for time? Volunteer students raised their hands. Teacher: *(noticing that some students had not raised their hand for either of the two strategies)* If you didn't raise your hand, it's because you used a different one? What did you use, Roxane? Roxane: Use what you know. Teacher: *(repeating)*: Use what you know ... okay ... What did you use ... er ... *(addressing child with hand raised)* John? John: *(looking at his strategy wheel)* Take risks. Teacher: You took a risk, very good. What did you use, Jim? Jim: Take risks. Teacher: *(repeating)* Take risks. What did you use ... hum ... (addressing child with hand raised) Jack? Jack: Take risks. Teacher: Okay, good ... (addressing child with hand raised) ... Thomas? Thomas: Take risks. Teacher: Take a risk... very good ... okay. *(Addressing the class)* I'd like you to choose the strategy that you used and write ... today we are November 20 and the name of the activity was Clowning Around *(writing on the board). (Addressing the class)* Okay, so you used take a risk ... stall for time ... *(pointing to the strategy poster)* anybody used a resource? Was it necessary to use a resource? *(students signalled no)* No? Everybody used (pointing to her head) ... you used what you know? Students: Yes. Teacher: Yes, okay ... very nice. *(Addressing me)* Some students think they have it.

At this point the reflection was still largely scaffolded by the teacher but the students' responses to the teacher's elicitation showed that their consciousness had been raised, as they looked at their strategy wheel and named strategies that they had found helpful. In addition, the students expressed curiosity about strategies on the strategy wheel for which they could not guess the meaning simply by reading the student-friendly terms and looking at the icons (as they did with Take risks). One exchange between the teacher and a student, Robert, was revealing of this. This discussion, which occurred at the end of the post-task reflection, just after I had turned off the videotape (thinking the discussion was finished), was recorded in my field notes. Robert looked at his strategy wheel and asked the teacher, *What is skim?* The teacher responded that it is a strategy related to reading, and then she explained that it

means reading quickly to get the general idea of a text. Robert followed up by asking her if he was skimming when he looked quickly over the clowns on the game board to get a general idea of what they looked like. The teacher responded, *No. You did not skim today.* Robert then looked at his strategy wheel again and added that he used the strategy, Take risks.

Intermediate outcome. The data from the field notes and videotape show increasing strategy awareness on the part of the students. These sources of evidence showed that the students understood that strategies could help them execute tasks in English, and they knew how and when to use the strategies taught. Their curiosity about strategies also led them to find out about others on the strategy wheel that had not been explained to them. This was revealed by their responses to the task-based questionnaire related to an oral interaction task (see Table 19 in the section dealing with the research question on strategy use below). The students had figured out the meaning of some strategies on this questionnaire through the use of wording accessible to them on the strategy wheel and class discussions, and used them. The percentage of students who used the following strategies is an example of this: Take risks (81%), Cooperate (96%), Pay attention (92%).

Second intermediate intervention and intermediate outcome.

Day 1 of the second intermediate intervention. The sources of evidence on this day were the videotape of selected class proceedings, the field notes, and strategy log. The teacher distributed the new tool, the strategy log, which also contained the 18 strategies in the Québec Education ESL Program, written in student-friendly terms. Its purpose was to help students to set goals regarding strategies they planned to use for a task, choose appropriate strategies for the task, and to lead them to autonomous strategy use. After explaining the task, the teacher placed the students in groups and asked them to look at their strategy log and discuss in their groups which strategies they could use for the task. They should then, individually, check off on their strategy log the ones they planned to use for the task. They were not required to come to a consensus. Data from the videotape of the student-to-student interaction among students from the embedded unit of analysis provide evidence of their strategy awareness as they discussed the meaning of various strategies and made sure they

understood them before choosing them. The following exchange, in Table 23, among team members is an example of the discussion:

Table 23

Student-to-student interaction: Choosing strategies on the strategy log

Pascal: The strategies... okay ... Jeanne: Stall for time ... Pascal: Yes... Ask for help or clarification... Cécile and Jeanne: Yes … Jeanne: It's very important. Pascal : Say it in a different way. Cécile and Jeanne: Nah ... nah! Jeanne : Check my … own work. What is this? Cécile: I don't know. Pascal: Use resources. Jeanne: (with a wondering look) Say it in a different way? Pascal: (affirming) Yes ... different way. Jeanne: You don't know what is this and you say "yes"! Pascal: Check my own work ... Jeanne: What is number 4, Check my own work? Cécile: I don't know what it is. (*Went to get a dictionary and started looking up words*) Jeanne: (*To Cécile – looking at which words she was looking up*) Check, ok? (Turning to me) I don't understand what is Check my own work. Me: Because Mrs. Joy didn't show it to you. Jeanne: Okay, we don't make because we don't know what it is. Cécile: Ok ... er ... reflect. Jeanne: I'm not sure but I think it's *réflichir.* Cécile: (*Looked in the dictionary*) Yes. Jeanne: Yes, it's reflect. (*Moving on to the next strategy on the strategy log*) Plan? Me, I plan. Cécile: Yes. (*Moving on to the next strategy on the strategy log*) Pay attention. Jeanne: What is pay attention? Pascal: Is listen to the other ... no? Jeanne to Cécile: Check the dictionary. Pascal: (*Went to check with the teacher and returned*) I ... er ... demander [*ask*]... Mrs. Joy and Mrs. Joy say ... er ... listen to the other partners. Jeanne and Cécile: (*In unison*) Ok … yes! This is very important. Jeanne: Predict... What is predict? Teacher (intervening in the discussion): No, if you don't know you just don't do it. Thomas: (Did not contribute to the discussion, but listened very, very attentively.)

Day 2 of the second intermediate intervention. The data from the videotape provided further evidence of strategy awareness as students asked for explanations of strategies on the strategy log; for example, Jeanne asked for an explanation of

scanning (Scan for information). The students discussed their strategies in groups and set goals by checking off on the strategy log those they planned to use.

Conclusion. Evidence provided by the data mentioned above suggests that prior to SI, a majority of the children had little awareness of strategies they could use to execute a specific oral interaction task entirely in English. Qualitative field notes from the pre-test of oral interaction show that a majority of them either switched to the L1 or abandoned the idea they were trying to express when they were faced with a problem of lack of knowledge of the L2. Following SI, however, they demonstrated strategy awareness, which grew from a non-verbal response to inquiries about strategies they used (raising their hand), to a verbal response with examples. The consciousness-raising of strategies also led students to express their curiosity about strategies that were not targeted for the SI, by asking for explanations as they explored other strategies that they might use.

What are the effects of strategy instruction on student strategy use? What are the links between strategy instruction and students' ability to match strategy to task demands?

Operationalization.

Strategy use was operationalized to refer to strategies that students utilize to facilitate execution of tasks or learning of material. Matching strategies to task demands refers to evidence of conditional knowledge of strategies, that is, knowing when to use which strategy. Evidence selected from data showed instances in which the students visibly used strategies following instruction, or reported using specific strategies, supporting their claims with examples.

Sources of evidence were based on:

1) documentary evidence based on a comparison between their pre- and post oral interaction tests, according to the quantitative and qualitative data from the field notes from those tests (from Phase 1);
2) a general strategy questionnaire showing pre- and post Children's SILL results (from Phase 1);
3) eight video recordings of classroom procedures: pre-task as participants received strategy instruction; during task as students executed them,

providing qualitative data as evidence of traces of strategy use; and post tasks as they participated in teacher led reflections of their strategy use, providing qualitative data from students' self-report of strategy use during tasks;

4) observation of traces of strategy use, based on qualitative data from field notes taken during classroom tasks;
5) a task-based questionnaire based on an oral interaction task, which provided quantitative evidence of strategy use;
6) six strategy log entries, which provided quantitative evidence of strategy use;
7) open-ended, in-class interviews with students from the embedded unit of analysis , asking them to explain strategies they were currently using to execute the task at hand. These were recorded on videotape.

The following situations on the videotapes were coded, using the HyperResearch software, as instances of strategy use: a) students using strategies to: solve problems related to a lack of knowledge of the L2, such as using a resource to look for a word they did not know in English, or other information; persevere in maintaining interaction in English, rather than switching to L1; execute a task, such as preparing and practising a presentation; b) students reporting strategies they used for a task during post-task reflections; and c) students' self-report of strategies during interviews.

The results of this question will now be presented as evidenced at each step of the strategy intervention model.

Intervention and immediate outcome.

The documentary evidence from the pre-test data shows that a majority of the children did not use appropriate strategies to do the oral interaction task in English, and they performed poorly (M=1.64, *SD* = .78). Although on their general strategy questionnaire Children's SILL data they reported medium use of strategies (M=2.91, *SD* = .38), when they were faced with a task requiring specific strategy use, many of them used avoidance strategies, such as switching to L1. They generally did not persevere in finding ways to express themselves in English. This changed with the intervention as the data below indicate.

Day 1 of the intervention. The sources of evidence for this step in the intervention were observation and field notes. The teacher conducted the strategy instruction described above, and made the students aware of the evaluation criteria for assessing their student-to-student oral interaction: use of strategies and use of English only.

Task 1. Qualitative field notes data from my observation indicate that while students engaged in the task, the strategy they used the most was the one that was already familiar to them, Use resources; I observed a few students using the newly instructed strategy, Stall for time, while I noticed a couple using another instructed strategy, Ask for help. Most students managed to do the task in English.

Post-task reflection: The teacher called out strategies and asked for a show of hands if they used them. Several reported using Stall for time and Ask for help or clarification. The teacher asked some students for examples of expressions they used to apply the strategies. An example a student gave of how she asked for clarification was to ask for a repetition using the expression, "Can you repeat that please?" The teacher reminded Ss to use these strategies and speak only English for the next activities.

Task 2. The teacher then presented the second task and the students engaged in another group oral interaction Halloween activity. She reminded students of the strategies, referring to the strategy posters that were still on the board.

Post-task reflection: The teacher called out strategies as she had done in the first task and asked for a show of hands if the students had used them. A few more reported using Ask for help and clarification and many reported using Use resources.

Task 3. The teacher presented the third task but did not propose any strategies to use. Nevertheless, as was reported in the previous section, Norman used a resource independently and then the teacher did consciousness-raising of the strategy by encouraging all the students to do likewise if they did not know a word they wanted to say. Data from the field notes show that the students all proceeded to use resources and they executed the task entirely in English.

Immediate outcome. At this point, student strategy use was mainly scaffolded by the teacher, which matches the pre-intervention SI model. According to that model, the immediate outcome for the initial intervention involved strategy awareness and understanding how to use the strategies.

First intermediate intervention and intermediate outcome. The sources of evidence for this intermediate intervention step were observation, field notes, videotape and the task-based questionnaire related to an oral interaction task. Each student was given the new tool, the strategy wheel.

Day 1 of the first intermediate intervention. The teacher started by first eliciting previously taught strategies (Use resources, Ask for help or clarification, and Stall for time) and students provided examples and corresponding expressions they could use when applying these strategies (examples of resources: dictionary, etc; examples of expressions: *How do you say … in English?; Could you repeat that please?)* The students did not remember how to use Stall for time, so the teacher did a brief review, giving an example of the functional language they could use when applying that strategy. She then explicitly taught a new strategy, Activating prior knowledge (Use what you know). She introduced the cooperative oral interaction task, involving pooling of prior knowledge about clowns, and encouraged the students to use strategies to execute the task in English only. She drew their attention to the evaluation criteria: Use of strategies and Use of English only and then she placed the students in small groups to do the task.

Qualitative field notes data from my observation indicate that while students engaged in the task, most of them used strategies to interact completely in English. A few students switched to L1 when they did not know a word they wanted to say in English, but most of them used the strategies taught in earlier classes. For example, I observed a student, Robert, who needed a moment to think of the words he wanted to say during the interaction, so he used the strategy, Stall for time. The expression he used to stall for time was 'Wait a second." I observed another student using a new strategy, Circumlocution (termed *Say it in a different way* on the strategy wheel), when she did not know the word unicycle. She said instead, "a bicycle with one wheel". The videotape of the student-to-student interaction during this class revealed

that most students used resources. The students in every group voluntarily went and picked up their dictionaries, so they had more than one dictionary per group. Many students could be seen actively looking up words in the dictionary and trying to do the task in English only. Some students even used gestures to convey their message without switching to L1.

Post-task reflection. The teacher called out strategies and asked for a show of hands if students used them. Several reported using Stall for time and Ask for help or clarification. The teacher asked some students for examples of expressions they used to apply the strategies. An example a student gave of how she asked for clarification is to ask for a repetition using the expression, *Can you repeat that please?* The teacher reminded students to use these strategies and speak only English for the next activities.

Day 2 of the first intermediate intervention. Task 1. The sources of evidence on this day were field notes of my observation and videotape of selected class proceedings (student-to-student interaction and post-task reflection). The class continued the LES on clowns. The first task was the guessing game, Clowning Around, a pair oral interaction activity, in which each child had a game board with illustrations of various clowns; Student A selected a clown on the game board and described it, and Student B would then guess which clown was being described. The teacher explained and modelled the strategies previously taught: Use resources, Stall for time, Ask for clarification, Use what you know. The students engaged in the task, practising the strategies.

Qualitative data from my field notes described the traces of strategy use I observed. Many students used gestures, while some used Ask for clarification. The videotape confirmed this and revealed that the children were starting to use the strategies in personal ways as the partial data from the videotape revealed in the following exchange between Anne, a high proficiency student, who was paired with Sylvie, a low proficiency student; Sylvie asked for clarification by requesting more detail in the description of the clown.

> Anne: My clown wear a sweater. On his sweater, he has three buttons, one heart and his neck has a bow-tie.
>
> Sylvie: You have a ... two heart ... on the balloon?

Anne: One heart on the balloon.

Post-task reflection. As seen from the transcript in the previous section of the post-task reflection, the students reported using the following strategies: Use what you know, Ask for help, Stall for time, Take risks. Several students reported using Take risks and this is perhaps accurate because the data from the field notes and videotape show that for this activity, they interacted entirely in English.

Task 2. Match the clown activity. Students were given pairs of cards with pictures of clowns on them. They circulated around the class, asking questions to find their match. There was no explicit SI for this activity but the strategy posters were still on the board. Students spoke mostly in English and there were some traces of strategy use, such as gesturing to get the meaning across without switching to L1 but this was not one of the instructed strategies, neither did it appear on the strategy wheel. (It is identified as a strategy in the Québec Cycle One program for grades 1 and 2.)

Task 3. The source of evidence for this activity is field notes of my observation. This was an info-gap find the differences pair activity. Each member of the pair had a picture of a different clown's closet. Their task was to find the differences between the two closets. The teacher introduced the activity and reviewed prepositions of place. She explicitly reminded the students of the strategies previously taught. She told them that they could use resources to check the prepositions, etc., and that it was important to ask for clarification. My observation revealed very active strategy use, as Table 24 shows. (Pascal was a low proficiency student from the embedded unit of analysis. In the pre-test of oral interaction, he switched to L1 often.)

Table 24

Field Notes: Traces of Strategy Use from Task 3, November 20

- Pascal used: Use resources, Ask for clarification (a lot), Gestures, Asked me for help saying, *How do you say cadre in English?*
  I responded 'picture frame' and he repeated, 'Oh, the picture frame', and used it immediately when talking to his partner.
- Ask for clarification: 1. Pascal asked Roxane for clarification by repeating what she said with a rising intonation. 2. Pascal asked Roxane, *"In front or behind? Your broom is in front or behind the hula hoop?"* Ask for clarification: Roxane asked for clarification often.
- Ask for clarification: Jeanne asked Jonathan for clarification twice: Can you repeat that, please?
- Ask for help: Jeanne asked T for help in English: *What's this? Buttons?* T responded that they were pompons.
- Ask for help: Roxane asked me for help, *How do you say en arrière in English?* She also asked her partner for clarification.
- Jonathan asked me for help in L1. I reinforced the strategy and pointed to the strategy card and the functional language poster.
- Stall for time: Jeanne used Stall for time ... er... She persisted with her message. Did not abandon the message.

Holiday break: No SI during the month of December.

Day 3 of the first intermediate intervention. (My first day back in the class after the holiday) The sources of evidence on this day were field notes of my observation, videotape of selected class proceedings (student-to-student interaction and post-task reflection), and a task-based questionnaire related to an oral interaction task.

*Task 1.*Battleship-style feelings pair activity. Each child had a card with a set of illustrations of faces depicting various emotions, placed in different squares on the card. Each child had to ask the other for the location of each face with each emotion and reproduce the partner's card on a sheet with blank squares. The teacher explained the activity and asked for my help in reminding the students of the strategies. I elicited the strategies that could help them play in English. They mentioned Ask for repetition and Use resources; I reminded them of Stall for time. The partial data from the field notes based on my observation showed that most students used Ask for clarification (especially repetitions), Stall for time, and gesturing.

There was no post-task reflection for this activity as the teacher used the time to give the students feedback on their technique for playing the game.

Task 2. Storybook post-reading activity. Graphic organizer with story reconstruction. This was a pair activity in which the students had to reconstruct, in sequence, the events of the story. The teacher told them they could use resources, but not the storybook as she did not want them to copy the text; she wanted the story reconstructed in their own words. Field notes data show that students used resources and asked for help in understanding expressions (such as rising action) on the graphic organizer.

Task 3. Group discussion involving personal responses to the story. The students responded to prompts, first individually in writing, then orally in a discussion in groups of four. The prompts were: 1. This story reminds me of the time ...; 2. What surprised me most about this story is ... The teacher reminded the students to use their strategies that help them to speak only English, such as Stall for time, Ask for help and clarification, etc. The students engaged in the task.

Assessment (questionnaire): Instead of a post-task reflection, students were asked to respond to a task-based questionnaire related to the oral interaction task.

Intermediate outcome. The quantitative data from the task-based questionnaire mentioned above are graphically displayed in Figure 2 below. The vertical axis on the left represents the number of students who reported using each strategy. The horizontal axis shows the strategies on the questionnaire. The legend on the right shows the response choices (yes/no). Figure 2 revealed that, of the 26 participants who completed the questionnaire, between 17 (at the low end) and 25 (at the high end) reported using 11 of the 14 strategies on the questionnaire. Of the instructed strategies, the percentage of use was as follows: Stall for time (69%), Ask for help (85%), Ask for clarification (85%), Circumlocution (50%), Use resources (65%), Use what you know (96%). As the strategies that the children reported using were appropriate for the task, which required them to react to a story, drawing upon their personal experiences and prior knowledge of English vocabulary (such as activities they usually do when there is a snow storm and the schools are closed), the results suggest that the children

understood how to match their strategies to the demands of the task. The strategy that was the most used by the children was use of prior knowledge (Use what you know: 96%). Asking for help (85%) was also very appropriate because this was a task requiring free discussion, and perhaps the students wanted to say things they had not learnt. Asking for clarification (85%) was also very well suited to this activity because the children were required to listen to their group members talking about their personal experiences and to understand this spontaneous discussion.

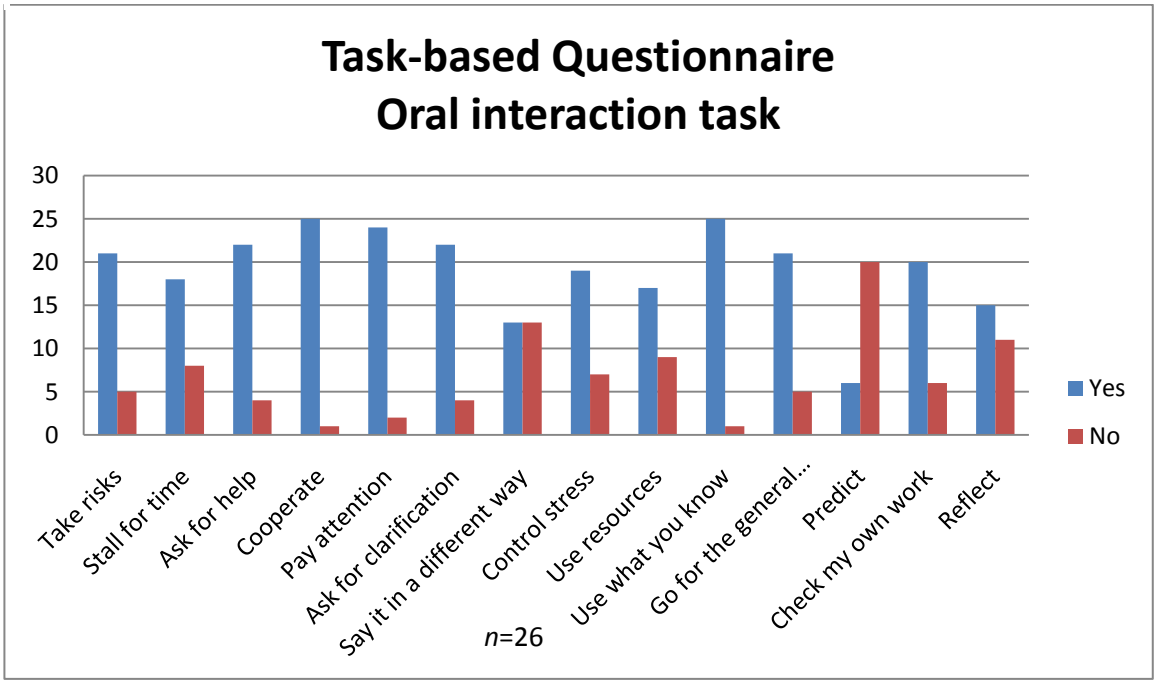


Figure 2. (Experimental group *n*=26) Task-based questionnaire

Second intermediate intervention and intermediate outcome.

Day 1 of the second intermediate intervention. Task 1. The sources of evidence on this day were the videotape of selected class proceedings, the field notes, and strategy logs. The number of participants represents the number of students who completed the strategy log on that day. The teacher distributed the strategy log, and after explaining the task (the modified jigsaw crossword activity in which one student had the down clues and the other one had the across clues), she placed the students in pairs and asked them to look at their strategy log and discuss in their pairs the strategies that might be helpful for doing the task. The students then checked off on their strategy log strategies that they planned to use for the task. Immediately after the task, each child would record those they actually used.

Post-task reflection. Seeing that this was the first post-task reflection using the strategy log, the teacher led the reflection by pointing out clearly to the students that they should check off only the strategies that they actually used for the task. They reported using mainly strategies that had either been taught explicitly or those that had been mentioned in previous post-task reflections. In addition, some students started volunteering the ones they found the most helpful among those that they used; for example, a student, Marc, reported his strategies and then added that those he found most useful were Stall for time and Ask for clarification.

Strategy log results: Explanation of the graphic representations below. Quantitative data from the six strategy log entries completed by the children during the SI were obtained using Excel statistical 'Count-ifs' function. This command calculated the number of times each strategy was used during the task to which it refers, and the number of students by proficiency level who reported using each strategy. Proficiency levels were based on the pre-test of oral interaction administered in October. As the number of students in the three proficiency levels was not equal, percentages of strategy use by proficiency level were then calculated. Seeing that not all students were present for each of the strategy log entries, the total number of students in the corresponding proficiency level who completed the strategy log on that occasion is indicated beside the title of each figure. The left-hand vertical axis shows the percentage of students who indicated using the strategy during the task and the horizontal axis shows the names of the strategies, which correspond to the strategies on the strategy log that the students reported using. Taking these together, the graphs show the percentage of students, by proficiency level, who reported using the strategies mentioned.

Strategy log 1a: quantitative data. The graphic representation of the results for this strategy log entry is displayed in Figure 3. This analysis revealed that more than two-thirds of the participants reported, immediately after the task, using the following strategies: Using resources (Use resources); Cooperation (Cooperate) and Risk-taking (Take risks). These three strategies were very appropriate for the task, which consisted of a modified jigsaw oral interaction problem solving activity; that is, completing a crossword puzzle in pairs. Of the three most frequently used strategies for this task, one had been explicitly taught (Use resources), whereas the other two had been included in the consciousness-raising as part of earlier post-task reflections. The

strategy that most of the students, irrespective of proficiency level, reported using for this activity was Take risks, which corresponded to my observation that they made an effort to speak English only during the task. There was also evidence that developing awareness was leading to use of the strategy, Pay attention, as 54% (13/24) students reported using it, with the mid-proficiency students taking the most advantage of it (5 out of 8 students).

