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Knowledge Transfer Intervention Theory: A Model Grounded in the Strategies used by Intermediate Agents in the Context of Education

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Résumé

La présente thèse se base sur les principes de la théorisation ancrée (Strauss & Corbin, 1998) afin de répondre au manque de documentation concernant les stratégies adoptées par des « agents intermédiaires » pour promouvoir l'utilisation des connaissances issues de la recherche auprès des intervenants en éducation. Le terme « agent intermédiaire » réfère aux personnes qui sont positionnées à l'interface entre les producteurs et les utilisateurs des connaissances scientifiques et qui encouragent et soutiennent les intervenants scolaires dans l'application des connaissances scientifiques dans leur pratique. L'étude s'inscrit dans le cadre d'un projet du ministère de l'Éducation, du Loisir et du Sport du Québec visant à améliorer la réussite scolaire des élèves du secondaire provenant de milieux défavorisés. Des agents intermédiaires de différents niveaux du système éducatif ayant obtenu le mandat de transférer des connaissances issues de la recherche auprès des intervenants scolaires dans les écoles visées par le projet ont été sollicités pour participer à l'étude. Une stratégie d'échantillonnage de type « boule-de-neige » (Biernacki & Waldorf, 1981; Patton, 1990) a été employée afin d'identifier les personnes reconnues par leurs pairs pour la qualité du soutien offert aux intervenants scolaires quant à l'utilisation de la recherche dans leur pratique. Seize entrevues semi-structurées ont été réalisées. L'analyse des données permet de proposer un modèle d'intervention en transfert de connaissances composé de 32 stratégies d'influence, regroupées en 6 composantes d'intervention, soit : relationnelle, cognitive, politique, facilitatrice, évaluative, de même que de soutien et de suivi continu. Les résultats suggèrent que les stratégies d'ordre relationnelle, cognitive et politique sont interdépendantes et permettent d'établir un climat favorable dans lequel les agents peuvent exercer une plus grande influence sur l'appropriation du processus de l'utilisation des connaissances des intervenants scolaire. Ils

montrent en outre que la composante de soutien et de suivi continu est importante pour maintenir les changements quant à l'utilisation de la recherche dans la pratique chez les intervenants scolaires. Les implications théoriques qui découlent du modèle, ainsi que les explications des mécanismes impliqués dans les différentes composantes, sont mises en perspective tant avec la documentation scientifique en transfert de connaissances dans les secteurs de la santé et de l'éducation, qu'avec les travaux provenant de disciplines connexes (notamment la psychologie). Enfin, des pistes d'action pour la pratique sont proposées.

Mots-clés : agents intermédiaires, stratégies d'influence, transfert de connaissances, domaine de l'éducation, théorisation ancrée, modélisation, intervention, utilisation des connaissances scientifiques, milieux défavorisés, commissions scolaires

Abstract

The present thesis was based on Grounded Theory (Strauss & Corbin, 1998) principles in order to address the lack of documented strategies implemented by "intermediate agents" to promote school practitioners' use of research-based evidence. The term "intermediate agent" refers to the individuals who are positioned at the interface between scientific knowledge producers and users, and who encourage and support users' uptake of research-based evidence in their practice. The study is part of the Quebec Ministry of Education, Recreation and Sports' project aimed at improving success rates of secondary school students in underprivileged areas. Those solicited to participate in the study were intermediate agents from different levels of the educational system who had obtained the mandate to transfer research-based evidence to practitioners in schools targeted by the project. Snowball sampling (Biernacki & Waldorf, 1981; Patton, 1990) was used to identify individuals who were recognized by their peers for the quality of the support they offered to school practitioners in applying research. Sixteen semi-structured interviews were conducted. Analysis of the data yielded an intervention model coined Knowledge Transfer Intervention Theory, composed of 32 strategies of influence that were categorized into 6 intervention components: Relational, Cognitive, Political, Facilitative, Evaluative, as well as Continuous Support and Follow-up. The findings suggest that strategies embedded in the Relational, Cognitive, and Political components are interdependent and aim to establish a favourable climate, allowing agents to exercise a greater influence towards potential users' ownership of the knowledge utilization process. Moreover, the Continuous Support and Follow-up component is key to sustaining changes in school practitioners' use of research. Theoretical implications linked to the model, along with underlying explanations of the mechanisms involved in the different components

are compared with the literature in knowledge transfer in the sectors of both health and education. Reports from related disciplines (notably in psychology) are also exposed. Finally, recommendations for practice are proposed.

Keywords: intermediate agents, strategies of influence, knowledge transfer, education field, grounded theory, model, intervention, knowledge utilization, underprivileged areas, school boards

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List of Abbreviations

CIMD	Coordination des interventions en milieux défavorisés
FRQSC	Fond de recherche du Québec sur la société et la culture
MELS	Ministère de l'Éducation, du Loisir et du Sport
NANS	New Approaches New Solutions
RBE	Research-based evidence

In loving memory of my mother

Hedy Hawawini Awad

(August 6th, 1947 – September 6th, 2012)

"The proper education of the young man does not consist of stuffing their heads with a mass of words, sentences, and ideas dragged together out of various authors, but in opening up their understanding to the outer world, so that a living stream may flow from their minds, just as leaves, flowers, and fruit spring from the bud on the tree."

– Jan Amos Comenius, 17th century

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Chapter One

Introduction

Problem overview

The educational environment faces several important challenges. Perhaps its most pervading challenge is that of fulfilling its mission, that is, to produce high-school graduates. Statistics from 2010-2011 indicate that in Quebec, 18.6% of public high-school students left school without a diploma (MELS, 2012). When students who frequented public high schools from highly privileged areas were compared with those from highly underprivileged areas, the Ministry of Education, Recreation and Sports of Quebec, reported a graduation rate differential of nearly 20%, from 88% to 69% in 2008-2009 (MELS, 2011). Although the dropout phenomenon is a complex one, these statistics suggest a poorer level of organizational performance for schools in underprivileged areas. In fact, students present a higher probability of school failure and dropout when they come from underprivileged areas; characterised by low incomes, lack of job stability, parents' low levels of education, as well as prevalence of single-parent families. Dropout and school failure rates, among already underprivileged students, subsequently increase their probability of experiencing socio-professional integration difficulties (Dagenais, Abrami, Bernard, Janosz & Lysenko, 2008; Dagenais & Janosz, 2006). These integration difficulties are embedded in a context of rapid progress in technology and science, and an ever-increasing requirement of expertise and know-how in the market place. The complexity of this phenomenon highlights the importance of improving organizational performance, by relying more heavily on research evidence in order to implement solutions in

schools from underprivileged areas that have been demonstrated as effective (Oplatka & Hemsley-Brown, 2004).

In the scientific literature, research results are known as an important source of information to help optimize organizational performance (De Long & Fahey, 2000; Kianto, Ritala, Spender, & Vanhala, 2014; Nutley, Walter, & Davis, 2007; Pfeffer & Sutton, 2000; Terpstra & Rozell, 1997), such as in educational contexts. As such, endorsing and employing research evidence would reduce the level of uncertainty during the decision-making processes, limit negative consequences related to poor decisions, and provide ways to effectively address any given problem (Hanjoon & Chankon, 1994; Lingard, 2013). Numerous efforts are being made to produce reliable, valid and useful research results. Generous research funding and other resources invested into different research projects prove how indispensable research data are (for example, FRQ-SC, 2014).

The challenge, then, is to transfer research evidence to school practitioners[1] with the goal of applying this evidence into their professional practices (Faye, Lortie, & Desmarais, 2007; Neiman, 2008; Nelson, & O'Beirne, 2014; Nutley & Awad, 2012). This concern is central to the growing field of knowledge transfer. One of the documented and recognized facts of this multidisciplinary field is the gap between available research-based evidence and its usage outside of the scientific realm (Davies, Nutley, & Walter, 2008; Estabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003; Glasgow & Emmons, 2007; Glasgow, Lichtenstein, & Marcus, 2003; Hirshkorn & Geelan, 2008; Landry, Amara, & Lamari, 2001b; Pentland et

[1] For the purposes of this study, the term *school practitioner* refers to teaching and administrative staff in secondary schools.

al., 2011; Trottier & Champagne, 2006; Vanderlinde & van Braak, 2010; Wandersman et al., 2008). Moreover, the literature indicates that other fields have a greater tradition of making research-based decisions compared to education (Arjomand, 2010; Cooper, Levin, & Campbell, 2009; Levin, 2004, 2011; Lysenko, 2010). Consistent findings show, however, that even in health care, the leading field in which the relationship between evidence and practice has been advocated and studied (Lavis, Robertson, Woodside, McLeod, & Abelson, 2003; Lemieux-Charles & Champagne, 2004), "the transfer of research findings into practice is often a slow and haphazard process" (Graham et al., 2006, p. 13).

In the area of education, this research-to-practice gap represents a particularly wide divide (Hemsley-Brown & Oplatka, 2005; Levin, 2010; Whiterow, 2011). Indeed, Dagenais and his collaborators (2010), in a study conducted with 3200 respondents of the educational system, showed that school practitioners, namely school Principals, Educational Advisors, teachers and non-teaching professionals, make little use of scientific knowledge. Moreover, Dagenais et al. reported that while most teachers rarely use research-based evidence to improve their practices, one-third of them never used it in the past school year (in the past twelve months as measured in the study by Dagenais et al., 2010). Academics and school practitioners alike are wondering what factors explain this divide. One of the elements explaining this gap, is the fact that teachers have traditionally relied on their personal experiences, and that of their colleagues rather than on research to guide their professional practice (e.g., Bredeson, 2003; Mitton, Adair, McKenzie, Patten, & Perry, 2007; Whitehurst, 2002). Notwithstanding the notable progress in the past decade, they continue to make little use of research (e.g., Dagenais et al., 2012; Dagenais et al., 2008; Rohrbach, Ringwalt, Ennett, & Vincus, 2005; Williams & Coles, 2007a, 2007b). Somewhat paradoxically, school

practitioners report a favourable attitude towards, pledge an interest in, and indicate a positive motivation to using research in their practice (Green & Kivdahl, 1990; McCaffrey & Hamilton, 2007; Williams & Coles, 2003, 2007). Thus, willingness to consider evidence does not necessarily translate into its application for school improvement (Dagenais et al., 2012).

The question remains then, where does the issue lie? A study by Williams and Cole (2003; 2007a, 2007b) found that teachers were less confident about finding and using research compared to information in general. The same authors also found that teachers were more confident about retrieving information then about actually applying it, all the while admitting that their teaching would improve considerably if they knew more about how to use research. Moreover, Levin (2004) stated that in the face of today's educational complexity, teachers were often looking for immediate, clear, practical and easily applicable solutions. We now recognize that it is unrealistic to expect that school practitioners be equipped to research, interpret, and implement evidence into their daily practice (Arjomand, 2010; Honig & Coburn, 2008; Levin, 2011; Nelson & O'Beirne, 2014; Nutley, Jung, & Walter, 2008).

Many authors agree that although there has been an increase in the amount of funding and research to understand knowledge use, little is known about how school systems find, share or use research (Arjomand, 2010; Cooper, 2009; Cooper & Levin, 2013; Honig & Coburn, 2008; Levin, 2011). Knowledge transfer being a multi-faceted process, the literature still yields little evidence on the processes involved, and even less is known about the effects that efforts to promote research use in practice organizations yield (Davies, Nutley, & Walter, 2005; Estabrooks, 2007; Lysenko, 2010; Mitton et al., 2007; Nutley, Walter, & Davies, 2007). Besides, conceptualizations of the relationship between research and practice remain underdeveloped. From the little that is known, authors admit that schools and school boards

have a very weak capacity to find, share, understand or apply research (Coburn, Honig, & Stein 2009; Cooper, Levin, & Campbell, 2009; Levin, Sa, Cooper, & Mascarenhas, 2009).

To understand how the educational world deals with research, studies have long been focused on individual characteristics of the targeted users (school practitioners), and more recently on the organizational characteristics involved (such as organizational culture: openness to research, and learning), while neglecting the characteristics of individuals who support potential users (Thompson, Estabrooks, & Degner, 2006). Yet, focusing on these individuals is a promising solution to promote the value of research and to encourage school practitioners' use of research-based evidence in their practices by concentrating on a strong support (Coalition for Evidence-Based Policy, 2003; Huberman, 1990; Nelson, & O'Beirne, 2014; Pentland et al., 2011; Ward, House, & Hamer, 2009; Willmott, 1994). Across fields, a consistent finding is that interpersonal relationships and social contexts are key to shaping evidence use in practice (e.g., Levin, 2011; Nutley & Awad, 2012). As such, school practitioners like other practitioners, have rather limited direct knowledge of, and access to up-to-date research. Levin (2004) evokes the importance of a third party to direct and mediate the communication between the world of knowledge producers and that of users. Bredeson (2003) argues that it is those organisations that uncover how to tap into people's commitment and capacity to learn at all levels that will succeed in the future. In this vein, uncovering how intermediate agents promote school practitioners' use of research-based evidence is crucial.

Therefore, it is worthwhile to look into the work of these intermediate actors in order to gain a clearer understanding of how they operate and the strategies they use, to promote school practitioner's use of research-based evidence. Although it is valuable, there are gaps in the

literature regarding this topic, which incidentally reinforces the urgency to address the question.

Relevance of the study

While this avenue is promising, there is an abundance of terms used to describe the activities of an intermediate agent (Thompson, Estabooks, & Degner, 2006). Some of the many titles used to refer to these intermediate agents include: "knowledge brokers" (e.g., Meyer, 2010), "agents of change" (e.g., Jones, 2006; Pratim, 2007), "facilitator" (e.g., Kiston, 2009; Kitson et al., 2008), "boundary-spanners" (e.g., Pawlowski & Robey, 2004; Williams, 2002), to list a few. When analyzed further, an inconsistency in the way these different terms are used is commonly observed in literature on this subject. Specifically, the same term can be employed to designate different definitions that vary from one study to the other (for example: opinion leader; Borbas et al., 2000; Closs, Briggs & Everitt, 1999; Dopson, Locock, Chambers & Gabbay, 2001;). Otherwise, two terms can have overlapping definitions. Therefore, the lack of a common term to describe the phenomenon creates confusion (Thompson, Estabooks & Degner, 2006).

Despite the variety of existing terms and definitions, there is a limited amount of research focused on understanding what an intermediate agent does, and how (e.g., Levin, Cooper, Arjomand, & Thompson, 2011). Learning how intermediate agents engage with research results and promote their use is particularly important however, considering the following: (a) the growing push of accountability in student success that school practitioners face; and (b) the ensuing need for them to improve their methods to meet the needs of students

in underprivileged areas, in a changing and increasingly complex world (Ungerleider & Levin, 2007; Witherow, 2011).

Intermediate agents' central mandate needs much more exploration as a means to learn about the most effective ways to promote school practitioners' research uptake, particularly in the field of education. In this vein, this thesis focuses on a promising avenue to reduce the research-to-practice gap and help promote the application of research-based evidence in educational practice, that is, the use of intermediate agents. More specifically, this study sets out to develop and refine a useful model of the knowledge transfer intervention process through documenting the strategies used by these intermediate agents. This will shed light on how these strategies and the model compare themselves to existing frameworks within and outside the field of knowledge transfer in education. To realize this objective, the present thesis is embedded in a specific approach.

Chosen approach and guiding research question

Due to the conceptual vagueness and the lack of supporting literature in the field of education on this topic, an inductive and constructivist approach, rather than a hypothetical-deductive approach was favoured for this study (Creswell, 2005, 2007; Van der Maren, 2004). We based the research topic in the field of knowledge transfer, instead of borrowing concepts from other fields. This decision increased the feasibility of the study for the following reasons: (a) intermediate agents' strategies should vary from one context to another, and (b) the milieu of education is still largely unexplored regarding this particular issue (Nutley, 2011; Poupart et al., 1997; Strauss & Corbin, 1998). Thus, it was considered premature to choose an existing theory that could have run the risk of lacking in explanatory power regarding the object of our

study. A posteriori, however, pertinent theories were compared to the study results in order to distinguish intermediate agents' knowledge transfer intervention strategies within and outside of the knowledge transfer field, allowing for a more holistic understanding of the phenomenon.

In this perspective, Poupart and his colleagues (1997) advocate that the object of research (in this case, strategies adopted by intermediate agents) is built progressively from the ground up. Therefore, based on the interaction between the collected data and of the ensuing analyses, and not only in light of the literature on the subject - in contrast to a hypothetical-deductive approach. In fact, the literature review in qualitative analysis does not target the operationalization of concepts in order to help start a research, but the gradual shaping of the object during research (Van der Maren, 2004). The intermediate agents' strategies were therefore elaborated progressively, and were grounded in fieldwork.

Consequently, this thesis was developed according to a certain objective, with no proposed hypotheses (Strauss & Corbin, 1998). As such, this study set out to provide a detailed account of the strategies intermediate agents adopted to promote school practitioners' use of research-based evidence and the overall intervention process involved.

Context of the study

In addition to explaining the approach that was chosen for the study, it is important to also consider the context in which the thesis took place for two main reasons. First, the results are grounded in fieldwork and as previously mentioned; intermediate agents' strategy may vary depending on the context. Therefore, the context constitutes an element that needs to be specified to circumscribe the strategies adopted. Second, the main author had the opportunity

to document the strategies used by intermediate agents in a structured province-wide project, called the *New Approaches, New Solutions* (NANS from hereon after). Thus, for both of these reasons, the context must be taken into consideration in the interpretation of the results.

This exploratory study is grounded in the evaluation of a governmental project, which was launched within the educational system in Quebec to target the problem of student dropout in underprivileged areas (MELS 2002). The Ministry of Education's effort to increase research use by school practitioners in secondary schools is the most important of its kind in the province of Quebec. The intermediate agents who took part in this study are members of Quebec's School Boards and ministerial bodies.

The context of the educational system in Quebec has evolved over time. The school system has been reorganized, school practitioners' professional autonomy has increased and their role has changed, warranting a greater use of research-based evidence in their work. The following section briefly explains the latest pivotal change to the educational system in Quebec, which led to the governmental project that is of interest in this study. Moreover, an overview of the project in question, including details regarding the key stakeholders involved, as well as their roles and responsibilities, are presented.

Background of the study: historical underpinning and the NANS project

There has been a series of major curriculum reforms in Quebec following the take over of the field of education by the provincial government from the hands of the Catholic Church in the sixties (Carel, 2010). The third and latest main educational reform began in the mid-nineties when the Estates General on Education called the role of the school, and its internal workings into question. In its assessment report titled, "The State of Education in Quebec",

published in October of 1996, the Commission of the Estates General issued a call for action to improve education in Quebec, which meant raising academic perseverance and more effectively meeting the needs of certain categories of students, mainly those from underprivileged areas (MELS, 1996a, 1996b).

The Commission also stated an urgent need to redefine roles and responsibilities of all partners involved, from the Ministry of Education to educational institutions, as well as parents and society in general. The decision-making process shifted to provide schools with greater autonomy and power. The goal, essentially, was to turn the focus of the school back to its original mission: to educate (by making students acquire knowledge), socialize (by transmitting the values that form the basis of Quebec's democratic society), and to qualify (by insuring the necessary training and development to practice professional activities) 100% of today's youth, through another revision of the curriculum (Lessard, Carpentier, Cournoyer, Larochelle, & Henripin, 2006; Lessard, Henripin, & Larochelle, 2007; MELS, 1997). In other words, giving them an education, which prepares them for a knowledge- and technology-based society. The role of schools and teachers, accordingly, evolved a great deal and grew in importance.

Overall, this shift at the provincial level not only underscored the need for school practitioners to increase their agility in the face of a changing society, but also to adapt their teaching style to various groups of students. An increase in the level of accountability school practitioners faced, with regards to the number of students who reached academic success, can also be noted (Lessard, Henripin, & Larochelle, 2007). Hereafter, it became the teacher's responsibility to find, and implement the necessary methods in order to reach that goal.

Based on the latest political wave, which is centered on academic success for all youths, the NANS intervention strategy was implemented in the most underprivileged areas across the province of Quebec in the fall of 2002. In order to determine which schools would take part in this initiative and to describe the socioeconomic background of the students, the Ministry of Education, Recreation and Sports of Quebec (MELS) used a deprivation index that ranges from 1 (highest) to 10 (lowest). Specifically, the deprivation index is calculated based on two variables: the index of low-income cutoff (LICO), and the index of socio-economic background (IMSE). As a result, 196 secondary schools with a socioeconomic milieu decile rank of 8, 9 and 10 are said to serve concentrated numbers of students from underprivileged areas, and were initially selected to partake in this project (MELS, 2002).

Developed by Quebec's MELS, the NANS project sought to adapt practices at both the school and classroom levels, which were proven to lead to greater success in students from underprivileged areas, and to lessen the academic gap these students typically experience when compared to those from higher socioeconomic backgrounds (Dagenais et al., 2010; MELS, 2002, 2011). In light of research-derived knowledge, the focus was on strengthening already existing practices that were proven effective in these schools and adapting new practices that were better suited for their context. Thus, these schools were required, each year since 2002, to produce a portrait analysis of the situation adapted to their context, in order to benefit from funding that would allow them to implement these new measures. With the support of the MELS, and their School Boards, the NANS has influenced secondary schools through their rigorous planning process and their close follow-up of actions taken.

This project distinguishes itself from other initiatives because of its intervention policy. Instead of implementing a one-size-fits-all measure, the focus was on the developing a

problem-solving approach that is context-sensitive. In other words, the NANS was innovative in that its philosophy was bottom-up, as opposed to traditional top-down procedures where only the Ministry determines objectives and educational activities. Hence, official documents did not identify specific and measurable objectives, but suggested expected changes according to the people involved in the initiative (MELS, 2002; Janosz, 2010). Therefore, the schools had the leeway and the responsibility to come up with the goals they would focus on in the coming years in light of a process of assessment of their school. Ministerial bodies encouraged and supported all efforts of assessment and collaboration. The flexible approach of this project's design was meant to enable greater mobilization and a focus on the development of adapted solutions to local needs.

Partners involved in the NANS project include: the Provincial NANS Steering Committee, the Coordination of interventions in underprivileged areas (CIMD), the Regional Offices[2], the School Boards, and each secondary NANS school (see Figure 1). The Provincial NANS Steering Committee's role is to follow-up on the implementation of the strategy, and to provide the Minister of Education with recommendations based on an analysis of the strengths, barriers, and progress of the strategy. If need be, this committee carries out the necessary adjustments (Janosz et al., 2010; MELS, 2007).

The CIMD, a ministerial body created specifically for the NANS project, provides schools and School Boards with a detailed explanation of the strategy. They offer support for the development of human capital on themes such as poverty and its impact on student

[2] Regional Offices services the French communities region by region. The Services to the English community oversees and support all English communities throughout Quebec.

success. Finally, they act as a partner in the evaluation of the project (Janosz et al., 2010; MELS, 2002, 2007).

Acting as an intermediary between the MELS and the School Boards, the Regional Offices follow-up on the implementation of the strategy in their region. The Regional Offices' mandate is also to facilitate the understanding of the possible impact of poverty on student success, by both the Schools Boards and the schools. Additionally, they develop support mechanisms for School Boards (Janosz et al., 2010; MELS, 2002, 2007).

The mandate of School Boards is to allocate the available funds between all NANS schools, while considering their socio-economic characteristics and the needs of their students, as well as to support and guide the planning and implementation of the strategy. They are also instrumental in the gathering and interpretation of research-based information. Their role of support and guidance further extends to their schools' choice of measures, methods, and instruments used to assess the impact of these measures on student success (Janosz et al., 2010; MELS, 2002, 2007).

The NANS secondary schools were instructed to prepare a portrait analysis based on the characteristics of underprivileged areas and use this analysis to produce their success plan. Once this plan was approved, schools then proceeded with the implementation and evaluation of their measures. Adjustments were made when necessary (Janosz et al., 2010; MELS, 2002, 2007).

Thus, the CIMD, the Regional Offices, the Services to the English community, and the School Boards essentially have a supportive role in the NANS implementation strategy. Based on the bottom-up logic of the NANS strategy, support is offered in different forms, and must

be adapted to the specifics of the context of each school, in each region, thereby evolving with time. Both continuous support and increasing school practitioners' use of research-based evidence are important components of the NANS project. Specific individuals within the ministerial institutions were given the mandate of providing continuous support to schools as a means of promoting the use of research-based evidence. Subsequently, intermediate agents who were recognized among their peers as being successful in their knowledge transfer practices, were appointed as resources that worked at these different levels of the school system.

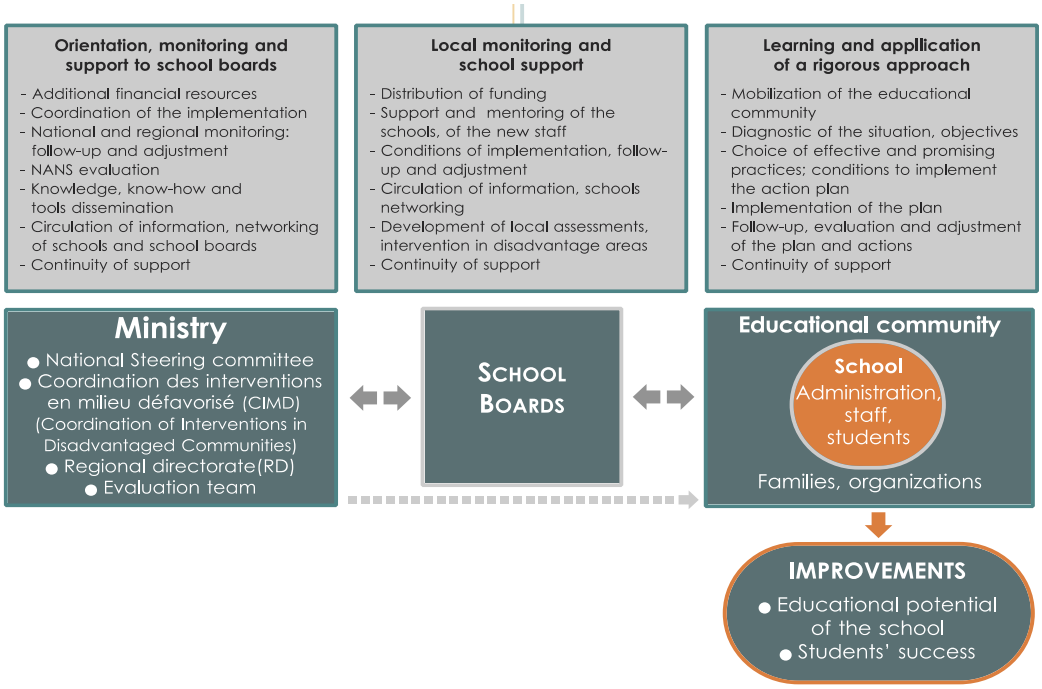

Figure 1. Key partners involved in the NANS project and additional information regarding each of their role (Janosz et al., 2010).

For the first time in the history of Quebec, the implementation of the NANS project would be evaluated with the close collaboration of an independent research team (Dagenais, &

Janosz, 2006; Janosz, 2010). This research team was composed of 10 researchers from three different universities: UQAM, Concordia University, and Université de Montréal. Their mandate was to evaluate both the implementation and the effectiveness of the NANS strategy on student success in underprivileged areas.