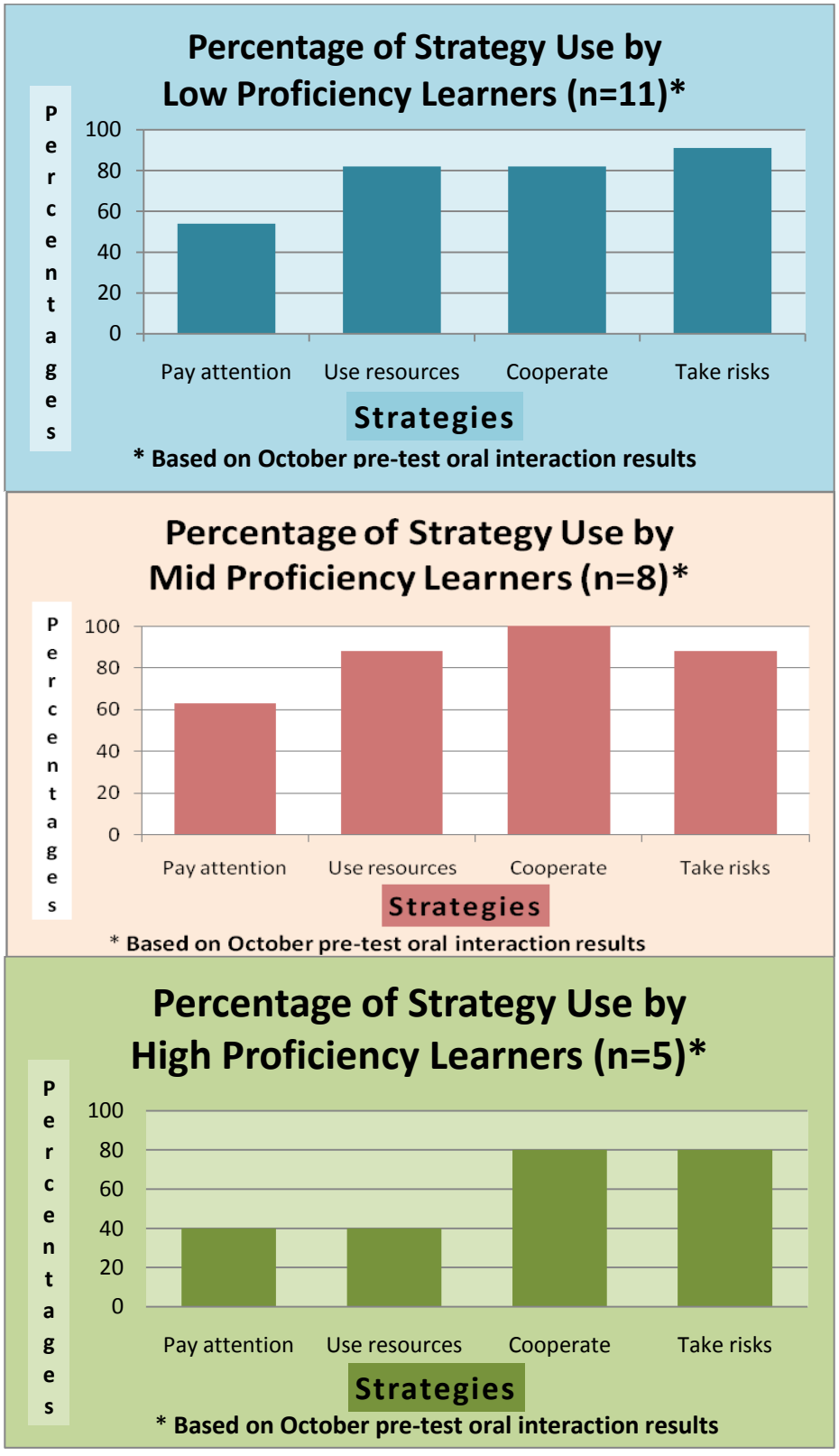


*Figure 3. (*Experimental group *n*=24) Students' reported strategy use by proficiency level: Strategy Log 1a January 29.

Task 2. The sources of evidence on this day were the videotape of selected class proceedings, the field notes, and strategy logs. The number of participants refers to those who completed the strategy log on that day. The teacher explained the task, which consisted of a read-and-summarize activity. Students were paired and each one had a short text to read about an animal. Each member of the pair had to read their text, turn the paper over, and summarize it for their partner. Prior to the task, they discussed in pairs the strategies that might be helpful for doing the task. The students then checked off on their strategy log strategies that they planned to use for the task. Immediately after the task, each child checked off those they actually used.

Post-task reflection. The teacher led the reflection by insisting on greater accountability on the part of the students reporting their strategies. One student, Claudine, reported the strategies she had planned to use, and then the teacher asked her which ones she had actually used, requesting explanations, as the exchange in Table 25 below demonstrates.

Table 25

Teacher Leading Post-Task Reflection: Strategy Log 1b

Teacher (*addressing student*): Claudine, which strategies did you use? Claudine: Ask for help or clarification. Teacher: Who did you ask for help? Claudine: Sylvie. Teacher: Ok, and ...? Claudine (*continuing to report her strategies*): Guess intelligently. Teacher: What did you guess? Claudine: Some definitions from the text. Teacher: From the text ... you had to guess some parts of it? Claudine: (*nodded, and then continued*) Cooperate. Teacher: Cooperate ... with? Claudine: With Sylvie.

Strategy log 1b: quantitative data. Quantitative data from the strategy log obtained using Excel statistical 'Count-ifs' function, graphically displayed in Figure 4 below, revealed that more than two-thirds of the participants reported using (immediately after the task), the following strategies: Cooperation (Cooperate) and Risk taking (Take risks). These strategies were not explicitly demonstrated but had been part of the consciousness-raising during post-task reflections on other occasions previously. Increasing awareness through consciousness-raising of other strategies that were not explicitly taught, but which were appropriate for the task, led some

students to use the strategy, Inferencing (Guess intelligently), which 13 out of 23 students reported using. This strategy was very useful to help them read and understand their text so that they could summarize it orally for their partner, as the task stipulated. They also had to negotiate meaning in order to get an understanding of their partner's text, so the fact that several of them reported using Ask for help and clarification also suggests that these students matched their strategies to the task at hand. Students of all three proficiency levels seemed to benefit fairly equally from the use of Cooperate and Take risks but the average students seemed to have taken the most advantage of Guess intelligently, as 5 out of 8 students from this level reported using this strategy.

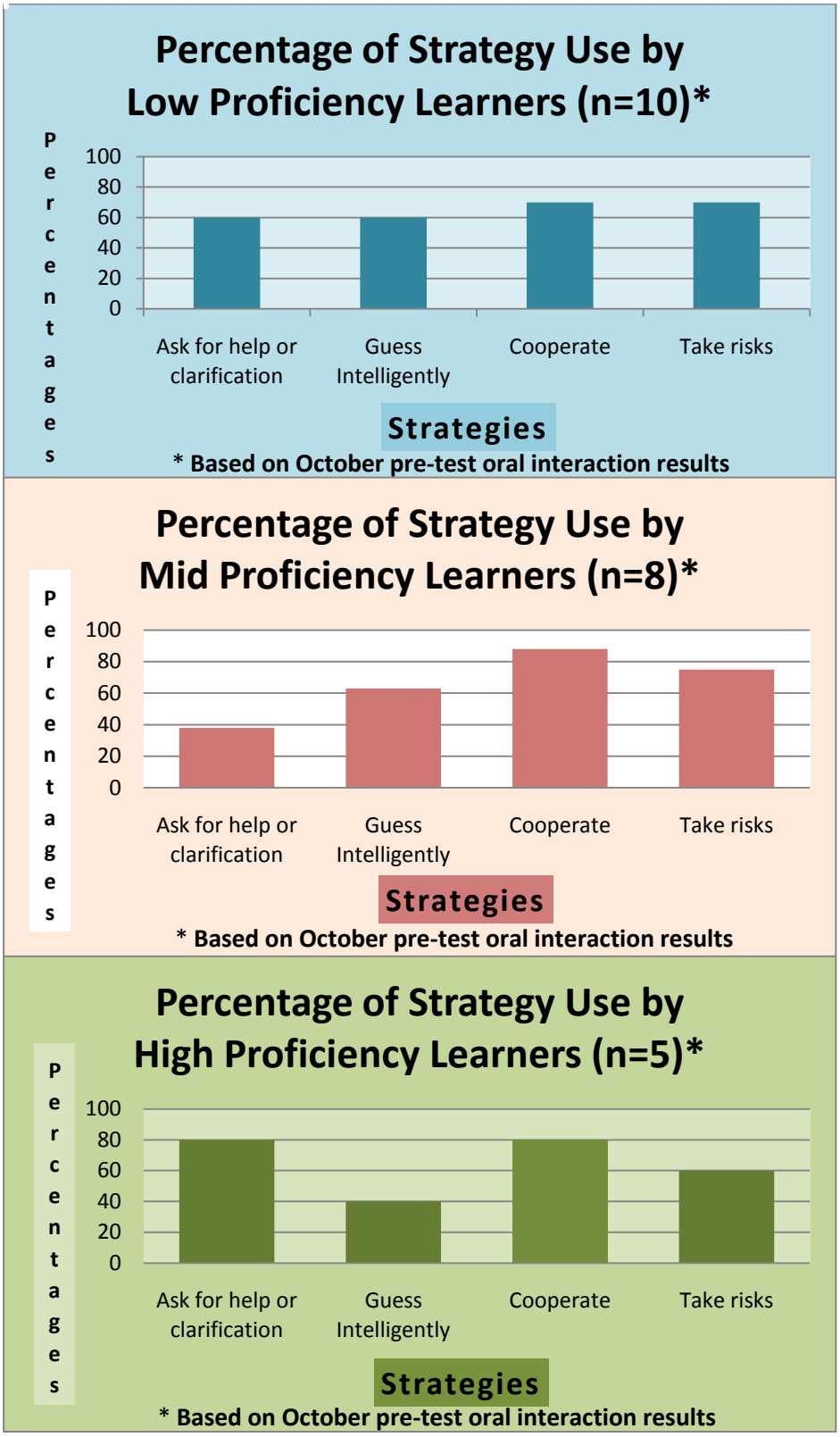


*Figure 4. (*Experimental group *n*=23) Students' reported strategy use by proficiency level: Strategy Log 1b January 29.

Day 2 of the second intermediate intervention. The sources of evidence on this day were the videotape of selected class proceedings, the field notes, and strategy logs. The number of participants represents the number of students who completed the strategy log on that day. The task was a complex project that the students had started the previous day. The teacher reiterated the instructions for the project, which consisted of researching or inventing an animal, making a model of its habitat, and presenting it to the class. After this, she asked the students to look at the list of strategies on their strategy log, and check off strategies that the students thought might be helpful for the task. One student, Cécile, asked for an explanation of Check my own work (self-monitoring) and the teacher explained that it means monitoring yourself by correcting yourself if you make a mistake or checking and correcting your written work. She then took the lead and invited questions about other strategies on the strategy log that other students wanted to know about. The students asked many questions and the teacher explained the strategies they asked about, leading them in consciousness-raising of some new strategies, according to their curiosity and questioning.

During the task. During the task, I targeted four students from the embedded unit of analysis and asked them to tell me about the strategies they were using to prepare their project. The partial data in Table 26 show some of the strategies they reported using and the explanations they gave. Their explanations show that they used the instructed strategies (Use resources, Ask for help and clarification) and others that were included in the consciousness-raising during earlier post-task reflections, albeit in sometimes idiosyncratic ways (see Thomas' explanation of his risk-taking strategy below). In the case of Thomas and Marc, they misunderstood the meaning of Inferencing (Guess intelligently) but otherwise, the children were able to explain their strategies based on the SI, and account for their strategy use with examples. The strategy most of these children chose was Use resources, which matched the demands of the task because it was a research project and they needed information in order to do an oral presentation and respond to impromptu questions in an interactive fashion immediately following the presentation.

Table 26

Report on Interviews with Embedded Unit of Analysis: Summaries of Students Explaining Their Strategies during Class Project

Researcher's prompt: Tell me about the strategies you are using to prepare your project.	
Jeanne: (mid proficiency) and her partner, Cécile (low proficiency) (*sitting by the computer; Jeanne looking in her Word by Word book as I arrived; Cécile working on the computer*)	Jeanne: Explained that she used resources because Cécile (her partner), didn't know the habitat, so she looked in her *Word by Word* book and on the computer to check the information that they did not have. Cécile: Said she used resources (showing me her *Word by Word* book) for her plan, and the computer, and consequently, she didn't ask for help or clarification. However, she did not find what she was looking for. I asked her if she asked for help at that point. She responded that she asked for help or clarification when she didn't find a word; for example, on the computer, she had a problem (finding the information). Me: I asked them both how the computer (their resource) helped them. Cécile: She said, "For dolphin habitat." Jeanne: Explained that they had to make a model of the habitat for the project, so they went on the Internet "for searching; for example habitat and what information we don't have..."
Thomas (low proficiency) with Marc (mid proficiency)	Thomas: "My strategy is ... (looking at his strategy log) use a plan." Me: I asked him to show me his plan. Thomas: Picked up his paper on which his plan was written and showed it to me. He continued reporting his strategies, saying he used Take risks and Cooperate. Me: I asked for an example of a risk he took. Thomas (*showing me his invented animal*) explained that his animal was *take a risk* and (showing me a real animal) that that animal was not *take a risk*. Marc: Helped to explain as Thomas had difficulty finding the words in English, said that it's because the invented animal was their creation; that they took a risk by taking parts from different animals so it was more difficult than copying a real animal. Thomas: Reported that he used Guess intelligently. Me: I asked for an example. Thomas had trouble finding the words, so he gestured to the text and Marc explained that they had to guess intelligently for the text, to not write a stupid text. [sic] Thomas added that he was also using Take notes. Marc explained that they needed to take notes for their presentation and to write their text.

Pascal (low proficiency) (Sitting beside his partner)	Pascal: He explained that first, they started by using resources, such as the computer and the book, *Big Cats* (showing the book), on page 34; he then went on to self-monitor by saying, "and after I draw a little er ... léopard (French pronunciation) ... er leopard (English pronunciation). He also used resources (the strategy posters and functional language posters on the board) to report that he used Ask for help and clarification by asking his partner to repeat or by asking "What did you say?)

Post-task reflection. The teacher conducted the post-task reflection in the usual manner, but insisting more and more on accountability. The students were required to give examples when they reported their strategies. They became accustomed to this and most volunteered examples. The students she called on reported using the following strategies: Use resources; Cooperate; Pay attention (and that student voluntarily explained that he paid careful attention to what his partner was saying); Ask for help or clarification; Use resources; Use what you know; Predict (volunteering that he predicted what he would find on the computer). The last boy called on gave a list of strategies. The teacher protested, insisting on a specific example of a strategy he used; (see partial data transcribed for the section on rival explanations dealing with social desirability, following this analysis). The student complied.

Strategy log 1c: quantitative data. Quantitative data from the strategy log obtained using Excel statistical 'Count-ifs' function, graphically displayed in Figure 5, revealed the following results. As mentioned earlier, this task was more complex than the previous ones as it involved a long-term group project in which students had to choose or invent an animal, reproduce the animal and its habitat using their choice of medium (e.g. papier mâché), present it to the class, and engage in an impromptu question and answer period immediately following their presentation. The process involved group discussions in order to come to a consensus about the choices to be made, and also to offer or request suggestions or comments or opinions during the production and practice of the presentation. The students were also encouraged to research animal facts in books or on the Internet. The teacher recommended that the students use the strategies, Planning (Plan) and Resourcing (Use resources). As Figure

5 shows, however, the participants' drew from a range of strategies on their strategy log and their strategy use became increasingly complex as the task grew in complexity. Twenty of the 25 students present used the strategy, Plan, while 19 of them used Use resources. In addition to the two recommended strategies, however, the students drew upon other strategies that had either previously been taught or strategies that had been used by some participants and discussed on previous occasions during the post-task reflections. These included Cooperate, which was reportedly used by 24 of the 25 students, and Take notes, which slightly more than half of the students reported using. Half of the participants reported using the strategies, Pay attention, and Use of prior knowledge (Use what you know).

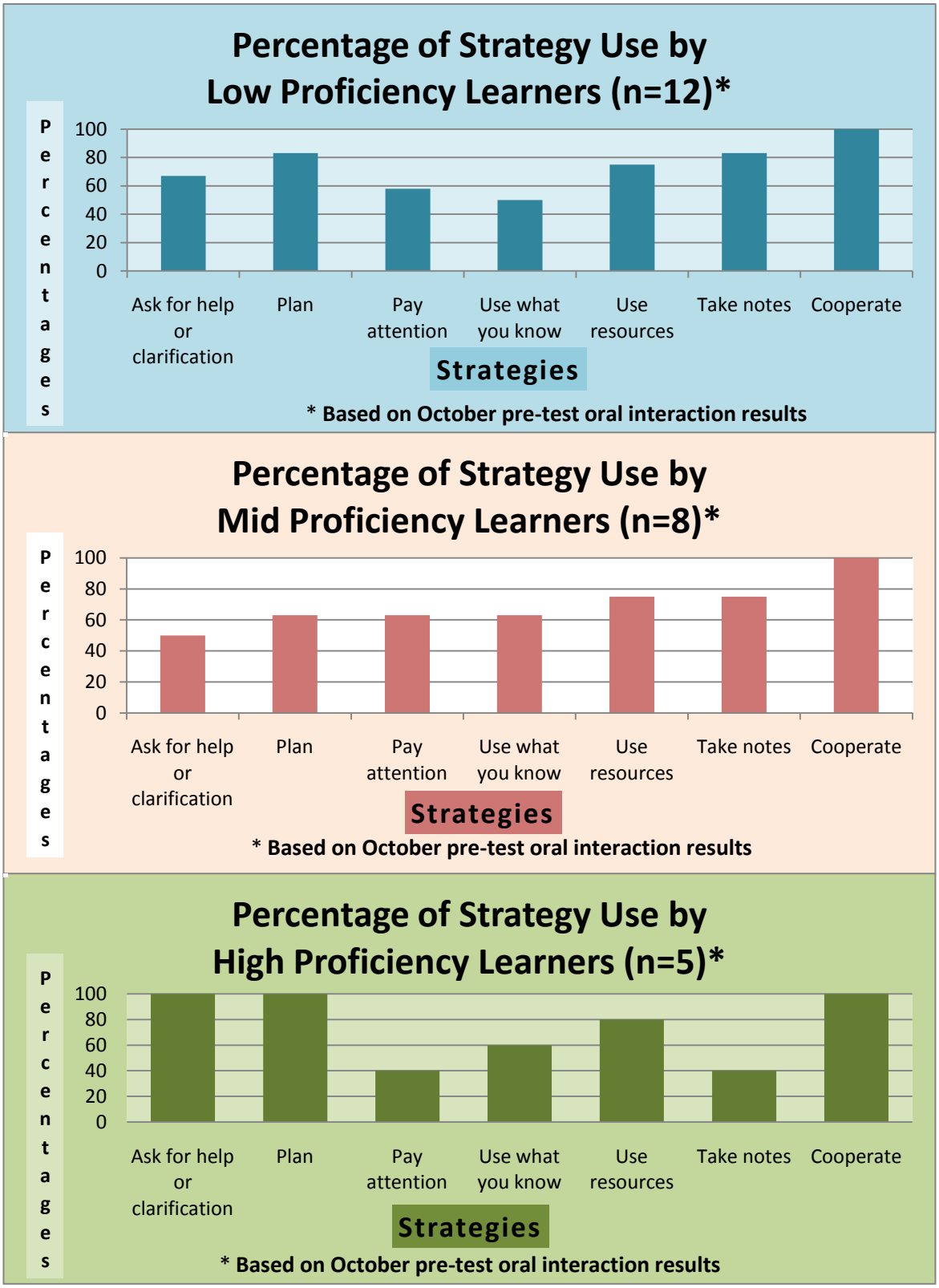


*Figure 5. (*Experimental group *n*=25) Students' reported strategy use by proficiency level: Strategy Log 1c February 12.

Day 3 of the second intermediate intervention. Task 1. The sources of evidence for this task were the videotape of selected class proceedings, observation and field notes, and the strategy log. The number of participants represents the number of students who completed the strategy log on that day. The task was the pair activity involving matching of the questions and answers from the song, *What Kind of Cat Are You*? After distributing the new copies of the strategy log and explaining the task, the teacher elicited strategies the children thought might help them do the task. They named strategies previously taught. The teacher then explained and modelled Inferencing (Guess intelligently) and strongly recommended the students use it. She then drew the students' attention to the strategy cards on board: Guess intelligently, Plan and Say it in a different way (Circumlocution), asked which among those they thought they might use for the activity, and invited students to check off on their strategy log those they planned to use. The students had become accustomed to the routine so they checked off the strategies they planned to use, independent of their peers and the teacher. They then engaged in the task.

During the task: Field notes of my observation. The partial data from my field notes (Table 27) reveal the traces of strategy use I observed as I circulated in the class and took notes. Several students tried to use the instructed strategy that the teacher urged them to use, Guess intelligently (Inferencing).

Table 27

Field notes of my observation

Field notes: February 26, 2009 – Task 1: Traces of strategy use
- Émily: Encouraged her team to use resources and she gave them dictionaries. - Danny didn't understand "hangs out". He tried to use Guess intelligently - looked at the word 'out' and thought it meant that the cat doesn't stay in the alley. He asked me for help. - Marie guessed intelligently: She linked the word "alley" with alley cat. (Linguistic clue) - Thomas and Pascal's group: Question: What kind of cat is the capital of Nepal? Pascal used resources. He looked up the capital of Nepal on the map in an atlas. Found Katmandu. Pascal also used Ask for help. He asked me for help. Pascal also used Guess intelligently like this: Question: What kind of cat is a group of things that are similar? He looked at the words 'group of things' and guessed correctly, 'category'. (Linguistic clues) - Philippe used Guess intelligently to find 'house cat'. He explained to his group.

Post-task reflection. The teacher conducted the post-task reflection in the same manner as on February 12, pushing the students for accountability with examples. When she called on Pascal to report and explain the strategies he used, he reported that he had used clues to guess the answer, 'category' but he was unable to verbalize the process he used in English. As I had observed him working out the answer, and noted the process he used in my field notes, I intervened and helped him by explaining how he guessed. I wanted to capitalize on this opportunity to share with the class the effective way he used to guess intelligently, using linguistic clues, so that others would get another example of how to use this strategy.

Strategy log 2a: quantitative data. Quantitative data from the strategy log obtained using Excel statistical 'Count-ifs' function, graphically displayed in Figure 6, revealed the following results. Nineteen of the 23 students present reported using the instructed and recommended strategy, Guess intelligently, and the proportion of use was almost evenly distributed between the mid and low proficiency learners, with the high proficiency learners reporting proportionately slightly higher use of it (11/14=79% Low, 4/5=80% Mid, 4/4=100% High). More than two-thirds of the students chose Use resources, Cooperate, and Take risks, all of which also suited the

demands of the task. One half of the class also chose to use the strategy, Use of prior knowledge (Use what you know), to help them arrive at the answers. This strategy had been explicitly taught at an earlier date.

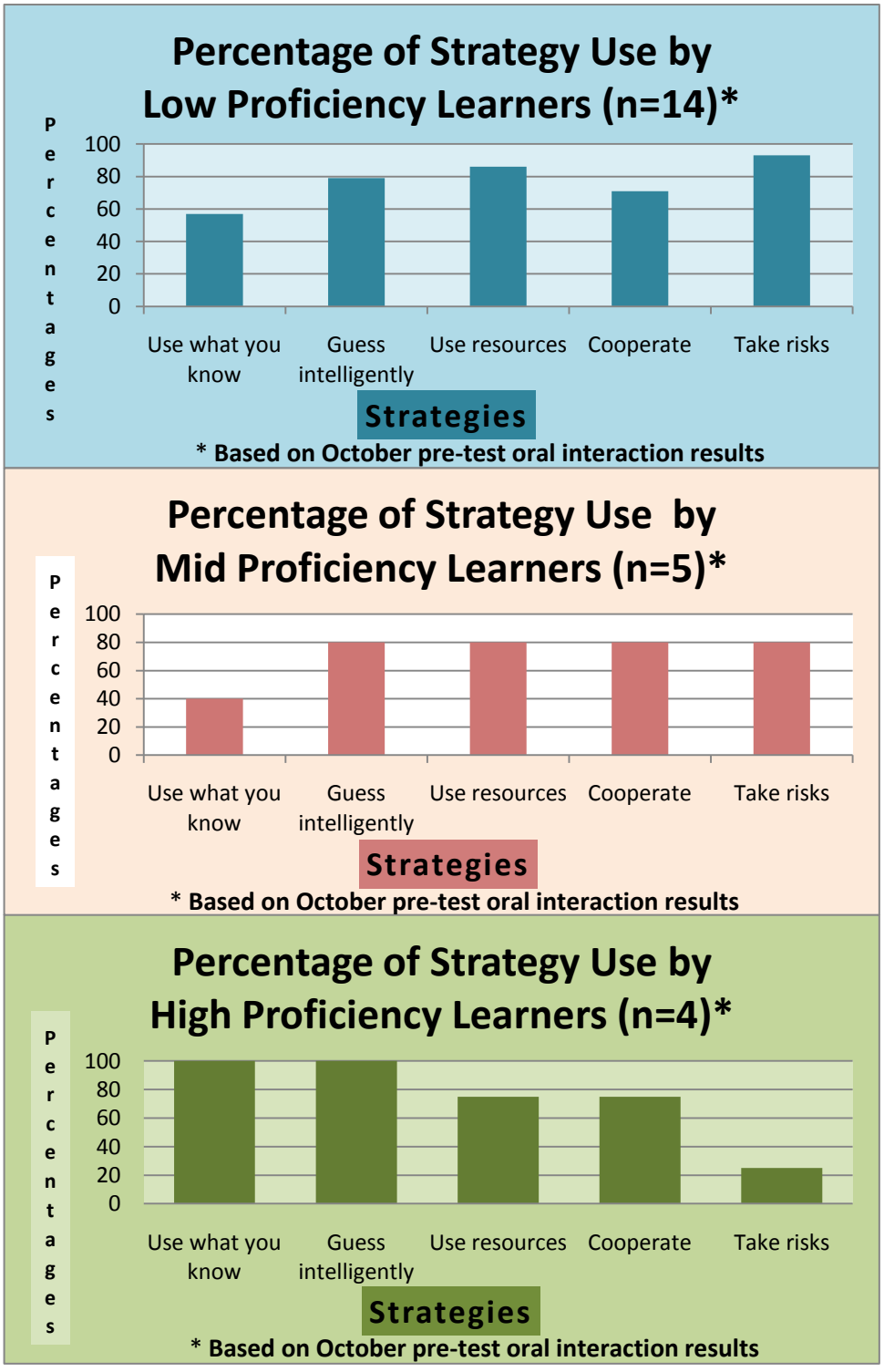


*Figure 6. (*Experimental group *n*=23) Students' reported strategy use by proficiency level: Strategy Log 2a February 26.

Task 2; Part A. The sources of evidence for this task were observation and field notes.

After explaining the task, which consisted of looking at cave man tools and guessing, in groups, what they might have been used for, using their imagination, the teacher elicited strategies the children could use for this task. She then reviewed the strategy, Use of prior knowledge (Use what you know). She explained that before, she used to give them sample language but now she wanted them to use the language they already knew to discuss. She drew their attention to the strategy card, Use what you know, and modelled an example using a shell, and elicited possible uses for it.

Observation and field notes data. My partial field notes data (Table 28) revealed that, for this part of the task, I did not observe frequent use of the recommended strategy, Use what you know. Many students used the strategy, Ask for help. The teacher intervened and encouraged them to switch from asking for help to using resources.

Table 28

Field notes of my observation

Field notes: February 26, 2009 – Task 2; Part A: Traces of strategy use
- Marc asked me for help: How do you say *'ancre'* in English? - Pascal asked T for help. - Thomas asked me for help: How do you say...? - Fred asked T for help: How do you say...? - Pascal guessed use for: Anchoring tool - to grab a bigger boat when your small boat runs out of gas. - Marie asked for help. - Anne asked T for help: How do you say...? T told her to look it up in the dictionary. (NOTE: T CIRCULATING AND ENCOURAGING Ss TO SWITCH FROM ASK FOR HELP TO USE RESOURCES.) - Pascal. (Use what you know) He re-used a word from the cat song in the previous activity (*burglar*). He said you could use the tool 'to throw on a house to climb up, if you are a burglar'. - Nicolas. He re-used a word from the cat song to chide another student who chose the same number as his group (*copycat*). - Marc used gestures to explain what he would use a tool for. - Danny: (Use what you know) He said the tool could be 'a big scissors'.

Task 2; Part B. The second part of the above activity consisted of pairing off (from the original groups of four) and inventing new uses for the cave men tools.

During the task: Field notes of my observation. The partial data from my field notes (Table 29) reveal the traces of strategy use I observed as I circulated in the class and took notes.

Table 29

Field notes of my observation

Field notes: February 26, 2009 – Task 2; Part B: Traces of strategy use
- Philippe: Directed attention: Always focuses on what is being said. Interacts with T a lot. - Danny asked T for help. He didn't know what a film was. T explained that they were used before digital cameras. - Sylvie, Cécile and Claudine said they would use the bottle for a slipper. I asked them how. - Cécile used gestures and Stall for time to explain how. - Anne used Ask for help, Use resources, Say it in a different way. She didn't know the word for 'zipper tag'. She asked her team-mate, who didn't know either. She then looked it up in the dictionary. She still didn't find the word, so when she reported, she used a circumlocution: The thing I use for my zipper. (***My note: Strong student; Showed flexibility in orchestration of strategy use.)*** - Pascal F: (Reporting) Newspaper, for the job of the mailman. - T asked how the newspaper is for the job of the mailman. - Pascal used Stall for time and Say it in a different way: Er... the newsboy. (Cultural reference: Young boys distribute local newspapers by hanging them in a plastic bag on the mailbox.)

Day 3 of the second intermediate intervention. The sources of evidence on this day were the videotape of selected class proceedings and the field notes of my observation. The students finished preparing and practising their animal projects from February 12, and got ready for their presentations. There was no explicit SI for the preparation and practice stages but the strategy posters were on the board. Just prior to the oral presentation of the animal projects, the teacher reviewed strategies that could help them with their presentations and with managing the question and answer period following their presentations. She particularly encouraged them to use two strategies if they forgot temporarily what they wanted to say, i.e. Stall for time and Say it in a different way.

During the task. For the most part, the students used the strategies that were targeted in the SI and succeeded with the task; for example, when Anne, a high proficiency student, forgot what she wanted to say, she used Stall for time. She said to the audience: *I need a minute, one moment.* The teacher acknowledged this by responding, *That's fine.* Anne took a brief moment, which did not interrupt the flow of

her presentation, and then she continued. Several students used this strategy, without it being as explicit as Anne's example, while others used Circumlocution (Say it in a different way). For example, Xavier, a strong student, forgot how to say the pony's coat, so he said 'the dress of the pony', and he still managed to get his point across about the colours of ponies.

Day 4 of the second intermediate intervention. Task 1. (Last day of SI) The sources of evidence on this day were the videotape of selected class proceedings, observation and field notes, and strategy log. The number of participants represents the number of students who completed the strategy log on that day. The task was a cooperative crossword activity on telling time, similar to the one the students did on January 29; Student 1 had the down clues and Student 2, the across clues. The students had to interact in order to complete the crossword. The teacher asked the students to look at their strategy log, and she elicited strategies that could help them do the crossword task. Students suggested various strategies, such as Ask for help or clarification; Guess intelligently; Use resources; Cooperate; Stall for time; Say it in a different way; Use what you know; Pay attention, and Take risks, They then checked off on the strategy log the ones they planned to use. The teacher repeated the requirements of the task and reminded the students to use their strategies to help them complete the crossword puzzle.

During the task: Partial videotape data. The partial data from the videotape show two students from the embedded unit of analysis, Marie, a high proficiency student, and Jeanne, a mid-proficiency student, working together to complete the crossword puzzle. The task was very challenging and the data shows that they drew upon the instructed strategies and partially completed the crossword puzzle. The first strategy they used was Use resources (their *Word by Word* book), which they used a few times to look up answers. They also used Cooperate, as they pooled ideas and tried to find the answers. Marie compared with French, drawing upon her knowledge of two languages to use Guess intelligently. When they got stuck on one number, she could be heard exclaiming, "Oh, my God! What are we going to write?" Nevertheless, the pair persevered, in English, by trying other strategies, such as using a process of elimination, moving on to another number among the clues to see if finding that

answer might help them find the previous one. Both children interacted entirely in English, even when they did not know the answers to the puzzle.

During the task: Field notes of my observation. Partial data from the field notes of my observation of traces of strategy use indicate that most students used the following strategies: Use resources and Ask for help and clarification.

Post-task reflection. The teacher conducted the post-task reflection in the usual way, requiring accountability for strategy use.

Strategy log 2b: quantitative data. Quantitative data from the strategy log obtained using Excel statistical 'Count-ifs' function, graphically displayed in Figure 7, revealed the results reported below. The task is comparable in task condition to the January 29 cooperative crossword task, at which point three strategies were predominantly used: Resourcing, Cooperation, and Risk taking. As Figure 7 below shows, the participants had developed and were drawing from a wider repertoire of strategies for the March 19 task. More than two-thirds of the participants of all proficiency levels reported using the following strategies: Pay attention, Use what you know, Guess intelligently, Use resources, Cooperate, and Take risks. More than half of the participants also reported using Stall for time. All of these strategies were appropriate for the task, and had either been explicitly taught in the SI, or been discussed in previous post-task reflections. In the past the strategy, Use what you know, had been taught explicitly but not widely used by the students. On February 26, the teacher reviewed this strategy and encouraged the students to use it. According to the quantitative data, on this day, 69% of the students used it, which suggests that the instruction made a difference. When the use of this strategy is broken down by proficiency, the data revealed the following distribution: low proficiency = 64%; mid proficiency = 71%; high proficiency = 80%. This shows that high proficiency learners reported highest use of this strategy, in this instance.

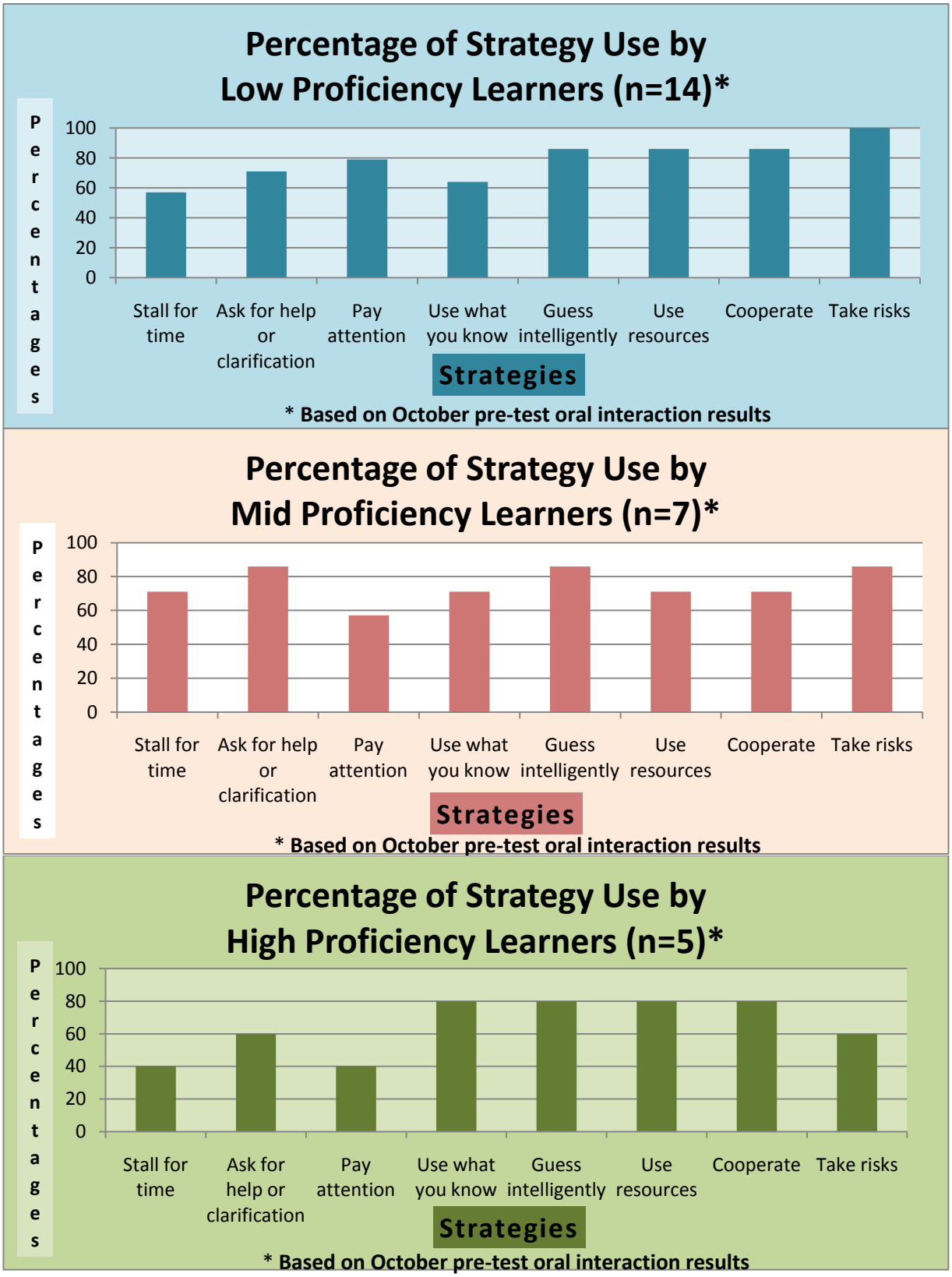


*Figure 7. (*Experimental group *n*=26) Students' reported strategy use by proficiency level: Strategy Log 2b March 19 Task 1.

Task 2. The teacher introduced the small group task, a modified jigsaw activity. Each group member had a clue regarding the location of a room on a floor plan, and together group members took turns reading the location of rooms and negotiating in order to arrive at a consensus to complete the floor plan of a school. For this activity, the teacher did not recommend any particular strategies. Instead, she described the task and elicited from students strategies they might use. The students used their strategy log to make suggestions and proceeded, without hesitation, (as the video shows) to check off the strategies they planned to use. Figure 8 graphically displays the strategies they reported using (immediately following the task). They selected their strategies autonomously, and Figure 8 shows that the strategies they reported using matched the demands of the task, which required the children to pay close attention to the clues given by the group members, cooperate in order to arrive at the layout of the floor plan, and infer meaning from context of the description of each location. Of the 23 students present on that occasion, 21 of them used the strategies Pay attention and Cooperate, while 20 of them used Inferencing (Guess intelligently). Other strategies used by more than half of the students were Stall for time, Ask for help or clarification, and Take risks, all appropriate strategies for the task.

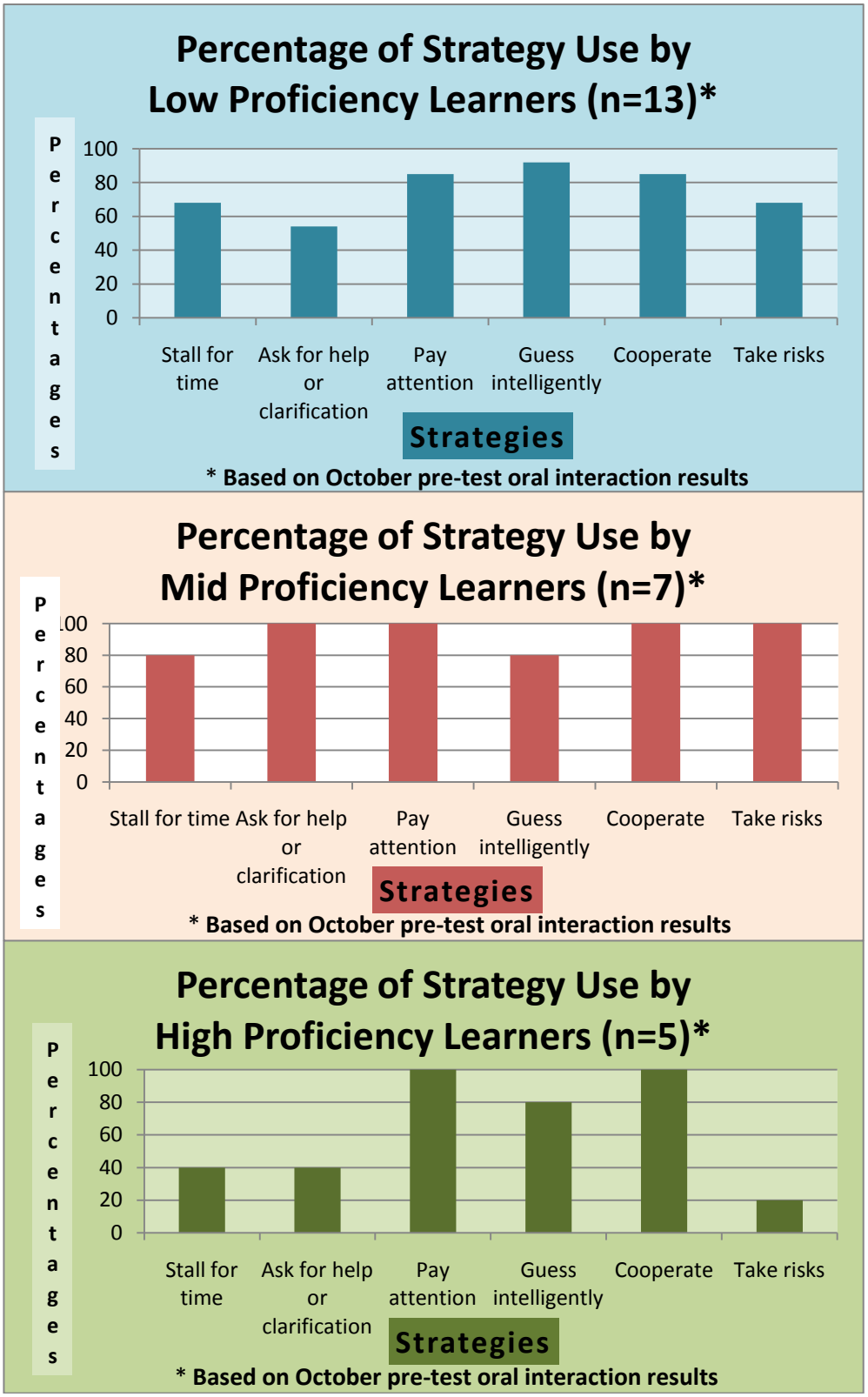


*Figure 8. (*Experimental group *n*=23) Students' reported strategy use by proficiency level: Strategy Log 2c March 19 Task 2.

Ultimate outcome. The data from the sources described above suggest that strategy instruction, with the teacher scaffolding the process in the early stages, and with the children being given many opportunities to practise the strategies, helped the students regardless of proficiency level, to become aware of and understand: a) the strategies b) how to use them and c) when to use them. The post-task reflection periods led to consciousness-raising of new strategies, which helped the students widen their repertoire of strategies. The data also indicate that through the above intervention, the children learnt to match their strategies to task demands. I will now examine the reliability of the strategy assessment.

How can children's strategy use in an authentic context be reliably assessed?

Definition and operationalization.

Strategy assessment in this study took on two forms. There was assessment of learning, defined by the framework for evaluation of the Québec Ministry of Education as "... a process that leads to a judgment on the knowledge acquired by a student and the competencies developed. This judgment ... must be founded on a sufficient amount of pertinent information" (p. 7). This study also involved assessment for learning, which the Québec evaluation framework states, "... serves to support learning whenever the goal of evaluation is to support the student in acquiring knowledge and developing competencies" (p.7). Formative assessment for learning (AFL) was intricately linked to the SI instruction process in Phase 2 of this study because it was ongoing and it allowed the teacher and the researcher to observe the process and the outcomes of each step of the strategy intervention model, and to make decisions about the next step. It also provided feedback to the learners about their strategies through post-task reflections and discussions, so that they would be actively and personally involved in their learning in each step of the strategy intervention process.

In order to increase reliability and validity of the assessment, its purpose had to be clearly identified and constructs had to be operationalized, so that the study could be replicated. The following procedure was applied. The research questions in this investigation guided the purpose of the assessment, and each assessment method was adapted to its purpose. For example, research question 1 sought to describe general

patterns of strategy use among Québec children, so a general assessment method, a survey, was employed. Research questions 2 and 3 tested the effects of a strategy intervention method in a case study, so specific strategy assessment methods were employed. The framework for the assessment was based on the steps of the strategy intervention model and the specific assessment methods varied, depending on whether their purpose was to collect information during the process of a particular step or at the point of the outcomes of each step. For example, assessment of the immediate outcome of the early intervention step was done through observation and field notes. The assessment of each of the other steps will be described in more detail below.

Assessment principles.

As we have seen in the review of the literature, the problem of assessing strategies is a complex one because "… strategies are, for the most part, not directly observable since they refer to internal, mental processes, and researchers must rely on learner accounts as indirect indicators of these mental processes" (White, Schramm, & Chamot, 2007, p. 93). The strategy assessment in this study, therefore, included self-report and other report measures combined, and followed three assessment principles, the first of which was Yin's (2009) principle of using several sources of evidence to support the assessment.

Principle 1: Using several sources of evidence. Seven sources of evidence were used for the assessment of this mixed methods investigation, including the following quantitative and qualitative methods:

1. Documentation in the form of test results of the pre- and post ESL oral interaction measure and field notes regarding students' strategy use during the tests (quantitative);
2. Questionnaires: Children's SILL pre- and post-test (Time 1 and Time 2) of general strategy use (quantitative);
3. Eight video recordings of the participants as they received pre-task strategy instruction; during tasks as they executed classroom tasks; post tasks as they engaged in the teacher led post-task reflection regarding their strategy use (qualitative);
4. Observation and field notes of strategy use during classroom tasks (qualitative);

5. A task-based questionnaire on strategy use related to an oral interaction task (quantitative);
6. Six strategy log entries documenting students' strategy use immediately following classroom tasks (quantitative), supported by specific examples during post-task reflections (qualitative);
7. Interviews**:** In-class open-ended interviews with case study students (embedded unit of analysis) asking them to explain the strategies they were currently using to execute the task at hand (qualitative).

The literature review also highlighted a need for culturally adapted strategy assessment (Lan, 2004; Lan & Oxford, 2003; Oxford, 2011). In addition, age-appropriateness was emphasized as the literature pointed out the inherent challenges in applying to research with children traditional assessment methods, such as think-aloud protocols (Gu et al, 2005) and diary writing (Simard, 2004; Simard, French & Fortier, 2007). These findings from the literature, along with my own experience and observation, led me to the second assessment principle for this investigation; that is, matching the assessment method to the age and context of participants.

Principle 2. Matching assessment techniques to the age and context of the children.

Care was taken to make the assessment techniques in this study age-appropriate and culturally adapted. To reiterate, the Children's SILL (version 1) questionnaire (Gunning, 1997) was adapted from Oxford's SILL (1990) for use with children and underwent extensive pilot testing and consultation. It was re-adapted for this study in order to reflect the current curriculum being used by the participants. This new adaptation, The Children's SILL (version 2), was piloted with participants of the same age group as participants of this study and in the pilot testing it was administered under similar test conditions as those involved in this study (Gunning, 2007, 2008). In order to increase reliability, the children took the Children's SILL in their L1, French, to facilitate comprehension and avoid additional questions and explanations, which could vary from group to group. The data from this investigation show that the children responded to the questionnaire without difficulty.

The task-based questionnaire based on an oral interaction task was also pilot-tested with participants of the same age group as the participants of this study. The instruction given to the teacher participant of the case study was to have the children complete the questionnaire immediately following the oral interaction task, in order to take into account the nature of children, who tend to focus on the here and now. The data from this investigation show that when the participants completed the task-based questionnaire immediately following the oral interaction task, they gave definitive binary answers: yes or no. On the other hand, the data from a reading task-based questionnaire administered by the teacher could not be calculated for this study because she administered it the day following the reading task and the children had forgotten which strategies they had used the preceding day, as evidenced by the fact that several of them checked between the yes and no boxes, in a non-committing fashion.

The strategy log procedure that was used for this study was adapted for children from a procedure used with adults by Nakatani (2005), which involved diary writing. For the present investigation, I took into account the challenges encountered with diary writing among children that were identified in the review of the literature (Simard, 2004; Simard, French, & Fortier, 2007) and designed a strategy log that was a simple checklist, on which the strategy names were written in terms that were accessible to children; for example, Circumlocution was re-named Say it in a different way. The goal-setting and actual strategy use were accounted for by simply putting a check mark in a box, which did not require complex explanations and which took into account children's natural short attention span, one of the drawbacks with diary writing identified in the literature mentioned above. The children in this study stayed focused on the task of checking off the strategies they planned to use, and those they actually used. In the early stages of the administration of the strategy log, the children also received the support of their peers for the goal setting, as they discussed strategies that might be suitable for the task. This is in accordance with the usual procedures in place in their class and the context for learning of the Québec Education Program, which states that children construct their learning with the help of peers and teacher. The strategy log technique, originally intended as a teaching technique, evolved into an assessment technique, based on the principle that assessment is an integral part of learning, and as such, it is ongoing and formative, which is congruent with the Québec

Ministry of Education's policy on evaluation (AFL) that advocates assessment of students' strategy use using during classroom tasks. The strategy log also had face validity as the children understood from the teaching procedure what it was supposed to measure and they understood the strategies on it which had been part of the SI when the teacher broke them down into their component parts and modelled them for the class. The children used their strategy log as support in reporting their strategies, but in order to add rigour to the assessment procedure, the teacher pushed for accountability by refusing to accept a list of strategies and insisting on examples of how the children used the strategy, as the transcript of the partial data of the exchange between the teacher and a student, Fred, in Table 30 shows.

Table 30

Teacher Insisting on Accountability

Teacher: Fred, which strategies did you use? Fred: I use Stall for time, Ask for clarification, and ... Teacher: Yeah, but give me an example of one that you used that really helped you. Fred (*still giving a list*): Use what you know ... Guess intelligently... Teacher: No! Don't give me a list; give me an example, like they [*the other students*] are giving me examples. Fred: Use resources. Teacher: Use resources ... okay ...? [*gesturing, waiting for an example*] Fred: I use my *Word by Word*. Teacher: Okay!