Overall, the newest school reform, and more particularly the NANS project, highlights an unavoidable fact: linking research to practice is no longer an option, but a requirement (Whiterow, 2011). In that light, the present thesis focuses on intermediate agents' mandate of promoting school practitioners' use of research-based evidence.

Outline of chapters

The chapters that follow include; Chapter Two, which presents an overview of the body of research in knowledge transfer. As such, the basic notions and current debates in the field are introduced particularly pertaining to education. More expressly, it includes a detailed definition of each of the main components involved in the study of knowledge transfer, as well as an exploration of the different theoretical models existing within the literature. An overview of what is known about intermediate agents is also reviewed. These considerations form the basis of this thesis.

Chapter Three describes the research methodology used in this study. Precisely, the chapter explains the rationale for using a qualitative methodology based on the Grounded Theory (Strauss & Corbin, 1998) approach, positions the main author, and details the research design; the sample selection, the instruments used, the procedures, as well as how the data was analyzed. This chapter also revisits the main contextual factors in which this study is set.

Chapter Four summarizes the study's findings based on an in-depth analysis of 16 semi-structured interviews. An empirically-based model presenting 32 strategies within 6 components of intervention is introduced. Data gathered and analyzed suggests that relational, cognitive, and political types of strategies set the stage for greater influence over school practitioners' ownership of the knowledge transfer process. The findings also reinforce the importance of continuous support and follow-up to sustain school practitioners' research-based evidence use.

Chapter Five provides a discussion and an analysis of the underlying mechanisms of the components, which emerged from the data presented in the previous chapter. This study's findings are compared to already existing theories within the field of knowledge transfer and psychology. Practical implications for schools in underprivileged areas are exposed, and future research avenues are suggested. Limitations of this study are also discussed.

Chapter Two

Literature Review

This chapter will shed some light on the essential concepts of the knowledge transfer discipline, leading up to the main object of this study; the strategies adopted by intermediate agents to promote school practitioners' use of research-based evidence.

Conceptualization of Knowledge Transfer

The study of the phenomenon of knowledge transfer from production of evidence to its use in practice has transcended the practical application of scientific knowledge into many disciplines such as health, education, management, and engineering to list a few (Davis, Nutley, & Walter, 2008; Graham et al., 2006). Across these different fields, variations are observed in the way the phenomenon is labelled (e.g., Pentland et al., 2011). This results in an array of terms including: *knowledge transfer*, *knowledge translation*, *knowledge mobilization*, *knowledge exchange*, *knowledge application*, *knowledge diffusion*, *knowledge dissemination*, and *implementation science*, among others (Graham et al, 2006; Straus, Tetroe, & Graham, 2009). The term knowledge transfer is however the most commonly employed (Graham et al., 2006; Nutley, 2009), particularly in Canada in social sciences (FRQSC, 2011; Straus et al., 2009), and is the one used throughout this thesis.

It follows that each of the terms employed to describe the phenomenon that leads produced research-based evidence into practice is defined in many different ways throughout the scientific literature (see for example, Straus, Tetroe, & Graham, 2009). Although a multitude of definitions exist within the literature, there has yet to be a consensus identifying

the most appropriate one (e.g., Mitton et al., 2007; Pentland et al., 2011). Moreover, the definition and connotation of the specific label of knowledge transfer has evolved over time, from restrictive to more encompassing. As such, the Fonds de recherche du Québec - Société et culture (FRQSC, 2011) adopted the expression of knowledge transfer, and provided a useful definition that is not only applicable to the sector of research in education in Quebec, but also representative of a wide-ranging perspective: "All efforts made to contribute to the promotion and acknowledgement of research activities and results in the fields of social science, humanities, fine arts and literature, in order to promote their utilization in practice settings, by decision-makers and by the general public, by either interactive or non-interactive means." (p.9). Notwithstanding this particular definition, three recurring major components are nonetheless identified across all definitions: (a) scientific knowledge, (b) knowledge utilization, and (c) the process connecting the first two components (Lewin, 2008). In the following pages, we will take a closer look at each of these components. We will define them across fields, state what is known about them and then relate it back to what is known more specifically in relation to the field of education.

First component: Scientific knowledge

Within the context of this thesis, *scientific knowledge*, *research evidence* or *research-based evidence* all refer to the product or outcome of research, regardless of how that evidence is presented (Dagenais et al., 2010), and is determined by specific criteria (Laroche, 2009). Although researchers have always differentiated scientific knowledge from scientific criteria, validation methods now encompass as many criteria, as there are producers and users of knowledge (Laroche, 2009).

Traditionally, academic institutions such as universities and research centers have been considered as the chief knowledge producers. Only the scientific community recognized the productions of these institutions as valid and reliable. Nowadays, production methods have become much more diversified (e.g., Gibbons et al., 1994; Nowotny, Scott, & Gibbons, 2001). Today, when we think of producers of knowledge, we include centers for research and development in private organizations; we notice the considerable rise in the practice of program evaluation, and programs dedicated to developing partnerships between educational institutions and practices.

The diversification of production methods has led to differences between definitions and types of validation criteria. On the one hand, the definition of criteria by knowledge producers varies from the strictest, which contains only randomized controlled trials, to the most inclusive, which also incorporates qualitative studies and professional experience (e.g., Whitehurst, 2002). On the other hand, the types of criteria, in addition to rigor and scientific quality, correspond to the applicability and to the accuracy of obtained results (Laroche, 2009).

This broadening of the modes of production and of validation of scientific knowledge can be explained in part by a widening range of users, and by attempts made to reduce the gap between research producers and users in order to better answer users' needs. Consequently, this broadening in the definition of criteria has an effect not only on the methods of validation of knowledge production, but also on the impact of its potential uses (e.g., Gibbons et al., 1994; Nowotny, Scott, & Gibbons, 2001). In parallel to how the definition of scientific knowledge evolved in the field of knowledge transfer, the following paragraph centers on the specific issues related to school practitioners.

Scientific knowledge and the field of education

What is considered as scientific knowledge in relation to the field of education has been subject to it's own debate. The chief criteria of scientific knowledge would be dependant on the probability that it influences professional practice throughout educational milieus (e.g., Lysenko, 2010). Two opposing views on what constitutes evidence that can be applied by school practitioners have consequently emerged. On one side, it is argued that randomized-control trials or quasi-experimental research, which report effect sizes, is the methodology of choice, in order to: (a) ensure the quality of the evidence, (b) be implemented in a larger array of contexts, and (b) lead school practitioners to larger questions about the practices that are most effective in supporting academic success (e.g., Lysenko, 2010; Slavin, 2004). Advocates of the opposing side have called for the adoption of broader protocols of research design, such as the "gold standard", to generate research-based evidence that would capture the complexity, depth, and contextual sensitivity of educational processes. This debate led research producers to integrate both visions into their methodological frameworks by using mixed method approaches (for an example of integration, Johnson & Onwuegbuzie, 2004).

The issue of professional judgment based on practitioners' tacit knowledge has been another aspect of the "what constitutes knowledge" subject. While this debate tends to be philosophical in nature, some authors posited that practitioners' "soft" data or practical evidence, along with an understanding of local contexts, educational values and beliefs, and intuitive experiences were all legitimate components of evidence (Hammersley, 2004; McNamara, 2002). This concept was named "practice-based evidence", defined as evidence that comes from everyday practice (Eraut, 2004; Simons, Kushner, Jones, & James, 2003).

In summary, it is clear that the conceptualization of scientific knowledge has been subject to much discussion. Along with the changing needs of users, the definition of the notion has also evolved over time, becoming a much broader one. Similarly, the conceptualization of knowledge utilization has also seen disagreement and debate regarding what that notion means with respect to desired improvements in an educational context.

Second component: Knowledge utilization

According to Landry, Lamari and Amara (2003), knowledge utilization can be conceptualized as the result of the process of knowledge transfer. In other words, successful knowledge transfer should lead to the application of scientific knowledge by users (Dagenais et al., 2010). This conceptualization offers the advantage of separating the criteria of utilization from its antecedents (Malo, 2010).

Initially, knowledge utilization meant the complete adoption and application of evidence in practice. The definition of this construct gradually became multifaceted in order to include not only direct and complete forms of utilization, but also substitutes forms of use, non-use, misuse, or abuse (Dunn 1986; Lysenko, 2010; Nutley & Awad, 2012). In this vein, knowledge utilization may, according to several authors, be operationalized into three principal and complimentary forms: (a) instrumental, (b) conceptual, and (c) strategic (Amara, Landry, & Lamari, 2003; Beyer, 1997; Graham et al., 2006; Hanney, Gonzalez-Block, Buxton, & Kogan, 2003; Hutchinson, 1995; Landry, Amara, & Lamari, 2001a; Landry, Amara, & Lamari, 2001b; Landry, Lamari, & Amara, 2003; Lavis et al., 2003; Nutley et al., 2009; Weiss, 1980).

First, an instrumental use implies that users make decisions, or solve problems on the basis of available scientific data (Amara, Landy, & Lamari, 2003; Landry, Lamari, & Amara, 2003; Weiss, 1980). Whether it is at the cognitive or behavioural level, users' practice is said to have changed. Authors describe this kind of utilization as linear, specific, and as the direct result of the process of knowledge transfer (Hutchinson, 1995). In terms of decision-making, this type of use would be limited to low-level decisions wherein users' interests are not affected by the outcome (Lysenko, 2010; Weiss, 1980). For example in a problem-solving context, preventive intervention is known as an empirical technique for limiting behavioural problems and difficulty at school (Walker & Walker, 1995). A teacher who performs precise and direct intervention on students who are at-risk of a behavioural disorder would be performing an instrumental application of scientific knowledge.

In practice, research utilization is seldom as direct, clear, and instrumental. Instead, it produces changes in individual understanding or attitudes (Davies, Nutley, & Walter, 2005). Thus, the second type of utilization coined "conceptual use" (Neilson, 2001) or "enlightenment" (Weiss, 1980) refers to the shift in practitioners' reference framework as influenced by research-based evidence (e.g., Lysenko, 2010; Neilson, 2001; Peltz, 1978). Concretely, practitioners adjust or forge new interpretations about a topic, without necessarily modifying their actions or affecting their decisions. Unlike instrumental use, this type of use is a passive process rather than an active one (Hargreaves, 2000). Take for example a teacher who believes that learning disabilities can only be managed with traditional methods. While reading a scientific journal, the teacher learns that technological aids are likely to foster educational success for students with learning disabilities (Jeffs & Castellani, 2010). By modifying their a priori regarding the management of learning disabilities, the teacher is

making a conceptual use of scientific knowledge. In a decision-making context, conceptual use serves to make improved choices when presented with different options that have been successful in other schools (Hughes, McNeish, Newman, Roberts & Sachdev, 2000).

Finally, "strategic" (Hughes et al., 2000) or "persuasive" (Nutley, 2009) utilization of knowledge, an even more indirect type of research use, occurs when decision makers and professionals are manipulating knowledge to legitimize their actions and decisions (Hughes et al., 2000). A school practitioner would perform a strategic utilization when employing research data to confirm or justify his practice, but not to change it (Amara, Ouimet, & Landry, 2004). To illustrate this take, for example, a teacher who is being questioned by one of their student's parents about the content of an extracurricular activity. By justifying the contents of the activity on the grounds of research results, the teacher would be making a strategic use of scientific knowledge. In a decision-making context, research-based evidence would be used to provide additional weight to one's argument in order to influence decisions.

While distinctions between the three abovementioned types of research utilization must be made, it would be erroneous to consider them mutually exclusive or as being part of a continuum (Dunn, 1986; Lysenko, 2010). As an alternative, authors propose they be viewed as interrelated, and co-existent dimensions (Cousins & Leithwood, 1993; Greene, 1988; Huberman, 1987). Research evidence may therefore be used for a single purpose or concurrently for different ends, depending on the context (Sunesson & Nilsson, 1988).

Dating back to 1969, Havelock claimed that a direct link between the component of knowledge production and the component of research utilization hardly existed. Some 50 years later, prominent authors in the field of knowledge transfer contend that little is still

known about the processes involved in linking both components (e.g., Honig & Coburn, 2008; Levin, 2011; Nutley, Walter, & Davies, 2007). The next section examines what is known so far about the multi-faceted process of knowledge transfer, and more precisely, as it pertains to the field of education.

Third component: The knowledge transfer process

Though not always conclusive, long lists of variables have been identified in the scientific literature to describe the mechanisms involved between the production and the use of research-based knowledge. Dagenais and his colleagues (2010) made an effort to conceptually regroup those variables as they pertain to education. In doing so, the authors came up with four main categories of variables involved in the process leading up to knowledge utilization: (a) potential users' opinions about the evidence, (b) individual expertise with regards to scientific knowledge, (c) users' organizational context, and (d) strategies which support knowledge utilization.

First, "opinion" indicates the teacher's perceptions about the accessibility, the clarity, the accuracy, and the usefulness of scientific knowledge (Abrami et al., 2007; McNamara, 2002; Ratcliffe et al., 2005). Their perception of the congruence between their needs and available knowledge represents a process that links scientific knowledge and its utilization (National Center for Dissemination of Disability Research, 1996a; National Center for Dissemination of Disability Research, 1996b; Roy, Guindon & Fortier, 1995).

Second, "individual expertise" refers to teacher's ability and competency using research-based knowledge in their practice. The level of training and the ability to understand

scientific journals are some examples of individual expertise that link the components of scientific knowledge and utilization (Abrami et al., 2007; Nutley, Walter & Davies, 2003).

Third, "organizational context" involves the various elements that interfere in teachers' professional activities and need to be dealt with daily. These elements include organizational culture, human and physical resources involved in the application of knowledge in practice (Abrami et al., 2007; Walter, Nutley, Percy-Smith, McNeish, & Frost, 2004).

Fourth, "sustaining strategies" corresponds to the multiple methods applied in order to promote research evidence uptake by school practitioners. For example, regular communication between users and knowledge producers (Huberman & Gather-Thurler, 1991; Landry, Amara, & Lamari, 2001a) is a sustaining strategy that completes the link between the components of knowledge and its utilization.

In his thesis, Ramdé (2011) validated a mediation model encompassing four factors (i.e., opinion, expertise, organizational context and support strategies) that explain the process of knowledge utilization (see Figure 2). This mediation model tested the predictive value of these four factors and their indirect links with research evidence use, based on the theory of planned behaviour (Ajzen, 1991; Fishbein & Ajzen, 1975). It was tested with the constructs of a questionnaire on knowledge utilization that was created and validated in the educational system in Quebec, as a part of the larger NANS project. The results of the structural equation modelling indicated that the mediation model explains more of the overall variance (67%) of knowledge use, implying that to increase the probability of use of research-based evidence by teachers, a step-by-step strategy is best. Although the model would gain from being tested longitudinally to conclude on its temporal sequence, the findings suggest that the first step

would be to work on the organizational context, as well as on the strategies of support in order to improve teachers' expertise. Once their expertise has grown, the probability of them having a more favourable opinion regarding research would increase. This heightened opinion towards research would then push teachers to apply it.

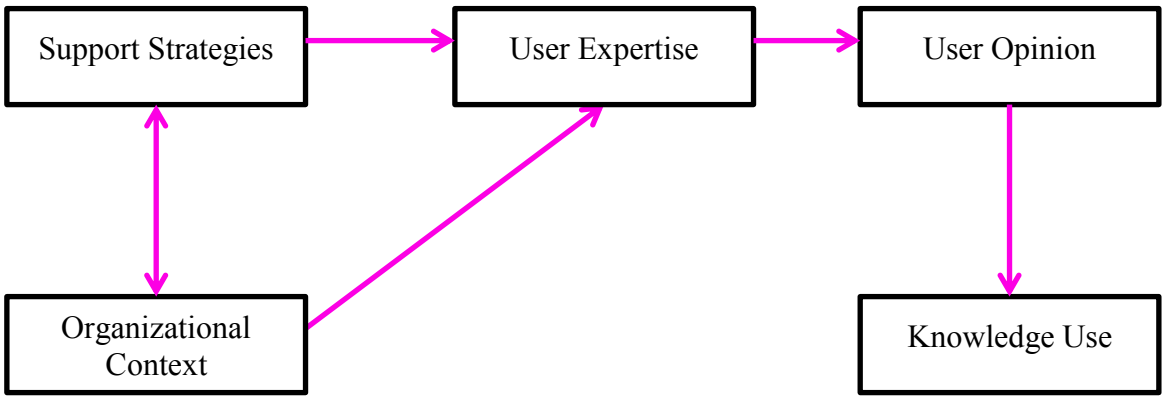

Figure 2. Ramdé's (2011) mediation model of knowledge utilization.

The current thesis is an attempt at explaining the process, which links the components of production and knowledge utilization, within the context of the user. The following section summarizes the three different components associated with knowledge transfer.

Overview of the three components involved in knowledge transfer

The detailed account of the three components, namely: scientific knowledge, knowledge utilization, and the knowledge transfer process, leads to two main observations. First, each component poses a conceptual challenge because it is complex and multifaceted. Second, experts do not agree on the weight to be given to each component in relation to the others, nor which context is best suited to explain the phenomenon. This disagreement has led to three types of models of knowledge transfer: Linear, Exchange, and Whole System models

(Faye, Lortie & Desmarais, 2007; Sudsawad, 2007). The following section will present these three types of models in more depth.

Models of knowledge transfer: Linear, Exchange, and Whole Systems

Linear, Exchange, and Whole Systems models are theoretical attempts at describing the mechanisms involved in bridging the research-to-practice gap (Love, 1985; Lysenko, 2010). The following pages will explain how knowledge transfers' representation evolved, according to the direction of the initiating knowledge transfer component (i.e., scientific knowledge, knowledge utilization, or the knowledge transfer process) involved.

Linear models

Linear models combine two traditional approaches: one based in science, called "science-push" (Landry, Amara, & Lamari, 2001a), and the other grounded in the needs of the user, known as "user-pull" or "need-pull" (see Figure 3; Denis, Lehoux, & Champagne 2004; Havelock, 1969; Lavis et al., 2005; Weiss, 1979). The science-push models focus on the component of scientific knowledge and assume that knowledge is transmitted from researchers to users. According to these models, the quality of scientific evidence is sufficient in and of itself to be used in or to drive practice (see Denis, Lehoux, & Champagne, 2004; Havelock, 1986; Landry, Amara & Amari, 2001; Weiss, 1979 for examples of science-push models). In this unidirectional model, researchers push knowledge towards users by marketing their research, which involves identifying their target audiences, and planning and implementing strategies of diffusion of scientific evidence (Lavis et al., 2005). However, empirical studies have consistently demonstrated that passive diffusion of knowledge, in professional journals

for example, is not enough to ensure its application in practice (Bero et al., 1998; Bowen & Martens, 2005; Grimshaw et al., 2001; National Center for the Dissemination of Disability Research, 1996a, 1996b; Rubin, Frommer, Vincent, & Phillips, 1998; Walter & Davies, 2005). Moreover, science-push models were criticized for limiting the users' role to that of a passive consumer of research, as opposed to actively involving practitioners in the stages of production of evidence (Lavis et al., 2003; Lysenko, 2010).

In contrast, "user-pull", "need-pull" or "problem-solving" models focus on the knowledge utilization component of knowledge transfer (Denis, Lehoux, & Champagne, 2004; Havelock, 1969; Lavis et al., 2005; Weiss, 1979). User-oriented models are driven by the logic that one's needs arise when practicing, which motivates them to explicitly plan, and implement strategies to pull knowledge from research they consider useful to solve their professional problems. Users' access to sources, and their skills to identify and evaluate adequate research-based evidence are key elements of these models.

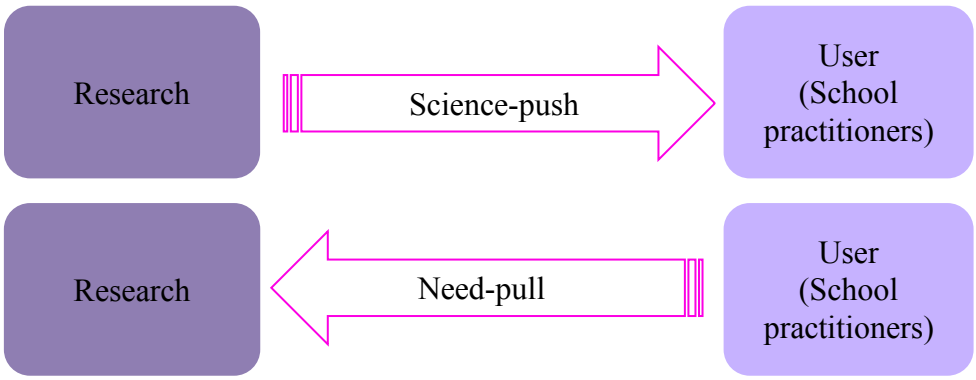

Figure 3. Linear models: science-push versus need-pull (i.e., boxes individually characterize the component in the knowledge transfer process that is central to these types of models).

The scientific literature indicates however, that the acknowledgement of one's needs is not enough to predict one's use of research evidence (Landry, Amara, & Lamari, 2001). On

the contrary, many other individual and contextual factors intervene in the process of knowledge utilization. To name only a few examples, users' attitude with regards to research (Estrabrooks, Floyd, Scott-Findlay, O'Leary, & Gushta, 2003; Hemsley-Brown & Sharp, 2003), institutional or professional culture (Cousins & Walker, 2000; Louis, 1996; Ratcliffe et al., 2005; Torrence, 2002), and key stakeholders' leadership (Cummings, Estabrooks, Midodzi, Wallin, & Hayduk, 2007; Nutley, 2003; Walter et al., 2004), represent significant conditions to promoting knowledge utilization to school practitioners. Finally, the users continue to be bystanders of research products, thus maintaining their consumers status in the need-pull models.

Overall, linear models offer the advantage of examining two components of knowledge transfer: scientific knowledge and knowledge utilization. However, these predominantly unidirectional models don't explain the relationship between these two components, and have received little empirical support (Walter et al., 2004).

Exchange models

To remedy these shortcomings, exchange models (Lavis et al., 2005) make the knowledge transfer process component explicit (see Figure 4). Indeed, these types of models introduced the idea of back and forth, and the active relationship between knowledge producers and knowledge users (Faye, Lortie, & Desmarais, 2007). Unlike the linear models, these models suggest that the users are involved in research activities alongside research producers (Lyons & Warner, 2005; Wiliam, 2002).

In the field of education, involving the practitioner in the research process is a tradition that dates back to the beginning of the 20th century, when John Dewey (1937) bet on teachers'

participation as the key to students' academic success (Joyce & Showers, 2002). In this characteristic example of exchange models, a strong emphasis is placed on collaboration and shared responsibility between researchers and users throughout the process of knowledge creation and utilization (Landry, Amara, & Lamari, 2001a,b). The more regular and frequent the interaction is between the various stakeholders, the more knowledge utilization would be significant (Cousins & Earl, 1995; Landry, Amara, & Lamari, 2001a).

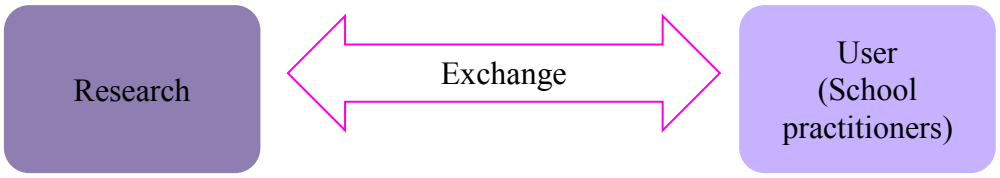

Figure 4. Exchange models (i.e., the double-sided arrow symbolizes the bidirectional component of the knowledge transfer process, which is the focal point of these types of models).

In summary, these models aim for practitioners to appropriate the entire research process, and not only the end result (Denis, Lehoux, & Champagne, 2004; Hughes et al., 2000). While pertinent in the search to understand the process of knowledge transfer, the context in which these relationships are taking place is still not taken into consideration, despite there being solid empirical evidence highlighting it's importance (Cummings et al., 2007; Estabrooks, Kenny, Adewale, Cummings, & Mallidou, 2007).

Whole Systems models

In reaction to the shortcomings of previous types of models, the Whole System models (Walter et al., 2004) add a fourth component to the study of knowledge transfer: the context (see Figure 5). These models integrate the different systems, embracing the components of

knowledge; it's utilization and process. Concretely, the context would help explain the interaction between scientific knowledge and it's utilization.

To cite only one example of these interactive models, Walter et al. (2004) put forward the model of organizational excellence. According to these authors, knowledge producers and users each belong to their own system, with a distinct culture and structure. Knowledge transfer can be explained, following the logic of Walter and peers (2004), through an understanding of the interaction between the systems of producers and that of the users. More specifically, the aim of the organizational excellence model is to develop a research culture among the different stakeholders and within their respective organizations; a culture that may not be natural for the organization a priori. This way, the systems of production and of utilization of scientific knowledge converge in the same direction by sharing a common interest for research. Leadership, the organization of work, and the creation of a learning environment exemplify some of the key elements of Walter and his peers' model.

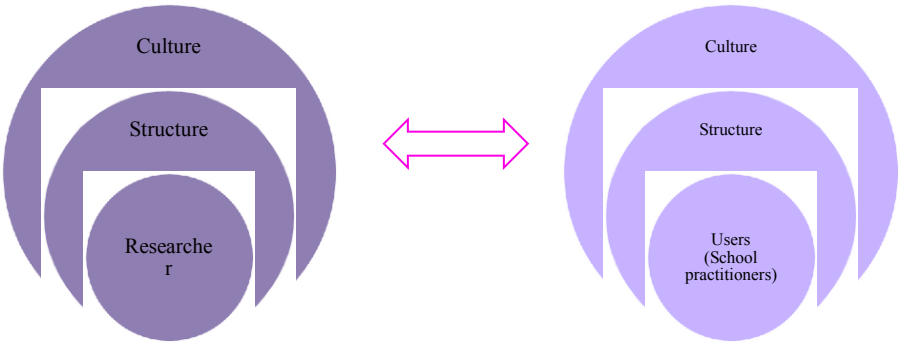

Figure 5. Systemic models (i.e., the context of research producers, and research users are considered separately, yet influence one-another in the process of knowledge transfer).

Overall, whole system models distinguish themselves from one another according to the relative weight of the different systems, and their impact on the three components of knowledge transfer. According to Nutley, Walter and Davies (2009), these systemic models would be suitable at different moments, and would vary depending on the context. They have the advantage of describing the phenomenon of knowledge transfer in a more holistic manner.

While promising, these more holistic models raise the challenge of measurement, as they simultaneously consider a number of systems. The existing literature has not produced any study so far to validate these models (Mitton et al., 2007; Nutley, Percy-Smith, & Solesburry, 2003). Even within each system, the empirical support is lacking, making it difficult to document the characteristics of effective systems.

Nevertheless, one of the promising characteristics of a user's system lies in the involvement and support from influential people whose mandate it is to encourage knowledge utilization by following users in their process (Mitton et al., 2007; Nutley, Percy-Smith, & Solesburry, 2003).