I also collected the strategy logs, which provided quantifiable traces of the children's strategy use with specific tasks, over the period of the second intermediate intervention.

The interview I conducted with specific children from the embedded unit of analysis was also adapted for children. Instead of using a vague prompt, such as "Tell me what you are doing now" as is sometimes used in think-aloud protocols, I used a direct prompt that would help to immediately focus the children's attention on the data I was trying to collect (their strategy use), "Tell me about the strategies you are using to do this activity". In order to avoid a response in which the children reported strategies they thought I wanted to hear, a danger inherent with direct prompts, I probed for specific examples of how the children were using the strategies, similar to what the teacher did during the post-task reflections. I videotaped the children's

responses for data analysis. The videotapes, which were used as sources of evidence to support various aspects of the assessment, were also adapted for children in that I only started to videotape once I had established a relationship of trust with the children. In one instance, a little girl started to cry during the presentation of the animal projects which I filmed for instances of strategy use because the teacher had urged the children to use strategies, such as Stall for time and Say it in a different way, if they forgot what they wanted to say, and affective strategies such as deep-breathing to control their stress. The teacher asked the girl what was the matter and she said the videotape made her nervous, so I turned it off and met with her later to see whether she wanted me to avoid filming her during future class activities. She reiterated that she wanted to continue participating in the study and said it was fine to videotape her during oral interaction activities with a group but that she was too nervous to be filmed doing oral presentations in front of the class. I respected her wishes. The videotapes of class proceedings were used as sources of evidence because I could analyze them later, and screen the self-report data for instances of social desirability (defined below), which leads me to the third principle that guided this assessment; that is, using the strategy of examining rival explanations (Yin, 2009).

Principle 3. Examining rival explanations. The rival explanation I examined with regard to the children's self-reported strategy use was related to the social desirability factor; that is, a phenomenon whereby the children might have reported strategies they thought the teacher and researcher wanted to hear, or which they perceived to be the right answer, which would call into question the validity of the findings. This is a rival explanation that often challenges findings based on self-report data. I examined all the data very carefully and found that it is possible that this could have influenced the children's responses in the first step of the strategy intervention, when the teacher simply pointed to the strategy posters and asked for a show of hands if the children used those strategies. Seeing that this was in effect a consciousness-raising step, however, it does not alter the results of the strategy intervention. The data from the strategy log, used as evidence of students' strategy use, was supported by videotape, which recorded the instructions given to the children explaining that they were only expected to report strategies they really used, as the partial data from the videotape of the teacher's instructions in Table 31 reveals.

Table 31

Teacher's Instruction for Checking off Strategy Use on the Strategy Log

Strategy log: January 19: Teacher's instructions immediately following the task
Teacher: Look again at your list of strategies. You checked before what you thought you were going to use. Now check after, "What did you actually use?" Okay ... What did you use? If you checked ten and you only used two [*putting emphasis on the numbers*], well then just check two ... that's it. Check exactly what you used.

The partial data from the videotapes of the children's responses during the post-task reflections also show that by this point of the data collection, the children understood clearly that they were expected to give frank responses, as the example in Table 32 shows. The task involved jigsaw reading, in which each member of a pair had to read a short text about a different animal and summarize the text orally to their partner. This child, Xavier, reported the strategies he planned to use and in the transcript of the data below he is reporting strategies he actually used, whether or not they were helpful, and justifying his response.

Table 32

Child's Response during Post-Task Reflection

Post-task reflection: January 29
Teacher: And what did you use after? Xavier: Ask for help or clarification, Say it in a different way, Use What you know, Cooperate, Task risks and Go for the general meaning. Teacher: And did that ... did those strategies help you understand the text? Xavier: Yes and no. Teacher: Can you explain? Xavier: Go for the general meaning is good because the ... the part of the text we don't understand, we ... er ... we read the phrase au complet là [*the complete phrase*]. Teacher: Okay, so you were able ... without understanding every... everything, you were able to understand general things. Okay, that's good. Good, Xavier.

To sum up, in order to assess the children's strategy use in an authentic context reliably, and to add rigour to the strategy assessment techniques, I applied the assessment principles of using several sources of evidence, adapting the assessment methods to the age and context of the learners, and examining rival explanations. I will now examine the impact of the children's strategy use on their success on ESL classroom tasks.

What are the relationships between strategy use and achievement as measured by success on ESL tasks?

Definition and operationalization.

In this investigation, ESL task success was defined as: a) carrying out classroom tasks in English and succeeding with the tasks; and b) performing the pre-test (Time 1) and post-test (Time 2) oral interaction measure to a 2.5 to 5 level on the oral interaction rubric, which was classified as mid-proficiency (2+ to 3) or high proficiency (3+ to 5) for the purposes of this study.

Intervention and immediate outcome.

Pre-intervention. The quantitative data from the oral interaction pre-test measure were analyzed using SPSS statistical software. The results showed that at that time, the overall level of students' ESL oral interaction test score was low (M=1.64, SD=.78). The qualitative data from the field notes taken for each participant as they engaged in the oral interaction task with their peer revealed that in general, their strategy use did not facilitate their efforts. In fact, as was reported previously, the majority of the students switched to their L1 when they did not know the words they wanted to say in English. The data from three students, Jeanne, a mid-proficiency student, and Pascal and Thomas, two low proficiency students demonstrate this (see Table 33).

Table 33

Field Notes from Pre-Test

Pseudonyms	Grade	Level	Comments
Pascal	2-	L	Asks for clarification in L1; reverts to L1 a lot; abandons message.
Jeanne	3	M	"Draw it on the floor"; couldn't find words for saying "under the sink"; asked herself in L1 when she didn't know.
Thomas	1	L	Relies heavily on T for help; Reverts to L1 a lot; abandons message when he doesn't know a word; Asks for help in L1.

The qualitative field notes from the first strategy intervention showed preliminary evidence that the students were starting to draw upon the instructed strategies such as Stall for time, Ask for help or clarification, and Use resources and that they used these strategies in order to speak only English during the task. At this

point of consciousness-raising, their strategy use was largely scaffolded by the teacher and the students were reminded frequently to use them and speak only English. The goal of this initial step was to spark the children's awareness that there were strategies they could use to help them execute the tasks in English, even when they did not know all the words they wanted to say.

First intermediate intervention and intermediate outcome.

Data from the videotape and field notes showed that as this step of the intervention evolved, the students were beginning to use some strategies independently (such as fetching dictionaries for their team without being prompted by the teacher) and actively applying their strategies in order to do their classroom tasks in English. For example, on November 20 the student, Pascal, who had reverted to L1 a great deal during the pre-test of oral interaction (see field notes above), was observed using the instructed strategies, such as asking for help or clarification, in order to do the task completely in English. The results of the quantitative data from the task-based questionnaire reported in the intermediate outcome reveal high use of strategies that would help the students succeed with oral interaction tasks in English; for example, 96% of the children reported using Use of prior knowledge (Use what you know), 85% Ask for clarification, 85% Ask for help, along with other strategies. Data from my field notes revealed that the students managed to interact in English only at that period of the intervention.

Although the students used strategies to help them succeed on oral interaction tasks, the focus of the strategy intervention, a final story reinvestment task that they did on January 15 on which some students succeeded and others did not, points to the relationship between their strategy use and success, or lack thereof, on ESL tasks. After having reacted personally to the story in English, and completing the task-based questionnaire, the students were asked to create a skit, in groups, based on the storybook, *Snow Day*. Their task was to modify the story by changing: a) the characters; b) the activities the family in the story was planning to do to activities that they, themselves, would do in the event of a snow day; and c) the ending. The teacher taught explicitly the strategies Plan and Practice, following the procedure described in the initial intervention step, and she left the strategy posters on the board during the process. The children were then placed in groups and instructed to interact orally in

English in order to come to a consensus about their version of the story, to write their plan, and to practise their skit. The videotape of the planning stage showed that, whereas all groups planned the skit in English, some groups such as the one consisting of Jeanne, Marc and Sylvie, could be seen practising diligently, whereas others planned the skit but did not practise. At the time of presentation of the skit, although everyone had succeeded in doing the oral interaction part of the task in English, it was clear that students who practised performed their skit well, whereas those who did not practise forgot what they had planned, performed poorly according to the teacher's criteria, and some improvised using their L1. This example was so clear that as a result, the teacher did not do the post-task reflection in the usual manner. Instead, she gave students feedback on the strategy, Practice, and pointed out that those who practiced the skit did well and those who did not practise performed poorly. She left the corresponding strategy poster on the board and urged the students to use it in the future when they had presentations to prepare.

Second intermediate intervention and intermediate outcome.

Data from the videotape, observation and field notes, the strategy logs and post-task reflections revealed that the students were consciously using strategies in order to successfully execute their classroom ESL tasks completely in English. Even the low proficiency learners, who had typically reverted to their L1 in the oral interaction pre-test, managed to do their oral interaction classroom tasks entirely in English, drawing from a wider repertoire of strategies as the strategy intervention progressed, as the data from the strategy logs tracking the strategies of the low proficiency learners in Figure 9 shows. In this figure, the vertical axis on the left represents the number of students who reported using each strategy, and the horizontal axis represents the dates on which the strategy logs were completed. As this figure displays the progression of strategies used by low proficiency learners only from the first strategy log entry to the sixth, the number of students indicated beside each date represents the number of low proficiency learners who filled out the strategy log on that date. The legend on the right shows the strategies on the strategy log that they reported using. As I pointed out in the previous section, the first task on March 19 proved to be challenging, even for the high proficiency learners, such as Marie. The qualitative data from the videotape shows that the children persisted in speaking English and the quantitative data from the strategy log for that task, in the table below,

shows that the low proficiency learners drew upon a wide range of strategies in order to execute the task.

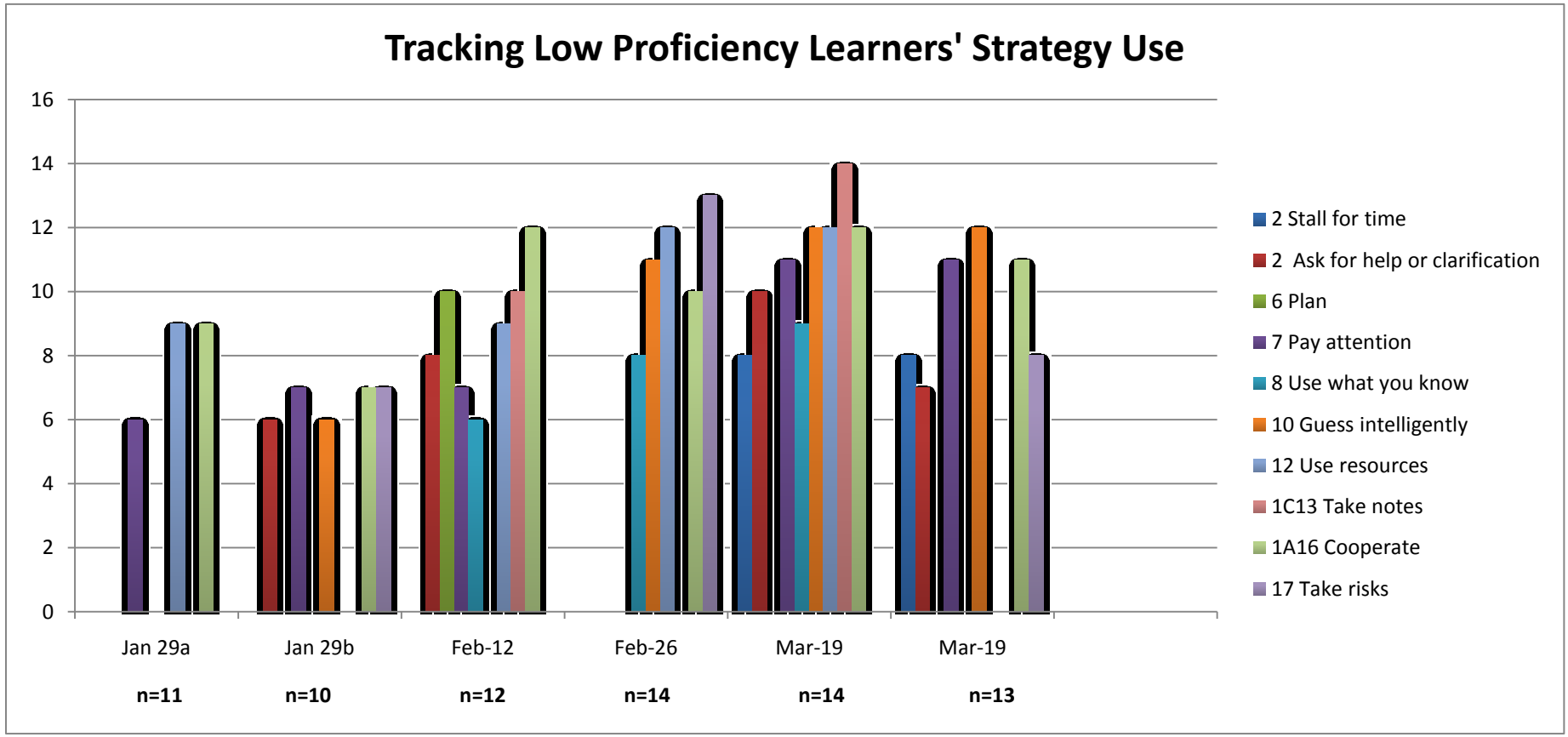


Figure 9. Tracking low proficiency learners' strategy use throughout the second intervention.

Ultimate outcome.

A paired samples t-test was conducted to evaluate the impact of the strategy intervention on students' scores on the ESL oral interaction test. Table 34 shows these results. There was a statistically significant increase in the ESL oral interaction test score from Time 1 (M=1.59, *SD* = .75), prior to the intervention, to Time 2 (M=2.56, *SD* = .51), $t(26) = -5.86$, $p \leq .0005$ (two-tailed), after the intervention. The mean increase from Time 1 to Time 2 is .93 with a 95% interval ranging from 1.30 to .63. The eta squared statistic (.31) indicated a large effect size.

Table 34

Pre- and Post-Test Oral Interaction Results for the Experimental Group

Paired Samples Statistics					
		Mean	N	SD	SE
Pair 1	ESL Task Succ_pre-test	1.59	27	.747	.144
	ESL Task Succ_posttest	2.56	27	.506	.097

Paired Samples Test									
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	ESL Task Succ_pre-test - ESL Task Succ_posttest	-.963	.854	.164	-1.301	-.625	-5.859	26	.000

Eta squared = 0.31

Changes in proficiency levels were also calculated using Microsoft Excel Statistical 'Count-if' function. Figure 10 graphically shows the change in ESL success rate from Time 1 (pre-intervention) to Time 2 (post intervention). The vertical axis on the left-hand side shows the number of students in each proficiency category on the ESL oral interaction test and the horizontal axis shows the proficiency categories (high, mid, low). The legend on the right-hand side indicates the time of the test; that is, pre-test October, 2008 in blue and post-test March, 2009 in red. At the time of the pre-test in October, prior to the strategy intervention, the distribution for each proficiency level was as follows: Low n=15; Mid n=8; High n=5. At the time of the

post-test, however, following the strategy intervention, the distribution was: Low n=0; Mid n=12; High n=15.

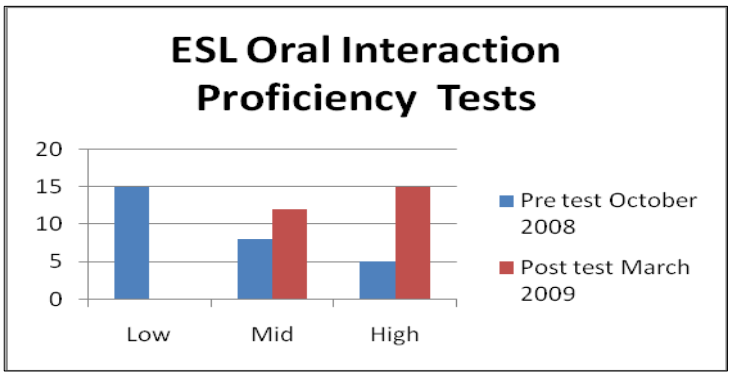


Figure 10. Pre- and post-test proficiency distribution.

Given the significant change in oral interaction results, I decided to track the strategy use of some case studies; namely students who changed proficiency levels from October to March. The rationale for selecting these cases is that they completed all six strategy logs, so their strategies could be reliably tracked. The quantitative data were obtained using Excel's 'Count-ifs' statistical function, in order to calculate a) the nature of the change in proficiency level (low to mid; low to high; mid to high); and b) the evolution of their strategy use across the six strategy log entries. Figure 11 shows the nature of their change in proficiency level. The vertical axis on the left-hand side shows the number of students in each proficiency category on the ESL oral interaction test and the horizontal axis shows the proficiency categories (high, mid, low). The number of students in each proficiency level at the time of the pre-test and the post-test respectively, is written below the horizontal axis. The legend on the right-hand side indicates the time of the test; that is, pre-test October, 2008 in blue and post-test March, 2009 in red. For the evolution of their strategy use across the six strategy log entries, see Figure 12.

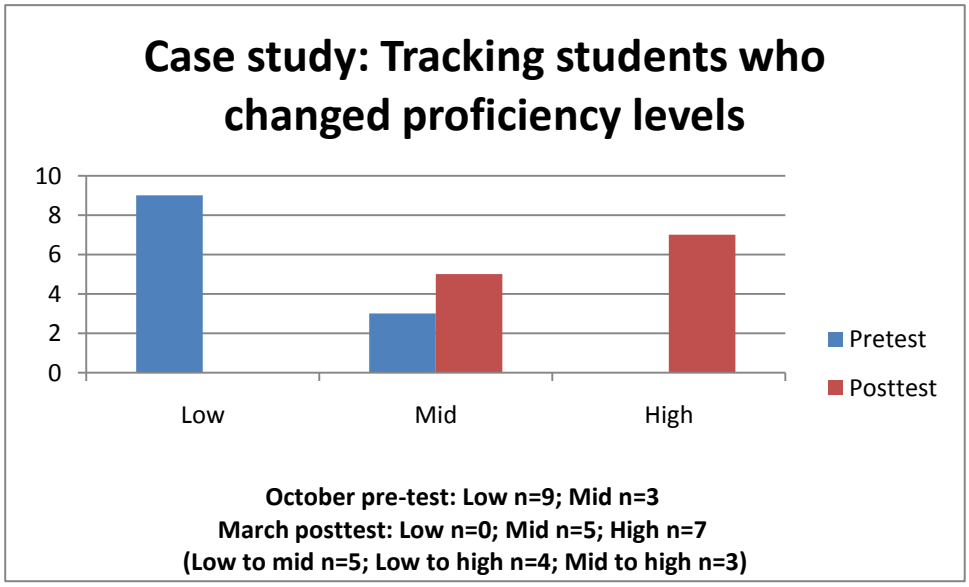


Figure 11. (*n*=12) Change in low and mid proficiency levels from October to March.

Figure 12 shows the evolution of these students' strategy use across the six strategy log entries. The axis on the left represents the number of students who indicated that they used each of the strategies listed in the legend on the right hand side. The horizontal axis shows the date on which the strategy log was completed. As Figure 12 graphically demonstrates, at the beginning of the second intervention, which corresponds to their January 29 strategy log entry, most of the students reported using the strategies, Pay attention, Use resources, Cooperate and Take risks. As the figure shows, however, they tried other strategies as time progressed and by the first task on March 19, which was very demanding as mentioned earlier, they maintained the use of the strategies reported on January 29 but, in addition, drew upon a wider repertoire of strategies, and more complex strategies such as Inferencing (Guess intelligently) and Use of prior knowledge (Use what you know) in order to persevere in speaking English to do this task, which was beyond the level of most students in the class as the data from the videotape shows.

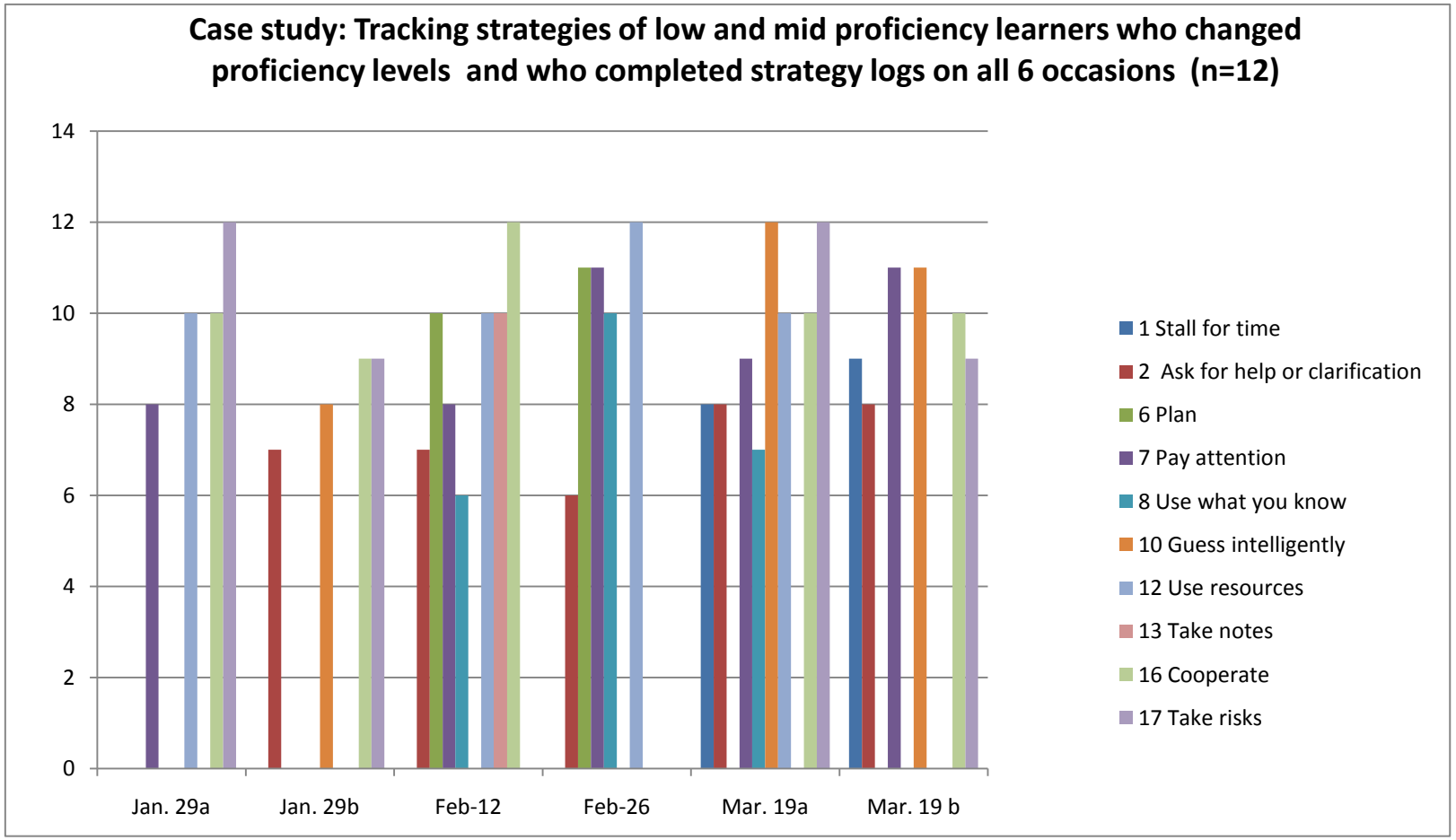


Figure 12. (*n*=12) Tracking the evolution of strategy use by students who changed proficiency levels from pre- to post intervention.

Embedded unit of analysis. One of the students in the case studies above who changed from low to high proficiency from the pre-test to the post-test of oral interaction was Pascal, a student from the embedded unit of analysis whose strategy use was documented throughout the strategy intervention and referred to in earlier sections of this paper. Tables 35 and 36 show my field notes from the oral interaction pre- and post-tests for three students from the embedded unit of analysis.

Pascal: pre-test. My field notes from his pre- and post-tests on the oral interaction measures show that in the pre-test, he tended to revert to his L1 or abandoned the message he was trying to convey when he did not know the words he wanted to say in English and he performed at a very low level (2-); see Table 35 below.

Pascal: post-test. On the other hand, on the post-test of oral interaction following the intervention, data from my field notes show that Pascal drew upon the strategies he had learnt and practised during the intervention, and he performed at a high proficiency level (3+).

Jeanne: pre-test. At the time of the pre-test, Jeanne's performance was average. Her vocabulary was limited and whenever she did not know how to say something she wanted to say in English, she resorted to mumbling to herself in her L1. This detracted from her English performance.