In summary, the review of the dominant models of knowledge transfer highlights the challenge it is to grasp how knowledge transfer leads to application of evidence in practice. Since knowledge transfer is an emergent and multidisciplinary field of study, it is not surprising that we obtain such diverse perspectives on the mechanisms at work. While science-push models are more frequently associated to research in healthcare, none of the existing models have received a prevalent status in education (Nutley, Percy-Smith, & Solesburry, 2003).

Whilst we recognize that there are many theories that attempt to describe the complex, participatory, and multifaceted process of knowledge transfer, there are few conceptually clear and thorough descriptions of the interventions and the processes that these involve. Moreover, despite the existence of numerous models, the field has not yet reached a consensus on a clear and encompassing one (Ward, House, & Hamer, 2009; Pentland et al., 2011). As such, there are discrepancies in the definitions, terminology and conceptualizations regarding how to attain sustained evidence-based practice, which gave rise to profuse theories and frameworks in the first place. Furthermore, until now, most theories focus on merely partial aspects of the knowledge transfer process (Pentland et al., 2011). Finally, a critical lack of empirical evaluative research into knowledge transfer initiatives and their appropriateness for implementation across contexts and disciplines has been stated in the literature (Armstrong et al., 2006; Corrigan et al., 2001; Mitton et al., 2007; Pentland et al., 2011). In fact, Greenhalgh and colleagues (2004) advised that research in knowledge transfer ought to be driven by theory, to focus on the process and adopt common definitions and measures. Thus, failing to consider these elements in research rationalizes, at least in part, the lack of a coherent and solid database in knowledge transfer (Pentland et al., 2011). To conclude, as it stands now, we are far from being able to design and implement evaluations of particular knowledge transfer strategies due to the lack of consensus, and empirical evidence on which interventions work (e.g., Arjomand, 2010; Levin, 2008).

Meanwhile, it is believed that neither researchers nor users are best placed to drive the translation, transfer, and implementation of research evidence in practice given that they belong to distinctive worlds. They operate based on different sets of belief, values, and practices (Caplan, 1979). Therefore, a third-party's involvement in the knowledge transfer

process constitutes part of the solution (e.g., Levin, 2004). The contribution of this mediator will be the focus of the next section of this literature review.

Intermediate agents: A proposed solution to the knowledge production-use gap

Over the past decade, the literature on knowledge transfer has been consistently stressing the importance of interpersonal relationships in shaping evidence-based practice (e.g., Myer, 2010; Pentland et al., 2011; Rogers, 1995). For instance, Hillage and colleagues (1998), who looked at models and factors that influence the uptake of research in practice, stated that a lack of mediation was a critical barrier to the implementation of research evidence in practice, while strategic partnerships were key to improving professional practice. The authors called for people to be engaged, and for mediation processes to be established to disseminate research. Then, a systematic review on the interactive processes involved in transferring knowledge (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidow, 2004) revealed that knowledge circulates from one system to the other until it's application in practice via social networks. Later, at the American Educational Research Association (AERA) conference, Levin and Ungerleider (2008; in Arjomand, 2010) stated that establishing ongoing personal relationships, which support the use of research, was seen as one of the most successful strategies in knowledge transfer.

The literature on knowledge transfer offers insight into the prototypes of actors who have the mandate to foster interpersonal relationships in order to promote an interaction between researchers and end users, as well as to develop end users' capacity for evidence-based decision-making. Different designations have been proposed to speak of these

individuals. To the best of the author's knowledge, Thompson and her collaborators (2006) were the only researchers to review the literature in health, education, and management so as to clarify the prototypes or concepts of the third party. Specifically, they pointed out five different types of individuals, sometimes groups: (a) *opinion leaders*, (b) *facilitators*, (c) *champions*, (d) *linking agents*, and (e) *change agents*.

Opinion leaders refer to peers and experts, or people identified as influential because they are knowledgeable about a particular subject. They are viewed as credible sources, trustworthy, accessible, approachable, willing to share, and able to persuade others (e.g., Locock, Dopson, Chambers, & Gabbay, 2001). Thompson and colleagues (2006) argue that most definitions of opinion leaders are context-specific in that their range of influence does not spread outside of their unit since their knowledge is also situation-specific.

Facilitators indicate external or internal people who engage in the task-oriented goal of assisting others through the dynamic process of implementing a change in practice (Thompson, Estrabrooks, & Degner, 2006). They are said to work with potential users in an atmosphere of mutual respect (i.e., in a non-prescriptive or directive way) to favour learning through critical reflection (e.g., Burrows, 1997). Thus, contrary to opinion leaders, they are assigned that role, and are concerned with helping and enabling a learning process, rather than informally persuading others (Dogherty, Harrison, & Graham, 2010; Harvey et al., 2002; Helfrich et al., 2010; MacNeil, 2004; Rycroft-Malone et al., 2002a,b).

Champions can be understood as internal individuals who emerge unsolicited within an organization, advocate for change and are involved in the different stages of the innovation process (Thompson, Estrabooks & Degner, 2006). They stand out because of their leadership

qualities, enthusiasm, and vision; and are able to influence others in order to advance projects (Howell & Higgins, 1990; Markham, 2001; Martinsons, 1993).

Linking agents are characterized as the human interface that connects the two seemingly incompatible worlds of researchers and practitioners (Thompson, Estrabooks & Degner, 2006). They operate from a problem-solving paradigm wherein the linking agent points the user towards appropriate resources to resolve his or her problem. Thus, they bridge the implementation of research-based evidence use gap by working at all steps of the innovation process (Crandall, 1977; Havelock et al., 1971; Havelock & Havelock, 1973; Hutchinson & Huberman, 1993). Linking agents are recognized as performing three functions: (a) directing their actions towards improving individual or organizational performance, (b) using research-based evidence as key tools for advancement, and (c) performing boundary-spanning roles (Culbertson, 1977).

Finally, change agents are defined as persons or a group whose role is either formal or informal, and whose main objective is to actively foster autonomy in the user's system (Thompson, Estrabooks, & Degner, 2006). They are part of projects that have a clear beginning and end (Havelock & Zlotolow, 1995; Rogers, 1995). They are said to develop users' need to change, already have the solution for the problem (i.e., research-based evidence), and assist them in changing their behaviour. In other words, they collaborate with users to identify their needs and problems, and then to uncover suitable research-based evidence to meet those needs (e.g., Hilz, 2000).

Beyond the typologies proposed by Thompson and her peers (2006), *knowledge brokers*, and *knowledge brokering* is a popular and emerging strategy that seems to be

growing in importance particularly in the health care field (Bielak, Campbell, Pope, Schaefer, & Shaxson, 2008; Dobbins et al., 2009; Dobbins et al., 2007; Meyer, 2010; Ziam, Landry & Amara, 2009). Knowledge brokers can be understood as persons or organizations (Myer, 2010; Sverrisson, 2001) in the public or private sector, who aim to facilitate the transfer and translation of research and other evidence between researchers and practitioners, by establishing and maintaining links between these two seemingly opposite worlds (Lomas, 2007; Myer, 2010). Moreover, they are seen as a useful element to overcoming barriers that stem from characteristics of the research or of the user and/or the organization (Walter, Nutley, & Davis, 2003). Ward, House and Hamer (2009) recognized three different approaches to brokering, which have been widely accepted within the literature, and which form the basis of practical work in the public sector. In the first approach, brokers act as "knowledge managers" or people who facilitate activities of creation, diffusion and use of knowledge. In the second approach, knowledge brokers are seen as "linking agents", whose activities aim to foster connections and positive communications between knowledge creators or producers and potential users. In the third approach, brokers are viewed as "capacity builders". While this approach is not as well articulated, is it said that their goal is to provide knowledge use training to practitioners in order to foster self-reliance and to develop their analytical and interpretative skills. Thus, brokering involves a wide range of activities, depending on how the function is designed (Ridde, Dagenais, & Boileau-Falardeau, 2013). Brokers are, in this perspective, more than just agents who move knowledge from A to B, as they are positioned at the interface between two worlds, making it a world in and of itself (Ward et al., 2009).

Third party mediators must understand the needs and specific functioning modes of the targeted users, and ensure a favourable context that promotes research use. Consequently, it is safe to say that these individuals will exercise their mandate differently based on the context in which they operate, where they stem from (organizations, public or private sector, etc.), who the potential users are and what they specifically need and expect from research evidence (Myer, 2010). Table 1 provides a useful summary of the six typologies presented in this section, as well as some additional results from studies in sectors other than education, which evoked noteworthy evidence about a particular typology, in terms of descriptors, strategies employed or activities accomplished and impact.

Table 1

Summary of the prototypes of intermediates presented and additional results linked with each prototype

Type of intermediary	Definition in (Thompson et al., 2006)	Additional information in sectors other than education		
		Authors and sector	Aims and research methodology	Findings related to the type of intermediate (Descriptors and impact)
Opinion Leader	- Peers or experts - Identified as influential because of what they know - Context-specific - Credible sources able to persuade others - Informal role	Pentland et al., (2011) Health care	Advise on the design and application of sustainable knowledge transfer and exchange mechanisms in large healthcare organizations through a review of the literature in knowledge transfer and exchange (33 papers, between 1990-2009)	- Systematic and literature reviews conclude that opinion leaders are variably effective in guiding the changes necessary in applying RBE in practice (Bero et al., 1998, Pyra, 2003, Mitton et al., 2007)
		Grimshaw, Eccles, Lavis, Hill, & Squires (2012) Health care	Summarize the current concepts and evidence to guide knowledge translation activities through a discussion paper	- Defined as: "use of providers nominated by their colleagues as 'educationally influential'. The investigators must have explicitly stated that their colleagues identified the opinion leaders." (The Cochrane Effective Practice and Organization of Care) - Informal leaders - Compared to their peers, opinion leaders have: (a) greater exposure to external communication, (b) somewhat higher social status, and (c) are more innovative - Influential position in their communication structure - Target the knowledge, attitudes, and social norms of their peer group - Colleagues identify different opinion leaders for different clinical problems - Not stable over time (Doumit, 2006)

Facilitator	- External or internal to the organization - Role is assigned / appointed (formal) - Task-oriented goal: assist in the process of implementing change in practice - Non-prescriptive or persuasive, but supportive and enabling - Encourage critical reflection	Harvey et al., (2002) Health care	Review of the literature within health care (75 papers, from 1985-1998) and a concept analysis of facilitation to determine its conceptual clarity and maturity in relation to successful implementation of evidence into practice	- Applied in different fields: health care, education, counselling, management, practice development, health promotion, action research, clinical supervision, quality improvement and audit - Commonly defined as: "a technique by which one person makes things easier for others' (Kitson et al., 1998, p. 152); "the process of enabling (making easier) the implementation of evidence into practice" (Harvey et al., 2002, p. 579) - Two key aims: (a) the achievement of specific goals, and (b) the development of processes to enable effective teamwork (Morrell & Harvey, 1999) - Purpose ranges from discrete task-focused activity (help and support) to a more holistic process of enabling individuals, teams and organizations to change (by helping them analyze, reflect, and change their attitudes, behaviours, and ways of working) - Role ranges from practical hands-on to complex and multifaceted - Difficult to draw meaningful conclusions about the efficacy of a facilitator intervention because of the diverse conceptualizations and applications - Overall, the distinction between the facilitator role and other change agents is unclear
		Dogherty, Harrison, & Graham, 2010 Nursing	Building on a previous review and concept analysis (Harvey et al,, 2002), examine how the role and process of facilitation in the implementation of research findings has evolved over the last decade within the nursing context	- Results are in line with Harvey et al. (2002) - Continues to be applied in implementation studies without specific explanation of meaning making it difficult to replicate either in research or practice - Articles frequently referenced the conceptual framework and definition originally developed by Kitson et al. (1998) and/or the concept analysis and definition by Harvey et al. (2002); probably resulting in the consistency of the findings - Definition by Stetler et al. (2006) stresses the importance of relationships and working together: "A

			Review of the literature and concept analysis (39 papers, from 1996 – 2008)	deliberate and valued process of *interactive problem solving* and *support,* which occurs in the context of a recognized need for improvement and a supportive interpersonal relationship" (p.6) - Facilitation was viewed as a person carrying out a specific role. In recent literature, it is both a specific role (e.g., facilitator) and a process (e.g., group engaging in facilitation) - Research is still needed to clarify how facilitation is used to implement change in nursing practice along with an assessment of the effectiveness of various approaches - Content analysis revealed that the specific strategies are located at the task-end of the continuum described by Harvey et al. (2002). Five areas of commonalities across papers transpired: (a) Increasing awareness of a need for change; (b) Leadership and project management; (c) Relationship-building and communication; (d) Importance of the local context; and (e) Ongoing monitoring and evaluation
Champion	- Emerge unsolicited, but naturally - Distinguish themselves by their personal traits (leadership qualities, enthusiasm, vision), which allow them to influence others - Advocate for change - Internal to the organization	Hendy & Barlow (2012) Health and Social care	Examine the role of champions in three health and social care organizations in England as they move services to a remote model of delivery The design is case studies using ethnographic methods	Literature review: - Champions "identify with the idea as their own, and with its promotion as a cause, to a degree that goes far beyond the requirements of their job" (Schon, 1963, p. 84) - Act entrepreneurially to engage themselves and others with the innovation (e.g., Rogers, 1995) - Enable formal hierarchies to be bypassed - Initially, emerge spontaneously and informally within an organization (cf. Schon, 1963) and actively and enthusiastically promote innovation and change to others (Howell & Shea, 2001; Mantere, 2005) - Distinguishable by their ability to communicate a clear vision of the innovation (Howell & Higgins, 1990) - In health management, the essential role of the champion is acknowledged (Dobson, Fitzgerald, Ferlie,

				Gabbay, & Locock, 2010; Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004; Locock, Dopson, Chambers, & Gabbay, 2001; Soo, Whitney & Baker 2009), alongside evidence for its effectiveness (Backer & Rogers, 1998; Markham, 1998; Schon, 1963) - Little direct empirical evidence exists on how to harness the benefits and energy of champions (Greenhalgh et al., 2004) - Questions remain about what factors determine their success - Role is to influence and facilitate change in others. They do this by: (a) demonstrating commitment, (b) promoting innovation with passion and persistence, (c) pulling together diverse groups of professionals, (d) team-building, and (e) developing informal networks to support them (Maidique, 1980; Pettigrew et al., 1992; Schon, 1963) - Communicate the meaning attached to the innovation to organizational members, and involve and motivate others to do the same, acting as boundary spanners between top management and other members (Carlile, 2002) Results: - Whilst this role is highly effective in the first phase of adoption, it may be less useful, even detrimental in the later stages of implementation, particularly if identification with the new circumstances is not established - Beyond local contexts, the effectiveness of the champions varied
Linking Agent	- A go-to person, in between researchers and practitioners - Works through all the steps of the	Robinson et al. (2005) Health care	Examine the utility and identify factors related to the success of linking systems between public health resource and user organizations, for: health	- As part of the "linking system" a linking agent, either from resource or user groups, is an individual that facilitates exchange through communication and activity initiation (Havelock, 1973) - Common linking functions and activities fit the characterization by Anderson's et al. (1999): (a)

	innovation process - Directs their actions towards improving performance - Uses RBE as a tool - Performs boundary-spanning role		promotion, dissemination, and capacity building. The design is a parallel-case study of three provincial projects using key informant interviews and content analysis of synthesized qualitative and quantitative data	awareness, (b) communication, and (c) interaction. This study adds a fourth function of capacity building - While authors found improvements to capacity enhancement and implementation of heart health programs, they could not draw any conclusions between specific types of linking mechanisms used and outcome measures reported
Change Agent	- Formal or informal role - Part of projects with a clear beginning and end - Proposes RBE as a solution to users' needs - Fosters self-reliance - Perceived as an expert	Haider & Kreps (2004) Public health	Special issue marking the 40th anniversary since Rogers' Diffusion of Innovations model (DOI), by detailing the state of research in three DOI categories: (a) Theoretical assessment; (b) Methodological assessment studies; (c) Application in public health	- Defined as "an individual who influences the clients' innovation-decisions in a direction deemed desirable by a change agency" (example of a Health Education Officer in the Ministry of Health) - Two approaches: (a) secure the adoption of the new idea, or (b) slow the diffusion process and prevent adoption of innovations with undesirable effects - Positive communication with potential users is vital to the success of any behavioural change program - Responsible for seven roles in the process of introducing innovation into a user system: (a) foster a need for change; (b) found an information-exchange relationship; (c) identify problems; (d) create an intent to change; (e) turn an intent into action; (f) stabilize adoption and avoid discontinuance; (g) reach a terminal relationship
Knowledge Brokers	- Facilitate transfer and translation of research by establishing and maintaining links between researchers and	Lomas (2007) Health care	Brief communication to propose the use of knowledge brokers as a solution to the disconnect between health research and health services' delivery	- Defined as "all activity that links decision makers with researchers, facilitating their interaction so that they are able to better understand each other's goals and professional cultures, influence each other's work, forge new partnerships, and promote the use of research-based evidence in decision-making." - 400 Canadian health sector knowledge brokers were surveyed since 2003 (few had a full time designation in

practitioners - 3 types (Ward et al., 2009): (a) Knowledge managers (facilitate activities of creation, diffusion, use); (b) Linking agents (foster connections and positive communication between researchers-users); (c) Capacity builders (give knowledge use training to practitioners; foster self-reliance and develop analytical and interpretation skills)			this role). They allocated 30% of their time on transforming knowledge (reading and disseminating research), 20% on intermediation (actually linking decision makers and researchers), and 50% on management duties or teaching. - 30% were based in universities, 10% were in foundations or research funding agencies, and 60% resided in the health system (e.g., hospitals or regional health authorities). - Describes four major brokering activities: (a) Setting the research agenda (consulting with key stakeholders to increase research uptake and linking funding to collaboration with organizations), (b) facilitating applied research (Graduate student awards to ensure work in this area, inclusion of decision makers as co-investigators as a formal requirement, co-production of research-syntheses with people who implement the results), (c) disseminating research (lay summaries, virtual networks, organizing face-to-face events among multiple stakeholders), and (d) getting research used (funding and evaluating selected knowledge brokers, providing workshops for health professionals on tools and techniques, and fellowship training programs for decision makers).
	Ridde, Dagenais, & Boileau (2013) Public health	Scoping study of the knowledge broker role in public health (19 papers)	- Knowledge broker initiatives were grouped into three categories, composed of 11 activities: (a) planning (identification of stakeholders, network and partnership creation, problem identification, and needs assessment), (b) knowledge broker support (training, technical support, elaboration of a practice guide) and (c) knowledge broker strategies (knowledge management, liaison between knowledge producers and users, and user training) - Role is to promote the emergence or to stabilize associations uniting actors (Boyer, Roth, & Wright, 2009).

	- None of the studies identified demonstrated an impact on clinical behaviours or public politics. - Available research is limited to short-term effects of knowledge brokers' strategies (Kirkpatrick, 1996). - Out of 4 identified studies exploring knowledge broker effectiveness, 3 describe an increase of targeted users' level of knowledge. Thus, documented strategies seem promising.

To recapitulate, no matter what label is proposed to describe and discuss this person, they all share a common objective: to recommend research-based evidence to potential users in order to promote its implementation in practice. Underlying this goal is the idea that increasing the availability of scientific knowledge should lead to behavioural changes. Based on this reasoning, the abundance of the terms employed, as well as the educational context wherein we do not know who this person is or how they execute their work, the author of this thesis retained the designation of *intermediate agent* as it is the most encompassing and neutral, compared to the terms presented. In Chapter Five, we will propose a comparison between the intermediate agents who participated in this study and the typologies presented in this Chapter so as to position them relative to the literature.

Although studies in knowledge transfer have increasingly been focused on the types of people who exercise a role of influence towards practitioners' use of research-based evidence, little remains known about the strategies they adopt (Pentland et al., 2011). Yet, in order to favour research uptake in practice, it is crucial to understand what levers must be activated to achieve that goal. Unfortunately, we are still far from knowing what works, in which setting, and with whom (Dagenais et al., 2012; Levin, 2011; Nutley, 2011). Several facts may explain why: (a) studies have consistently suggested that no single approach is effective in all circumstances (e.g., Grimshaw et al., 2001; Nutley, Walter, & Davies, 2003). Instead, different knowledge transfer strategies show mixed effects (e.g., Arjomand, 2010); and (b) descriptions of knowledge transfer interventions, such as those from intermediate agents, are vague, context-specific or partial (e.g., Cooper, 2009; Dagenais et al., 2008; Ward et al., 2009). Moreover, what we find is a list of possible activities that aren't organized into a coherent process. In their scoping study that included 19 articles in the context of public health, Ridde,

Dagenais and Boileau-Falardeau (2013) identified three categories comprised of 11 activities performed by knowledge brokers. The first category includes knowledge brokers' planning activities, which aims to organize and structure brokering initiatives. Specifically, brokers identify, at the beginning stages of an initiative, all stakeholders (individuals, institutions or groups) for whom support for an initiative is important. Brokers also find partnerships, by targeting practice communities or groups who wish to be involved in brokering activities (e.g., Clark & Kelly, 2005). Moreover, context analysis helps knowledge brokers understand the characteristics of potential users, and their environment (e.g., Ward et al., 2009). Based on a previously identified problem, brokers seek to identify information that emphasizes the gap between reality and an ideal situation. The second category, called support for knowledge brokers, consists of enabling brokers in order to subsequently support practitioners' research uptake. The third and final category, termed knowledge-brokering activities, relates to the strategies brokers use to help potential users. These include knowledge management, wherein the goal is to produce valid and adapted information for users (e.g., Mecheri, Boissel, Amsallem, & Stagnara, 2009). Brokering activities also involves liaison between producers and users (via face-to-face, telephone or Internet). While the frequency of interaction between stakeholders may be on a daily basis in some cases (e.g., Russell et al., 2010), it is usually set to once every two months (e.g., Amsallem et al., 2007). Brokers typically have a social network that they use to create gathering opportunities for producers and practitioners to meet (via conferences, seminars, or a platform for collaboration; e.g., Clark & Kelly, 2005). Finally, training for users is another activity performed by brokers to ease their access to relevant research and to explain the evidence (via line conferences, workshops or discussions; e.g., Amsallem et al., 2007). Thus, beyond the diversity of titles intermediate agents have, and the

listing of possible activities inherent to their mandate (see Table 1 for more examples), our grasp of how to encourage research uptake in general, and particularly how this is accomplished by an intermediate, and the process involved in supporting school practitioners remains partial at best.

Conclusion

Overall, reviewing the elements related to the person who's mandate is to promote research-based evidence use presented in this chapter leads to an important observation: the central mandate of intermediate agents needs much more exploration to learn about the strategies adopted to connect research to practice. This thesis sets out to present a model explaining the process of knowledge transfer intervention as seen through intermediate agents' perspective. Moreover, this thesis also aims to present how this model relates to different frameworks in the literature on the matter. The next section sets out to summarize what was discussed throughout the chapter, leading up to the main study's methodology.

Summary of the chapter

Chapter Two presented an overview of the key concepts involved in knowledge transfer as well as the debates surrounding its study. The three components (scientific knowledge, knowledge utilization, and the process of knowledge transfer) that comprise the study of knowledge transfer were each considered separately, but discussed both across disciplines, and in relation to education, specifically. What stood-out was that each component was dynamic and multi-facetted, partly because knowledge transfer is a multidisciplinary field offering alternative views that need to be considered simultaneously, and partly because knowledge transfer is an emerging field that still requires considerable exploration.

Then, different types of models (linear, exchange and systemic) that hypothesize how the processes of knowledge transfer leading up to knowledge utilization occurs, were presented. A noteworthy insight highlighted in this section was that, although exchange models allow for a closer inspection of the producer-user relationship, the way knowledge transfer is operationalized seems highly embedded in the context. Not considering the context or its specificities yields, at best, only a partial understanding of the mechanisms at work. Yet, research is still far from knowing which characteristics are important at a conceptual level, and even less about what their impact is.

Based on an important review of the types of persons involved in promoting research-based evidence use, we reported on six types of people who accomplish this mandate. The review of the literature that followed focused on this study's main concern: intermediate agents. Namely, the diversity of their titles leading to a blur regarding the strategies and knowledge transfer interventions they plan and use to promote research-based evidence.

Thus, in order to delineate our understanding of the strategies used by intermediate agents in the context of knowledge transfer in education, existing theories based on their complementarity with the subject of interest and this study's findings were contrasted and compared in Chapter Five. The next chapter will detail the methods that were employed to reach this understanding.

Chapter Three

Research Methodology

Research purpose and design

The purpose of this study was to document the strategies intermediate agents put forward to support the use of research-based evidence in education. Inherent to that research goal, a Grounded Theory was constructed to explain how intermediate agents promote school practitioners' use of research-based evidence. To that effect, a qualitative design was implemented.

More specifically, this study was grounded in a knowledge transfer project, which focused on intermediate agents who supported school practitioners' use of research-based evidence to ensure greater academic success for high-school students from underprivileged areas. It is based on the experience of those agents who were recognized by their peers for their efficacy as intermediates. The methods and techniques used in this study were based on the Grounded Theory approach (Glaser & Strauss, 1967; Strauss & Corbin, 1998).

After a brief review of the research objectives pursued in this study, this chapter will take a closer look at the qualitative research approach used in this context, and its appropriateness for to the research objectives. Thereafter, the research plan, which details the circumstances of the study, the sample, the recruitment strategy, the instruments, the procedure as well as the analysis and treatment of the data, will be presented in more depth.

Before the detailed presentation of the research plan, the pertinence of a Grounded Theory research design (Glaser & Strauss, 1967) is argued, and an overview of the approach is provided in the following section.

Grounded Theory: Relevance, overview and position of the principal investigator

As with any research design, it is the research question and the context of the study that should dictate the methodology and the design the researcher must choose and implement (Feuer, Towne, & Shavelson, 2002; Van Der Maren, 2004, 2006). Although there has been a long-standing debate about worthy indicators of science-based research, some authors have attempted to shift the debate back to research design's principal mission: "the question drives the method" (Feuer, Towne, & Shavelson, 2002, p.8), thus calling out the critics: "the myth that science is synonymous with a particular method" (p.9) should be dismissed. Therefore, a study's rigor should be apparent through both the relevance of the method to systematically investigate and answer the research enquiries, and through the conscientiousness with which the researcher applies the research method (Riehl, 2006). Comprehensively, qualitative research was chosen as the preferred route for this study, based not only on the exploratory and descriptive nature of the inquiry, but also on the inherent complexity of the process of knowledge transfer. Finally, Grounded Theory is a known research method that "fits into the broader traditions of field work and qualitative analysis" (Charmaz, 2003, p. 270).

As discussed in Chapters 1 and 2, this study is exploratory in that it remains unclear how intermediate agents promote research-based evidence to school practitioners. Authors such as Levin (2011) continuously suggest that we are still far from knowing what works, as

well as when and where it works. This issue carries even more weight in the field of education where knowledge transfer research is lagging behind. Thus, this study aimed to further explore and provide a description of the process of intermediate agents' knowledge transfer intervention strategies.

Overview of the approach

Glaser and Strauss developed the Grounded Theory in 1967, which was later adapted by Strauss and Corbin's (1990; 1998) some twenty years later. The revised version of this theory is said to facilitate the discovery of concepts and relationships of a complex issue through the systematic analysis of the data. This aims to inductively produce a theory that explains a process, action or interaction about a phenomenon (Charmaz, 2006; Creswell, 2007; Glaser & Strauss, 1967; Neiman, 2008; Strauss & Corbin, 1998).