Jeanne: post-test. As Table 36 below shows, at the time of the post-test, Jeanne drew upon strategies learnt during the intervention, such as probing her partner with several requests for clarification, so that she could execute the task of drawing the objects in the right spots on the illustration.

Thomas: pre-test. In the pre-test, Thomas hardly spoke unless the teacher helped him. He was clearly one of the lowest proficiency students in the class.

Thomas: post-test. At the time of the post-test, Thomas approached the task with confidence, not relying on any support. Frequent pauses detracted from his performance but he drew upon strategies he had learnt, such as Circumlocution. When he wanted to tell his partner where to draw the object and he did not know the word for 'library', he said, "...in the room full of books".

Table 35

Field Notes from Pre-test

Pseudonyms	Grade	Level	Comments
Pascal	2-	L	Asks for clarification in L1; reverts to L1 a lot; abandons message.
Jeanne	3	M	"Draw it on the floor"; couldn't find words for saying "under the sink"; asked herself in L1 when she didn't know.
Thomas	1	L	Relies heavily on T for help; Reverts to L1 a lot; abandons message when he doesn't know a word; Asks for help in L1.

Table 36

Field Notes from Post-test

Pseudonyms	Grade	Level	Comments
Pascal	3+	H	Substituted French word pièce (with English pronunciation); Asked for repetition; stalled for time; used gestures; asked for clarification of illustration; stalled for time to think about what Marie said (he was drawing in the wrong spot; Marie clarified); he said desk in a different way (circumlocution); cooperated; stopped, thought about prompt (stall for time); said message in a different way.
Jeanne	4+	H	Asked for clarification a great deal; slight hesitation to think of basketball "panier" asked me for clarification of illustration; elaborated a lot; rich language (a pair of scissors); gave additional details; circumlocution (a desk for children); cooperated; helped partner by giving lots of detail.
Thomas	2+	M	No support but frequent pauses; circumlocution for library (room full of books); pauses; asked for clarification a great deal in L2; did not revert to L1 (except 'What is room *déjà*?" [again])

Examining rival explanations.

In order to examine the possibility that the successful ESL task results might have been influenced by factors other than the strategy intervention, the scores of the control group on the pre and post- ESL oral interaction test were examined. A paired samples *t*-test revealed that there was also a statistically significant increase in this group's oral interaction test score from Time 1 (M=1.58, *SD* = .81) to Time 2

(M=2.12, *SD* = .77), *t*(26) = -4.244, *p*≤ .0005 (two-tailed). Comparison tests using SPSS were then carried out with the pre and post-test oral interaction test results of both the treatment and control groups, to see if there was a difference in the degree of improvement between these two groups. Means and standard deviations were first calculated on the pre-tests of both groups prior to the strategy instruction intervention, the results of which are illustrated in Table 37.

Table 37

Descriptive Statistics for Treatment vs Control Groups: ESL Task Success Pre-test (Prior to SI Intervention)

Descriptives								
ESL Task Success pre-test								
					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min.	Max.
treatment	28	1.64	.780	.147	1.34	1.95	1	3
control	26	1.58	.809	.159	1.25	1.90	1	3
Total	54	1.61	.787	.107	1.40	1.83	1	3

In order to find out if there was a significant difference between the two groups in these results, a one-way between groups ANOVA with planned comparisons was conducted, with treatment/control as the independent variable and the pre-test for ESL achievement as the dependent variable. As the results in Table 38 reveal, there was no significant difference between the treatment and control groups prior to the intervention.

Table 38

ANOVA with Planned Comparisons: Treatment Vs Control Groups;

ESL Task Success Pre-Test *(Prior To SI Intervention)*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.059	1	.059	.093	.762
Within Groups	32.775	52	.630		
Total	32.833	53			

Contrast Tests: Treatment/control: ESL task success prior to SI

		Contrast	Value of Contrast	Std. Error	t	df	Sig. (2-tailed)
ESL Task Success pre-test	Assume equal variances	1	.07	.216	.305	52	.762
	Does not assume equal variances	1	.07	.217	.305	51.362	.762

Means and standard deviations were then calculated on the ESL oral interaction post-tests in order to see if there might have been any modification in English achievement following the strategy instruction intervention. The results, illustrated in Table 39, indicate that there was a mean difference between the two groups.

Table 39

Descriptive Statistics for Treatment vs Control groups: ESL Task Success Post-test (Post SI Intervention)

Descriptives								
ESL Task Success post-test								
					95% Confidence Interval for Mean			
	N	Mean	SD	SE	Lower Bound	Upper Bound	Min.	Max.
treatment	27	2.56	.506	.097	2.36	2.76	2	3
control	26	2.12	.766	.150	1.81	2.42	1	3
Total	53	2.34	.678	.093	2.15	2.53	1	3

In order to find out if the mean difference between the two groups in these results was statistically significant, a one-way between groups ANOVA with planned comparisons was conducted, with treatment/control as the independent variable and the post-test for ESL achievement as the dependent variable. As the results in Table 40 reveal, the difference between the treatment group score over the control group following the strategy intervention was statistically significant (p=.02).

Table 40
ANOVA with Planned Comparisons: Treatment Vs Control Groups;
ESL Task Success Post-Test *(Post SI Intervention)*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.566	1	2.566	6.139	.017
Within Groups	21.321	51	.418		
Total	23.887	52			

Contrast tests

		Contrast	Value of Contrast	Std. Error	t	Df	Sig. (2-tailed)
ESL Task Success posttest	Assume equal variances	1	.44	.178	2.478	51	.017
	Does not assume equal variances	1	.44	.179	2.459	43.138	.018

As the results of the contrast tests above reveal, the experimental group's results were significantly better than those of the control group, so other rival explanations were examined, such as a difference in initial proficiency, the training and experience of the teachers, linguistic demographics, exposure to English outside of school, curriculum, and program and pedagogical materials. However, these variables were all controlled for, as I will now explain.

Statistical results of the pre-test of English oral interaction showed that there was no significant difference between the test scores of the experimental group and those of the control group. It would have been possible that the teacher could have made a difference, but as the descriptions of the teacher participants show, the teachers of both the experimental and control groups had similar training and experience. The linguistic demographic of the towns in which the schools were

located was also similar. One could argue that the curriculum, program, or pedagogical materials could have made a difference but in the case of these two schools, these factors were all similar as well. These data, therefore, contribute to the evidence that the strategy instruction and the children's subsequent strategy use had an impact on their ultimate outcome, higher oral interaction test scores.

To what extent are causal paths evident among strategy instruction, strategy use, and success on ESL tasks?

Definition and operationalization.

Causal paths in this investigation refer to a preliminary qualitative path, tracing and comparing the steps of the intervention and outcomes of each step of the pre-intervention hypothesized strategy intervention model to the corresponding steps on the post intervention model. The pre-intervention model was developed after many years of experience conducting strategy instruction in ESL primary level classes, and experimenting with the model in a pilot project with participants similar to the population of this study.

Tracing the causal path from strategy instruction, to strategy use, to success on ESL tasks.

Academic problem. Figure 14 at the end of this chapter reproduces Figure 1, the pre-intervention SI model. As Figure 14 shows, the intervention model was developed to address an educational problem involving the difficulty in getting students to interact orally in English in the ESL class. They tended to use avoidance strategies such as switching to their L1 or completely abandoning the message when they did not know the words they wanted to say in English. The teacher participant in the pilot project also identified the same problem as being her major challenge. As oral interaction is the competency that receives the most attention in the Québec ESL curriculum at this level, the focus of the intervention was on that competency, and the model was developed to integrate into the ESL teaching some of the strategies prescribed by the curriculum which were thought to facilitate oral interaction.

Intervention and immediate outcome. The first step of the intervention was teaching the strategies, focusing on declarative and procedural knowledge, which, it

was hypothesized, would lead to an outcome whereby students would develop strategy awareness and understand how to use strategies to help them execute classroom tasks in English only. This first step was scaffolded by the teacher, which is congruent with the context for learning and developmental profile in the curriculum, which states that "Initially, students mostly imitate models of interaction and re-use functional language and strategies in appropriate situations" (p. 100). As this first step of the intervention was the students' initial introduction to strategies, it was felt that the students had achieved the goal for the immediate outcome of the hypothesized model and that they were ready to move on to the intermediate intervention.

First intermediate intervention and immediate outcome. The first intermediate intervention aimed to continue teaching strategies, focusing on procedural and conditional knowledge. Students would practise using the strategies and matching their strategies to task demands. It was hypothesized that this step of the intervention would produce an outcome whereby students would understand how and when to use the instructed strategies. The quantitative data from the task-based questionnaire revealed that the participants achieved this outcome by mid-January (starting from the end of October). In addition, the qualitative data from the observation, field notes and from the videotape showed that some students had also developed a curiosity about other strategies on the strategy wheel, the tool they used, and they asked for explanations of them. These explanations led to consciousness-raising of some strategies that had not been explicitly explained and modelled. The class also benefitted from the post-task reflections in which several students were called upon to give examples of strategies they had used during the tasks. In general, the students were using strategies to accomplish their ESL oral interaction tasks, and they persevered in speaking English. They even spoke the L2 in situations requiring the creative use of English in oral interaction, such as coming to a consensus as they planned a skit. The children had achieved the expected intermediate outcome of the intermediate intervention. Up to that point, the steps of the strategy intervention matched the hypothesized intervention model and we had not yet reached the targeted date for the end of the intervention (end of February). I therefore decided to expand upon the model and add a second intermediate intervention.

Second intermediate intervention and immediate outcome. The second intermediate intervention aimed to have the teacher explain tasks and elicit appropriate strategies for those tasks, focusing on conditional knowledge and goal setting. The students would set goals regarding their strategy use, practise matching their strategies to task demands, and reflect on the strategies they actually used to perform a task. They would discuss potentially appropriate strategies for tasks with peers, set goals, record their goal setting prior to tasks and their strategy use immediately following those tasks on a strategy log, originally designed to be a teaching and learning tool, which the students would use to report their strategies in the post-task reflections. The class benefitted by the examples provided during these post-task reflections, as the teacher insisted on accountability through specific examples of strategies used and how they helped. After observing a period involving these post-task reflections and the degree of accountability that the teacher required of the students in reporting their strategies, I realized the potential for a better ultimate outcome on the part of the students, and more rigour in the strategy intervention research. With the teacher's permission, I expanded the intervention model to make the strategy log a teaching, learning and evaluation tool, and extended the time of the research until the end of March. The students achieved the ultimate outcome of developing and drawing from a wide repertoire of strategies to accomplish classroom tasks as they persisted in speaking English only, even when the task was beyond their level, as evidenced by Task 1 on March 19. The result of this intervention was significantly higher test scores on the oral interaction post-test measure, for which all of the students employed strategies to persevere in speaking English and accomplish the task successfully, and no one switched to their L1 or abandoned the message. All of the students who had scored in the low proficiency range on the pre-test improved their score on the post-test and some students even went up two proficiency levels. Several students changed proficiency levels and even those who had scored in the high proficiency level on the pre-test improved their performance on the post-test.

As the post SI Model in Figure 14 demonstrates, the strategy intervention in this experiment matched and expanded upon the pre-intervention hypothesized SI model, and each step of the intervention led to an outcome whereby students further developed their strategy use, which contributed to the development of their oral interaction competency, as evidenced by the number of students who improved their

proficiency levels from the pre-test to the post-test. We can therefore infer from evidence from this investigation that there might be a preliminary qualitative causal path from strategy instruction, to strategy use, to success on ESL oral interaction tasks.

Figure 13 Figure 1: Strategy Intervention Model – Hypothesized Pre-intervention

Based on my experience and pilot project (logic model adapted from Yin, 2009, p. 150)

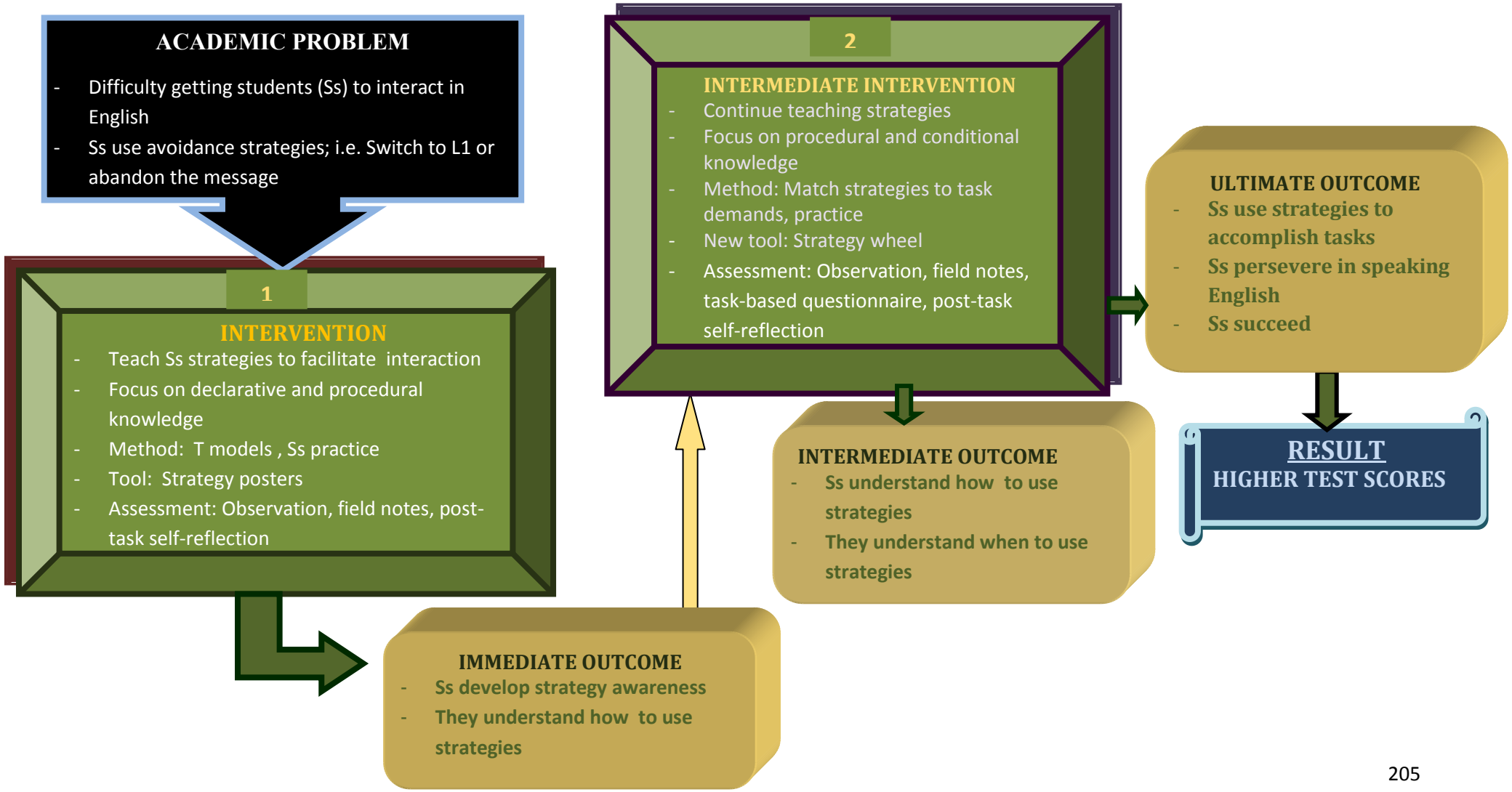
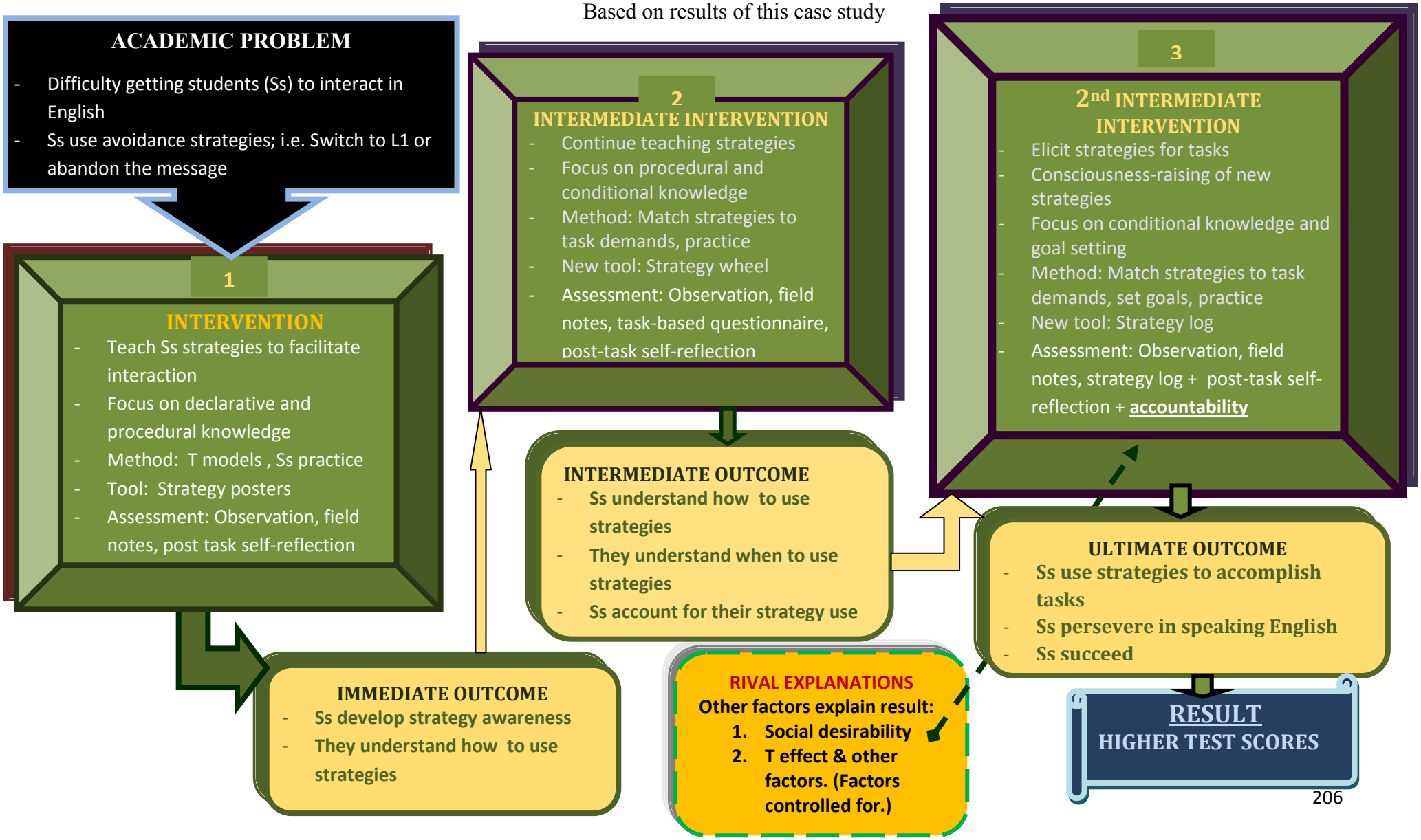


Figure 14. Strategy Intervention Model – Post Intervention
Based on results of this case study



In this chapter, I have presented the steps of the strategy intervention model used in this case study and documented the outcomes of the intervention with regard to the children's strategy use and progress in ESL as they went through each step of the process. This SI model matched and expanded upon a hypothesized model, developed as a result of my experience and a pilot project. I have examined rival explanations by comparing the participants' test scores to those of a control group that was similar to them. This led me to inferring a preliminary qualitative causal path from strategy instruction to strategy use, to greater success on oral interaction tasks.

Chapter 6 will now present the discussion and conclusion to this study.

Chapter 6: Discussion

This chapter discusses the results of Chapters 4 and 5 in light of the literature reviewed in Chapter 2, as it relates to four areas: children's L2 strategy use; strategy instruction and its implications for language teaching methodology; strategy assessment and context specific strategy instruction assessment, and research. This will be followed by a discussion of the implications for the Québec context. Chapter 4, which investigated research question 1, dealing with the children's patterns of strategy use, will fuel the discussion about children's L2 strategy use. Comparisons will be made with other Children's SILL studies in terms of frequencies of strategy use, and the impact of variables such as gender, proficiency and motivation on students' strategy use, to see if there are similarities or differences. Chapters 4 and 5, which were triangulated during the analysis in order to adequately answer research question 2, dealing with the relationship between strategy instruction and strategy use, and research question 3, examining the impact of strategy use on ESL task success, will form the basis of the discussion about strategy instruction and its effects on ESL task success. The discussion of these findings will pivot into proposing preliminary qualitative links among strategy instruction, strategy use, and success on ESL tasks. The findings from both Chapters 4 and 5 will provide a basis for the discussion about strategy assessment among children and particularly among children studying ESL in the context of the Québec curriculum.

Children's L2 Strategy Use

Introduction: Phase 1: The Survey Study.

This study investigated patterns of strategy use amongst children enrolled in the Québec elementary ESL program at the grade 6 level. Children from six classes took the questionnaire, The Children's SILL, version 2. The research question was broken down into sub-questions, the first of which described the most and least used strategy categories on the Children's SILL, followed by the five most and least used strategy items. The

impact of variables such as gender and proficiency on strategy use was considered next, and finally the relationship between strategy use and motivation was probed.

The most and least used strategy categories.

The overall mean strategy use reported by the participants (no intervention) was 2.87/ SD=.41, considered moderate strategy use according to the scale used. This is very close to the overall mean from my pilot study done with children from a similar population in 2008, in which the overall mean was 2.73/SD=.35. Jimenez-Garrido (2010) also reported moderate strategy use among the children in her Spanish Children's SILL study, as did Lan (2004) and Lan and Oxford (2003) in their Taiwanese Children's SILL studies. Nonetheless, in my 1997 Québec study, the students reported moderately high overall strategy use, thereby making it the exception among these six Children's SILL studies. The high strategy use among students in my 1997 population could possibly have been related to the fact that all five classes of the participants involved were from the same small school jurisdiction, with generally strong parental involvement, and an unusually high degree of teacher collaboration in terms of planning and teaching techniques among the ESL teachers involved. Even though the participants in that study had little or no exposure to English outside of school, participants in my qualitative study, a subset of children from that general population, indicated that their parents or grandparents valued the learning of English. In addition, the ESL teachers involved often organized cooperative learning situations, which placed students in a context to use English among peers in the classroom, thereby perhaps requiring greater use of strategies to function.

Nevertheless, in terms of the nature of the strategies used, a pattern seems to emerge in the preferences for strategy categories across the six Children's SILL studies mentioned here. In the current study, the two most used categories were the affective category (3.18/SD=.65), followed by the compensatory (3.00/SD=.54), which mirrors the preferences of the Taiwanese children in the studies above. In my 1997 study these two

categories were also preferred by the children but in that case the compensatory category was the most used, followed by the affective. In my 2008 pilot study, the affective category had the highest reported use (3.13/SD=.60), followed by the metacognitive category (2.84/SD=.48), and then the compensatory category (2.80/SD=.53), which is identical to the order of strategy category use found in the Jimenez-Garrido (2010) study of Spanish children's strategies. The appearance of the affective category among the top two strategy categories in these six studies, across three cultures, seems to suggest that children feel a strong need to draw upon strategies to manage their emotions, which may be related to language anxiety (Gunning, 1997) or language ego (Brown, 2007), or the complex physical and emotional developmental changes experienced by children in pre-adolescent years (Curtain & Dahlberg, 2004). Compensatory strategies help learners make up for missing knowledge, so it is not surprising that children of this age and proficiency level often rely upon strategies from this category. On the other hand, the need to compensate for a lack of knowledge seems to diminish as learners become more proficient in the language, as was found in some studies comparing the strategies of less advanced with more advanced learners (Chamot & El Dinary, 1999; Jiminez-Garrido, 2010). This is congruent with one of the findings of the current study, in which the use of the compensatory strategy category diminished from Time 1 to Time 2 in the experimental group, while their English proficiency significantly increased and their use of all other strategy categories showed some gains over the same period.

The choice of the compensatory and affective categories by children in Spain, Taiwan and Québec in the studies mentioned here and the low use of the cognitive strategy category across the six Children's SILL studies seems to suggest that there is a difference between children and adults or adolescents in their choices of strategy categories, seeing that several studies with the latter groups report very frequent use of strategies from the cognitive category (Nyikos & Oxford, 1993; O'Malley, Chamot, Stewner-Manzanares, Kupper & Russo, 1985a; Oxford & Nyikos, 1989). Given that this finding related to use of the cognitive strategy category in the present investigation was

on the Children's SILL Time 1, this means none of the participants had had the strategy intervention at that point, which makes them comparable to the participants in the previous Children's SILL studies. We can, therefore, perhaps infer that it does not come naturally to most children to choose cognitive strategies which have the function of "... manipulation or transformation of the target language by the learner" (Oxford, 1990, p. 43). This has implications for teachers generally as children need to be taught to use these strategies, which have been shown to contribute to learning (Cohen, 1998). This finding is particularly important in Québec, where the curriculum includes more strategies from the cognitive category than any other.