In this perspective, Grounded Theory helps to provide an in-depth examination, based on empirical data, of a research question that is poorly documented in the literature, and provides guidelines for subsequent action (Strauss & Corbin, 1998). Creswell (2005) argues that Grounded Theory demonstrates the "rigor that quantitative researchers like to see in an educational study" (p. 296). Thus, Grounded Theory was ultimately deemed the ideal approach to generate a theory that explains how intermediate agents influence school practitioners' implementation of research findings (Poupart et al., 1997).

According to the creators of this method, data collection, analysis, and the final interpretation of the data are intimately intertwined. In other words, this method is a process of constructing a theory based on an inductive analysis that starts from a systematic and

progressive description of a phenomenon, and that orients itself towards a theory that is rigorously verified at every stage of analysis (Fortin, 1996).

Overall, this design emphasizes the discovery and development of fresh categories rather than the use of preconceived notions and existing theories, as well as a systematically focused and sequential approach to data collection instead of large initial samples (Charmaz, 2006).

Position of the principal investigator

In qualitative research, and particularly in the Grounded Theory approach, it is important for the researcher to be mindful of the a priori that may have had an influence on the construction of the model (Charmaz, 2006; Strauss & Corbin, 1998). This acknowledgement allowed the researcher to guard against her own bias, and to test her assumptions rather than to reproduce them. In turn, this allowed her to approach the study from a perspective of relative objectivity (Charmaz, 2006; Harry, Sturges, & Kingner, 2005).

The author of this research had very little first-hand experience with the mainstream Quebec Educational System upon beginning this study, as her educational background was set in the European French System. This caused her to be more thorough during interviews in order to clarify and deepen her own understanding of the intermediate agents' context (Charmaz, 2006). This way, the principal investigator built her grasp of the context in which the study took place based mainly on the empirical data, rather than her own a priori.

Following her pre-university studies in the European French Educational System, the principal investigator received her undergraduate training in Psychology and her graduate training specialized in Organizational Psychology. In the context of this training, the author

developed her knowledge and her competencies of human behaviour. It is fair to assume that the researcher's a priori inadvertently stems from this training, which understandably had an impact on the analysis of the data. Indeed, it can be concluded that the author drew some links between the data collected from the respondents of this study, and existing theories from the discipline of psychology.

In qualitative research, these experiences may be viewed as more of an asset, than a liability (Charmaz, 2006), because they form the basis for a way to look at the data, question and listen to interviewees, and to think critically about the data.

In the following pages, the research plan that was performed for the purposes of this study is revealed.

Research plan

This section of the chapter includes: a review of the context of the NANS study, the quantitative and qualitative exposé of the participants that were recruited to partake in this study, the two tools that were used to collect the data, the three steps of the procedure of the study according to Grounded Theory, as well as the analysis and treatment of the data.

Context of the study

The *New Approaches New Solutions* or the NANS project represented a unique opportunity to improve our understanding of the mechanisms at play in educational practitioners' decision to use research findings.

As previously described, the present study was therefore part of the larger research evaluation of the NANS, a Quebec governmental initiative that targets the problem of elevated

dropout rates of students from underprivileged areas at both the school and classroom levels. Its aim is to ensure greater success for students in underprivileged areas by adapting practices based on research. Since the fall of 2002, the NANS initiative has been implemented in nearly 200 high schools across Quebec that are said to serve a concentrated number of students from underprivileged areas based on a deprivation index established by the Ministry of Education, Recreation and Sports of Quebec. The targeted schools belonged to 54 School Boards, and 11 Regional Offices.

The individuals who are titled intermediate agents in this study are those who were called upon to support school practitioner's use of research findings. Within the NANS study, they were representatives of: (a) the CIMD, (b) School Boards, and (c) Regional Offices. Each of these bodies had roles and responsibilities within the implementation of the NANS strategy, which were discussed in greater detail in Chapter One. Essentially, the CIMD had the responsibility of determining the general objectives of the strategy and of supporting its implementation, while the School Boards were the project managers of the strategy. Their mandate consisted of distributing available resources among the schools, and of supporting the implementation of the strategy. The Regional Offices had more of an intermediary role between the CIMD and the School Boards. Each Regional Office had the mandate of implementing support mechanisms for School Boards to ultimately help better cater to the schools in their territory.

Recruitment strategy and considerations

Participants in this study were recruited using the snowball sampling method (Biernacki & Waldorf, 1981; Patton, 1990), in which a participant identifies another one from

within their social network. This type of sampling method helps target people who are the most efficient in a specific field of practice (Patton, 1990). Therefore, recognition by their peers was the selection criteria used to identify the most efficient agents whose mandate was to support school practitioners' use of research-based evidence. Moreover, our inclusion criterion stipulated that participants must have the same definition of scientific knowledge as the researcher team on the NANS project, and as sufficiently indicated in the review of literature. In that respect, all 16 informants shared the conceptualization of scientific knowledge detailed in Chapter Two.

A risk associated with Snowball Sampling is that it may lead to homogeneity of ideas, when the people suggested are too similar (Patton, 1990). However, a strategy of triangulating the sources was employed to avoid this particular bias. Triangulation is used in qualitative research as a method to establish and verify the validity of a study by analyzing a research question from multiple perspectives (Olsen, 2004). Specifically in this study, informants were recruited from different institutions (for example, School Board or Regional Offices), and held a variety of positions (for example: Regional NANS Coordinator, Educational Services Director). Therefore, by triangulating diverse sources and by getting different points of view, empirical saturation was reached. One may claim to have reached empirical saturation when no new information is provided throughout the interview (Strauss & Corbin, 1998).

Sample: Profile of key informants

Key informants were chosen to participate in order to clarify the strategies used by intermediate agents. As discussed, the basic recruitment criterion called for individuals who were recognized by their peers for the quality of their support in transferring research to

school practitioners in an effort to promote scientific knowledge utilization. In total, the sample is comprised of 16 participants were recruited from: 54 School Boards across the province of Quebec that are involved in the NANS project, the ministerial bodies involving 11 Regional Offices, and the CIMD. All participants who were contacted by telephone to partake in this study willingly agreed to do so.

The sample is divided among the different instances as follows: 6 participants belonging to 5 different School Boards, 7 members from 6 different Regional Office, and 3 participants who stem from the CIMD, and work in 3 different regions of Quebec. Of this sample, 10 participants are women, and 6 of them are men. The number of years of schooling of the sample varied between 16 and 20 years (M=18.38*; SD*=1.20); while most had a master's degree (75%), their education ranged from a bachelor to one person completing a Ph.D. The participants of this study distinguished themselves by their notable expertise in the field of education (between 7 and 40 years; M=21.13; SD=10.03), and their work in underprivileged areas across Quebec (between 3 and 28 years; M=10.40; SD=7.52). Most informants had training in the field of education, or in fields closely related such as psychoeducation, psychology, school administration or change management. Although they all had a knowledge transfer mandate, their title within their respective instance was very variable, with no two participants holding the same official title. Except for one participant who was just moved into a new position a month prior to the interview for this study, all participants were in their positions for a noteworthy amount of time (from 2.5 to 10 years; M=4.57; SD=2.07).

Instruments

To answer the research objective pursued in this study, two tools were used: a demographic questionnaire and an interview guide.

Demographic Questionnaire

Participants were asked to complete a demographic questionnaire (refer to APPENDIX 1), in which they indicated their sexes, the last diploma they obtained as well as the number of years of school they had completed, the number of years of experience in the field of education and intervention in underprivileged areas, the number of professional work years within the School Board or ministerial bodies, their title at the time of the interview, and the number of months they had occupied that function in the organization.

Interview Guide

A semi-structured interview was prepared for the purposes of this study. In this type of interview, the list of subjects to cover is determined in advance so that all participants give their points of view on the same themes (Charmaz, 2006; Patton, 1990). Thus, systemization of data collection, organization, analysis and comparisons amid data were facilitated and interviewer bias was reduced (Patton, 1990).

In this type of interview structure, the examiner also has the possibility of modifying the order and the wording of questions based on the participant and the situation, in order to allow the emergence of new and unforeseen themes. In other words, the interview follows a structure, but provides the interviewer with enough flexibility to adapt to the situation and to the reality of a participant. The interviewer must therefore remain open and attentive to the specifics of each case, and to the unique perspective and significance participants give to

particular events and to the phenomenon examined (Paillé, 1991; Petterson & Durivage, 2006).

Questions were formulated based on the recommendations provided by Patton (1990). As such, open-ended questions were elaborated in order to give way to unanticipated statements and uncovered themes in the interview grid. This way, it was possible to extract a maximum of information highlighting the object of research, all the while minimizing the risk of imposing predetermined responses to a given question.

The interview guide covered 2 complementary themes, and was composed of 11 questions (refer to APPENDIX 2). The first theme served to ensure that the intermediate agents who were chosen to partake in this study were indeed transferring evidence-based research by asking how they define the concepts of scientific knowledge or research findings and knowledge transfer. This first theme totalled three questions (for example: "What is considered research-based knowledge for you?").

The second theme covered by the interview aimed to clarify intermediate agents' knowledge transfer intervention strategies. This theme included eight questions (for example: "Can you describe the tasks that you accomplish in terms of knowledge transfer support?").

Two questions were based on the critical incident technique (Flanagan, 1954; Petterson & Durivage, 2006). This technique involves asking a respondent to evoke a specific event in which they had been particularly effective, and another event in which they had been particularly ineffective and to explain the circumstances surrounding the event, and the reasons they believe it was effective or ineffective. The goal was to obtain specific behavioural descriptions and their consequences as they were observed and experienced. In

the context of this study, they allowed to identify criteria of efficacy of intermediate agents in their promotion of scientific knowledge use.

Research procedure: A three-step process

This study unfolded in three successive steps bearing the recommendations of Strauss and Corbin (1998; see Figure 6). The authors posit that by alternating between research in the field and analysis of the collected data, a researcher progressively constructs a theory that is grounded in empirical reality. This theoretical construction stems from a consideration of all of the facts and incidents that are perceived as key concepts of the object of research.

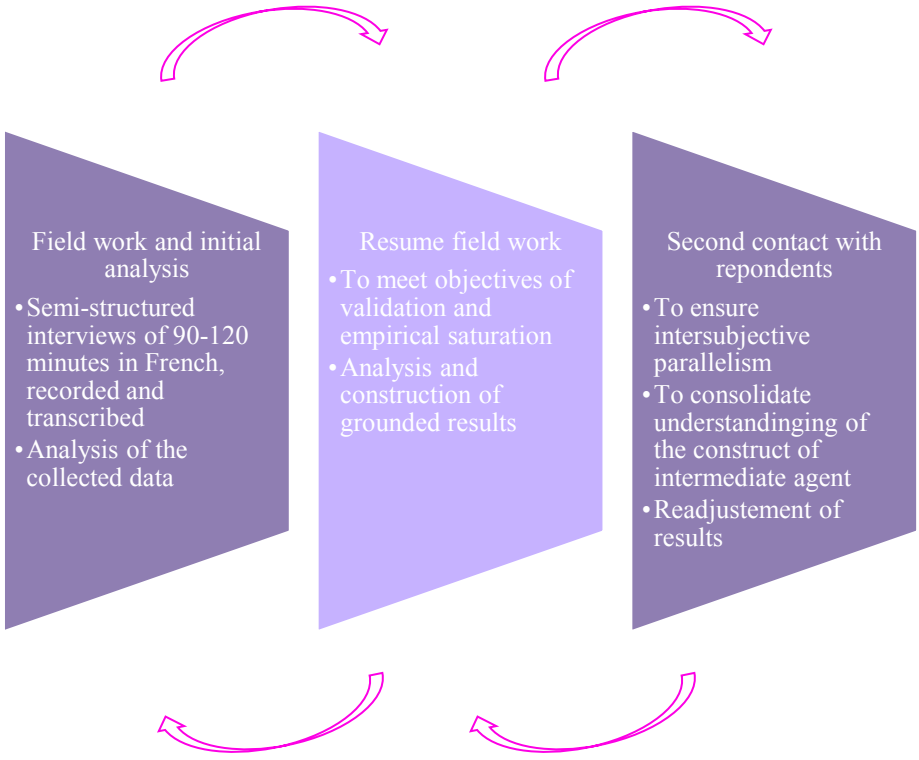

Figure 6. Summary of the research procedure of this study (Charmaz, 2006; Strauss & Corbin; 1998; Van der Maren 2006).

The first step (Strauss & Corbin, 1998) consisted of contacting by telephone those individuals who were previously identified by two different sources of reference. After a brief presentation of the researchers involved, the study's objectives were specified. Appointments for a face-to-face interview were made with people who were interested in taking part in the study. They were informed that the interview would take place in their office. Participants were e-mailed the interview guide one week ahead of the scheduled meeting.

Before the start of the interview, participants were asked to sign a consent form detailing their right to withdraw from the study at any time, without facing negative consequences (refer to APPENDIX 3). They were also asked to complete the demographic questionnaire.

Thereafter, semi-structured interviews varying between one-and-a-half and two hours were conducted in French. All interviews were recorded and transcribed verbatim by a person independent of this study. The transcripts represent a corpus of 332 pages. Also, hand-written notes were taken in order to keep a trace of observations that were made, and as a protective measure in case of a defective recording. In one case, the researchers' notes were transcribed for analysis purposes since the recording of the interview was not successful. The transcription occurred shortly after the interview so that the most information could be recuperated. To ensure the confidentiality of participants, code names were attributed to them and only members of the NANS evaluation team and researchers involved in the study had access to the transcribed interviews.

At the end of each interview, participants were informed of the next steps, and were invited to refer the researcher to other people who shared the characteristics examined in this

study (Faugier & Sargeant, 1997). After a series of interviews, when no new information seemed to emerge, data collection was interrupted in order to start analysis (Glaser, 1978). This marked the end of the first stage in the procedure of this study.

After a first period of transcription of interviews, and analysis of the data collected in the previous stage, fieldwork was reprised. Resumption of data collection constituted the second stage (Strauss & Corbin, 1998) of the procedure of this study, and proved essential. Indeed, this stage had the double purpose of validating the themes that emerged during analysis of the data, and to verify that empirical saturation had been reached (Strauss & Corbin, 1998). Thus, interviews were completed until the participants' answers became redundant. Upon it, the second stage was over.

When analysis of the data was very advanced and results were formulated, the last step served to evaluate the pertinence of interpretations and conclusions, which stemmed from the sampled data. To do so, the preliminary results were presented in front of approximately 80 people who work in the different ministerial bodies, including 6 participants in this study. They were invited to comment on the findings, and a workshop was held allowing people to discuss the implications of their practice. This strategy is used to ensure an inter-subjective parallelism; in other words to reduce the gap between the expression of informants' thoughts and those of the researcher to ultimately better understand the construct of intermediate agent (Van der Maren, 2004).

Analysis and treatment of the data

Generally speaking, Grounded Theory is "an iterative process by which the analysis becomes more and more grounded in the data, and develops increasingly richer concepts and

models of how the phenomenon being studied really works." (Denzin & Lincoln, 2000, p. 783).

The approach gained acceptance from quantitative researchers because of its rigor and usefulness (Charmaz, 2006; Creswell, 2005). The authors of Grounded Theory (1998) suggested however that, the strategies linked to their approach be used flexibly in researchers' own way; while stating in their book that their goal was to "stimulate other theorists to codify (data) and publish their own methods for generating theory" (Glaser & Strauss, 1967, p.8). In other words, this method actively involves the researcher in the analysis of the data, while she is being progressively led by the inquiry. Overall, since this procedure is sensitive to the emergence of themes, it presents the advantage of being flexible and dynamic (Paillé, 1994; Patton, 1990; Poupart et al., 1997). The following paragraphs describe the method of analysis and of data coding used.

To ultimately document intermediate agents' intervention strategies, the data stemming from the interviews were organized, coded, and analyzed using the NVivo 8 software, which is specifically designed for treatment of qualitative data. This tool helps operate a *decoupage* of interviews by themes, elaborate a thematic and analytical arborescence (i.e., making a hierarchy of categories), and cross-examine data to make different kinds of associations or groups. Its aim is to answer questions in relation to the study or to go deeper into an emerging theme.

Five stages of analysis of the data as based on by the Grounded Theory approach (Glaser & Strauss, 1967) was used to treat the data. These include: microanalysis, conceptualisation, categorisation, empirical linkage, and integration (see Figure 7). These stages do not have

clear-cut boundaries, rather the stages ought to be viewed as an inductive reasoning approach and a non-linear process. Moreover, the coding process is said to be open, which implies assembling similar concepts together into categories. As such, no pre-determined set of codes exists; instead, the main researcher is interested in developing these codes as the analysis moves forward.

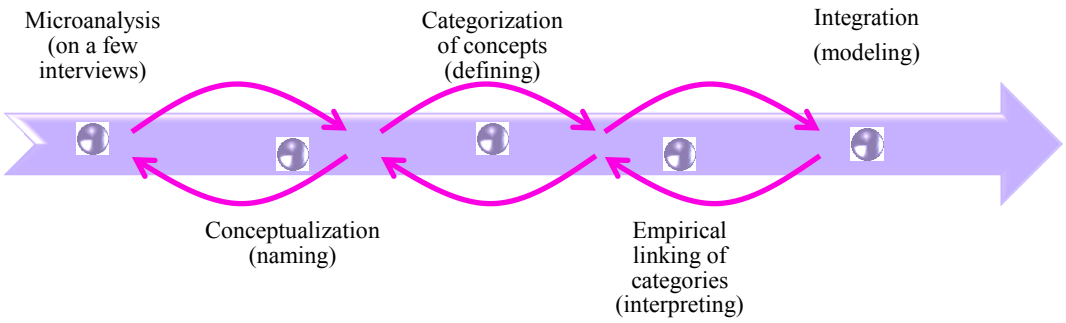

Figure 7. Five steps of analysis of the data inspired by the Grounded Theory approach (Glaser & Strauss, 1967; Paillé, 1994; Strauss & Corbin, 1998).

Microanalysis represents the start-off point of the Grounded Theory approach to analyze the data (Paillé, 1994; Strauss & Corbin, 1998). The initial coding stage is practically a line-by-line effort to find preliminary groupings of ideas, and to suggest initial interrelations between these groupings (Charmaz, 2006). In concrete terms, the researcher took a small sample of interviews (generally 2 or 3, in this case 3), read their transcription and her notes with attention, separated each idea, and gave it a *code* or a *label*. Key phrases were also underlined and highlighted. At this stage, a label refers to words or a short expression of the overall idea (refer to APPENDIX 4 for an example of codes). The researcher has to stay as close as possible to what the data says, all the while not necessarily repeating the words verbatim. Examples of the type of questions that lead the main researcher are: “what is the underlying idea?” or “does my label or my code faithfully translate the idea that the participant

was trying to convey?" While this stage is applied with conscientiousness, rigour and minutia, it is gradually abandoned. In fact, as the concepts start to emerge and the researcher becomes acquainted with the data, the necessity for a line-by-line analysis lessens. At that point, the researcher progressively moves on to the second stage of analysis. Inter-rater agreement with a professional researcher in qualitative analysis was done on at least three separate occasions in order to make sure coding processes were adequately applied to the data. This practice also ensured construct validity (Maxwell, 1992; Van der Maren, 2006). Precisely, the main researcher of this study and the professional researcher in qualitative analysis, who was also a member of the NANS evaluation team, discussed the resulting labels, and validated that the application of Grounded Theory approach was adequately followed. Summaries of their discussions were documented for the principal investigator to keep track of her thought process.

The second stage is that of conceptualization, and is intimately linked with microanalysis. It involves reducing, condensing and regrouping conceptually the codes that were previously attributed on a few interviews. The groupings are made based on any characteristic that is shared by a number of codes (Charmaz, 2006; Van der Maren, 2006) and concepts. At this stage of the process, they are defined as conceptual labels assigned to distinct activities or events. The researcher then proceeded with the same exercise on the remaining corpus of data (Paillé, 1994; Strauss & Corbin, 1998). Thus, each interview is read in detail, and ideas are grouped into concepts. By the end of this stage, the main researcher began to be aware of the concepts that seem more central (for example, the concept of "strategies") and the ones that are peripheral to the phenomenon that is studied (for example, concepts related to the structure and the culture of the educational system), as well as of the different kinds of

elements that have emerged. Much like the previous stage, the researcher periodically validated her conceptualization with the professional consultant in qualitative research, and with researchers of the NANS study.

The third stage, termed categorization, aims to regroup the "concepts" or "codes" that emerged from the second stage of analysis of data (Charmaz, 2006; Paillé, 1994; Strauss & Corbin, 1998). In fact, categorization resembles the stage of conceptualization in that the concepts are grouped based on common traits. The difference is that a category is a higher order or more abstract form of concept. As such, the category is given a more conceptually rich and encompassing label, as compared to the concepts that stem from the participants' verbatim. In practical terms, the researcher made a list (i.e., arborescence) of the categories that seemed to emerge throughout the codification process. Concretely, different types of strategies started to emerge. Then, she compared the various concepts and determined whether or not they pertained to a common phenomenon (i.e., category), and grouped them accordingly (refer to APPENDIX 5 for an example of arborescence, which includes concepts that were grouped into categories). Moreover, the researcher went back into the data, and checked that the categories were indeed linked to the concepts. This time, the data was reviewed at a more abstract level, and the properties or characteristics of a category were identified. In this vein, data is not analysed line-by-line, but rather, covers a few paragraphs. It is common for a paragraph to be coded into one, two or more categories. Ways of coding data vary from one researcher to another depending on the researcher's need for context in later analysis. As a result, it complicates, or rather makes impossible, the process of realistically quantifying the percentage of coded material. Also, this stage is not static and tends to evolve over time, notably through the review and further analysis of the data. Categories are questioned and

redefined based on the researcher's capacity to fit the concepts into the different categories. In concrete terms, the researcher read each interview, and coded every idea (and some context) into a category from the arborescence (for example, into a type of strategy). The content of each category or strategy was then analyzed separately. For example, one strategy represented 36 pages of codes. The principal investigator re-read every coded paragraphs pertaining to a particular strategy in order to make sure that each coded reference belonged to the strategy, and to better understand how each strategy was defined and manifested in the intermediate agent's practice. Thus, each main idea was highlighted or underlined, and notes were taken after every coded paragraph or reference to keep a trace of the interpretation and understanding of the researcher. Memos were also written and served as a useful tool to aid the researcher progress in her attempt to make sense and clarify what is emerging from the data. Finally, throughout this stage, the researcher counter-verified and discussed categorizations on multiple occasions with the professional researcher in qualitative studies, and with members of the NANS study. Typically, during those meetings, the main researcher and the professional researcher consultant would go over the codes attributed to sections of the transcripts. The consultant would question the main researcher on her attribution of these codes in order to stimulate her reflections and to allow her to deepen her own understanding of the arborescence of codes. Through these meetings, the arborescence became more and more stable as each code and the process became more and more clear. These meetings also allowed the main researcher to stay sensitive to possible bias in the elaboration of the arborescence as well as through the coding process of the entirety of the data.

The fourth stage, empirical linking of categories, consisted of taking the previously independent list of categories, and identifying how best to link them together empirically in

order to eventually build a theory. The challenge at this phase was to understand how participants viewed the relationship between the different categories. Although certain links or relationships became apparent, making visual representations of the possible linkages helped the main researcher evolve throughout the process of translating the complexity of the phenomenon. For example, in one previous version, a gradation of color was employed to symbolize the additive value of the intervention process (see APPENDIX 6). To reduce bias of the principal investigator, each attempt at linking categories was compared to the data. Specifically, referring to memos (i.e., notes she made during analysis of the data) and comparing and explaining the possible links between the categories to other researchers of the NANS project as well as to an independent researcher, were all useful strategies to better define how each category related to the next one, and the nature of these relationships. Moreover, these strategies served to ensure that interpretations made by the main researcher were grounded in participants' view of the process, rather than on personal bias or a conceptual framework known to her. Furthermore, it is at this stage that the researcher presented her evolving preliminary results on multiple occasions (i.e., one international conference in the field of knowledge transfer in front of researchers, one presentation for the major stakeholders of the NANS project at the Ministry of Education, one presentation for the Ministry of Education, which included 6 participants from this study). This ensured ecological validity (Marshall & Rossman, 2010), and by being challenged and questioned, it allowed the researcher to continue to fine-tune and specify how best to define and relate categories together. For example, in a preliminary version, the components of intermediate agent support were hierarchized differently (see APPENDIX 6). Thus, the gradual development of the meaning given to the research object (i.e., the strategies employed by intermediate agents to

promote research-based use by school practitioners) is based on the explanation provided regarding the links between the different categories. As a result, the final version of the visual model, and the one presented in the next Chapter, is the theory that was deemed by the principal investigator, as the most representative of the data and the one that was able to sustain a critical analysis from an independent researcher who was familiar with the study. For example, the independent researcher verified that each strategy was indeed part of the right component of intervention.

The fifth stage, integration, involves the delimitation of the object or the phenomena that is studied, and is the process of modeling until a theory is created (Charmaz, 2006; Paillé, 1994; Strauss & Corbin, 1998). A "theory" in Strauss & Corbin (1998) is defined as: "a set of well-developed concepts related through statements of relationship, which together constitute an integrated framework that can be used to explain or predict phenomena" (p. 15). Hence, this stage begs the question: "what are we globally talking about?" or "what is the general theme?" To do so, the main features of the theory are highlighted, and presented in Chapter Four.

Moreover, the objective in this last stage is to circumscribe the resulting theory. The process of comparing the resulting theory with the literature on knowledge transfer and with connected areas of research is also used to emphasize what the theory encompasses. At the same time, it serves to provide empirical and theoretical support for the theory in the scientific literature. These elements are presented in Chapter Five.

Overall, these five stages of analysis (Charmaz, 2006; Paillé, 1994; Strauss & Corbin, 1998) allowed the researcher, based on the data gathered from intermediate agents, to propose

an empirically grounded model that theorized the strategies intermediate agents employed to promote the uptake of research findings by school practitioners. Table 2 provides a summary of the research plan that lead to the development of the theory presented in the next chapter.

Table 2

Summary of the research plan developed and implemented in this study

Category	Key elements
Context of the study	• NANS: a bottom-up approach • Intermediate agents were representatives of the CIMD, the School Boards, and the Regional Offices
Recruitment strategy	• Snowball sampling method to identify the most efficient agents whose mandate was to support school practitioners' use of research-based evidence • Criteria: recognition by peers for the quality of the support provided to school practitioners and common definition of research-based evidence and knowledge transfer • Notion of triangulation of sources of information
Sample: Profile of key informants	• *N*=16 • Notable expertise: o In the field of education o In underprivileged areas • Training in education or closely related fields • Holding the same position for a noteworthy amount of time
Instruments	• Demographic questionnaire to provide a profile of the key informants • Interview guide: o Covers 2 themes; 12 questions o Questions are mostly open-ended or based on the critical incident technique o Format is semi-structured
Procedure based on Grounded Theory	Iterative approach: between field work (interviews) and analysis of the transcribed data o Notion of empirical saturation o Notion of inter-subjective parallelism

Analysis and treatment of the data based on Grounded Theory	• Software NVivo 8 used • Notions of arborescence and memo writing • Five stages of iterative analysis of the data: o Microanalysis: line-by-line coding of ideas o Conceptualization: groupings of codes based on a common characteristic o Categorization: more abstract groupings of concepts based on common traits o Empirical linking: linking independent categories to explain relationships o Integration: making a model out of the object of study

Chapter Four

Results

The aim of this study was to identify and document the strategies intermediate agents adopted towards school practitioners to promote the use of research-based evidence. This chapter presents an empirically-based model, "the Knowledge Transfer Intervention Theory" that resulted from a Grounded Theory approach based on 16 interviews with informants of the NANS project, who were recognized by their peers for the quality of their support in knowledge transfer. Specifically, the analysis of the data led to 32 strategies that intermediate agents favoured and expended during their knowledge transfer interventions with school practitioners. These were grouped into 12 sets of strategies, which in turn were categorized into higher order strategies (labelled as components), and organized into a process model that is thoroughly described below. View Table 4 at the end of the chapter for the complete overview of the model.

Chapter Four will initially present a general outline of the model, and an explanation of its overarching goal. The subsequent sections will detail the different parts of the model. Specifically, each component will be defined, and details regarding how each strategy is operationalized will be covered. Finally, three main characteristics of the model will be reviewed before concluding the results chapter.

The knowledge transfer strategies used by Intermediate agents to promote school practitioners' scientific research uptake: An empirically-based model of intervention

Figure 8 reveals the empirically grounded model explaining the knowledge transfer intervention process as executed by intermediate agents. The founding premise behind the Knowledge Transfer Intervention Theory is that an intermediate is necessary to bridge the gap between the system of producers and that of users to increase the likelihood of scientific knowledge being at least considered.

> in general, knowledge transmits better when there is a transmitter. There needs to be someone, an intermediary. […] For example, if an evaluation team has investigation results, they send the school a report saying: "call us if you have questions of comprehension", there's no transmitter there. So then, 9 times out of 10, the document will sit on a tablet. – An informant from the CIMD (refer to APPENDIX 7.1 for the original French transcript)

In fact, this model is a conceptual representation of the theory that emerged from a methodical analysis of interviews with intermediate agents, and is based on their perspective and experiential practice. The objective of this model is to describe the intervention process performed by intermediate agents in order to promote the use of research-based evidence by school practitioners. Specifically, it describes what strategies should be implemented in order to yield an impact on users' system, and what the knowledge transfer intervention process encompasses for them. How these are manifested conceptually and practically are explained hereafter.

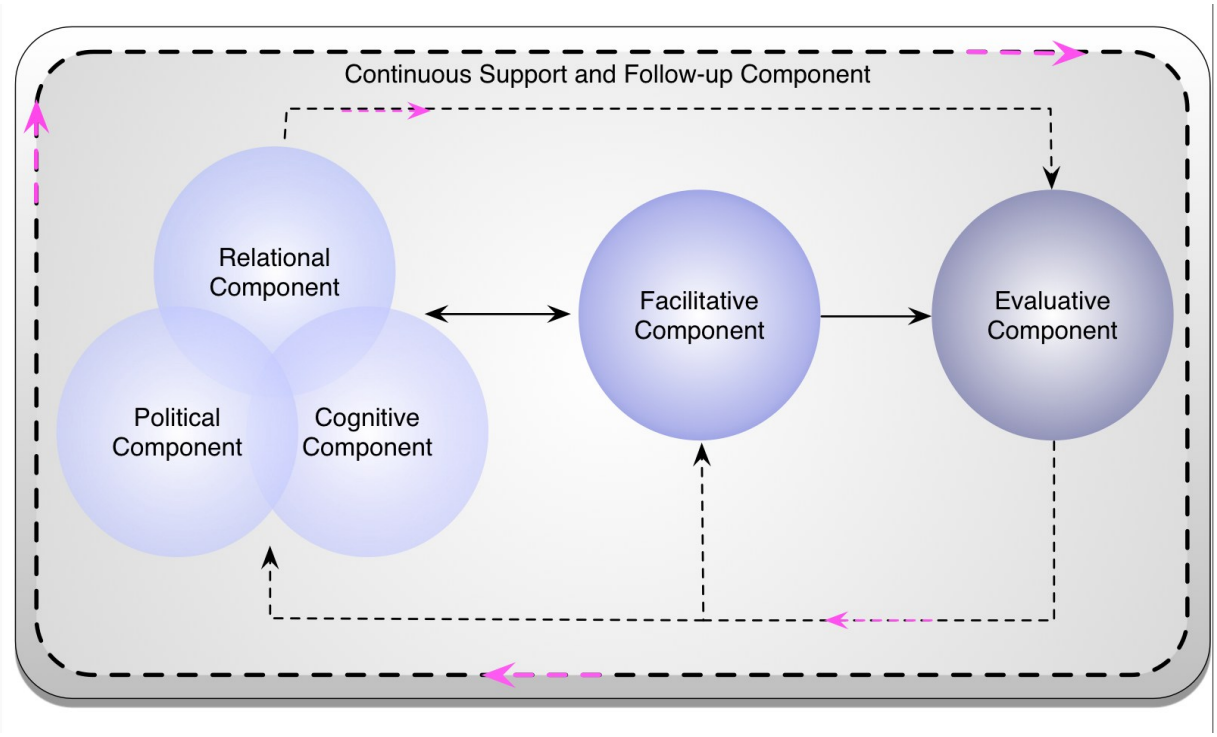

Figure 8. The Knowledge Transfer Intervention Theory

The Knowledge Transfer Intervention Theory

The process, as depicted in Figure 8, represents different types of strategies grouped together, and divided into six components of intervention. The first component, called Relational, is defined as building; and maintaining a working alliance, and is comprised of two sets of strategies: (a) fostering trust and openness, and (b) choosing the right time to intervene. Relational strategies generally aim to create a favourable climate for knowledge transfer intervention, and must also be considered throughout the intervention process. Setting the stage incorporates the idea of creating a positive and favourable setting for knowledge transfer.

The second component, termed Cognitive, consists of convincing practitioners of the relevance of research-based evidence and offering meaning to its users. It includes three sets

of strategies: (a) building awareness towards the relevance of research-based evidence, (b) contextualizing research-based evidence according to practitioners' concerns and needs, and (c) accessing and adapting research-based evidence in light of users' concerns and language. These strategies typically aim to foster a positive perception of research-based evidence and its application.

The third component, named Political, refers to the strategies implemented by intermediates based on their read of contextual issues, and the actions they take accordingly. The Political component is comprised of four groups of strategies: (a) developing relationships with key players, (b) capitalizing on opportunities to intervene, (c) avoiding sensitive topics, and (d) developing a critical mass of people favourable to research. These strategies aim to counter the barriers associated with research promotion and uptake in user practice and broaden the possible reach of research.

The first three components (Relational, Cognitive and Political) influence one another in order to create more openness from practitioners towards the use of research-based evidence. In a way, they each figuratively prepare for subsequent steps, as potential users are positively primed to be influenced by intermediates, and to practice research uptake. In this vein, it follows that the fourth component, called Facilitative, represents an essential part of the model, wherein strategies described are meant to empower practitioners in their use of research-based evidence.

The double-sided arrow represents the inter-influence between the three intertwined components (Relational, Cognitive, Political) and the Facilitative Component. Specifically, the arrow implies that intermediates monitor cues within the context that would signal the

necessity of adopting relational, cognitive, or political-type strategies while they assume strategies from the Facilitative Component.

The fifth component, termed Evaluative, tackles strategies for implementing an evaluation approach to the use of research-based evidence, which loosely aims to assess users' progress and assimilation of research-based interventions in their practice. Results of this assessment trigger a feedback loop for intermediates' intervention. In other words, intermediates make use of information gathered from this phase to adapt their future interventions. As such, they may revert back to one or multiple strategies. The intent being that they ultimately exercise a better influence on school practitioners.

The sixth and final component, Continuous Support and Follow-up, ties the intervention process together. Defined as framing the way the work between intermediates and users is realized, its presence serves to ensure the process moves forward in the direction of research uptake. In this perspective, through continuous support and follow-up strategies, intermediates seek to reinvest research-based evidence in users' practice, consolidate their learning, and promote their professional development. See Table 3 for an overview of the components and their respective set of strategies.

Overall, this model presents intermediate agents' intervention process as one of influence through the use of various types of strategies compounded to produce an impact in the users' system. Moreover, this process is viewed as dynamic, in that many collections of strategies are used simultaneously on a case-by-case basis. At the same time, some strategies (relational or facilitative ones) must be present before others (evaluative ones) can be employed effectively. Intermediate agents may also revert back to one set of strategies or

another based on their awareness of users' context and a sensitive appraisal of where school practitioners stand in terms of their openness and willingness to use research-based evidence.

Table 3

Overview of the six components and their set of strategies

Component	Group of strategies
Relational	1) Fostering trust and openness 2) Choosing the right time to intervene
Cognitive	1) Building awareness towards the relevance of research-based evidence 2) Contextualizing research-based evidence according to practitioners' concerns and needs 3) Accessing and adapting research-based evidence in light of users' concerns and language
Political	1) Developing relationships with key players 2) Capitalizing on opportunities to intervene 3) Avoiding sensitive topics 4) Developing a critical mass of people favourable to research
Facilitative	1) Empowering practitioners to use research-based evidence
Evaluative	1) Implementing an evaluation approach to the use of research-based evidence
Continuous Support and Follow-up	Encompasses relational, cognitive, political, facilitative, and evaluative components

The following sections define each component of the model, and go into detail regarding each strategy. Citations from the data are presented to validate each strategy. These were chosen based on the participant who stated the idea the most clearly and concisely. All excerpts that appear in this chapter are literal translations from French to English, while all original quotes in French are supplemented in APPENDIX 7 for readers who would like to get further clarification regarding what was originally communicated during interviews.

Relational Component of the Knowledge Transfer Intervention Theory

Before empowering school practitioners to make use of scientific research in practice, informants discussed the importance of creating a relationship with potential users. This increases the likelihood that research will be reinvested in the schools, and not simply communicated to them. This first phase of the process of intervention mainly focuses on establishing and maintaining a working alliance with targeted users, through strategies that (a) foster trust and openness, and (b) ensure appropriate timeliness when promoting research-based evidence (see Figure 9). From their perspective, this human aspect made the difference between simply proposing new knowledge and school practitioners actually using research evidence in practice. How intermediate agents set the stage to bridge the gap between knowledge and its use by school practitioners is explained hereafter.

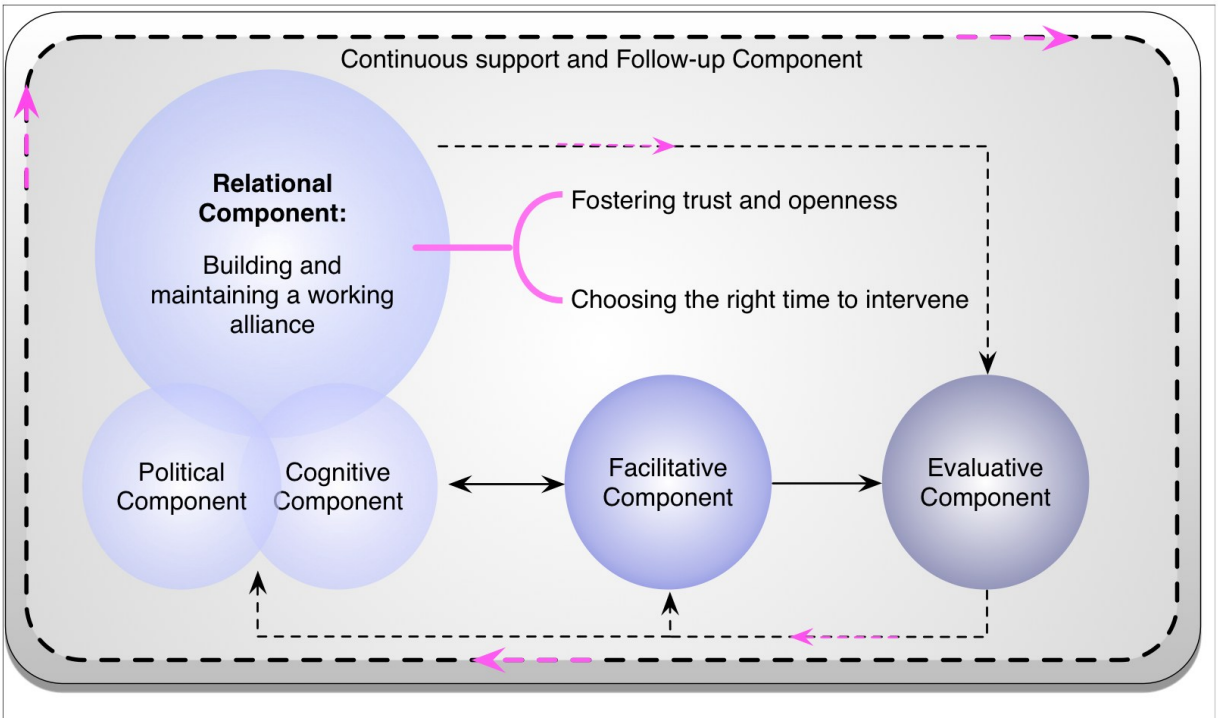

Figure 9. Focus on the Relational Component of the Knowledge Transfer Intervention Theory

Fostering trust and openness

The first set of strategies, fostering trust and openness, directly reported by 11 interviewees, aims to build a working relationship between potential scientific knowledge users and intermediate agents; one that would last throughout the knowledge transfer intervention process. Informants believed that, in order to influence school practitioners' uptake of research, it is necessary to foster an interpersonal relationship that goes beyond being simply cordial.

> Before a person opens the door to their classroom for you, and showcases the issues they encounter, it takes more than a 'hello' in the hallways. Bringing people to have confidence, to develop that bond of trust; it's been said, there is research that proves it also that it's no coincidence. – A School Board informant (refer to APPENDIX 7.2).

In the perspective of intermediates, it is the agents' capacity to listen to and respect potential users that helps instil this sense of trust between both parties, as well as a climate that is conducive to a productive knowledge transfer intervention.

> … we granted, in the initial stages, a capital importance to interpersonal relationships and to the creation of a climate that's favourable to learning and exchange, greatly based on trust and self-esteem, and on the reception and thus, on a favourable climate. So, we paid a lot of attention to all emergences of either competition or discord, or anything. Interpersonal relationships seemed like one of the fundamental elements at the beginning. And this was maintained all throughout. – A Regional Office informant (refer to APPENDIX 7.3).

To foster confidence and gain trust, participants also added that it is critical to exert a strong sense of ethics, particularly regarding confidentiality.

> […] we made sure that in the group, there was an ethic of confidentiality that was implemented. We would agree that what went on around the table would not leave the room. So, from the start, we would put a code of ethics on the table. – An informant from the CIMD (refer to APPENDIX 7.4).

Finally, intermediate agents maintained that they were required to showcase their credibility in order to foster trust and openness from users. Analysis of the data suggests four ways in which they demonstrated their credibility:

1) Through their experience with respect to the realities schools face, and from having worked in underprivileged areas:

> "You have to instil a connection of trust, and I was credible because I had experience; I had a big school, I had always worked in underprivileged areas." – A Regional Office informant (refer to APPENDIX 7.5).

2) Through their knowledge base and expertise in research:

> So, earning their trust, showing them that I also have things to show them; that they needn't tell me what to do just because they're directors. […] There always comes a time when we recognize each other's expertise and when we learn to work together. – A School Board informant (refer to APPENDIX 7.6).

3) Through being well prepared before a meeting in order to convey current, accurate information regarding what research produces, thereby demonstrating a rigorous approach:

> And we prepare ourselves very well. I'll admit to you that… it's not to brag, but I pull out all the stops for the preparation of these meetings, to document myself, and get… in some cases, different viewpoints also. […] But I think that the big part of the issue, is to not talk nonsense; because that, it doesn't take long, when you start speaking nonsense, people realize it […] and… after that, they don't even listen to you anymore. – A School Board informant (refer to APPENDIX 7.7).

Also, by upholding a critical stance, regardless of what school practitioners prefer to hear. Indeed, intermediates claimed they maintained their stance even when others appeared dissatisfied.

> It's major, in the sense that I work for people, but not to always give them what *they* want. So I have to stay critical in that (context). I have to live with the dissatisfactions that it creates as well. Because you know, its not always pleasant to be told: "we are not happy with the content of this meeting, we thought it would be more like this or like that." That's hard to live with. But then, when we continue the work and that a

> month later, people say: "Oh okay… That's why we were looking at this or that element" and we see that a light bulb went on, then we tell ourselves it was worthwhile. – A School Board informant (refer to APPENDIX 7.8).

Finally, 4) through a transparent approach, which implies intermediates be earnest, without going overboard, concerning the progress research has made when asked.

> And we aren't afraid to bring it up and say: "here, some people think this, but other studies demonstrate the opposite. So, we have to be careful with regards to this or that practice". Hence, we don't add more than is necessary, we tell them like it is with respect to these issues. – A School Board informant (refer to APPENDIX 7.9*).*

The combination of these four elements are thought to create an impression of credibility, which in turn generates more trust and openness from both, potential users and intermediate agents. Likewise, credibility builds over time and constantly evolves.

> And then, more and more, I would say, the fact that I developed this trust, this credibility, […] I am a recognized resource in the region. I am starting to become more and more legitimized to, at some point, say: "Look, this is not going far enough. Now, let's be honest with each other." – A Regional Office informant (refer to APPENDIX 7.10).

Thus, fostering trust and openness to build and maintain interpersonal relationships is a stepping-stone in the knowledge transfer intervention process. Overall, informants believed that this was achieved by demonstrating respect and active listening, by adopting a code of ethic and valuing confidentiality, and by demonstrating their credibility. Though these strategies are essential to introduce early in the process, they must also be maintained throughout the process. In time, interventions become more interesting, dive deeper, and favour greater research uptake.

Choosing the right time to intervene

Selecting the appropriate instant to intervene within the users' system is the second significant set of strategies discussed by intermediate agents and belonging to the relational component of the Knowledge Transfer Intervention Theory. It was deemed a relevant matter, and directly discussed by six informants. Underlying this issue of timeliness is the necessity for intermediate agents to adapt themselves to users, to stay alert and sensitive to users' responsiveness and pace, in order to maintain a favourable climate for a knowledge transfer intervention – one which allows for a more significant impact geared towards greater knowledge use.

First, participants argued that if the timing were wrong, any kind of knowledge transfer intervention would not yield an impact.

> "Very important is this question of choosing the right time. Because you can have the same technique as in another setting and if the timing isn't right, it won't work." – A School Board informant (refer to APPENDIX 7.11).

Intermediates relied on how they felt to determine whether or not the timing to discuss research-based evidence was appropriate. Upon analysis, this perception is initially based on an understanding of the context and the needs of potential users at the current time.

> But, as I told you, for me, the times where it really didn't work, and my colleague also, it was really a question of timing. We weren't there at the right time. And that; I felt it. You feel it quickly. So much so that in certain cases […], I needed to completely set aside what I had planned to tell them and instead, answer their needs, their questions, their complaints, listen to them, and all that because it wasn't moving forward at all. And that, as I told you, is very important. But this is when it really didn't work. – A School Board informant (refer to APPENDIX 7.12).

Their "feeling" is also based on an appreciation of a school practitioners' level of openness or responsiveness to change (i.e., receptiveness or pace). Strategies associated to the

latter are: (a) Assessing practitioners' level of responsiveness to research or to an evidence-based intervention, at the group level:

> Often, it's a question of timing. At what moment will you give this or that presentation, what is happening…? Last year, one of our schools changed considerably their characteristics. It went from a rank of 6 to a rank of 9. So, important changes in terms of students attending the school and, at the same time, they changed school Principal. So much so that the school was in a state of shock at the beginning of the year. And then, they realized the extent of the task; the youth they were getting and the comparison was like pretty obvious to them in regards to the youth they had in June of the previous year, versus those they had in September. It wasn't at all the same clientele. They had difficulty taking that in and practice changes also, on the administrative level, so that the environment had become somewhat tense. Then, we called someone in to talk to them about underprivileged areas, to tell them that this was an underprivileged area... But they just didn't feel like being told that. They knew they were in an underprivileged area. So, it was very badly welcomed. And that, that's difficult because after that, you have to bring that back. We would have been better off doing nothing and waiting for it to calm down a bit and for them to be more receptive. – A School Board informant (refer to APPENDIX 7.13).

Or to detect individual users' responsiveness towards research:

> "it's often connected to that. Linked to a reluctance of the person in front of you, who doesn't want to hear about it (i.e., research-based evidence)." – A School Board informant (refer to APPENDIX 7.14).

And (b) to accept and respect users' pace, whether it is at group/team level:

> I think that, when a group has reached a point where they want to develop together, they want to analyse, evolve, then, knowledge from research has a big place, because they are ready. They want some. Whereas if I'm a team still confronting myself in: "Who am I? What are my values? What are my competencies? My knowledge? " What I, myself, was realizing, is that people were saying: "Look, we all know, researchers, they're never in the classroom. Listen to what I have to say. I, myself, have competencies; it's been X number years that I teach." So, I had to go through that, accept that we develop that. – An informant from the CIMD (refer to APPENDIX 7.15).

Or to accept and respect users' pace at the individual level:

> […] you allow people to process. You make them move forward, but it's not a race that by the end of the year we must absolutely be finished. We'll get to as far as we could have. Respect them in that. – A School Board informant (refer to APPENDIX 7.15*).*

In other words, if practitioners are not ready to listen, either at an individual level or as a function of events occurring at the school affecting a number of people, it is wiser to postpone an evidence-based intervention and instead, to listen to their concerns and answer their immediate needs. To do so, intermediates must remain sensitive to users' openness towards a knowledge transfer intervention, and be flexible enough to set aside what was planned for the benefit of maintaining an effective working alliance.

Cognitive Component of the Knowledge Transfer Intervention Theory

While a work-related relationship between a potential user and an intermediate agent is important to establish and maintain throughout the process, those interviewed in this study also sought to attach meaning to research-based evidence for its users, and to convince them of its relevance. How this goal was achieved is detailed in the following section. Precisely, intermediates convinced practitioners by using strategies including: (a) building awareness towards research-based evidence, (b) contextualizing research-based evidence according to practitioners' concerns and needs, and (c) accessing and adapting research-based evidence in light of users' concerns and language (see Figure 10).

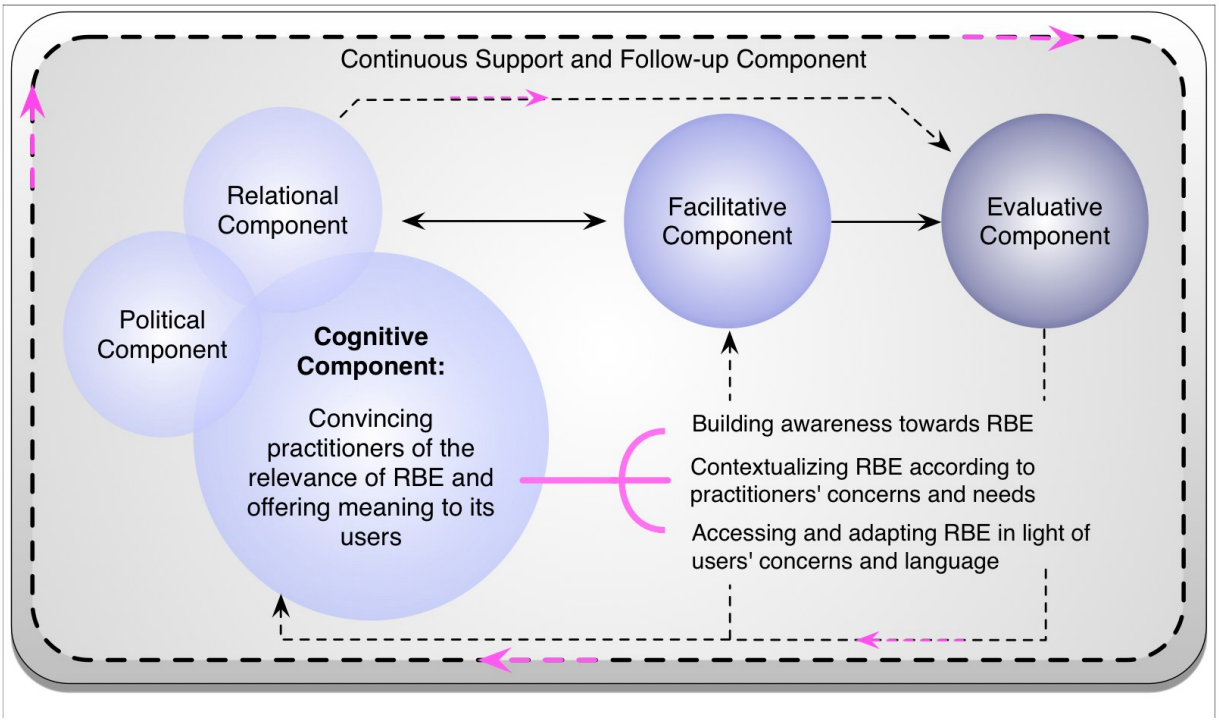

Figure 10. Focus on the Cognitive Component of the Knowledge Transfer Intervention Theory

Building awareness towards research-based evidence

Explicitly addressed by 12 participants in this study, intermediate agents reported adopting different strategies that served to build potential users' awareness towards research-based evidence. The premise underlying these strategies is that school practitioners would be more inclined to consider and eventually implement scientific knowledge if they saw it as relevant and useful to their practice. In other words, they must be aware and understand why they should use research-based evidence, and why this makes sense for them in their practice. Conversely, if school practitioners did not see or believe in the relevance of research, it follows that they would be less likely to modify their behaviours.

> Being able to convince your people that what you do, what you're embarking yourself in is important and is useful; that we don't just do it to answer a command from the

> Ministry or for all sorts of other reasons. Once you have that, it's about giving meaning to that action. – A School Board informant (refer to APPENDIX 7.17).

Many possible interventions are linked to this strategy. The first pertains to intermediate agents encouraging school actors to call into question their own methods and beliefs. The motivating intent of challenging an ingrained belief with a new notion is, first, to provide school practitioners with the opportunity of integrating a new idea, second, to give it meaning for the idea to become relevant and, finally, to make links between research and their practice. Questioning their methods is, in this regard, a dynamic cognitive process.

> Because if you don't doubt and if you don't question yourself, you don't move, you're not in action, you're not in motion, you're not progressing. […] So, to move forward, you have to ask the questions, cast doubt a bit and feed them also: "Oh, look, I read this thing. Have you seen it? There is this thing that was done elsewhere". And it also has the effect of modeling, because them also, they begin to search and they exchange knowledge with each other. – A Regional Office informant (refer to APPENDIX 7.18).

Intermediates described their approach as constructive confrontation. While they sought to provoke thoughts and considerations that could subvert practitioners, they did so with compassion. Before ending each intervention, they made sure that they had adequately examined the issue at hand, and had given the user a sense of closure to avoid leaving them grossly destabilised.