The most and least used individual strategies overall.

The most used individual strategy overall was from the metacognitive category, *When someone speaks to me in English, I listen attentively* (3.59), which was also the most preferred strategy in my 2008 pilot study, even though the degree of use was slightly less (3.46). In fact, four of the five strategies found to be most frequently used in this study, were also among the five most frequently used in my pilot study. All five of the most used strategies fall into the high use category, as did the five preferred strategies in my pilot study. This is an element of consistency in the children's strategy use across these two studies. A comparison of these can be found in Table 41 below.

Table 41

Most Used Strategies: Gunning, 2008 vs Gunning, 2010

Gunning, 2008	Gunning, 2010
23. When someone speaks to me in English, I listen attentively. (3.46) 18. When I don't know a word in English, I ask for help. (3.31) 14. I use resources (dictionaries, word banks, posters in my class, etc.) to help me with my English. (3.28) 29. I am willing to take risks by guessing the meaning of a word or phrase, and by speaking English even when I am afraid of making mistakes. (3.25) 11. I find similarities between French and English (example: table/table). (3.25)	23. When someone speaks to me in English, I listen attentively. (3.59) 12. I make an effort to understand the sense of what I read or what I hear without translating word for word. (3.38) 11. I find similarities between French and English (example: table/table). (3.37) 18. When I don't know a word in English, I ask for help. (3.29) 29. I am willing to take risks by guessing the meaning of a word or phrase, and by speaking English even when I am afraid of making mistakes. (3.28)

The least preferred strategy item in the current study was item 2, *I mime words to remember them (example: I touch my toes to remember toes)* (1.97) and this strategy has been found to be consistently seldom used by children of this age (Gunning, 1997, 2008; Lan & Oxford, 2003). It was so seldom used in the Lan and Oxford (2003) study that Lan removed it from the revised Taiwanese Children's SILL (2004). I made a decision to keep it because it is now one of the main strategies prescribed by the MELS ESL Cycle One program (grades 1 and 2) and I felt that teachers could conceivably be including it in strategy instruction in Cycle 3 (grades 5 and 6). Given the finding of consistently low use among older children across two cultures, however, we can perhaps affirm that this strategy is probably more suited to younger children than pre-adolescent children, who are generally more self-conscious than younger ones as they are building their self-image and like to work and feel like "adults" (Curtain & Dahlberg, 2004).

The impact of gender and proficiency on strategy use.

Contrary to other studies describing strategy use among children (Jimenez-Garrido, 2010; Chamot & El Dinary; 1999; Lan, 2004; Lan & Oxford, 2003; Su, 2002), this study did not find a main effect for gender. In the studies mentioned earlier, girls generally were found to use more strategies than boys but in my three Québec studies (1997, 2008, 2010) this has not been the case. Nevertheless, the current study reiterates the findings of those mentioned above with regard to proficiency, as high proficiency learners reported using more strategies overall than did low proficiency learners. In particular, the high proficiency learners used significantly more affective strategies (3.43 high vs 3.10 low) and cognitive strategies (3.00 high vs 2.70 low). The finding of the current study showing that high proficiency learners used more affective strategies than low proficiency learners is similar in some respects to my 1997 study, which also showed that the affective strategy category distinguished high proficiency learners from the other two categories of learners. This underscores the need to teach affective strategies to children. The finding showing that high proficiency learners use significantly more cognitive strategies than low proficiency learners is interesting, given the fact that this category placed fourth out of the six categories on the Children's SILL in terms of strategy use among the general population of the present study, and was shown to be not widely used by children generally in other investigations describing the patterns of children's strategy use (Gunning, 1997; 2008; Jimenez-Garrido, 2010; Lan & Oxford, 2003; Lan, 2004). Even though the majority of children do not pay enough attention to cognitive strategies generally, the high proficiency young learners in this study seem to have figured out their importance, which probably contributes to their language performance.

The relationship between strategy use and motivation.

This question referred to the idea that if the children have a positive attitude towards English, they will adopt a constructive approach to learning the language (Moon,

2005), which represents the first element in motivation, the desire to learn English. Without desire, children will be less likely to take the effortful steps needed to achieve the goal of learning the language, including drawing upon strategies to help them learn. The children were therefore asked if they liked English. The mean difference in strategy use between the students who answered that they liked English and those who said they did not was 45%, in favour of the ones who liked the language. This was true for all categories of learners surveyed, irrespective of gender, proficiency, or whether they were in an intensive or a core program. In the Lan and Oxford (2003) and Lan (2004) studies of children's strategies, motivation (liking of English) was the best predictor of strategy choice. Also, in an adult study of university students' strategies, Oxford and Nyikos (1989) also found that "... motivation was the single most powerful influence on the choice of language learning strategies" (p.294). This finding, along with those of other researchers in the field, points to the importance of designing ESL classes that are geared to the interests of the learner, which is one of the principles of the Québec competency-based curriculum, pertinence to the learner (Lasnier, 2000). Based on my experience, I think students are more likely to enjoy learning the language if they find the classes interesting, which does not necessarily mean that they have to be entertained but rather, that the classes need to meet their needs and focus on their interests.

Strategy Instruction and Its Implication for Language Teaching Methodology

Effects of strategy instruction.

The importance of strategy instruction is clearly expressed by Brown (2007) in his book, *Teaching by Principles: An Interactive Approach to Language Pedagogy*:

> In an era of communicative, interactive learner-centered teaching, SBI [strategies-based instruction] simply cannot be overlooked...One of your principal goals as an interactive language teacher is to equip your students with a sense of what successful language learners do to achieve success and to aid them in developing their own unique, individual pathways to success. Because by definition

> interaction is unrehearsed, mostly unplanned discourse, students need to have the necessary strategic competence to hold their own in the give and take of meaningful communication. (pp. 258-259)

Quantitative and qualitative data from Phase 2 of the current study were combined to investigate the issue of the effects of strategy instruction on students' strategy use. A strategy intervention model involving three gradual steps (intervention, first intermediate intervention, and second intermediate intervention) was applied in one intact class of 6th graders, while another similar class served as a control group. The SI lasted four months and seven sources of evidence were used to assess the effects. The results of this study corroborate the statement by Brown, above, that strategy instruction is crucial to language teaching methodology, and by Moon that children learning a second language "need to become aware of the strategies they are using and how effective they are" (p. 167).

The findings of the present investigation indicate that the children in this case study started out showing generally low strategy awareness when they were placed in a situation in which they needed to solve communication problems related to a lack of knowledge of the L2 required to successfully complete a specific oral interaction task. The majority of them chose to switch to their L1 or abandon the message by stopping the interaction or skipping the thought they wanted to express and moving on to something else. The results showed low pre-test scores on the oral interaction task.

Qualitative data from the initial strategy intervention indicate, however, that the children started to show some degree of emerging strategy awareness by identifying strategies they used during specific tasks and providing examples of how they used the strategies, along with the functional language they used in applying the strategies in these situations. The intent of this step of the intervention was to help them develop declarative and procedural knowledge of the instructed strategies, which were thought to facilitate oral interaction, and they achieved this, scaffolded by the teacher.

For the first intermediate intervention, the students were given a strategy wheel with the eighteen strategies from the MELS program on it. The intent of this step of the

intervention was to help students develop procedural and conditional knowledge of strategies, as they matched their strategies to task demands. After the second day of the first intermediate intervention, the students were able to name some of the strategies they had used, and they showed evidence of heightened consciousness by starting to experiment with new strategies that were written in student-friendly language on the strategy wheel, and also of keen curiosity by asking for explanations of others. The children were clearly starting to develop an active approach to their strategy use and by the end of the first intervention, quantitative data from a task-based questionnaire showed that they they were able to match their strategies to the demands of an oral interaction task.

For the second intermediate intervention, the children were given a strategy log with the eighteen strategies in the Québec curriculum, written in the same student-friendly language as on the strategy wheel. Two columns were added to each strategy log entry, in which students would check off strategies they planned to use for a task and, immediately following the task, those that they had actually used to perform the task. In the beginning, students discussed in their groups appropriate strategies for the task before checking off the ones they planned to use. Data from the videotape of the first day of this step of the intervention (the second intermediate intervention) showing a group of learners comprised of students from the embedded unit of analysis (Pascal, Jeanne, Cécile and Thomas) were particularly revealing in demonstrating how the group discussions helped the children develop a heightened awareness and an active approach to their strategy use. Pascal suggested checking off a particular strategy for the task and Jeanne asked him what that strategy meant. He could not explain it and was consequently criticized by Jeanne for suggesting that he would check off a strategy that he did not understand. In their continuted discussion about other strategies on the strategy log, another strategy was mentioned and Jeanne wondered out loud what it meant. Pascal, without being prompted, immediately went to check with his teacher what the strategy meant, and he reported back to his group. From that point onwards, he adopted a very

active approach to strategy use. This student, who started out as a low proficiency learner with a narrow range of strategies and ineffective strategy use in the pre-test of oral interaction, moved up two proficiency levels by the time of the post-test, at which point he drew from a wide range of strategies to successfully execute the oral interaction task. This group discussion following the strategy instruction seems to have been a turning point for Pascal. Similarly, several other children seemed to have benefitted from discussing their strategies with their peers, and also from hearing their peers give examples of the students' strategy use during the post-task reflections. In their strategy log entries, they reported increased use of the cooperation strategy, and as a whole, that they drew upon an increasingly wide range of strategies according to the needs of the task. The videotapes supported these claims in their six strategy log entries as they were able to provide specific examples and detailed information about their strategy use.

The quantitative data from the strategy log entries reveal that the children also modified the nature of their strategies according to the demands of the task. When they engaged in the complex, long-term project on animals, started on February 12, their strategy log entries showed that they drew upon a wider, more complex range of strategies, such as planning and resourcing, and added new strategies that were suited to the task, such as note-taking. The fact that the students were able to draw upon their personal repertoire of strategies, in addition to using the two recommended by the teacher, as the demands of this long-term project evolved, suggests that they were becoming adept at orchestrating their strategy use according to the demands of the task. This was again evident on March 19, when the telling time crossword was too difficult for the learners, even the most proficient ones. Quantitative data from the strategy log entry from that day (Strategy log 2b) show a complex range of strategies, pointing to the students' ability to manage the use of their strategies according to the task. The striking finding from this task is that the children persevered and did not resort to their L1 or to abandonment strategies, even when the task was clearly too difficult for their level. This shows the benefits of the strategy instruction for all proficiency levels because, when the

students were faced with a communication problem to solve, they drew upon their repertoire of strategies that had either been a focus of the instruction or among those discussed during the post-task reflections. An example of this was evident when at one point Marie, a high proficiency student from the embedded unit of analysis, exclaimed to her partner, Jeanne, a mid-proficiency student, "Oh, my God! What are we going to write?" but they persevered and completed the portions of the crossword that she and Jeanne were able to complete, by cooperating and using all resources available to them.

Strategy instruction was, therefore, shown to have positive effects on students' use of strategies to accomplish classroom tasks, mirroring the anecdotal effects I had observed in my experience as an ESL teacher at this level. Following the SI, the children in this study were able to select appropriate strategies for tasks and to orchestrate their strategy use, according to the demands of the task. This reflects behaviours attributed to high proficiency learners in earlier investigations (Vandergrift, 2003; Yamamori et al, 2003) but now being exhibited by the class as a whole, irrespective of the children's initial proficiency level.

The students' ability to select and manage their strategies in order to accomplish ESL tasks led to greater perseverance in using English in oral interaction (as seen in the videos of their classroom activities) and ultimately, to increased test scores on the oral interaction post-test measure. Several students changed proficiency levels, some moving up two proficiency levels. The qualitative field notes from the post-test of oral interaction revealed that, in a situation in which the students, regardless of proficiency level, did not know the words they wanted to say in the L2, they were able to draw upon a variety of strategies to function without recourse to their L1or to abandonment strategies. They approached the task with confidence and a sense of self-efficacy, showing that they felt equipped to accomplish the task. The control group, on the contrary, used much of the same vocabulary as the experimental group to execute the oral interaction task on the post-test but several of them continued to resort to the use of the L1 or to abandon the message when they did not know a word they wished to say. Although they used similar

vocabulary to accomplish the task, as they worked with similar pedagogical materials as the experimental group, their approach to the task was different from that of the experimental group. Seeing that both groups were similar in all respects, except for the strategy instruction, we can infer therefore, that SI had benefits for the children in the experimental group, irrespective of their initial proficiency level. This group of learners started out with 15 students in the low proficiency range and ended up with no one in the low proficiency range, and with some students moving up two proficiency levels. Students from the mid-proficiency range moved up to the high range, and those from the high proficiency range increased their scores.

Methods of conducting strategy instruction.

The strategy intervention model followed a hypothesized model that I had developed as a result of my 2008 pilot project and my lengthy experience conducting strategy instruction among children. It involved a gradual approach, starting with consciousness-raising, and focused on declarative and procedural knowledge of strategies for the initial intervention. This was followed by an intermediate intervention, focused on developing students' procedural and conditional knowledge of strategies, and finally a second intermediate intervention which recycled the focus on procedural knowledge and led students to greater autonomy by having them discuss, set goals for their strategy use depending on the task, and record on their strategy log immediately afterwards the strategies they had actually used for the task. The children also reflected on their strategies in post-task reflections with the class throughout the three steps of the intervention.

The intervention process also evolved from teacher support in strategy use in the beginning, to peer support as the children discussed possible strategies for tasks in small groups, and finally to autonomous choices by the students. The data from the videotape on the last day of the SI in March shows that the teacher explained the task and the children, on their own, checked off the strategies they planned to use even before being

instructed to do so by the teacher. When she told them to check off the strategies they planned to use, we could hear children responding, "It's done!" This autonomous action on the part of the students caught the teacher off-guard, and she responded, "Check them again!" The students had become accustomed to the routine, however, and were very aware of their strategy use. This was evident from their explanations of their strategies during the post-task reflections, when they were able to engage in meaningful reflections on their strategy use, volunteering examples and describing how the strategies helped them execute tasks. In short, the children had taken charge of their strategy use and, as Cohen (1998) states, "... the ultimate goal of strategy training is to empower students by allowing them to take control of the learning process" (p. 70). This was also evident in the way some of the children even started applying the strategies in their own unique way, as my interview with Thomas, a low proficiency student, during the animal project shows. Even though he misunderstood the precise meaning of some of the strategies, he had sufficient comprehension of most of them and of the process to achieve success and, as suggested by Brown (2007) above, he had developed his own unique path to success. In his post-test of oral interaction, he moved up to the mid-proficiency level.

The method of strategy instruction, which involved presenting the strategies, explaining them, providing many practice opportunities to the children to use them, and having them reflect on them afterwards is a method that has wide support in the field of strategy instruction (Oxford, 1990). This method was effective in teaching the children how to use the strategies, and the numerous practice opportunities afforded them encouraged them to eventually apply these strategies autonomously to their classroom tasks. At one point early in the first intermediate intervention, the teacher remarked to me that she thought the children understood the strategies and wondered if she needed to continue reinforcing them. I explained to her that they would understand how to use them after a relatively short while but needed many practice opportunities before they actually applied them on their own. The outcome of the second intermediate intervention shows that they achieved this goal. It would have been interesting to see how much sooner they

could have achieved the goal if there had not been a month-long holiday break from the strategy instruction.

The actual strategy intervention model (see Figure 14: Post-intervention model) matched and expanded upon the hypothesized intervention model (Figure 13). The procedure involved a series of interventions and outcomes, which led to the ultimate outcome of a statistically significant increase in ESL oral interaction score from Time 1 (M=1.59, SD = .75) to Time 2 (M=2.56, SD = .51); $p \leq .0005$. This prompted me to infer a possible preliminary qualitative causal path from strategy instruction to strategy use, to success on ESL oral interaction tasks.

Language of instruction.

Because of the concern for applying strategy instruction that did not detract from L2 learning, it was important that the SI be conducted in English, despite the learners' low level of English proficiency. I introduced the teacher to simple techniques for presenting the strategies and provided her with visuals that helped her to explain them in English. With the strategy posters, she was able to break the strategies down to their component parts in order to support her explanations. She also taught simultaneously the functional language to use with the strategies as she demonstrated them. The SI therefore, provided the students with English input, such as English expressions to ask for clarification and to stall for time, which they used as they employed the strategies and as they reported on them during the post-task reflections. The SI was integrated into the L2 pedagogical tasks, rather than being taught in a separate how-to-learn exercise. As a result, this method contributed to the students' development of their oral interaction competency, rather than taking time away from their English content instruction.

Strategy Assessment

In order to choose appropriate strategy assessment methods for this study, I first considered the purpose and nature of the assessment, and then chose corresponding appropriate strategy assessment methods. The purpose of Phase 1, the survey study, was to get a broad overview of strategy use among children from six classes of 6th graders. A questionnaire was therefore my method of choice. The Children's SILL version 2 was the instrument I used. Administration time was 30 minutes, as with my previous Children's SILL studies, and it was efficient and simple to use. Even though version 2 was modified to reflect the strategies in the Québec curriculum, it bore sufficient resemblance to the Children's SILL version 1 that it allowed me to compare findings from this study across the six Children's SILL studies that have been conducted thus far in three different countries (Gunning, 1997, 2008, 2010; Jimenez-Garrido, 2010; Lan, 2004; Lan & Oxford, 2003). The insight from this comparison led to some conclusions about similarities in children's patterns of strategy use. As mentioned above, the affective strategy category turned out to be the first or second choice across these six investigations, underscoring its importance to children across cultures, and over time because it was also the second choice of the participants in my 1997 study. This is different from many studies of adult and adolescent strategies, which found the cognitive category to be the most used (Nyikos & Oxford, 1993; O'Malley, Chamot, Stewner-Manzanares, Kupper & Russo, 1985a; Oxford & Nyikos, 1989). In the six Children's SILL studies mentioned above, strategies from the cognitive category were not generally widely used, except by the high proficiency learners in the current study. Commonalities were also found with Su's (2002) Taiwanese study of children's strategies using a modified version of Oxford's original SILL (1990). In that study, as in the investigations by Lan and Oxford (2003) and Lan (2004), children's liking of English was the strongest predictor of strategy use. In the current study, children's liking of English was also significantly related to their use of strategies, regardless of gender, proficiency, or program type. These comparisons are valuable for teachers, researchers and program

developers as they provide insight into children's patterns of strategy use, which are different in some ways from the patterns of strategy use of adults and adolescents.

The general strategy questionnaire was, therefore, an appropriate choice for answering research question 1, because it suited the nature and purpose of Phase 1 of the investigation. Needless to say, a general questionnaire has limitations, which will be discussed in the next chapter, so the purpose and nature of Phase 2 of this investigation dictated other choices.

Phase 2 was designed to answer research question 2, dealing with the effects of strategy instruction on students' strategy use, and research question 3, which investigated the relationships between strategy use and success on oral interaction tasks. The purpose of this investigation was to study the effects of the implementation of a strategy instruction phase which respected the teaching of strategies prescribed by the Québec curriculum. A case study of a class, involving a strategy intervention model extended over a period of time, was therefore designed. As the nature of this investigation involved documentation of the learning process over time for a group of learners, ongoing assessment was chosen. In order to add reliability and rigour to the findings, seven sources of evidence, including assessment for learning and assessment of learning, involving self-report and other report measures, were triangulated to corroborate the findings. Each of these will now be discussed.

1. *Oral interaction achievement measure for the pre-and post-tests of language proficiency.* This measure involved two similar information gap activities that had previously been used in a test of oral interaction proficiency by White and Turner (2005), and by me in my 2008 pilot study. The original rating scale used by White and Turner was replaced by an oral interaction rubric to reflect the evaluation criteria related to the oral interaction competency in the Québec Education Program. These two tests were efficient as they were not long or complicated to administer, so I was able to use the first one in Phase 1 as a common measure to establish proficiency levels across six classes, instead of relying on teacher-rated proficiency, which could

have varied from one school to the next. This test also served as a pre-test for Phase 2. The second test, which served as a post-test for Phase 2, had similar characteristics as the first, but was not identical so the children got the impression that it was a new activity, which helped me avoid the pitfall of earlier research in using the same measure for pre- and post-test with children of this age (Simard, 2004). In her diary study of 6th graders from Québec, Simard discovered that the children became bored with the testing method, which required them to do the same test on three different occasions. The tests used in this study had face validity as the children were accustomed to doing oral interaction activities of this sort, so they would perceive them to be measures of oral interaction. The oral interaction rubric added construct validity to the assessment as it accurately reflected competency 1 of the current Québec curriculum. The MELS videos representing the exemplars of the competency levels also helped prepare the teacher participants in this study to come to a common understanding of the rating scale used on the rubric. The fact that they helped me to assess the first five pairs of students from their classes and that we discussed these results and arrived at a consensus before I proceeded to assess the other pairs on my own, added rater reliability to the process.

2. *General questionnaire:* The Children's SILL, discussed above, served as a pre- and post-test measure of the children's general strategy use. The findings were quantifiable using SPSS, which made comparisons of strategy use from pre- test to post-test possible.
3. *Eight video recordings*. The video recordings of classroom proceedings as participants received strategy instruction, executed classroom tasks and engaged in post-task reflections of their strategy use were invaluable in supporting my field notes and allowing me to go back and check details, the scope of which was too vast to be covered accurately by field notes alone. Video, as opposed to audio recordings, helped me to capture facial expressions, such as when the children were struggling, but persevering to do the challenging time crossword task. The HyperResearch

software package used to code the videos made it possible to analyze large quantities of data from eight video recordings, tag important exchanges for quick and frequent reviewing, and therefore do selected, pertinent partial transcriptions to support the evidence, rather than having to transcribe all of the class proceedings over the course of four months. Transcribing all of the class proceedings would have been a daunting task and an inefficient use of time, as this would have involved transcriptions of the teacher enforcing discipline, making jokes with the children, or other teacher-to-student, or student-to-student, interaction inherent in day-to-day classroom proceedings that were not pertinent to this investigation.

4. *Observation and qualitative field notes.* Observation of the classroom proceedings allowed me to record traces of students' strategy use when I was not videotaping, or important impromptu exchanges after I had turned off the video camera, such as the one that occurred between the teacher and a student, Robert, on Day 2 of the first intermediate intervention. He showed his curiosity about the strategy skimming by asking his teacher if he was skimming when he looked over the game board quickly to get an overview of the clowns on it. This was totally unplanned, and would have been missed if I had relied on videotape only, and if I had not established a system for writing down field notes of my observations. As other researchers have pointed out, however, observation of classroom proceedings alone as a method of strategy assessment is inefficient because some strategies are observable, whereas others are not (Cohen, 1997; Macaro, 2001).
5. *A task-based questionnaire.* The questionnaire based on an oral interaction task was administered at the end of the first intermediate intervention in mid-January to quantitatively assess the strategies the children had applied to the task. Administration time was very short (5 minutes) as was the case in my two previous pilot studies in 2007 and 2008. The results were easily quantifiable as a whole and by proficiency, using the Excel software, which also produced graphic representations of these

results. It was originally intended to be used as the ongoing assessment tool of choice but was replaced by the strategy log, which provided richer data.

6. *The strategy log.* This was originally intended as a teaching tool but upon noting its potential as an assessment tool, after using it for the first time, I re-assessed my tools and changed from using the task-based questionnaires for interim strategy assessment to using the strategy log. It provided a seamless link among teaching, learning and assessment. The teacher used it as a teaching tool and the children used it as a learning tool during their group discussions of appropriate strategies to use for the task, and in asking questions about strategies that were on the log but not included in the instruction. It also served as a formative assessment tool when the students used it to report their strategies during the post-task reflections. This approach became assessment for learning; i.e. teaching, learning and assessment combined to lead to greater effectiveness and autonomy.

In addition, the strategy log and post-task reflections led to increased accountability as the children were required to support claims with precise examples, thereby showing evidence of increased understanding of the strategies. Last but not least, the strategy log provided traces of student strategy use that I could quantify by proficiency using Excel 'Count-ifs' statistical function. Seeing that the students completed the strategy log entries six times, I could use this evidence to track the evolution of their strategy use, and this was represented graphically by the Excel software. I was then able to look for supporting data on the video recordings for tagging and coding, using the HyperResearch software. These segments of the videotapes were then used for partial transcriptions, either of the student discussions when setting goals regarding their strategy use and recording their goal setting on their strategy log, or of their reporting of their strategy use during the post-task reflections. The strategy log matched the age and context of the participants as the 18 strategies from the Québec Education Program were written on it in student-friendly language, and it had face validity because the students used it for learning and were,

therefore, at least familiar with most of the strategies written on it. Consequently, they perceived it to assess what it was intended to assess.

The strategy log was an adaptation for children of a strategy instruction and assessment method used by Nakatani (2005) with adults. This adaptation for children made the process simple and efficient. Post-task reflections and the noting down of strategies on a grid had been used in a previous investigation of listening strategy instruction among 4th graders learning French as a second language (Vandergrift, 2002). This study provided a foundation for the post-task reflection process used in the present study, but the combination of the strategy log and videotaping added rigour to the current investigation.