> Listening, compassion, calling into question, mirroring, sometimes rocking the boat… not rocking it to be hurtful, but to play devil's advocate. Placing people in other situations: "And what if we did this? Why wouldn't we do it?" Repositioning certain interventions, creating doubt, creating cognitive conflict and, to a certain degree, an affective conflict among teachers. […] So, to accept, sometimes, that it shakes up during discussions… without confrontation, but exchanging our perceptions. Never leaving without me ensuring that we had, indeed, covered all aspects of the question and that we had tied up any loose ends. Never leaving someone in a state of major imbalance. – An informant from the CIMD (refer to APPENDIX 7.19).

Another strategy used to build awareness towards research-based evidence, discussed by informants, is to focus on the impacts and benefits that stem from its application.

> "And my role, is […] to bring people to develop an understanding of the effects that it (i.e. research) can have." – A School Board informant (refer to APPENDIX 7.20).

For example, an intermediate may point out that, although reflecting on research-based evidence will require some initial investment and time, they will ultimately save time in the long run. The informant of the following citation argues however, that this particular concept is often difficult to convey to users, given their busy context.

> By seeing the impacts it (i.e., the use of research) could have… but that, what it is, is that it requires also some time to analyze, to be capable of seeing that the time that I invest right now will pay off. But it's trying to make people understand that, also (people) who are clouded by their daily work, their present-day, to see the impact that it will have and that will allow them to free up more time in the future. But it's quite the challenge. A big challenge. – A School Board informant (refer to APPENDIX 7.21).

Thus, building awareness towards research-based evidence involves challenging users' belief system, and arguing the different advantages offered by research. Although on their own, these strategies aren't enough to incite research's uptake, they target people's cognitive appraisal of research by giving it value and meaning. While these interventions are meant to destabilize users' thoughts and attitudes, they are accomplished in a constructive manner. This process is a dynamic one, and it therefore follows that the way strategies are executed in the Cognitive Component considers the relational aspect of the intervention.

Contextualizing research-based evidence according to practitioners' concerns and needs

Intermediate agents regularly sought to link school practitioners' concerns to research-based evidence in hopes of promoting its use in their practice. As directly reported by 13

informants, the underlying premise for this group of strategies is that school practitioners would not use research if it did not resonate with their current problems and provide elements of solutions. Therefore, it is necessary to highlight how scientific research can be linked to users' concerns through efforts of contextualising it.

> I really have to stick to what's concrete and the reality and the problems they are going through. It's imperative that the research elements I bring, that they be solutions to problems they are living. If they're not solutions to problems they are living, the reception will… not necessarily, not be okay, a minority of it won't be ok, but the majority [will say]: "It's interesting..." nothing more. But if it's a concern they are going through in their milieu, and then, I bring elements based on research that can be solutions, like it or not, it will attract people. Some of them will be more reluctant, of course, but they are living the issue. So, in that context, they will be ready to, at least, try something: "It can't be worse than it is now, we are stuck with it now. – A School Board informant (refer to APPENDIX 7.22*).*

These concerns must be centered on only a few priorities at a time so as not to become scattered, which would eventually lead to failure at the organizational level. As such, intermediate agents along with school practitioners target one or a few specific issues to concentrate on.

> In addition, if there are many issues in a milieu and we are not able to focus ourselves, to target something specific to work on together collectively, and we become dispersed, we would then be scattering our energy everywhere. Then, on an organizational level, we'd risk losing out. – An informant from the CIMD (refer to APPENDIX 7.23).

According to interviewees, using research-based evidence derived from studies or assessments conducted within the practitioners' own schools (through the NANS project) is a winning strategy. In fact, using this data was a way of personalizing research-based evidence to their reality, thus making potential users more open to integrating it into their own practice.

> I have a school, amongst others, which has a lot of data from research and then, you take it from there. […] And then, when people see that there is an issue and the more it's glued to their reality, their students, their school, well then, they open up. And they

> are lucky to have their schools' data. Nothing is more advantageous than that. – A Regional Office informant (refer to APPENDIX 7.24).

To summarize, by contextualizing schools' concerns with research, intermediate agents were going a step further to convince users of the relevance of research-based evidence for their practice. While the former strategies serve to influence people's cognitive appraisal of research, a more applied approach to favouring research uptake in practice, is to link it to people's concerns. Through this strategy, intermediate agents are supporting practitioners with a problem-solving process grounded in research.

Accessing and adapting research-based evidence in light of users' concerns and language

Intermediates interviewed in this study all agreed that making research meaningful was key to increasing users' receptiveness towards it. Beyond strategies geared at building awareness towards research, and contextualizing it to users' concerns and needs, intermediates also believed it was necessary to work on the evidence itself. In fact, it was beneficial not only to carefully consider which evidence to present, but also to customize the format of that evidence before presenting it. This interrelated process aims at making the research more rapidly accessible and meaningful to the user. Finding and transforming research, as well as the way it is presented to practitioners, are all tasks that are a critical part of the overall Knowledge Transfer Intervention Theory.

Of the participants interviewed, 14 asserted that accessing and adapting research are fundamental tasks they perform, mainly due to the demands and barriers school practitioners face. This coming from an understanding that targeted users are not readily willing to invest time in reading lengthy research or trying to comprehend the jargon involved. The aim is to engage practitioners by getting to the point quickly and efficiently. Moreover, while

transforming research is crucial, the relationship between intermediates and users remains indispensable.

> Because school Principals and teachers are people who don't have time to read 300 pages or 150 pages. They have to rapidly be in comprehension mode and get to the heart of the matter. So, one of the tasks was to ensure the transformation from a raw product to a consumable product. After which, sometimes, it also demands, despite that, a human intervention. – A Regional Office informant (refer to APPENDIX 7.25).

The following paragraphs detail, based on the analysis of the data, the steps intermediate agents took to access and subsequently adapt research-based evidence to users' respective needs, context, and language.

First, in terms of access to research, intermediate agents reported that they found scientific knowledge mainly on the Internet. Although they affirmed that research was easy to find and to access, their challenge was to carefully select valid evidence from the abundance of information available on the Internet. The process of selecting evidence was based on what agents considered as relating to a person's needs or concerns, which differed from one practitioner to another.

> … when you play the role of a transmitter, you have to know that what you are passing along has to be adapted to the needs of those who you are passing it on to. It's not realistic that you can pass exactly the same things to everyone. – An informant from the CIMD (refer to APPENDIX 7.26).

Thus, the goal is not to present all of the scientific knowledge that is available, but to deliver the research that is relevant to the actual problems practitioners encounter, or that answer a specific need. The motivation behind this is to avoid overwhelming users with factual information they do not need, at the risk of losing their focus on finding concrete solutions to their problem.

> As I've told you, I don't care to diffuse the state of research as a whole. It would be drowning them with information. But finding solutions to problems they are going through; that, is helpful. And you are well received in these cases. – A School Board informant (refer to APPENDIX 7.27).

Evidence was also chosen based on what was considered relevant, such as demonstrating progress, serving as a basis for discussion, or providing parts of answers to users' questions.

> "We did a pre-selection of the data that was most interesting, either because they demonstrated progress, or these data that prompted the most questions, that became important to present to the school, which maybe had elements of answers." – A Regional Office informant (refer to APPENDIX 7.28).

Once the evidence was selected, intermediate agents focused on organizing the factual information into themes or subjects of interest (on a Website for example) and on clearly identifying whom the evidence may be of interest to.

> Often, an element that I see that is facilitating also, is when the clientele is identified or the path for use is clearly identified, that, I know people will say: "This, this concerns me, but that, that does not". And they do their pruning that way. – A School Board informant (refer to APPENDIX 7.29).

Reflecting on ways to trigger an emotional response in users was another way intermediates sought to arrange the evidence.

> But when research comes in from outside (i.e., the school), then, it has to be organized because it's not about disseminating everything and anything, any which way. We have to see how we can touch people, what will touch [them]. So, going myself to search for that information, organizing it in order to transfer it… – An informant from the CIMD (refer to APPENDIX 7.30).

Then, in order to facilitate practitioners' familiarization with the research evidence, intermediate agents focused on simplifying, and synthesizing it so as to maintain users' interest in research.

> You have to be able to give them access to research, because if they have to go through all the steps of scanning, peeling through research and all that, we are going to lose them. So it has to become accessible for them in a simple way all the while giving them access to the main research. – A Regional Office informant (refer to APPENDIX 7.31).

Finally, they framed and illustrated the scientific evidence for users within their respective contexts in order to facilitate its adherence.

> "I think there is work to be done to facilitate appropriation, of vulgarizing, of the importance of making connections between these data and the practice of these people […] it has to be illustrated." – A Regional Office informant (refer to APPENDIX 7.32).

The final product of these previous steps, or the transformed research evidence, is not disseminated to potential users, without an interpersonal exchange between the intermediate and the user. In fact, interviews highlighted that intermediates ensured users perceived that an individual was supporting them, through direct and tangible interactions.

> There is an exchange that is concrete, that is direct. So, of course it's not only to just send information: "You should do this because research says so." It has to be wrapped in a context where the teacher knows that he/she will be supported to be able to do the intervention; who knows that he/she will be able to have something that is much more encompassing than a stripped down research result. – A School Board informant (refer to APPENDIX 7.33).

The transformed product was also animated by intermediates to ensure that all users understood the important elements that emerged from research.

> And this is how it was presented to school Principals; by handing them, well, the official 58 page version, but also the memory aid that had only 4 pages, but that were the important 4 pages, if you will. And it was animated. It was… to ensure everyone's understanding. It wasn't just submitted, as I was saying earlier, it's contextualized. – A School Board informant (refer to APPENDIX 7.34).

Lastly, ensuring a presence and making sure that users feel supported also stimulated more requests for research-based evidence from the users.

> For example, I visit a school, I work with its Principal and I see that he has difficulties, I say: "Bob[3], what would you think if we looked at this? Would it suit you if I sent you something on this subject? I read something lately and it's very interesting. There's an experiment, actually in Gaspésie on it. Would you like me to send it to you?" And then, they're happy. And at some point, sometimes, it will elicit other needs. So, they call me back: "Nancy, you know, the teachers, when we got together, they asked me this thing. Do you have anything to propose for me? So, it works in reverse sometimes. – A School Board informant (refer to APPENDIX 7.35).

On another level, intermediate agents discussed how *to* present scientific knowledge to school practitioners. They believed that to achieve an impact on potential users, information ought to be presented in certain ways. First, they stressed the importance of human contact, through in person, one-on-one or group discussions.

> Even if tomorrow I had chewed up all the research results and that I… it wouldn't be the unique solution to my problem. It would be a part of the solution, but there would still be a need to find ways to communicate that information, to ensure that people… And me, I think that we need to proceed not with documents that we send by email, not with notes that we send through reports. Teachers are… they have too much; they throw it away. We have to get in there with people. – A School Board informant (refer to APPENDIX 7.36).

In fact, face-to-face discussions are viewed as opportunities for debates, exchange of ideas, and reflection between the principal actors. Moreover, the following excerpt demonstrates that intermediates are sensitive to how their target audience operates in order to better cater to their needs.

> "And teachers need to… they like to have their say. So you can't just go, present it and leave. For me, these are opportunities for exchanges also, and for questioning." – A Regional Office informant (refer to APPENDIX 7.37).

Intermediates believed that benefiting from occasions to present the evidence in person, via group or individual meetings for example, would also aid in making it come alive

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[3] Names used in this citation were changed to preserve participant anonymity.

as opposed to choosing more a classic approach, such as sending a report by email for instance. In other words, intermediates offer meaning to the transformed data by using a lively and stimulating presentation approach.

> "we take advantage of occasions, such as general meetings or group meetings, cycle team meetings in schools to pass information and make it come alive, instead of just virtual or paper." – A School Board informant (refer to APPENDIX 7.38).

Second, informants considered it was a winning strategy to employ the same style and language school practitioners usually adopt in their own classrooms. Specifically, by asking questions that enticed reflective behaviours and by adding a section that identifies recommendations and possible solutions proposed by a study, in the same way an educator proceeds in his or her classroom with high school students.

> We take them (i.e., research studies), we read them, we chew them and we gather them onto a page and a half, two pages, with questions. Because teachers, they work with questions. A teacher, he/she asks questions in a class. So, we take them up on that and then, we go give them questions that could be meaningful to them. – A Regional Office informant (refer to APPENDIX 7.39).

Finally, intermediate agents made research attractive by favouring visual modes of presentation containing simple formulations in order to have users' pay attention to what is central about the data.

> We would always go with a PowerPoint presentation in which we tried to vulgarize as much as possible, to simplify as much as possible the data so that people didn't get the impression… You know, sometimes, there are some who are deterred just by thinking: "They're going to present us a bunch of numbers with statistical analyses." No, we tried to proceed simply so that people really get to what's essential. – A School Board informant (refer to APPENDIX 7.40).

To summarize, intermediate agents have two major steps that guide their intervention in this set of strategies: (a) find and adapt research evidence; and (b) establish how they will

present the evidence in a manner that will entice users. In the first major step, intermediates select pertinent research-based evidence based on a needs analysis. Then, they organize, synthesize, simplify and vulgarize the evidence, and adapt it to users' context. Finally, they support and ensure users' understanding of the consumable product. In the second major step, the data indicated that they essentially favour human interactions (as opposed to indirect dissemination of the adapted research-based evidence) to promote discussion and debate. Moreover, they seek to make the evidence come alive using a lively and stimulating approach. They also adopt a language that speaks to school practitioners. Lastly, intermediates prefer visual presentations of the evidence, clear of jargon.

The strategies of accessing and adapting research-based evidence in light of users' concerns and language conclude the section on the cognitive component of the intervention model.

Political Component of the Knowledge Transfer Intervention Theory

As previously mentioned, informants of this study are individuals who, given their position and role, do not possess any power of authority over school practitioners. Instead, they seek to mobilize potential users towards research uptake. Analysis of the data suggested that aside from the Relational and Cognitive components that aim to influence users, intermediate agents also chose certain tactics that represented political choices to promote the use of research-based evidence. The Political Component is defined in this model as the actions taken based on intermediates' read on potential hindering issues or barriers in the context. Expressed otherwise, informants discussed ways to counter the challenges they perceived in users' context in order to promote research-based evidence use. The strategies

detailed in this component include: (a) developing relationships with key players, (b) capitalizing on opportunities to intervene, (c) avoiding sensitive topics, and (d) developing a critical mass of people favourable to research (see Figure 11).

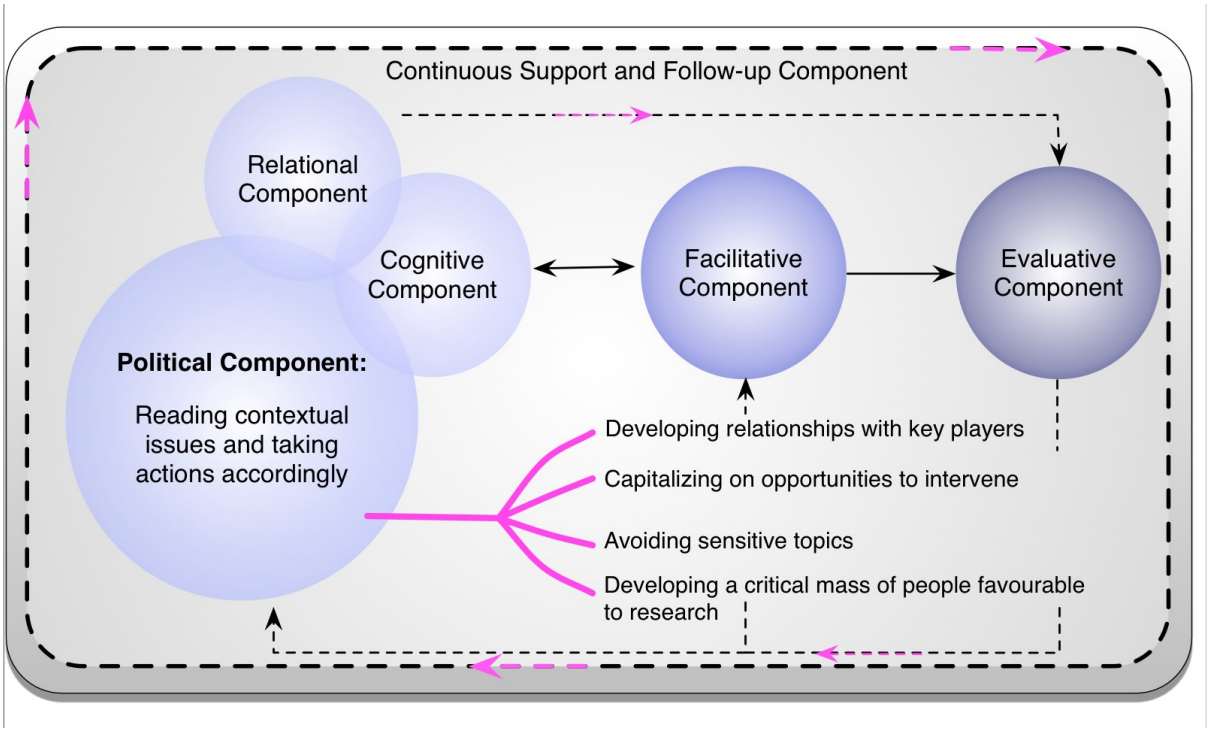

Figure 11. Focus on the Political Component of the Knowledge Transfer Intervention Theory

Developing relationships with key players

As discussed in the Relational Component section, rapports need to be established and maintained to favour an effective knowledge-based intervention with school practitioners. Politically, however, seven intermediate agents specified that relationships be established with key individuals within the organization, so as to maximize their impact on school practitioners.

> I can't force these people (i.e., school practitioners) to do anything. […] This is a reality. So, to counter this, we had to develop trusting relationships with key people. And with time, I was able to develop, if you will, good relationships that were

> fruitful… that gave good results and led to interesting things. – A Regional Office informant (refer to APPENDIX 7.41).

By "key" individuals, informants referred to people who, based on their title, or hierarchical level, had access to and were in close contact with school practitioners. For instance, school Principals were identified as key players, and through their presence, interventions carried more weight and added legitimacy to the discussion.

> these meetings are mandatory for teachers, this year or it's systematically on the agenda and the Principal is present. That is very important. Teachers see that it's serious and that it's important and that the Principal attaches importance to it. It's a presence of the Principal, also, and a discussion focused on that. – A Regional Office informant (refer to APPENDIX 7.42).

Also, a resource person was another example of a key player that intermediates associated with and going through the network indirectly. This allowed the intermediate to gain access to certain schools.

> There was also through the grapevine, namely in each of the regions, what we called Regional Resource people. And there is a Regional Resource person who works on at-risk high school students. So, for me, she became a work colleague and through her, I could infiltrate research data, so that they would be reassessed with the teachers; or, she recommended that I go with her or I recommended she come with me if we were speaking about a particular strategy. So, this, it was more… I say through the grapevine, but it was ok to do so, it was more in complementarity with our roles and our functions of support. – An informant from the CIMD (refer to APPENDIX 7.43).

Thus, by associating with people who had the legitimacy and the access to schools because of their position or status, intermediates could further their knowledge transfer mandate. This citation shows that some participants connected with people that could complement their work with the NANS schools.

Otherwise, intermediates determined who "key" individuals were, based on competency, motivation regarding the topic of underprivileged areas, willingness to relay

research-based evidence, and proximity with targeted users. In practice, intermediates are acting politically, by exercising their power of influence to find their key person using these criteria.

> It's someone who has an interest in, and who has a motivation related to the theme of intervention in underprivileged areas. At the beginning, that's what I'm searching for. I am looking for someone competent and motivated. We don't always have a choice, because we have to ask managers to appoint or designate people. So, often we have to use our role of influence so that we have the best people… not the best *people*. THE best *person*. […] In fact, it's more than competence, it's that he has an interest and a motivation and that he accepts to play his/her role of disseminator and transferor fully for groups with which he works. […] So, these people in the network, are key and determinant people. – A Regional Office informant (refer to APPENDIX 7.44).

This excerpt also provides a concrete example of the influence that intermediates must exercise on their organizational context in order to counter perceived challenges. In this instance, the barrier to the pursuit of their interest is that sometimes, they do not have a choice on the person who will be appointed to support school practitioners. The intermediate is this case searches for one person who accepts their mandate fully, rather than more people who may not have the same level of engagement to promote research-based evidence.

Additionally, participants were asked to explain how the information is passed along within their organizational context. The data further demonstrates the importance of choosing key individuals with whom to develop relationships. Specifically, informants selected individuals who had the potential to influence others to use research-based evidence. Through this strategy, intermediates' intent is to widen their impact to a greater number of school practitioners and transfer their skills to empower more intermediates.

> You see, it's really a relay from person to person, tools, and knowledge that are transferred and that this person, you empower them. It's really what there is behind support; you empower people or one person, who finally, will have influence over another group based on what you did. It's really a chain of transfer from person to

person, competencies, knowledge, and new practices. – A Regional Office informant (refer to APPENDIX 7.45).

Thus, informants perceived knowledge transfer as a relay chain from one person to the other, and as a process of empowering one intermediate at a time, in terms of knowledge and tools, in hopes of influencing other groups of school practitioners.

To summarize, this strategy's underlying use is to further intermediates' knowledge transfer mandate. It does so by ensuring that research-based evidence is relayed to solid intermediates that are in close contact with school practitioners.

Capitalizing on opportunities to intervene

As previously discussed with regards to the issue of timeliness of an intervention, intermediate agents believed it important to choose the right time to assume knowledge transfer activities. On a political level, however, nine intermediates also argued that it was important to be opportunistic enough and ready to intervene when possible. Put differently, intermediates read elements of the situation or context that suggested it was a favourable occasion to pursue their mandate's objective.

> "You have to know what exists and at a given time, you have to know, at the right time, to find these things (i.e., research evidence), and to use them in what you're doing." – A Regional Office informant (refer to APPENDIX 7.46).

Informants provided a few examples of which situations they took advantage of to stage an unforeseen knowledge transfer intervention. For instance, they capitalized on opportunities to bring scientific knowledge into the conversation when: (a) inquiring about successful or otherwise, failing school initiatives, (b) school practitioners had decided to gather-up and work on a specific concern, (c) in the process of determining what methods to

use when starting a project, or even when (d) they were experiencing difficulties or not achieving the results they had hoped for.

> To explain our successes or explain the things that don't work… And when people do that, I think it creates moments that are very strategic where, you come, when you are supporting, with data or research-based evidence. […] when people decide to invest themselves around a concern for example […] when people start a project and that they're convinced that what they would have to do is this, this, or that thing with regards to motivation, reading, at that moment… […] Or also, they are experiencing certain difficulties or they have certain results, but not as much as they would want, and then, sometimes also, these are moments that are very strategic to say: "Let's go see. Maybe you acted on certain things, but what does research say about it?" […] at these moments, people are open and available. – A Regional Office informant (refer to APPENDIX 7.47).

Thus, intermediates were alert to situations wherein users were more open and available to listen to ways in which research could contribute to the conversation.

While intermediate agents considered it crucial to contextualize research-based evidence according to practitioners' reality, they capitalized, on a more tangible level, on the ministerial mandates imposed on schools. Intermediate agents discussed this approach as political leverage to introduce scientific knowledge in schools.

As formerly eluded to, schools in Quebec are mandated to produce a success plan that must be renewed every one to three years. In 2001, the Ministry of Education, Recreation, and Sports (MELS) called on schools in underprivileged areas that are part of the NANS project, to ground these success plans on empirical evidence in order to receive funding. Hence, schools were encouraged to legitimize their success plans on promising practices. Intermediate agents, who otherwise wouldn't have an opening to promote research-based evidence, viewed this obligation from the MELS as an opportunity worth capitalizing on to work with schools and support their use of research in a concrete matter.

> You have to renew your success plan after 3 years, and we would like you to, instead of basing it only on an analysis of the situation and to say: "here's what we're going to do"; before saying that, what is worthwhile? Therefore, to inform yourselves on practices concerning the boys, on practices concerning the scholastic progress of the youth in your schools and on practices concerning underprivileged areas. – A School Board informant (refer to APPENDIX 7.48).

Overall, ministerial mandates were regarded as an significant political leverage for intermediates for three main reasons: (a) this demand placed on schools from the MELS had to be complied with, even though schools vary in their degree of compliance.

> By placing requirements in a success plan and by asking them (i.e., NANS schools) to refer to research, this is an element in which they are forced to go towards [scientific] knowledge. They are forced to go see. They do it in varying degrees, according to the school, according to their capabilities. – A Regional Office informant (refer to APPENDIX 7.49).

(b) Success plans concern and impact practitioners' schools directly, and are concrete enough to work in a controlled setting, thus providing a framework in which research could be discussed. Moreover, this strategy is perceived as more beneficial than training sessions because it is viewed as a unique opportunity to work in collaboration with users.

> The way in which we carry out planning (i.e., success plans); that has a considerable impact on practices in class, much more than would taking people and sitting them down for three hours to give them training, because we do it with them. When we arrive and we take, for example, we highlight our difficulties and we say: "We have higher levels of drop-outs, a lot of untouched homework, a lot of absenteeism, a lot of this and that…" We look at these different issues together and we think together. But it's in this stage of thinking together that, from time to time, then, I arrive and I say: "You see, in association with school, family, there is this important element. We have discovered that…" I don't say: "Research tells us that…" "We have discovered this or that thing… That could maybe guide us on the ways of doing things. What do you think?" And my work as an animator is to create, to instigate these questions and to come in, inconspicuously, and say: "Look, there is this, this, this." And then, often, people adhere and say to themselves: "It's true." – A School Board informant (refer to APPENDIX 7.50).

Interestingly, the informant highlighted how they generally inserted research into the success planning discussion in a timely manner. As such, the intermediate employs a more subtle approach "we discovered that", draws a link to the user's issue and asks them for their input, rather than, a more direct and confrontational style, "research says that". According to this intermediate, this manoeuvre leads to greater adherence, which put in another way, serves to promote the likelihood research-based evidence will be used, and to increase the agent's influence. Finally, (c) this demand legitimized intermediates as people who transfer research-based evidence, while providing a opening through which they could offer their services to these schools.

> That's how I entered more into the milieus. So, when there was an objective to their action plan, I told them: "On that subject, if you want, I could come support you, we could look at what we can do." So, that, that was much more effective, directly in the school. – An informant from the CIMD (refer to APPENDIX 7.51).

Therefore, intermediates capitalize on any occasion to promote their mandate by taking advantage of various situations that may benefit from the use of research-based evidence (such as, inquiries about successful or failing school initiatives), and by linking data with ministerial mandates in order to exercise their influence on practitioners. In doing so, they counter the challenge or barrier brought on by the lack of authority over school practitioners.

Avoiding sensitive topics

Going back to the Cognitive Component wherein intermediates aimed to convince practitioners of the relevance of research's uptake, informants considered ways to build receptivity towards research. One such method, more political in its nature, is to avoid sensitive topics at the beginning of the relationship with targeted users, and instead, focus on

subjects that have less emotional baggage for them. Implicit to this idea is that intermediates had a read on what constituted sensitive topics, and took action to counter the issue.