7. *Interviews.* In-class interviews were conducted with selected students from the embedded unit of analysis. This method was chosen over the stimulated retrospective recall used in my 2008 pilot study because of the practicality of the in-class interviews. In my pilot study, the children had a 15-minute reading period immediately following their ESL period, so it was easy to obtain permission to take them out of class for the stimulated retrospective recall. In the current investigation this was impractical as an assessment method because the teacher was not favourable to the idea of having the children leave the class for fifteen minutes as they would miss ESL content, which she would feel obliged to have them make up. The in-class interviews yielded useful information because they took place while the students were working and they could explain their strategies to me, using immediate tangible examples. For example, when Thomas wanted to explain his idiosyncratic use of risk-taking, he picked up a drawing of the animal he had created and said, "This animal is a risk" and then he reached for a picture of a real animal and said, "This animal is not a risk." His partner then helped out by explaining to me that creating an animal is more difficult than researching an animal as the latter involved copying the English words. The fact that the in-class interviews were videotaped allowed me to view them several times to capture the essence of the children's strategy use.

The strategy assessment methods used for this study took into account the advantages of methods used in previous research and tried to address some of the weaknesses. The various sources of evidence served to counter-balance one another, in order to produce strategy research with robust reliability. Rival explanations were examined and the data carefully screened for evidence that might support explanations other than the effect of strategy training and student strategy use on the outcomes. The data supported the findings reported.

Culturally adapted strategy instruction, assessment and research.

The instruction, assessment and research were adapted for children learning ESL as a compulsory subject in a Québec classroom. The strategy instruction was integrated into the regular curriculum, and the teacher was supported by me either through the tools I provided her, such as colourful strategy posters, or my occasional help, such as during the class after the holiday when she requested my assistance in jump-starting the strategy instruction. The strategy instruction was presented through simple demonstrations, using techniques the children could relate to, such as the equation method (e.g. Stop + Think = Stall for time) or the teacher thinking aloud or providing examples of strategy use. They were accustomed to working in small groups, so the strategy instruction also involved small group discussions of strategies.

From my experience teaching children similar to this research population, I was able to adapt the teaching materials and evaluation tools to children, taking into account their age and nature. For example, I knew that perception would be important at their age, as Simard (2004) pointed out in her diary study among 6th graders from Québec. It was therefore crucial for the children to perceive the strategy instruction as being important to their learning. I thought that if the teacher and researcher placed value on it, the children would also. Consequently, I gave each child their very own strategy kit consisting of a plasticized version of a colourful strategy wheel and marker in a plastic pouch that fitted perfectly in their binders. They received it with great enthusiasm and carefully placed it

in their binders. It was clear that they cherished it, which set the tone for their positive attitude towards the strategy instruction.

The assessment methods were also adapted to the age and context of the participants. Gu et al (2005) pointed out the difficulty of using traditional strategy assessment methods, such as think-aloud protocols, with children. Lan (2004) also thought it important to make assessment methods culturally adapted as she embarked upon a detailed adaptation process, involving a committee of experts and practitioners in the field, to make the original Children's SILL (Gunning 1997) culturally adapted to Taiwanese children, and she put the first version through extensive field-testing (Lan & Oxford, 2003) and developed a further re-adaptation resulting from the field-testing before using the final Taiwanese Children's SILL in her 2004 study. In the current investigation, there was an intricate link among teaching, learning and assessment, reflecting the spirit of the Québec curriculum and a relationship among these three processes working in tandem that Colby-Kelly and Turner (2007) refer to as an "assessment bridge".

This chapter presented a discussion of the results of Phases 1 and 2 of the present study. Chapter 7 will now present the conclusions, including a summary of the findings, the implications, limitations and recommendations for future research and the contribution of the study to the field.

Chapter 7: Conclusions

This chapter will present the conclusions of the present study, including a summary of the findings, the implications, limitations and recommendations for future research, and the contribution of the study to the field.

Summary of the Findings

This study, which sought to look at children's strategies through the lens of an authentic context, was conducted in the context of the 6th grade Québec ESL classroom, where students study English as a required subject following a prescribed competency-based curriculum that integrates eighteen strategies into the ESL program. The research questions aimed to: 1) describe patterns of strategy use among children from this population; 2) investigate the effects of strategy instruction and student strategy use; and 3) probe the relationship between strategy use and success on oral interaction classroom tasks. The study was conducted in two phases. Phase 1, which answered research question 1, was a survey study among children from six classes (n = 138) describing their patterns of strategy use. Phase 2, which answered research questions 2 and 3, was a strategy intervention study conducted over a four-month period with one class of children from a 6th grade intensive class, which represented a subset of the general population. A quasi-experimental component was added involving a similar class of children from another 6th grade intensive class, also a subset of the general population, to support the findings of research question 3.

Children's patterns of strategy use.

The overall mean strategy use of this group of learners (no intervention) was 2.87/SD=.41, representing moderate strategy use. The pattern of strategy use by category was Affective 3.18/SD=.58; Compensatory 3.00/SD=.49; Metacognitive 2.98/SD=.52; Cognitive 2.79/SD=.45; Memory 2.66/SD=.61; Social 2.63/SD=.61. The five most used

individual strategies overall were, in order: *When someone speaks to me in English, I listen attentively* (metacognitive); *I make an effort to understand the sense of what I read or what I hear without translating word for word* (cognitive); *I find similarities between French and English (example: table/table)* (cognitive); *When I don't know a word in English, I ask for help* (compensatory); *I am willing to take risks by guessing the meaning of a word or phrase, and by speaking English even when I am afraid of making mistakes* (affective). There were no significant main effects for gender but proficiency played a role in students' strategy choice; high proficiency learners used significantly more strategies than low proficiency learners, particularly with regard to strategies from the affective and cognitive categories. A strong relationship emerged between the role of the children's liking of English (the first step towards motivation) and their strategy use. This was true regardless of gender, proficiency or program type.

The impact of strategy instruction on children's strategy use.

The strategy intervention, developed from a hypothesized SI model, aimed to improve the children's strategy awareness, help them develop their strategy use, and lead them to autonomous choice of strategies, which in turn, would have an impact on their success on ESL oral interaction tasks. The effects of the intervention were assessed using seven sources of evidence. Findings indicate that: a) the strategy instruction had the expected outcome at each step of the intervention, and I expanded upon the model because the children had achieved the objective before the end of the planned intervention period; and b) regardless of proficiency level, the children benefitted from the strategy intervention, which helped them develop a wider repertoire of strategies from which to draw in accomplishing ESL tasks.

The relationship between strategy use and success on ESL interaction tasks.

The children learnt to use strategies, to match them to the demands of the task, and to use them autonomously, which led to higher results on the post-test of oral

interaction competency. The improvements of the experimental group from pre- to post-test were statistically significant, as were comparison pre- and post-test results between the experimental and control groups.

Implications of the Investigation

A mixed methods approach using a triangulation design was used for this investigation. Triangulation of the above-mentioned results provides us with an understanding of children's learning strategy use and the effects of strategy instruction on success in ESL in an authentic context, namely the third cycle of the public school system in Québec. From the general patterns of strategy use uncovered in Phase 1, a pattern emerged that is similar in some respects to other international studies of children's strategy use. Contrasts can be drawn between patterns of children's strategy use and those of adults and adolescents. This has implications for teachers, researchers, and curriculum developers of children's ESL programs including a strategy component. The significant differences between high and low proficiency learners also point to a need for strategy instruction aimed at equipping all learners with the tools employed by successful learners, as Brown (2007) suggests. This could include student-to-student discussion and sharing of examples of strategy use for particular tasks, as was evidenced by the SI model in Phase 2.

The SI model in Phase 2 helped the children to develop strategy awareness and use, which in turn facilitated their progress from the behaviours of switching to L1 or abandoning the message when they did not know the words they wanted to say in English, to using strategies to persevere and succeed in executing ESL tasks in English only. This indicates the importance of teaching children how to learn (Moon, 2005) and equipping children with the tools to succeed which, instead of taking time away from ESL content instruction, enhanced students' oral interaction competency.

In effect, the aim of this SI was to create a strategy intervention model that was practical, and efficient, that teachers would be inclined to implement, and which would

not take time away from the teaching of ESL content. This concern of teachers regarding the ESL content was eloquently expressed by Cunningham-Florez (2000), as a teacher, when she decided to embark upon an action-research project that involved identifying the strategies used by her beginner learners:

> I was very concerned about the impact that this plan would have on the time and concentration I devoted to my learners and their learning. I did not want the few hours per week that we spent together to be diminished by the distraction of my research... Therefore, I tried to select methods that I could use while teaching. (p. 4)

Practical, classroom-based research responds to fears by practitioners about taking time away from ESL content instruction, especially those with few hours of ESL instruction per week. The social-interaction model developed in this investigation, ensuring that the steps in the SI were decided upon by the researcher and the practitioner and that the SI was woven into the teacher's lesson plans, added a level of practicality to the SI that teachers will, hopefully, be inclined to adopt.

The research findings of this study match my anecdotal teaching experience which gave me the impression that SI helped my students, who received from one to two hours of ESL instruction per week only, to take charge of their learning and gain in self-efficacy and motivation, thereby maximizing their learning, in spite of the short time devoted to ESL in the school schedule. This reiterated the finding by Chen (2007) with adult learners, that strategy instruction had an impact on learning processes, not just on learning outcomes related to content (product).

Implications of the Investigation for the Québec Context

Phase 1 of the study indicates the importance of teaching the cognitive strategies in the ESL program, which do not come naturally to children. The study uncovered a significant difference in use of cognitive strategies between high and low proficiency

learners, the former using statistically significantly more cognitive strategies than their low proficiency counterparts.

The relationship between the children's 'liking of English' and their strategy use was also found to be noteworthy. Teachers from Québec could try to generate a positive attitude towards ESL by focusing, for example, on one of the principles of the competency-based program, namely, pertinence to the learner. This involves a need to plan classes geared to the students' interests and needs, and activities that engage the learners. An idea for achieving this with large numbers of students would perhaps be to provide some element of student choice when class projects are assigned. In the experimental study, the simple choice of preparing a project on a real or imaginary animal appealed to Thomas' creativity and challenged him to use resources in order to find the English words for describing his imaginary animal.

Phase 2 of the present study investigated the effects of the implementation of the Québec Education Program's integration of the strategies into the curriculum. The results indicate that the integration of some of these strategies had a statistically significant impact on the children's development of competency 1, *to interact orally in English.* This means that the time spent on the SI process equips the children to succeed with ESL tasks, rather than detracting from their success in ESL. If SI involving just a few of the prescribed strategies, for only a four month investigation, could show such significant effects, the implementation of all the strategies in the curriculum over the period of the entire elementary and secondary school careers of the students would no doubt furnish them with valuable learning skills, the scope of which would reach far beyond the few hours afforded to ESL in the school schedule.

Limitations and Recommendations for Future Research

The relationship between qualitative and quantitative methods is an advantage of this study. There are some limitations, however, that should be considered. First, In Phase 1 the categories of the Likert scale were treated as interval data for the analyses of

the memory, cognitive, compensatory, metacognitive, affective and social strategy categories. There is an ongoing discussion in the literature as to such treatment. Some may view this as controversial and therefore consider this a potential limitation. According to others, however, it is common practice among researchers in the behavioural sciences (Welkowitz, Cohen & Ewen, 2006).

Second, although the findings of this study are significant in the areas already mentioned, Phase 1 and Phase 2 of the study were conducted in only one area of Québec; that is, Montreal's South Shore, where the population is fairly homogenous in terms of socio-linguistic demographics. These findings could possibly have produced different results in more multi-lingual, multi-cultural areas of Montreal or elsewhere.

The findings of Phase 1 turned out to be similar in some respects with the strategy use patterns of children from other countries and areas, so it is perhaps fair to assume that they might also be similar to a larger population of children internationally. Nevertheless, the possibility of drawing comparisons between the results of Phase 2 and other populations would need further study. The SI was conducted with one 40% intensive class that received nine hours of English instruction per week. Efforts were made to conduct a parallel study with a group of core English learners but the task of finding a matching core group with a similar profile made the results difficult to interpret. Also, the time needed to measure the effects of the SI in a core group that receives only one hour of English instruction per week would be much greater than the scope of this thesis allowed. Although my own experience conducting SI with core groups of ESL learners at this level provides anecdotal evidence that the results of the present SI can be replicated in core groups, but over a longer period of time, this would need to be verified by empirical research.

The results of Phase 2 of this study led me to trace a possible preliminary, qualitative path from strategy instruction, to student strategy use, to success on oral interaction tasks. Future quantitative path analysis research is, however, needed to solidify this causal path.

In areas where strategies are integrated into the curriculum and training in how to conduct strategy instruction is available to teachers, as is the case in Québec, there are many opportunities for future research in this field. The ESL curriculum in place prescribes the teaching and assessment of strategies, and cross-curricular collaboration is a distinct possibility as strategies are an integral part of the entire school curriculum. In addition, some researchers have raised the issue that "it may not be practical to prepare all language teachers to teach strategies" (Gu, 1996, in Chamot, 2004, p. 123). In Québec, however, this matter has been dealt with by various measures taken by the MELS to train ESL teachers to conduct strategy instruction, such as a teacher strategy training module (Brook, Gunning, Lahey, & Lassire, 2002), and to provide them with practical tools, such as approved textbooks (Gunning, Lalonde, Watts, & Schinck 2001, 2002, 2003, 2004) to conduct strategy instruction in the elementary ESL class. Oxford suggests that "It is possible that the infusion of strategies and strategy instruction into textbooks and course materials is the most common mode by which learners obtain strategy assistance at present, though no research has been done on this important topic" (personal communication, 2010). The Québec competency-based curriculum in place also favours task-based strategy instruction, which has hardly been researched to date. In addition, it requires the assessment of strategies, which has rarely been studied with children, and research in this area has sometimes been criticized for lack of rigour. Finally, further studies involving strategy instruction among children are sorely needed in order to see if the present or other strategy intervention models would produce similar effects in other contexts.

Contributions of the Study to the Field

This study contributes to the field of learning strategies in its descriptions of children's L2 strategies, an area that has received more attention since my pioneer 1997 study, but which remains under-researched. Comparisons across other international

Children's SILL studies and other studies describing children's strategies are valuable in providing insight into children's patterns of L2 strategy use.

The strategy intervention model developed and tested empirically in this study is a valuable contribution to the fields of strategy instruction and language teaching methodology among children. It was based on theories of metacognition, involving declarative, procedural, and conditional knowledge of strategies, and grounded by many years of practical experience in conducting SI among children similar to this research population. In addition, it involved a practical application of the theory of social interaction, whereby the researcher developed the intervention with the collaboration of the practitioner (Yin, 2009), which was invaluable in making the research practical and which, to my knowledge, represents a first in the field of strategy instruction among children. Besides the practicality of this approach, the flexibility of the research design, seeing that it was adjusted along the process to fit the needs of the practitioner and the participants, allowed for a perfect match among the research methods, the practitioner and the participants, thereby contributing to the effectiveness the approach, as suggested by Yin (2009). The results of L2 strategy instruction research are not always conclusive, perhaps because there may be a mismatch between the research methods and the participants or because autonomy in strategy use takes a long time to develop. This four-month study, geared towards the needs of the participants, showed statistically significant results.

Last, but surely not least, I believe this study provides valuable insight into strategy assessment among children who, so far, have sometimes been obliged to adapt to assessment methods designed for adults and adolescents. The strategy assessment methods used in this investigation were designed for children, field-tested among elementary school learners, and modified during the course of this study to reflect the teaching and the learning processes among these children. The theoretical framework for the strategy assessment was based on principles of CBA, with a sociocultural approach, in which stakeholders such as the teacher, students, and researcher worked together and

used assessment practices congruent with the context of the study. This approach supported student learning through ongoing feedback, student to student, and teacher to student reflection. Turner (forthcoming) states that CBA's time as a paradigm has arrived. In calling for the formulation of a research agenda, she proposes investigation of "the characteristics of assessment methods (tasks and procedures) that appear to provide a context for learning" and "the evidence that these interventions bring about change in learning". The context specific, socially-constructed CBA strategy assessment methods employed in this study begin to address some of these issues.

The instruments used will contribute to a bank of practical research tools for children from which other researchers and teachers can benefit. Up until now, there has been a gap in this area of strategy assessment among children. The Children's SILL, originally adapted for my 1997 study from Oxford's SILL (1990) for adults and adolescents, has already been adopted or adapted by other international researchers. The version used this study was, once again, efficient in providing a snapshot of children's general strategy use. The task-based questionnaire related to an oral interaction task, which was used at the end of the first intermediate intervention to assess the children's use of strategies with regard to a particular task, took only five minutes to administer, making it a practical instrument for teachers and researchers. As the review of the literature shows, task-based questionnaires are useful in assessing learners' specific strategy use because they have the benefit of being completed immediately after a task, which makes learners more likely to accurately report their strategies than might be the case with a general questionnaire that is not linked to a specific task. Oxford et al. (2004) and Chamot (2005) called for more strategy research using task-based questionnaires. The one devised for children and used in this study responds to this need. A third instrument, the strategy log, which started out as a strategy instruction tool in this study, ended up becoming a prime assessment instrument in documenting the children's strategy use during the intervention. The procedure involving goal setting of strategy use immediately prior to a task, and assessing the strategies actually used immediately

following a task, was adapted for children from Nakatani's (2005) study with adult Japanese learners. In the current research, the strategy log for children involved a checklist whereby the children would simply check off prior to a task the strategies they planned to use and immediately following the task those that they actually used. In addition, the teacher conducted post-task reflections in which she asked the children to use their strategy logs and report the strategies they planned to use and those they actually used, insisting on accountability by requiring examples of how they used the strategies, including the English functional language employed. The whole process was videotaped, allowing me to collect qualitative data to support the quantitative data gathered from the strategy logs. The three research instruments mentioned above (Children's SILL, task-based questionnaire and strategy log) were also related in that parallel items referring to the children's strategy use could be found in all three, and these were linked to the prescribed curriculum (see Appendix I). To my knowledge this assessment procedure is an innovation in strategy research and assessment involving children's L2 strategies.

The mixed methods approach used for the data analysis allowed for "[s]ome informal 'cross-talk' between strands ... during the analysis" (Teddlie and Tashakkori, 2009, p. 266). The mixing of qualitative and quantitative data provided a broader picture of the process of strategy development among the children, rather than simply a narrow view of the outcome (product). It allowed me, for example, to track the strategy use of the children who improved their proficiency levels from pre-test to post-test, and to look at the strategy use among particular children from the embedded unit of analysis. An example of this was the strategy development of Pascal, who started out as a low proficiency learner whose strategy use in the pre-test was limited to asking for help in L1 or switching to L1 when he did not know a word he wanted to say in English, and who ended up as a high proficiency learner at the time of the post-test. The qualitative data from the video recording showed a vivid moment of his developing strategy awareness when a fellow student made it clear to him that he should understand the strategies he was checking off on the strategy log. The various quantitative measures provided

evidence of his strategy use and the field notes during the ESL post-test provided insight into the outcome of his autonomous strategy use, which facilitated his oral interaction as he persevered in English, asking for clarification and maintaining the oral interaction, and ultimately succeeding with the task.

The mixing of qualitative and quantitative data from Phase 1 and Phase 2 permitted me to make overall inferences about the children's strategy use based on both types of data. As Teddlie and Tashakkori (2009) state:

> Inferences made on the basis of the results from each strand are then integrated or synthesized to form meta-inferences at the end of the study. These meta-inferences are conclusions generated through an integration of the inferences that were obtained from both strands of the study. (p. 266)

In this investigation, triangulation of several sources of evidence added rigour to the strategy assessment, and provided rich insight into how children develop their strategy awareness and evolve from the declarative knowledge of strategies, to procedural knowledge, to conditional knowledge, and ultimately to make the strategies their own as they use them in idiosyncratic ways while taking charge of their learning. Indeed, this contributed to a unique glimpse into children's strategies through the lens of an authentic context.

This thesis began the process of filling research gaps in the literature related to strategy use, strategy instruction and its influence on ESL oral interaction task success among children. The strategy assessment techniques and instruments, and the combination of a case study with a quasi-experimental component, contributed to a mixed methods analysis that allowed me to infer from the integration of the qualitative and quantitative data that the SI helped raise the children's consciousness about strategies, and that the children's strategy use facilitated their English oral interaction. I look forward to future empirical research that will replicate and expand upon these findings, in order to enrich the literature on L2 strategies among children.

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Appendices

Appendix A. THE CHILDREN'S SILL (Gunning, 1997): English version

Instructions: Read the statements, then choose an answer for each statement:

1. Never or almost never
2. Usually not
3. Sometimes
4. Often
5. Always or almost always.

Example. Statement: I try to find opportunities outside of school (sports, activities, etc.) to practice English. Answer __4__

N.B. There are no wrong answers. We just want to know about the way in which you learn English.

Part A

1. I associate new English words with what I already know.
2. I associate the sound of a new English word with a sound or a word that I already know.
3. I mime words to remember them.
4. I review often.

Part B

5. I often repeat new expressions that I have learned.
6. When I speak in English, I try to imitate English-speaking people, in order to pronounce the words correctly.
7. I often practice English alphabet sounds.
8. I often watch TV in English or I listen to English radio.
9. I read books in English or I work with English computer programs.
10. I try to find opportunities outside of school (sports, activities, etc.) to practice my English.
11. I practice what I learn with my parents.
12. I find similarities between French and English (example: table/table).
13. I make an effort to understand the sense of what I read or what I hear without translating word for word.
14. I try to discover grammar rules of the English language.

Part C

15. When I hear a new word in English, I try to guess the meaning by looking at the rest of the sentence.
16. When I have trouble making myself understood in English, I use gestures to express what I want to say.
17. When I don't know a word in English, I ask for help.
18. When I can't find an expression in English, I try to find another way to say what I mean (synonym, description, etc.).

Part D

19. I organize my time to study English (not just when there is a test).
20. I look for occasions to speak English.
21. When someone speaks to me in English, I listen attentively.
22. I evaluate my progress in learning English.
23. I analyze the errors I have made and try not to repeat them.

Part E

24. Whenever I am stressed by the idea of speaking English, I try to relax.
25. I am ready to take risks: guess the meaning of a word or sentence, try to speak English even if I make mistakes.
26. When I succeed, I congratulate myself.

Part F

27. If I don't understand what is said to me in English, I ask the person to speak slowly, to repeat, or to clarify what has been said.
28. I work with my classmates to practice my English.
29. I try to find out about English culture.

ANSWER SHEET

Name_____

Date:_____

Native language_____ Age_____

Write your answer for each statement (the 1 2, 3, 4 or 5) beside the number of the statement.

Calculate the total for each column and write the result at the bottom of each column.

Part A	Part B	Part C	Part D	Part E	Part F	
I._____ 2._____ 3._____ 4._____ 5._____	6.___ 7.___ 8.___ 9.___ 10.__ 11.__ 12__ 13.__ 14.__ 15.__	l6.__ 17.__ 18.__ 19.__	20.___ 21.___ 22.___ 23.___ 24.___	25.__ 26.__ 27.__	28.__ 29.__ 30.__	
Total_	Total_	Total_	Total_	Total_	Total_	
+ 5 =	+ 10 =	+ 4 =	+ 5 =	+ 3 =	+ 3 =	30 =

Adaptation of the **Strategy Inventory for Language Learning (SILL)** developed in 1989 by Rebecca Oxford; adapted for Francophone children in 1997 by Pamela Gunning.

Appendix B. Questionnaire sur les stratégies d'apprentissage

THE CHILDREN'S SILL 2 (Version used in the present study)

Version pour le Programme de formation de l'école québécoise (2001)

Consignes : Lis les affirmations ci-dessous et ensuite choisis une réponse pour chacune des affirmations.

1. Entièrement en désaccord
2. Rarement en accord
3. Souvent en accord
4. Entièrement en accord

Exemple : Affirmation : J'essaie de trouver des occasions en dehors de l'école (sports, etc.) pour pratiquer mon anglais. Réponse __4__

N.B. Il n'y a pas de mauvaises réponses. On cherche seulement à connaître de quelle façon tu apprends l'anglais.

Partie A

1. Je fais des liens entre ce que je sais déjà et les expressions ou les mots nouveaux que j'apprends en anglais.
2. Je mime des mots pour m'en rappeler. (Exemple : Je touche mes orteils pour me rappeler du mot *toes.)*
3. Je révise en dehors de la classe ce que j'apprends en classe.

Partie B

4. Je répète ou j'écris à plusieurs reprises le même mot en anglais afin de m'aider à m'en rappeler.
5. Lorsque je lis un texte en anglais, je le lis d'abord rapidement (je le survole) afin d'en avoir une idée générale et ensuite je le relis plus lentement et plus attentivement.
6. Je regarde la télévision ou j'écoute la radio en anglais.
7. Je lis des livres en anglais.
8. Lorsque j'utilise l'ordinateur, je fais des efforts pour le faire en anglais (Internet, jeux, logiciels, etc.).