> People who have extremely rigid ideas on certain subjects… there are subjects that are more delicate than others. Integration of students with difficulties, the question of having to repeat school years, participation, openness of the school towards parents and the community. People who went through really negative experiences with regards to that; despite the fact that we produce research data, they are still very centered on the negative experience they've encountered or that someone else told them about. And at that moment, it's difficult. It's difficult to… People close up quite quickly and we hear answers such as: "Ah yes, research is nonsense. One says one thing in one direction and six months later, they come up with another one that says something in another direction." These people are pretty cynical with regards to the content of research. "Ah yes, them, its going well in their university office, doing research, but they haven't… Let them come try to apply this in my class." These, I've been through experiences like that where we didn't go very far. It's possible though. Me, I'm not saying that there's nothing to do with these people. You have to increase their receptivity, slowly, on other topics on which they are less in conflict with. – A School Board informant (refer to APPENDIX 7.52).

Therefore, when school practitioners appear cynical with regards to research due to past negative experiences or topics highly debated in underprivileged areas, one intermediate agent wisely made use of a different approach.

While the agent admitted that these interventions required some patience, they believed the pay off would be greater openness to change and to research evidence over time. To do so, they adopted a (small) step-by-step approach.

> Small research summaries, small topics… "Research says this, this research experiment arrived at that conclusion." And then: "Ah yes, this makes sense. Where did you get this study?" "It was published on this site, it appears at this place…." We come with another topic like that, that is less… people come to say: "Look, the topic that you talked about last time, supposedly that evaluation, its more beneficial to proceed this way. I read this other thing. I fell on this article." And so, this way, we increase permeability to change and to research data. And it could be advantageous. It supposes an attitude of… it supposes a lot of patience in these contexts. – A School Board informant (refer to APPENDIX 7.53).

This excerpt highlights an intermediate's more direct mention of research in his or her discussion with users. When exchanges concentrate on topics that are less emotionally charged than the success plans, for example, which directly targets sensitive topics, a less subtle approach can be utilized. Thus, intermediate agents choose this strategy as a means to counter perceived rigidity or barriers from users.

Developing a critical mass of people who are favourable to research

One intermediate also conferred the strategy of creating a critical mass of individuals who demonstrated greater openness towards research, newer ideas, and towards changing their practices based on research-based evidence. This tactic is viewed as a political one in that it materializes in response to the negative influence of school practitioners who are more reluctant towards research-based evidence.

> You don't transfer the information the same way, you don't address subjects the same way and you'd better work with small groups, work with a couple of volunteers because you know that in your 30, there are a few who are interested. Working with […] a few teachers this way, so that when one day you address these questions in a large group, you can have a critical mass of people who will tell the others: "No, now, us, we don't think that this is the best way, to kick students out in order to lead them to succeed." You could have created a little bigger dynamic… a critical mass of people who will support a certain number of more progressive ideas. – A School Board informant (refer to APPENDIX 4.54).

This reference shows that the intermediate's strategy was to identify volunteers based on their interest in research, and work with them in small groups to promote research-based evidence. The aim is that when they congregate into larger groups, the critical mass of volunteers may, in turn, exercise an influence over their peers. Thus, this strategy is advantageous for intermediate agents because it can change a group's dynamic by giving more

weight and a stronger voice to ideas that are in line with research evidence, and that may go against former popular beliefs in the user's system.

Consequently, the political aspect is omnipresent in the strategies intermediate agents use to support research uptake in the user system. Indeed, they work through the challenges inherent to the educational system, and leverage the opportunities they are offered (capitalizing on opportunities to intervene through linking research-based evidence with ministerial mandates), otherwise create them (relationships with key players; creating a critical mass of people who are favourable to research), and even go around barriers (avoiding sensitive topics). Additionally, it is not surprising that some of these strategies intertwine with relational or cognitive-type strategies. Per say they are depicted as such in the model because in reality, while each strategy may have a predominant nature, they all share a common ground.

When briefly describing the empirically-based model in the introduction of this chapter, inter-influence was observed between the Relational, Cognitive, and Political components. In their own fashion, each provides conditions that favour a successful knowledge transfer intervention process. Absence of these conditions is thought to explain an unsuccessful knowledge transfer intervention.

> People weren't open, there was no reception, they had preconceived judgment, there was… You see, maybe individually, they would have been nicer, as is often the case, but collectively, there is a climate that is totally unfavourable that made it so that it was a lost cause to continue to speak on this or that theme because there was a systematic blockage. In fact, it's exactly the opposite of what I was explaining to you earlier. They weren't volunteers, the timing was not good, and we didn't have time to work on the interest, to entice possible gain. It was exactly like all learning. It's very much linked to, maybe, to the group's receptivity or to the strategy that was established on my part to bring the knowledge. – A Regional Office informant (refer to APPENDIX 7.55).

This quote emphasizes the inter-influence or inter-dependency amid the Relational Component (i.e., "there is a climate that is totally unfavourable that made it so that it was a lost cause to continue to speak on this or that theme because there was a systematic blockage", "the timing was not good"), the Cognitive Component (i.e., "we didn't have time to work on the interest, to entice possible gain"), and the Political Component (i.e., "they weren't volunteers", "to the strategy that was established on my part to bring the knowledge."). This example also reflects the complexity of an intervention requiring the use of multiple strategies at the same time.

Once the strategies associated to the Relational, Cognitive, and Political components have been employed to lead to greater receptiveness, intermediates adopted the strategies linked with the Facilitative Component.

Facilitative Component of the Knowledge Transfer Intervention Theory

All informants (16) explicitly discussed the Facilitative Component, defined as guiding users as they take ownership of the knowledge transfer process. Underlying this component is the intermediates' intention of making users autonomous in their problem-solving approach grounded in research, and developing their capacity through related competencies (see Figure 12).

> "Now, the challenge is that you have to enable teachers to do it. You can't go do it in their place. Because what we want is for teachers to develop these competencies." – A Regional Office informant (refer to APPENDIX 7.56).

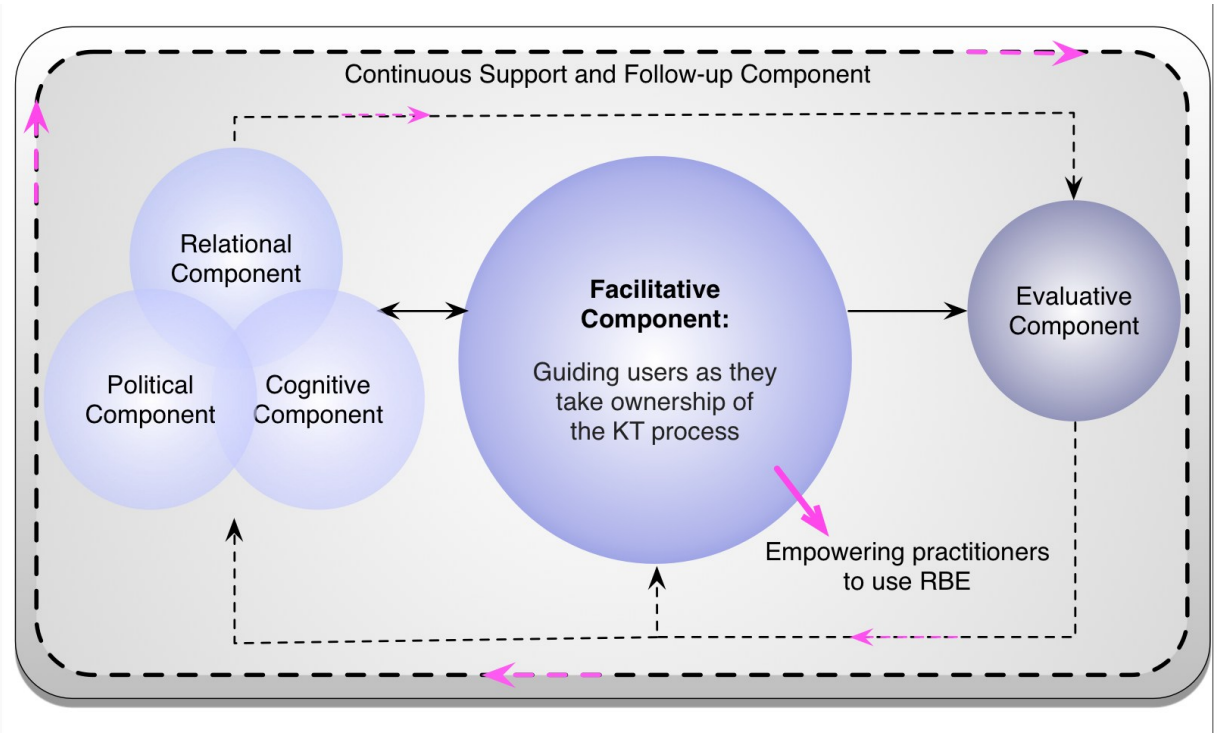

Figure 12. Focus on the Facilitative Component of the Knowledge Transfer Intervention Theory

Empowering practitioners to use research-based evidence

Intermediate agents perceived themselves as guides who do not follow a rigid protocol, but who direct school practitioners towards possible solutions in line with their underlying concerns.

> "we don't want to fall into a recipe either. It's more about guiding them, to orient them toward potential solutions." – A School Board informant (refer to APPENDIX 7.57).

Informants also elaborated on how, as guides, they oriented school practitioners towards possible solutions. Analysis of the data indicates that this was achieved by encouraging school practitioners to recognize and make links between their concern and a research question.

> "We took a number of things (i.e., research-based evidence) and we showed them that they had links with […] the issues they were tackling." – A Regional Office informant (refer to APPENDIX 7.58).

Similarly, they guided users by inspiring them to experiment with research-based evidence in their classroom, as well as through exchange and collaboration. These strategies were meant to develop school practitioners' expertise in knowledge use. Ultimately, the goal is that users be self-sufficient.

> That's to say that they had occasions to experiment in their classrooms and to get feedback after on how it went, what worked, what didn't work so well. And to… In fact, to develop further. Because, at some point, we want teachers to train themselves. – A Regional Office informant (refer to APPENDIX 7.59).

Beyond serving as guides, intermediate agents empowered school practitioners by supporting them in their own appropriation of the research-based evidence utilization process. Indeed, participants provided some clues as to how they supported school practitioners in their process of familiarization with use of research evidence. Analysis of the data suggests that they initially informed school practitioners that answers to their needs were readily available, and that those answers existed within the scientific literature. Then, by showing them how to find and sort through research evidence, thereby making the researching process explicit, intermediate agents were encouraging scientific knowledge use and contributing to potential users' development of expertise.

> What is important is to know what's available, and to show them (i.e., school practitioners) where they could search, through a data set, the 4 or 10, amongst the 100; those that would, in relation to what they're currently doing, be enlightening. – A Regional Office informant (refer to APPENDIX 7.60).

Intermediates also actively supported how users learned to transform research-based evidence into consumable and applicable information. Mainly due to their work context and

job-related demands, school practitioners needed support in acquiring the skills to complete this process. Otherwise, informants argued that they simply would not try to learn it on their own. The following excerpt provides an example of how this was done.

> So, I present them a video presentation of Chouinard, presenting his model. I present them a model in Word format, while telling them what would be important, what we highlight, what we retain, what we leave out in all that. People work in workshops. This is the way we integrate things. – A School Board informant (refer to APPENDIX 7.61).

In this illustration, the intermediate provided a step-by-step breakdown of the tasks generally undertaken to transform research-based evidence into useful information for users' practice. It is believed that through using this method, and workshops, practitioners may integrate the process more easily.

Finally, supporting users in the appropriation of the research material consisted of demonstrating how to apply scientific knowledge into their practice. In doing so, research evidence became concretely applicable.

> We are going to lead them to integrate it (i.e., research-based evidence) and to translate it, try to see how this is useful to them, and how it can be translated in elements that are concrete in relation to their practice. – A School Board informant (refer to APPENDIX 7.62).

On the whole, intermediates empower users by acting as guides to direct practitioners towards possible solutions in research and by making sure users are supported as they take ownership of the knowledge transfer process, thereby contributing to the development of their expertise in research.

Evaluative Component of the Knowledge Transfer Intervention Theory

Once intermediate agents have performed a set of knowledge transfer interventions that aim to impact and influence the users' system, and that these interventions have led to the implementation of research-based actions, they enter an evaluative phase. Intermediates modeled an evaluation process for school practitioners by demonstrating how to operationally assess the methods they implemented in their practice. Moreover, they assessed along with school practitioners, the concrete impacts of using research-based evidence in their practice (see Figure 13).

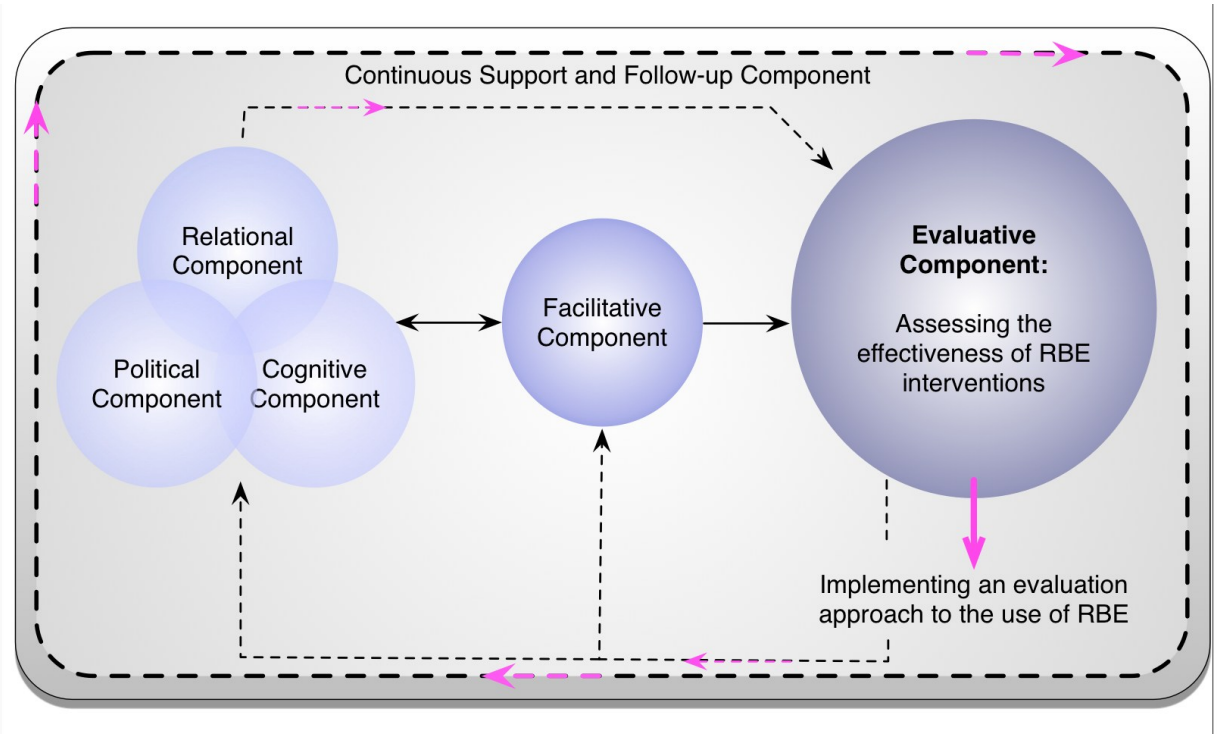

Figure 13. Focus on the Evaluative Component of the Knowledge Transfer Intervention Theory

Assessing the effectiveness of research-based evidence interventions

This set of strategies serves to provide users with the basis to evaluate their research-based actions. Intermediate agents support school practitioners in their assessment, which in turn, provides intermediates with a feedback loop that allows them to adapt themselves to the needs of the user, and to determine the usefulness of research-based actions school practitioners carry out. Moreover, through this feedback, they may revert back to a different component in the intervention process, based on elements that may need more work.

This group of tactics, directly discussed in six interviews, contains two main strategies. The first involves applying follow-up mechanisms to systematically evaluate users' progress in their practical application of research-based actions.

> all the methods that we put in place in schools, when a school lists their methods, [the school] has to put monitoring mechanisms in place in order to be able to say at the end of the line: "did this method produce results or not? I looked at my objective, it was reached, and I didn't even implement this method. So, it's not why I reached my objective. – A School Board informant (refer to APPENDIX 7.63).

As seen in this citation, monitoring mechanisms were believed to be important to allow users to question the reasons why an objective what achieved or not. More precisely, monitoring mechanisms went hand-in-hand with setting measurable objectives. This was revealing information for both users and intermediate agents, who similarly, assessed the result of their support.

> They're written so that they can be easily measured, the objectives I mean, and the methods are also labelled and with a monitoring mechanism that is put in place […] So, I look at the result, at the end; what it produced with this school, the fact of having supported them, supported the milieu, the committee, all that so that they could work in this direction, the result is conclusive at the end […] it will be easy to say: "the methods that I put in place, did they allow me to reach the objective?" Yes, because my objective is easily measurable. I have targets, all is in place, it allows me to do that. At the same time, I have monitoring mechanisms that will allow me to say: "Is it because

> my method wasn't good or because I didn't put it in place that I didn't reach my objective?" So, all the elements are in place at the moment in order for them to easily implement [their] success plan and evaluate at the end of the line and afterwards go towards another phase. – A School Board informant (refer to APPENDIX 7.64).

The second strategy in this intervention component refers to documenting what resulted from the research-based actions in users' practice.

> "They (i.e., people who commit to a process) decide to follow this and to document what they're doing, in general, after a certain amount of time, they obtain positive results." – A Regional Office informant (refer to APPENDIX 4.65).

Both these strategies pursue three goals. The first being that the more users assess their practices, the more rigour they develop, and the more they know which practices are valid in their context.

> Well, if in a milieu we are able to demonstrate that with this intervention and this and that condition we had an impact, well if in 10 milieus we conclude the same thing, we're going to be able to, at some point, to be able to talk also about a practice that is valid, or in any case that is… I find that the more we're going to work on this, the more we're going to help people develop rigor toward it. – A School Board informant (refer to APPENDIX 7.66).

The second goal to assessing users' research-based evidence actions is to allow them to either legitimize or improve their practices. While the task may be daunting, it serves as an argument to mobilize users towards evaluating their methods.

> The more people enable themselves to follow and to evaluate what they're doing, the more, I think, that it's in their interest to rely on things that are research-based. Because it, finally, it corroborates what they're doing, and it tells them that they are absolutely right to maintain it. These are arguments to justify this, it's…or it helps them polish and adapt what they're doing. And this, we have work to do. – A Regional Office informant (refer to APPENDIX 7.67).

The third and final goal intermediates pursue, through the use of these assessment strategies, is to support practitioners as they hone their critical reflection regarding the results

of a particular intervention. Bringing into question why certain research-based actions have succeeded or failed to achieve this.

> Develop the critical aspect to say: "We're implementing some things…" That's good. But myself, my role among these people (i.e., school practitioners) is to bring them to say to themselves: "It's not simply because we're doing this that we're going to get effects." So, we're going to look at what will be the effects; are they ones we're seeking or if we're going to end up with undesired results… And from there, to have the critical mind to say to oneself: "But, what didn't we do right" or "What did we do and what happened that provoked another situation, etc." So, this is it, to develop a critical mind. – A School Board informant (refer to APPENDIX 7.68).

Overall, this component posed a particular challenge to intermediate agents because users did not generally welcome the task of assessing one's own methods, and some intermediates feared being negatively perceived:

> And then, for them, it was becoming very disappointing because now, it's as if I was ruining their fun. And so sometimes, it's a reason for certain guidance counsellors to not go so far, sometimes. Because I realized that for some, to become very rigorous towards this way of doing, etc., they're like somewhat scared to put it out there sometimes. It's not the case for everyone, thankfully, but for many, there's this. – An informant from the CIMD (refer to APPENDIX 7.69).

Informants stated however that, while they perceived it as a challenge and that it was not part of the culture in education, it was important to require an evaluation of users' methods nonetheless. This is thought to lead to improved decision-making, targeted actions in relation to high school students in underprivileged areas, and to ensure practices are more effective.

> We have a challenge to bring the school community and all of practitioners to rely to a greater extent on this knowledge to make more judicious choices, better targeted actions, that are more likely to be more effective. For me, in the school milieu, it's not independent from another challenge, which is to bring people to monitor more what they're doing, to evaluate it and to document it. This, this is not really an integral part of the culture in education […] When we ask the milieu, for example: "What do you do that you find particularly pertinent from the last couple of years in your milieu in relation to the question of underprivileged [area]? What could you talk about? What seems to produce results [in your school]?" People are little… First, people, I think,

> often, haven't necessarily done this in a very systematic way, collecting information, data, observations. – A School Board informant (see APPENDIX 7.70).

Thus, intermediate agents believed in the necessity of evaluating research-based measures that were implemented in users' practice despite the challenging aspects of this particular task. Through this component, intermediates enable users by instituting mechanisms to systematically monitor and evaluate their progress and by documenting what resulted from their research-based actions. They consider it important for the rigour and critical reflection that develops in users from implementing such steps, as well as for the better grasp they get of what works best in their context.

Continuous Support and Follow-up Component of the Knowledge Transfer Intervention Theory

Intermediate agents interviewed in this study stressed that engaging school practitioners in scientific knowledge was not sufficient in and of itself. They must ensure multiple follow-ups, and continuous support over time in order to increase the probability that research would be reinvested in users' practice. The lack of continuous follow-up and support in the research use process provoked negative feelings and frustration from school practitioners, loss of information, non-use and misuse of scientific knowledge. For this reason, the Continuous Support and Follow-up Component ties the process of intermediate agents' knowledge transfer intervention together. In this vein, it can be understood as a meta-component, encompassing all other components described in the model (see Figure 14). As such, intermediates established guidelines surrounding their work with users. Specifically, 14 intermediate agents discussed the strategies linked to the final component of the theory.

These schools must be accompanied. It's all well and good to give… the same thing, I'd say, for the training that guidance counsellors give to teachers. Offering training and leaving things there, that won't amount to much. It's the same thing for our school Principals. We inform them, they adhere to that. When they leave from here they're happy, they've learned something, now everyday life takes over. If we don't go accompany them in the process to really put this in place and follow this very rigorous process, it won't produce any results, it won't penetrate. – A School Board informant (refer to APPENDIX 7.71).

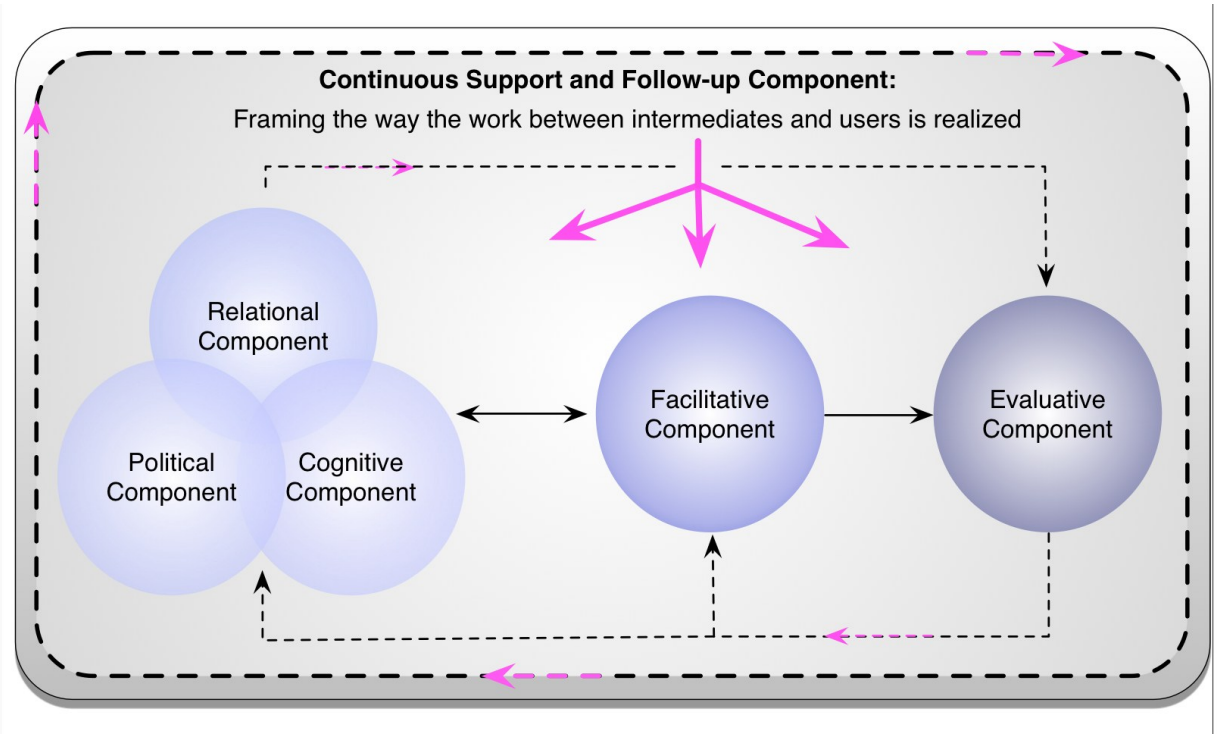

Figure 14. Focus on the Support and Follow-up Component of the Knowledge Transfer Intervention Theory

Based on the data, follow-up practices involved a regular (physical) presence from intermediate agents in the schools where they intervened.

And myself, I've identified ways of doing things, like regularity. Whether I have a meeting with people or not, at day 5, I'm in the rural area, we'll let's go, I'm in the rural area. I didn't ask myself if I was going or not. No. I was in the rural area. People hadn't necessarily asked for appointments, I didn't have any meetings planned, but people saw me there. And, all of a sudden, well, when people had questions, people turned to me. – A School Board informant (refer to APPENDIX 7.72).

The excerpt denotes that over time, and because of an intermediate's consistency and accessibility, potential research adopters could turn to him or her whenever questions or needs arose.

Beyond a regular presence, intermediates stressed the importance of holding routine meetings (on average every 5 to 6 weeks), with a judicious amount of people (varies between 8-12 people) and a thoughtful duration; long enough to allow people to reach metacognition (between 2 to 3 hours). Through the following citation, the informant described a carefully crafted intervention plan (i.e., when, how many people, and how long) based on his or her experience with users.

> There was a frequency of meetings. The frequency was every 5 or 6 weeks. I experimented with all sorts of frequency. Three weeks was too fast because they didn't have time to integrate and experiment in the classroom. And after 6 weeks, it was too far, we'd lose track. […] The length of the meetings varied. In certain groups, it was an hour and a half; in others it was three hours. Hour and a half meetings are always feasible, but we wouldn't get to metacognition. It's not long enough. […] The number of practitioners in the group: minimally, I'd say 6 to 8 people; maximum 12 people. Even 12, it's starting to be big, if we want everyone around the table to get a chance to express themselves. – An informant from the CIMD (refer to APPENDIX 7.73).

In addition to the notion of regularity, informants' continuous support strategies included establishing shared responsibility between both parties with respect to their collaboration.

> So, we went and then, what we agreed upon with them is a game plan: "We'll come back. We'll support you. You guys will have things to do in the mean time, but at each meeting, we will come back and look at how you have progressed in your things." It was there, it became like an obligation for them… – A School Board informant (refer to APPENDIX 7.74).