9. J'essaie de trouver des occasions en dehors de l'école (sports, activités, etc.) pour pratiquer l'anglais.
10. Je pratique ce que j'apprends avec mes parents.
11. Je trouve les ressemblances entre le français et l'anglais (exemple : table/table).
12. Je fais un effort pour comprendre le sens de ce que je lis ou de ce que j'écoute sans chercher à faire une traduction mot à mot.
13. Je cherche des informations spécifiques lorsque j'écoute ou lorsque je lis un texte.
14. J'utilise des ressources (dictionnaires, banque de mots, affiches dans ma classe, etc.) pour m'aider en anglais.
15. Lorsque j'écoute ou lorsque je lis un texte, je prends en note l'information importante.

Partie C

16. Lorsque j'entends un nouveau mot en anglais, j'essaie d'en deviner le sens en m'aidant du reste de la phrase.
17. Lorsque j'ai de la difficulté à me faire comprendre en anglais, je fais des gestes pour exprimer ce que je veux dire.
18. Lorsque je ne connais pas un mot en anglais, je demande de l'aide.
19. Quand je ne trouve pas l'expression exacte que je veux utiliser en anglais, je cherche une autre manière d'exprimer ce que je veux dire (synonyme, description, etc.).
20. Lorsque je parle anglais, si je ne trouve pas le mot que je veux dire, je prends un petit peu plus de temps pour réfléchir, puis je continue à parler.
21. J'essaie de prédire la suite des événements d'une histoire ou d'une conversation.

Partie D

22. J'organise mes activités afin de me réserver du temps pour étudier l'anglais de façon régulière et pas uniquement lorsqu'il y a un examen.
23. Lorsque quelqu'un me parle en anglais, j'écoute attentivement.
24. Lorsque je fais une activité en anglais, je planifie ce que je veux dire ou écrire et comment le dire ou l'écrire.
25. J'évalue mes progrès dans l'apprentissage de l'anglais en réfléchissant à ce que j'ai appris et à ce que je dois apprendre.
26. J'essaie de me corriger au fur et à mesure que se déroule l'activité en anglais.

Partie E

27. Si je suis stressé(e) à l'idée de m'exprimer en anglais, j'essaie de me détendre.
28. Si je ne comprends pas tout ce que j'entends ou que je lis en anglais, je ne m'inquiète pas; j'essaie de comprendre l'idée générale.

29. Je suis prêt(e) à prendre des risques : deviner le sens d'un mot ou d'une phrase, essayer de parler en anglais même si je fais des fautes, etc.

Partie F

30. Si je ne comprends pas ce qu'on me dit en anglais, je demande à la personne de parler lentement, de répéter, ou de clarifier ce qu'elle a dit.
31. Je travaille avec des ami(e)s de ma classe pour pratiquer l'anglais (dans la classe ou en dehors de la classe).
32. Je fais un effort pour me renseigner sur la culture anglophone.

Feuille de réponses

Nom _____

Date _____

Ta langue maternelle_____ Ton âge_____

Est-ce que tu aimes l'anglais? Oui ☐ Non ☐

- Écris ta réponse pour chaque affirmation (1 2, 3 ou 4) à côté du numéro de l'affirmation.
- Calcule le total pour chaque colonne et écris le résultat correspondant au bas de chaque colonne.

Part A	Part B	Part C	Part D	Part E	Part F	
l._____ 2._____ 3._____	4.___ 5.___ 6.___ 7.___ 8.___ 9.___ 10.__ 11.__ 12__ 13.__ 14.__ 15.__	l6.__ 17.__ 18.__ 19.__ 20.__ 21.__	22.___ 23.___ 24.___ 25.___ 26.___	27.__ 28.__ 29.__	30.__ 31.__ 32.__	
Total_	Total_	Total_	Total_	Total_	Total_	
+ 3 =	+ 12 =	+ 6 =	+ 5 =	+ 3 =	+ 3 =	/32

[1] Adaptation du *Children's Strategy Inventory for Language Learning* (Children's SILL), Pamela Gunning, 1997, basé sur le SILL, développé en 1989 par Rebecca Oxford.

THE CHILDREN'S SILL 2.0[1]

Version for the Québec Education Program (English translation)

Instructions: Read the statements, and then choose an answer for each statement:

1. Strongly disagree
2. Rarely agree
3. Often agree
4. Strongly agree

Example. Statement: I try to find opportunities outside of school (sports, activities, etc.) to practice English. Answer __4__

N.B. There are no wrong answers. We just want to know about the way in which you learn English.

Part A

1. I use what I already know to help me understand new English texts or words.
2. I mime words to remember them (example: I touch my toes to remember *toes*).
3. I review outside of class what I learn in class.

Part B

4. I repeat or write the same English word several times to help me remember it.
5. I first read a text quickly to get the general idea and then go back and read it more slowly and carefully.
6. I watch TV or I listen to the radio in English.
7. I read books in English.
8. I work on the computer in English (Internet, games, programs, etc).
9. I try to find opportunities outside of school (sports, activities, etc.) to practice my English.
10. I practice what I learn with my parents.
11. I find similarities between French and English (example: table/table).
12. I make an effort to understand the sense of what I read or hear without translating word for word.
13. I look for specific details when I listen to or read a text.

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[1] Adaptation of the **Children's Strategy Inventory for Language Learning (Children's SILL)**, Pamela Gunning, 1997, which was based on the **SILL,** developed in 1989 by Rebecca Oxford.

14. I use resources (dictionaries, word banks, posters in my class, etc.) to help me with my English.
15. When I listen to or read a text, I write down the important information.

Part C

16. When I see or hear a new word in English, I try to guess the meaning by looking at the rest of the sentence.
17. When I have trouble making myself understood in English, I use gestures to express what I want to say.
18. When I don't know a word in English, I ask for help.
19. When I can't find an exact expression in English, I try to find another way to say what I mean (synonym, description, etc.).
20. If I can't think of a word when I am speaking English, I take a little extra time to think and then I continue speaking.
21. I try to guess what will come next in a story, or a conversation.

Part D

22. I organize my time to study English (not just when there is a test).
23. When someone speaks to me in English, I listen attentively.
24. When I am doing an activity in English, I plan what to say or write and how to say or write it.
25. I evaluate my progress in learning English by thinking about what I have learned and what I need to learn.
26. I check my own work and try to correct my errors during an English activity.

Part E

27. Whenever I am stressed by the idea of speaking English, I try to relax.
28. If I don't understand everything I listen to or read in English, I don't worry. I go for the general meaning.
29. I take a chance and speak English even when I am afraid of making mistakes.

Part F

30. If I don't understand what someone says to me in English, I ask the person to speak slowly, to repeat, or to clarify what they have said.
31. I work with my classmates to practice my English (inside or outside of class).
32. I try to learn about English culture.

ANSWER SHEET

Name_____

Date _____

First language_____ Age_____

Do you like English? Yes ☐ No ☐

- Write your answer for each statement (the 1 2, 3 or 4) beside the number of the statement.
- Calculate the total for each column and write the result at the bottom of each column.

Part A	Part B	Part C	Part D	Part E	Part F	
l._____ 2._____ 3._____	4.___ 5.___ 6.___ 7.___ 8.___ 9.___ 10.__ 11.__ 12__ 13.__ 14.__ 15.__	l6.__ 17.__ 18.__ 19.__ 20.__ 21.__	22.___ 23.___ 24.___ 25.___ 26.___	27.__ 28.__ 29.__	30.__ 31.__ 32.__	
Total_	Total_	Total_	Total_	Total_	Total_	
+ 3 =	+ 12 =	+ 6 =	+ 5 =	+ 3 =	+ 3 =	/32

Adaptation of the **Children's Strategy Inventory for Language Learning (Children's SILL)**, Pamela Gunning, 1997, which was based on the **SILL,** developed in 1989 by Rebecca Oxford.

Appendix C. Oral Interaction Rubric

C1 To interact orally in English	5 Advanced competency development	4 Thorough competency development	3 Acceptable competency development	2 Partial competency development	1 Minimal competency development
Evaluation criteria	**Descriptors**				
Use of functional language	- Appropriately uses a wide range of functional language	- Correctly uses a broader range of functional language than that frequently employed in class	- Correctly uses the functional language frequently employed in class - E.g. to take turns	- Uses functional language expressions inspired by models	- Uses the functional language only with guidance from peers or teacher
Participation in exchanges	- Speaks English spontaneously without hesitation - Initiates and responds to interaction spontaneously - Maintains interaction by elaborating on ideas - Completes the task successfully, communicating complete messages, and responding to messages in a way that demonstrates full comprehension.	- Speaks English with slight hesitation - Initiates and responds to interaction - Maintains interaction by asking questions - Completes the task successfully, communicating fairly complete messages, and responding to messages in a way that demonstrates very good comprehension.	- Speaks English only throughout the class, with some hesitation and support - Initiates, responds to and maintains short exchanges with support - Completes the task successfully, communicating partial messages, and responding to messages in a way that demonstrates comprehension.	- Completes messages by reverting to mother tongue - Responds when called upon by peers or prompted by the teacher - Pauses frequently when trying to express messages - Completes the task but succeeds only with a great deal of help.	- Rarely takes the initiative to speak English - Responds to simple direct questions by gesturing or giving one- or two-word answers - Relies heavily on teacher or peers to formulate simple messages - Does not complete the task successfully

Pronunciation	- Pronunciation comprehensible by an Anglophone without interpretation	- Pronunciation generally comprehensible by an Anglophone without interpretation	- Pronunciation often comprehensible by an Anglophone without interpretation	- Pronunciation comprehensible by an Anglophone with some interpretation	- Pronunciation not comprehensible by an Anglophone without interpretation
Use of strategies	-Draws upon a wide repertoire of strategies autonomously to solve communication problems. - Is adept at matching strategies to task demands. - Orchestrates strategy use by switching strategies readily, as needed, to solve communication difficulties.	- Draws upon a range of strategies generally independently to solve communication problems. - Generally matches strategies to task demands. - Manages strategy use with relative ease, by switching strategies if needed.	- Draws upon some strategies, sometimes with assistance, to solve communication problems. - Sometimes matches strategies to task demands. - Manages strategy use, sometimes with assistance, by switching strategies if needed.	- Draws upon a few strategies, usually with assistance, to solve communication problems. - Has difficulty matching strategies to task demands. - Needs guidance in managing strategies by switching to another if needed.	- Uses avoidance strategies; for example, switching to L1. - Abandons the message when faced with communication problems.

Source: P. Gunning, 2008

Just a moment...

Let me think …

hum …

Stall for time

Source: Gunning, P. , Lalonde, R., Schinck, M., & Watts, W. (2002). *A New Twist to English*. Cycle 3 Strategy Posters. Montreal: Lidec.

Appendix E. Suggested Modifications to Clowning Around LES

MELS LES The World of Clowns http://www.speaq.qc.ca/teach_mels.html

Preparing for the task

1. A hook to cue students in to the theme of clowns.
- Pictures of famous clowns;
- Video: clowns (It seems this video is no longer available. I will try and find another.)

2. Predicting: Have Ss predict the topic of the lesson.

3. MELS document: TG page 3: Lead Ss in discussion about their feelings towards clowns.

4. APK: Picture of clown's props and accessories; point out the difference. Ss play game *I spy*

E.g. Student A: I spy with my little eye something that a clown wears around his neck.
It is long and has polka dots on it.
Student B: A tie?

5. Clowns TG, p. 3 : Look at SB, p. 1; label the clothing

Competency 1: To interact orally in English
Activity 1 – Clowning Around game
MELS document, page 4.

Competency 2: To reinvest understanding of oral or written texts
Activity 2: Clown Riddles (MELS document, page 5)

Competency 3: To write texts
Ss write riddles – MELS document, p. 5.

Activity 3 & 4: Meet some real clowns (MELS document, p. 6) – **or keep this for a project (See below)**

Activity 5: In a clown's wardrobe (MELS document, p. 9)
- This could be a telephone homework assignment, if you wish.

Project: Research project on clowns

Competency 2: To reinvest understanding of oral or written texts
Jigsaw reading: Clown types http://www.shrineclowns.com/Clown_Types.html

- Students share information about different types of clowns.

- This could actually be a read-and-draw activity.
- You could save the text to a file, without the pictures and proceed in the following way:
    - Assign the reading describing one clown type to each student in a group; (Student A: White Face Clown; Student B: Auguste Clown; Student C: Hobo Clown; Student D: Character clown.
    - Students read the assigned text and take notes about the assigned clown type.
    - Students illustrate their clown type and check their illustration with the real picture on the Internet to see if they understood.
    - They get into groups and take turns telling their group about each clown type.

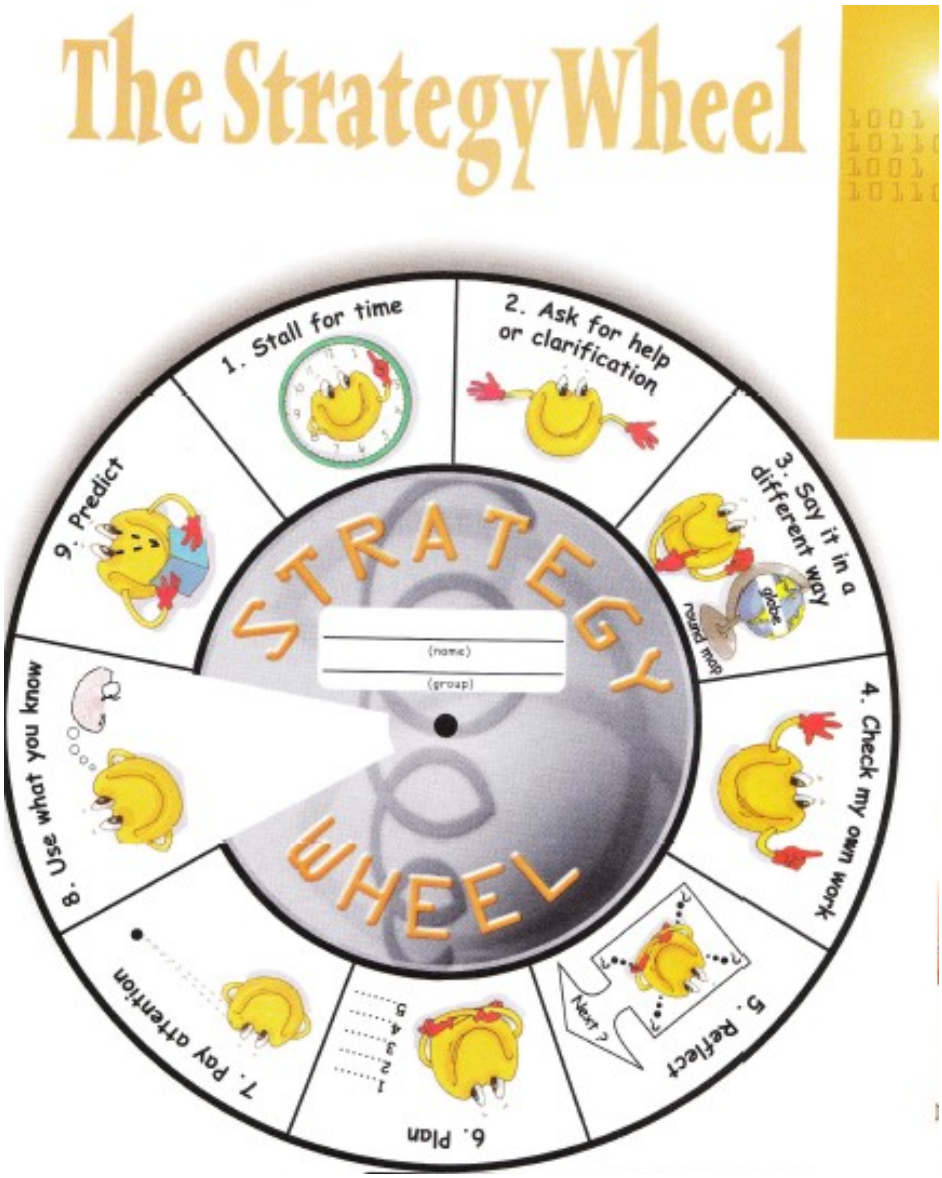
Competency 3: To write texts
Either
A. Students write a report about their favourite clown (clown type; accessories and props; main activities, etc.)

Or
B. Students imagine themselves as clowns and write a report about themselves (clown type; accessories and props; main activities, etc.)

Or
C. Students choose one type of clown, do more research on that type on the Internet and write a factual report (accessories and props; main activities, etc). Write the final text on the computer, include pictures, etc.

Mrs. Joy displays their masterpieces in the corridor ☺

Appendix F. The Strategy Wheel



Source: Gunning, P., Lalonde, R., Schinck, M. & Watts, W. (2002). *A New Twist to English*. Cycle 3 Student Book 1. Montreal: Lidec.

Questionnaire sur des stratégies reliées à une tâche

Compétence 1: Interagir oralement en anglais

Mise en situation

Tu fais une activité d'équipe qui consiste à parler en anglais avec les membres de ton équipe. Dis nous ce que tu fais pour t'aider à parler en anglais.

Consignes: Lis les affirmations et ensuite choisis une réponse pour chaque affirmation.

1. Oui
2. Non

Exemple.

Lorsque je fais une activité d'équipe, comme la tâche que je viens de réaliser, qui consiste à parler en anglais avec les membres de mon équipe …	Ma réponse
3. Si je veux dire quelque chose mais que je ne connais pas le mot en anglais, je demande de l'aide. (Exemple: Je demande à mon professeur où à un autre élève, *How do you say --- in English?*)	1

N.B. Il n'y a pas de mauvaises réponses. Différentes personnes utilisent diverses stratégies pour les aider à faire des activités en anglais.

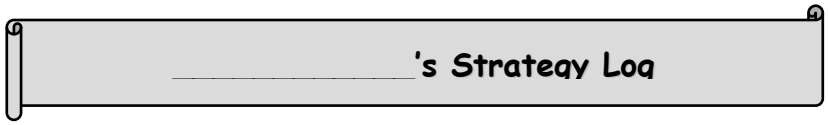
Ceci n'est pas un test.

Nom _____

Date _____

Lorsque je fais une activité d'équipe, comme la tâche que je viens de réaliser, qui consiste à parler en anglais avec les membres de mon équipe …	Mes réponses
1. Je prends un risque et je parle en anglais, même si je crains de faire des fautes.	
2. Lorsque je parle anglais, si je ne trouve pas le mot que je veux dire, je prends un petit peu plus de temps pour réfléchir, (exemple: je dis, *Hum-m-m… just a minute,* etc.) puis je continue à parler.	
3. Si je veux dire quelque chose mais que je ne connais pas le mot en anglais, je demande de l'aide. (Exemple: Je demande à mon professeur où à un autre élève, H*ow do you say --- in English?*)	
4. Je travaille avec les autres élèves de mon équipe et nous nous entraidons pour faire l'activité.	
5. Lorsque quelqu'un de mon équipe dit quelque chose en anglais, j'écoute attentivement.	
6. Si quelqu'un de mon équipe dit quelque chose en anglais et que je ne comprends pas, je demande à la personne de répéter ou d'expliquer ce qu'il ou elle a dit.	
7. Si je ne trouve pas l'expression exacte que je veux utiliser en anglais, je cherche une autre manière d'exprimer ce que je veux dire (synonyme, description, etc.).	
8. Je me détends et je prends plaisir à faire l'activité.	
9. Si je veux dire quelque chose et que je ne sais pas le mot en anglais, j'utilise des ressources (dictionnaires, banque de mots, affiches dans ma classe, etc.).	
10. J'utilise des mots que je connais déjà pour m'aider à m'exprimer en anglais.	
11. Si quelqu'un dans mon équipe dit quelque chose en anglais et que je ne comprends pas chaque mot, je fais un effort pour comprendre le sens général de ce que la personne dit.	
12. J'essaie de prédire ce que mes co-coéquipiers vont dire dans la suite de la conversation.	
13. Je réfléchis à ce que je dis et je me corrige si je fais une faute.	
14. Après l'activité, je réfléchis à ma performance et à ce que je peux faire pour mieux m'exprimer la prochaine fois.	

Appendix H.The Strategy Log



Strategies	Date		Date		Date		Date	
	I plan to use	I used	I plan to use	I used	I plan to use	I used	I plan to use	I used
1. Stall for time								
2. Ask for help or clarification								
3. Say it in a different way								
4. Check my own work								
5. Reflect								
6. Plan								
7. Pay attention								
8. Use what you know								
9. Predict								
10. Guess intelligently								
11. Practice								
12. Use resources								
13. Take notes								
14. Skim								
15. Scan for information								
16. Cooperate								
17. Take risks								
18. Go for the general meaning								

Steps for Using Strategy Log

Before the activity

1. Present the activity; e.g. riddles.
2. Do example(s) with students; e.g. you give the clues for some riddles.
3. Tell them they will do the activity in their groups; e.g. they will take turns giving clues for and guessing the riddles.
4. Have them take out their strategy wheel.
5. Ask them to look at their strategy wheel and discuss in their groups which strategies could help them speak only English and do the activity.
6. Distribute the Strategy Log and have them write their name and the date on it.
7. Ask them to check off, individually, in the column, *I plan to use*, the strategies they think they will use for the activity.

The activity

8. Have students engage in the activity; e.g. asking one another the riddles in their groups.

After the activity

9. Ask students to check off, individually, in the column, *I used,* the strategies they actually used during the activity.
10. Discuss with them, as you usually do, the strategies they used and how they helped.

(The strategy log will give them traces of the strategies they actually used, which will help to fuel their discussion.)

Appendix I. The Relationship Between Items in the Strategy Assessment Instruments and Strategies in the Québec Education ESL Program (2001)

Strategies in the Québec Education ESL Program Cycle 3	Strategy log: Simplified strategy names	Children's SILL items	Task-based questionnaire Oral interaction
1. Delay speaking	Stall for time	20	2
2. Asking for help or clarification	Ask for help or clarification	18, 30	3, 6
3. Circumlocution	Say it in a different way	19	7
4. Self-monitoring	Check my own work	26	13
5. Self-evaluation	Reflect	25	4
6. Planning	Plan	22, 24	
7. Attention	Pay attention	23	5
8. Use of prior knowledge	Use what you know	1	10
9. Predicting	Predict	21	12
10. Inferencing	Guess intelligently	11, 16	
11. Practice	Practice	4, 6, 7, 8, 9, 10	
12. Resourcing	Use resources	14	9
13. Note-taking	Take notes	15	
14. Skimming	Skim	5	
15. Scanning	Scan for information	13	
16. Cooperation	Cooperate	31	4
17. Risk-taking	Take risks	29	1
18. Accepting not being able to understand everything listened to or read	Go for the general meaning	12, 28	11

Appendix J. What Kind of Cat Are You?

What Kind Of Cat Are You?!

Retrieved September 2, 2010 from http://www.billyjonas.com/index.php?page=cds&family=&category=family_-slash-_young_audiences&display=13

What kind of cat hangs out in your house? HOUSE CAT!
What kind of cat hangs out in the alley? ALLEY CAT!
What kind of cat is a chocolate candy bar? KIT KAT!

What kind of cat are you? What kind of cat are you?
Tell me tell me true, what kind of cat are you?
I'll give you some clues. What kind of cat are you?

What kind of cat has the first name of Tom? TOM CAT!
What kind of cat is really really scared? SCAREDY-CAT!
What kind of cat hangs out at the copy shop? COPYCAT!
What kind of cat is actually a fish? CATFISH!
What kind of cat breaks into places at night? CAT BURGLAR!
What kind of cat hangs out with Bat Man? CAT WOMAN!
What kind of cat has a thousand legs? CATERPILLAR!
What kind of cat is a big expensive car? CADILLAC!

What kind of cat is a great big disaster? CATASTROPHE!
What kind of cat is an even bigger disaster? CATACLYSM!
What kind of cat rhymes with that and is a long religious recitation?
CATECHISM!
What kind of cat is connected to the engine of your car?
CATALYTIC CONVERTER!
What kind of cat facilitates a chemical reaction? CATALYST!
What kind of cat comes in the mail from Sears? CATALOGUE!
What kind of cat is a group of things that are similar? CATEGORY!
What kind of cat is a whole bunch of cows? CATTLE!

What kind of cat throws stuff over the wall of a castle? CATAPULT!
What kind of cat tunnels under the castle? CATACOMB!
What kind of cat floats on two pontoons? CATAMARAN!
What kind of cat takes a picture of the inside of your body? CAT SCAN!
What kind of cat obscures your vision? CATARACT!
What kind of cat is being followed by a moon shadow? CAT STEVENS!
What kind of cat is the capital of Nepal? KATMANDU!
What kind of cat carries your golf clubs? CADDY!

Credits:

Words & Music by Billy Jonas