Thus, instituting certain responsibilities made users feel a sense of obligation towards the intermediate, and therefore towards their collaboration in the knowledge transfer process.

Lastly, interviewees emphasized that providing support required differentiating one's approach and message according to the person. Therefore, to find a frame of work that will fit the individual's interest, learning style and personality.

> And there are people who come to trainings and are bored and would be better off reading a good book or spending 3 hours doing research to move things forward rather than be there, present in a training. There are those who are willing, who play the game, but that will often stop there because if there isn't support, if there isn't a rigorous follow-up that's done, they'll think it was very interesting and we'll talk about it as a nice memory but it stays there. And there are those that want nothing to do with it. And this, you have to be conscious of this. And these people, they need a different framework. […] So, we always have to grasp to whom we are addressing ourselves to, to differentiate, bottom line. – A School Board informant (refer to APPENDIX 7.75).

Intermediate agents believed that this component was crucial, notably because regular follow-ups and support help consolidate learning and favour school practitioners' professional development.

> "[…] the support, as I'm telling you, guarantees us a dynamic link between the question of the knowledge and a more certain development of professional competence." – A Regional Office informant (refer to APPENDIX 7.76).

Informants argued that follow-up conditions must be implemented so as to ensure continuity in their work with users, notwithstanding possible changes in school practitioners' organizational context (such as an important figure leaving the school).

> So, I'd say that when the person who puts a project and everything in place leaves, we have to make sure that if we put something in place, that the person who has the responsibility to put it in place, they have to be there… otherwise… So, I'd say that there are conditions that aren't there. This is often what explains failure. – A Regional Office informant (refer to APPENDIX 7.77).

In conclusion, support and follow-up is based on intermediate agents' belief that to influence practitioners towards the use of research, they must, on the one hand, ensure a regular presence while using an approach that is mindful of how people learn. On the other

hand, intermediates give themselves the right to impose certain measures and to hold users accountable for their part in the knowledge transfer process. In turn, these strategies are meant to strengthen learning and further professional development.

The specificities of the continuous support and follow-up component conclude the comprehensive presentation of intermediate agents' Knowledge Transfer Intervention Theory. The subsequent section invokes some key features of the empirically-based model.

Three main characteristics of the model

Based on the presentation of these results, three features transpire from the empirically grounded model as a whole. These are highlighted before concluding the results chapter.

Many strategies are used simultaneously. In their fieldwork, intermediate agents adopted many strategies simultaneously; they did not necessarily intervene sequentially and seldom used a single approach. Although the model is presented as the ideal process, in reality, their intervention is complex, iterative and dynamic. In fact, those interviewed remained sensitive to the context and the targeted user in order to determine which strategies ought to be used and when. Regardless of the strategies chosen, the intent remained to exert an influence on potential research users. For example, while the intermediate guides the user through his or her appropriation of the knowledge transfer process, the agent cannot neglect cues suggesting that the working alliance is not secure, or that the exercise does not seem meaningful or relevant to the user. Thus, the components should be regarded as fluid and permeable to the context and to the potential users' influence on the relationship.

Each component is necessary, but insufficient without support and follow-up to withstand an impact on potential users' practice. Like different pieces of a puzzle, the

Relational, Cognitive, Political, Facilitative, Evaluative, and Support and Follow-up components each cover a vital angle or part of intermediates' knowledge transfer intervention process. Whilst it appears capital to build a trusting relationship, to personalize research to users' context, to adapt the language of research to the user, or to evaluate the impact of initiatives based on research evidence, these are not enough to entice the user to adopt research and to make the knowledge transfer process their own. More than that, intermediate agents argued that the component of Continuous Support and Follow-up was sine qua non in the process to produce a lasting impact on the user.

The Knowledge Transfer Intervention Theory is a model of influence. It is the combined and multi-facetted use of all types of strategies that is suggested to influence research uptake in users' practice. Throughout the chapter, the reasons, underlying premise and goals behind the use of each strategy were put forward. Nonetheless, the overarching goal of the model is to influence school practitioners towards the use of research-based evidence. Thus, through the usage of various strategies, intermediate agents seek to encourage users to behave in a way they may otherwise not have considered or, without support, would not have carried through. To conclude, as one informant from the CIMD perfectly said: "I have a power of influence, but it's not I who will say: 'you have to be here'." (See APPENDIX 7.78 for the original French transcript).

Summary of the findings and conclusion of the chapter

The qualitative analysis of the data, based on Grounded Theory principles, highlighted 32 individual strategies, grouped into 12 sets of strategies, which in turn are related to 6 components of intervention. Intermediate agents combined these during the transfer of

scientific knowledge in the hopes of influencing school practitioners to use research-based evidence. These strategies are grouped in terms of their predominant nature: (a) Relational, (b) Cognitive, (c) Political, (d) Facilitative, (e) Evaluative, or (f) Continuous Support and Follow-up. The Relational, Cognitive, and Political components act interdependently to favour greater influence via facilitative strategies. Lastly, the Continuous Support and Follow-up Component serves to tie the model together and therefore can be viewed as a meta-component in this model. Each type of strategy was described in terms of how it was implemented, and why it was perceived as relevant in the process of intervention. These elements are reprised in a recapitulative summary in Table 4 hereafter.

On the whole, intermediate agents simultaneously assume multiple strategies according to the context and the users, making the interpretation of the model a fluid and dynamic one. Beyond this feature, support and follow-up is meant to ensure that the intermediates' intervention has a lasting effect. Finally, this model is a holistic process that ultimately serves to describe how intermediate agents influence the user system in order to integrate scientific knowledge into their practice.

Chapter Five will cover the discussion. Purposely comparing and contrasting the model that resulted from this study with the scientific literature in knowledge transfer and related fields based on how closely they relate to these findings.

Table 4

Summary of the 32 strategies highlighted in the Knowledge Transfer Intervention Theory

Strategies	What	How	Why
Relational Component = Building and maintaining a working alliance	Fostering trust and openness	1. By demonstrating respect and active listening 2. By being ethical and valuing confidentiality 3. By becoming a credible source, through: (a) Their experience in schools, and in underprivileged areas; (b) their knowledge base and expertise in research; (c) a rigorous approach; and (d) a transparent approach	To create a climate that will favour research-based evidence use and its promotion in the user system
	Choosing the right time to intervene	Based on intermediates' understanding of users': (a) Current context and needs; and (b) level of openness and responsiveness to change 4. By assessing their openness to research and to an evidence-based intervention (group/individual levels) 5. By accepting and respecting their pace (group/individual levels)	
Cognitive Component = Convincing practitioners of the relevance of research-based evidence and offering meaning to its users	Building awareness towards research-based evidence	6. By constructively questioning users' ideas, methods and beliefs 7. By focusing on the impacts and benefits of applying research to their practice	To reduce the cognitive dissonance associated to research and its use, and promote its benefits, practicality and accessibility
	Contextualizing research-based evidence according to practitioners' concerns and needs	8. By selecting a few priorities to focus on 9. By making use of local data	
	Accessing and adapting research-based evidence in light of users' concerns and language	A. How to choose and adapt research-based evidence: 10. By preselecting research-based evidence, based on: (a) Users' needs, or (b) its capacity to serve discussions 11. By organizing research-based evidence into: (a) themes, or (b) into something that could tap into users' emotions 12. By simplifying and synthesizing research-based evidence 13. By framing research-based evidence within users' context 14. By supporting users via direct and tangible interactions	

Table 4

Summary (continued)

Strategies	What	How	Why
	Accessing and adapting research-based evidence in light of users' concerns and language	15. By ensuring users understood what emerged from the research via an animation B. How to present research-based evidence: 16. By having interpersonal contacts (one-on-one or group discussions) 17. By using a lively and stimulating approach 18. By adopting the same language and approach school practitioners use in their classroom 19. By using visual modes of presenting research-based evidence, containing simple formulations (i.e., no jargon)	
Political Component = Reading contextual issues and taking actions accordingly	Developing relationships with key players	20. By choosing people who exercise a power of influence, based on: (a) Title, hierarchical level, access to practitioners; (b) competency, motivation for the underprivileged areas, willingness to relay research-based evidence; or (c) potential to influence users	To reduce the barriers of research promotion and uptake in practice and to broaden the possible reach of research
	Capitalizing on opportunities to intervene	21. By taking advantages of situations that require the use of research-based evidence (e.g., when choosing methods to start a new project) 22. By linking research-based evidence with ministerial mandates • By asserting that success plans must be complied with • By working on success plans in a concrete manner • By putting forward that their role is legitimized through the ministerial demand	
	Avoiding sensitive topics	23. By choosing topics that have less emotional baggage for users 24. By taking small steps towards research	
	Developing a critical mass of people favourable to research	25. By identifying volunteers who are more open to research, and by working with them in smaller groups before coming back to larger settings	

Table 4

Summary (continued)

Strategies	What	How	Why
Facilitative Component = Guiding users as they take ownership of the knowledge transfer process	Empowering practitioners to use research-based evidence	26. By acting as a guide to direct practitioners towards possible solutions in research • By helping users acknowledge the links between reported issues and a research question • By encouraging users to experiment with research-based evidence in their classrooms or through exchange and collaboration 27. By supporting users in their process of appropriation of the research-based evidence utilization process: • By making the researching process explicit • By showing users how to transform research-based evidence into applicable information through workshops • By demonstrating how to apply research-based evidence in their practice	To promote an autonomous use of research-based evidence
Evaluative Component = Assessing the effectiveness of research-based evidence interventions	Implementing an evaluation approach to the use of research-based evidence	28. By implementing follow-up mechanisms to evaluate users' progress in the application of research-based actions in their practice 29. By documenting what resulted from school practitioners' use of research-based evidence	To encourage users to adopt a systematic and monitoring approach to research-based evidence application
(Meta) Component of Continuous Support and Follow-up = Framing the way the work between intermediates and users is done	Encompassing relational, cognitive, political, facilitative, and evaluative, components	30. By being regularly present in the school and by holding routine meetings 31. By establishing shared responsibilities between the two parties involved 32. By adopting a differentiating approach depending on the person, based on their: (a) interest, (b) learning style, and (c) personality.	To favour the reinvestment of research-based evidence in users' practice, consolidate their learning, and promote their professional development

Chapter Five

Discussion

This study intended to shed some light on the strategies intermediate agents employed to support school practitioners' use of research-based evidence. The results of a Grounded Theory based data analysis (Strauss & Corbin, 1998) highlighted 32 strategies, which were grouped into 6 major components making-up the Knowledge Transfer Intervention Theory: Relational, Cognitive, Political, Facilitative, Evaluative, and Continuous Support and Follow-up. This discussion will start by comparing the findings of this study with evidence from the literature that supports and explains the functioning of this model. Following the theoretical implications, the central practical implications will be examined before discussing the limitations of this study, contributions of this thesis and future research opportunities.

Theoretical implications of the findings

This section presents a comparison between the author's conceptualization of the knowledge transfer intervention process, and that of a sound model in knowledge transfer research (Ward et al., 2009), which offered similarities and distinctions worth exposing. After a brief overview of the Knowledge-To-Action model (Graham et al., 2006), the reasons this framework was specifically chosen for comparison are highlighted. Following, is a literature review explaining and theoretically supporting the Relational, Cognitive, Political, and Facilitative components.

Overview and relevance of the Knowledge-To-Action framework (Graham et al., 2006)

Presented in Figure 15, the Knowledge-To-Action model (Graham et al., 2006) is a holistic knowledge transfer framework that may be broken down into two phases: *Knowledge Creation*, which is represented by the funnel in the center, and *Action Cycle*, which is represented by the cycle around the funnel.

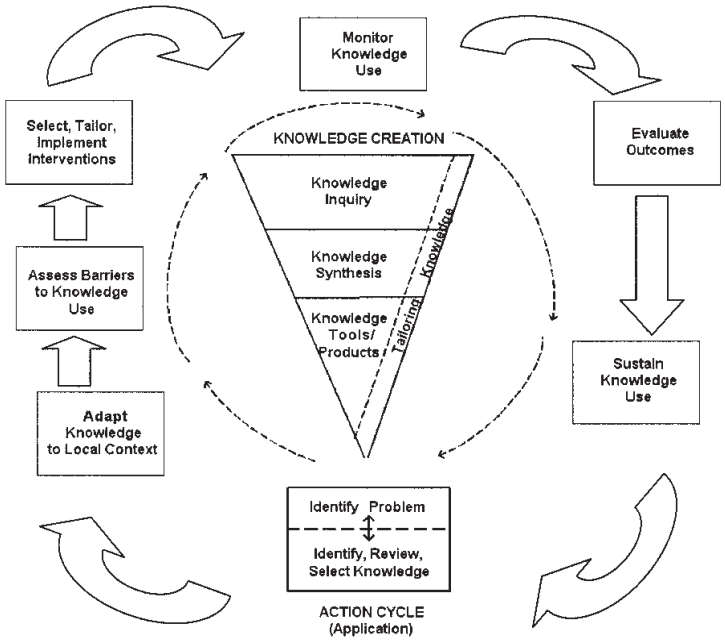

Figure 15. The Knowledge-To-Action framework (reproduced from *Lost in Translation: Time for a Map*, Graham et al., 2006).

Knowledge Creation specifically refers to the major types of knowledge or research that are found and used within the health care sector; namely: *Knowledge Inquiry*, *Knowledge Synthesis*, and *Knowledge Tools*. According to the authors of the model, the symbol of the funnel is meant to illustrate the process of refinement of knowledge, until it is made user-friendly for stakeholders (Graham et al., 2006). Another interpretation offered by Graham et

al. (2006) is that knowledge can be viewed as going through filters, leaving only the evidence that is most valid and useful.

The Action Cycle, is comprised of seven dynamic activities that are thought to lead to the implementation of knowledge; these are: *Identify a Problem that Needs to be Addressed / Identify, Review and Select Relevant Research to the Problem*; *Adapt the Identified Knowledge to Local Context*; *Assess Barriers to the Use of Knowledge*; *Select, Tailor, Implement Intervention to Promote the Use of Knowledge*; *Monitor Knowledge Use*; *Evaluate Outcomes of Knowledge Use*, and *Sustain Ongoing Knowledge Use*.

These activities are presumed to influence one another, and to be influenced by the phases in Knowledge Creation. Moreover, they are based on the commonalities the authors found in over 60 planned-action theories, explaining how to "deliberately engineer" change in individuals or groups varying in size and setting (Tiffany, 1994).

The Knowledge-To-Action model (Graham et al., 2006) is presented as a useful framework for collaborative work between knowledge producers and knowledge implementers or as separate phases accomplished by distinctive stakeholders at different points in time. In the latter view, the Action Cycle may be left to intermediate agents who promote and facilitate the uptake of research in potential users. Thus, the results of this study can be compared to the activities found in the Action Cycle.

This model was chosen for comparison with the current study's results for five main reasons. The first is that the scientific community recognizes Graham and colleagues' framework (2006) as one of the rare attempts to present the complete process of knowledge transfer: from knowledge creation to its implementation in practice (Pentland et al., 2011). Therefore, it was deemed worthwhile to position the current model into a more holistic and

encompassing one. As such, the reader may benefit from understanding what the current results help to expand on inside the global process of knowledge transfer. The second reason, which is linked to the first, is that by comparing the Knowledge Transfer Intervention Theory with a more encompassing one, there is a greater chance of highlighting the limits as well as the unique distinctions and added value of the model. This also answers the last objective of the fifth stage of analysis and treatment of the data: circumscribing the resulting theory by comparing it to another model and with the literature. Third, the Knowledge-To-Action's Action-Cycle is presented as a distinct phase operated by either a knowledge producer or an intermediary; making the comparison with the Knowledge Transfer Intervention Process not only possible and but easier to follow. Fourth, Ward and colleagues (2009) have suggested that while existing models had not yet demonstrated their suitability as instruments for conceiving and assessing interventions, Graham et al.'s (2006) framework was one such exception. Indeed, their model has been tested for planning and evaluating knowledge transfer strategies (Ward et al., 2009; Straus, Graham, Taylor, & Lockyer, 2008) thereby making a comparison between their model and this study's results all the more relevant. Fifth and finally, the model presented in this thesis is empirically grounded (bottom-up and inductively) in the sector of education and in a particular project, while the Knowledge-To-Action framework is theory driven (top-down and deductively) and created for use in the health sector. Therefore, it is interesting to analyze whether or not models that were created with such opposing methodologies, and designed for the specifics of different sectors, can reach similar conclusions.

Outline of the similarities and distinctions between the Knowledge-To-Action model (Graham et al., 2006) and the Knowledge Transfer Intervention Theory

The findings of this study are consistent with Graham and colleagues' (2006) Knowledge-To-Action model in several ways (see Figure 15). Although presented and termed differently, several strategies proposed in the Cognitive, Political, Evaluative, and Continuous Support and Follow-up components of the Knowledge Transfer Intervention Theory are generally found in the Knowledge-To-Action model. Indeed, the Cognitive Component's *contextualizing research-based evidence according to practitioners' concerns and needs*, and *accessing and adapting research-based evidence in light of users' concerns and language* is similar to the Action Cycle's activities of *Identify Problem / Identify, Review and Select Knowledge*, and *Adapt Knowledge to Local Context*.

Similarly, the Political Component, which involves an analysis of the situation and strategies to counter observed challenges, can be understood in Knowledge-To-Action's Action Cycle as the activities related to Assess Barriers to Knowledge Use, and Select, Tailor, and Implement Interventions. Likewise, Knowledge-To-Action's Action Cycle's Monitor Knowledge Use and Evaluate Outcomes activities closely resemble the strategies described in the Evaluative Component of the Knowledge Transfer Intervention Theory. Finally, Knowledge-To-Action's Action Cycle's Sustain Knowledge Use activities compares to the strategies found in the Continuous Support and Follow-up Component.

In other words, both models generally agree that: (a) research evidence must be adapted for potential users, their context, and their reported needs and concerns, (b) intervention "strategies" / "activities" executed by a third party (intermediate agents, other

mediators, stakeholders, or implementers) depend on an assessment of the barriers to knowledge utilization, (c) research-based activities should be monitored and evaluated, in order to bring about adjustments in knowledge implementation strategies, and (d) managing/producing changes in the user system (i.e., research application) is a continuous process where the goal is sustainability of knowledge use, and that (e) their components or activities are dynamic, fluid and permeable to others' influences (i.e., research producers, or the users' system). Overall, the Action Cycle of the Knowledge-To-Action model, which details the activities that lead to the application of knowledge in practice, and the Knowledge Transfer Intervention Theory essentially include many of the same steps that ultimately lead to a similar goal.

Beyond the consistencies between the two conceptualizations, the Knowledge Transfer Intervention Theory distinguishes itself from Graham's et al. (2006) framework in a number of ways. First, while the Knowledge-To-Action model presents a process of knowledge transfer that begins with the creation of knowledge until its utilization in practice, the Knowledge Transfer Intervention Theory details an interactive process that occurs somewhere in between knowledge producers and users, belonging neither to one nor the other system. Rather, it focuses on the process of knowledge transfer between intermediate agents and the end-users of research-based evidence.

The second differentiating factor between these models concerns the depth in which the elements are presented. Graham et al.'s Knowledge-To-Action model (2006) simply provides a name and a definition for each phase, whereas the Knowledge Transfer Intervention Theory delves deeper into how each component of intervention is concretely operationalized by intermediates. For example, the way intermediate agents apply their strategies to influence

research uptake and even more characteristically, how, at the relational, cognitive, and political level, they interdependently attempt to promote research uptake was described thoroughly. Through intermediates' experiential knowledge, we learned that we do not only base the intervention on whether or not users want to solve a problem, but in actively generating an interest in research, and its potential for users' practice. In turn, this sets the stage for facilitative-type strategies, which gear users towards self-sufficiency in the knowledge utilization process.

The third distinguishing element in the model pertains to the continuity with which intermediate agents adjust themselves to the user. As such, in this study's findings, intermediates were visually represented (through double-sided arrows) as staying attentive to cues regarding the impact of their intervention, and maintained a flexible approach allowing them to adapt themselves as they went along, as opposed to the Knowledge-To-Action model, which presents Monitor Knowledge Use activities as a distinct phase.

Contrary to Graham and his colleagues' Knowledge-To-Action model (2006) outlining activities and phases to follow, the Knowledge Transfer Intervention Theory proposed groupings of strategies that are more encompassing and that refer to the Relational, Cognitive, Political, and Facilitative components deemed necessary to influence school practitioners' application of research-based evidence. Thus, this constitutes the fourth major difference between these models. As such, in addition to not accounting for the relational aspect of knowledge transfer intervention in the Knowledge-To-Action framework, the creators of the model also failed to consider activities related to that crucial notion. On the contrary, the findings of the present study highlight strategies that foster trust and openness towards the intermediate, as well as strategies related to the issue of timeliness. With respect to the

Cognitive Component, while the authors of the Knowledge-To-Action model did present some activities or phases relative to this intervention aspect, they ignore the crucial elements of convincing practitioners of the relevance of research-based evidence use, and of providing concrete meaning to research. In terms of the Political Component, our model recognizes a political dimension with which intermediate agents must deal, and which moves beyond the barriers linked to the research itself. Specifically, the main researcher of this study relays strategies of associating with key players, capitalizing on opportunities that present themselves, starting with topics that evoke less emotional baggage, and creating a critical mass of people favourable to research. Finally, like the Relational Component, the Facilitative Component in the Knowledge Transfer Intervention Theory is not found in Graham et al.'s model. Per se, beyond Knowledge-To-Action's Monitor Knowledge Use and Evaluate Outcomes activities, the current study's results go a step further and add to the existing knowledge base in knowledge transfer research by directly including the Facilitative Component as part of an overall intervention. This central element groups strategies detailing ways to empower research users to ascertain a self-reliance in the knowledge transfer process, while gaining a better understanding of what works in their own context.

Fifth and lastly, the model proposed in this thesis distinguishes itself by the way it was created. As such, the findings of this thesis are empirically-based, grounded up and explain what is done and how, as opposed to Graham et al.'s (2006) theory-based model, which evokes what activities ought to be implemented. In addition, this thesis sought to bring more clarity to the construct of intermediate agents by specifying what their knowledge transfer activities involved. This intermediate party was defined as agents who were recognized by their peers for the support they offered. In contrast, the Knowledge-To-Action framework

remained vague regarding the person or people in charge of the implementation activities. Finally, the Knowledge-To-Action model is adapted to the health care system, whereas the conceptualization offered in this study adds to the knowledge base in educational settings where empirical models are lacking (e.g., Levin, 2004; Ward et al., 2009).

Globally, the empirically-based model presented in this thesis serves to detail how intermediate agents perform the phases or activities found in the Action Cycle of Graham et al.'s (2006) Knowledge-To-Action framework. In that regard, while this framework is recognized not only for presenting the complete process of knowledge transfer, but also for being useful in designing and evaluating strategies, the review by Pentland et al. (2011) still articulates the need to understand the practical processes that enables their Action Cycle in order to support professionals' use of research-based evidence. Thus, in a way, although termed otherwise, the findings of this study are a demonstration of what intermediate agents in the education system, and within the NANS project, reported to have done to assess and overcome barriers, whether these were closely related to the users, knowledge, or to the context in order to ultimately influence school practitioners towards knowledge use.

On a practical level, each model differentiates itself in regards to its target audience and usefulness. The Knowledge-To-Action model (Graham et al., 2006) is most suitable for collaborative work between knowledge producers and implementers, whereas the Knowledge Transfer Intervention Theory serves as a guideline for other intermediates that wish to undertake the process themselves.

The subsequent Table 5 offers a review of the similarities and differences between the models, as well as each of their main practical application.

Table 5

Summary of the similarities, distinctions, and practical implications between the Knowledge-To-Action model (Graham et al., 2006) and the Knowledge Transfer Intervention Theory

Comparison	Category	Models in Knowledge Transfer	
		Knowledge-To-Action	Knowledge Transfer Intervention Theory
Similarities	Aim of the model	Action Cycle: identifies activities involved in the implementation of research in practice by stakeholders	Describes strategies intermediate agents used to promote research uptake by school practitioners in underprivileged areas
	How the model works	Phases are dynamic, influence one another, and are influenced by the Knowledge Creation phase	Components are used simultaneously or sequentially, in an iterative process, wherein each component is necessary but insufficient without support and follow-up to have a sustainable impact
	Activities/ phases or components/ strategies	Identify Problem / Identify, Review, Select Knowledge; Adapt Knowledge to Local Context	Cognitive Component: (a) Contextualizing research-based evidence according to practitioners' concerns and needs; (b) Accessing and adapting research-based evidence in light of users' concerns and language
		Assess Barriers to Knowledge Use; Select, Tailor, Implement Interventions	Political Component; involving an analysis of the situation and strategies to counter observed challenges
	Activities/ phases or components/ strategies	Monitor Knowledge Use; Evaluate Outcomes	Evaluative Component
		Sustain Knowledge Use	Continuous Support and Follow-up Component
Distinctions	Explanation provided by the model	Process explaining knowledge transfer: from its production to its implementation in practice based on planned action theories	Process explaining the relationship between intermediate agents and end users as perceived by intermediates
	Number of phases or components	Seven (7) phases in the Action Cycle	Six (6) components of intervention
	Phases or components	A Knowledge Creation funnel (linked to the production of research-based evidence)	X

		X	Relational, Cognitive, Political and Facilitative components of intervention * Notion of interdependence between the Relational-Cognitive-Political components
		Monitoring Knowledge Use phase is presented as a distinct phase	Intermediates are depicted as monitoring their impact throughout the intervention process
	Detail and depth of explanation reported	Activities/phases are named, but not explained	The *what* (components and strategies) are named and the *how's* are detailed
	Type of model	Theory-based	Empirically-grounded
	Third party	Unspecified	Intermediate agents recognized by their peers for the quality of offered support
	Contextual background	Health care setting	Education setting
Practical implication	Usefulness of the model for practice	For collaborative work between knowledge producers and implementers	For intermediates who seek guidelines on how to influence school practitioners' research uptake and overcome barriers

On the one hand, the Knowledge-To-Action model (Graham et al., 2006) provided both direct and indirect theoretical support for some of the strategies of the components found in Knowledge Transfer Intervention Theory, chiefly: Cognitive, Political, Evaluative, and Continuous Support and Follow-up. On the other hand, the model presented in this thesis distinguishes itself with the Relational, Cognitive, Political, and Facilitative components. The subsequent section will compare the latter with the literature from within and outside of knowledge transfer research that both support the findings of this thesis and explain their relevance in the field of knowledge transfer.

Grounded Theory's Knowledge Transfer Intervention components compared to a review of the literature

The Relational, Cognitive, Political, and Facilitative components will be theoretically and empirically reviewed, and explained in that order.

Grounded Theory versus the Relational Component in the literature

Knowledge transfer researchers in various fields agree that fostering interpersonal relationships with potential users is key to favouring the use of research-based evidence (e.g., Grimshaw et al., 2011; Levin, 2011; Levin, Cooper, Arjomand, & Thompson, 2011; Mitton et al., 2007; Rogers, 1995). In fact, over the years, authors have consistently stated that practitioners are generally more influenced by their coworkers than they are by external evidence (e.g., Cordingley, 2004; Dagenais et al., 2012; Mitton et al., 2007). Moreover, studies and reviews of the literature in health care found that building trust between collaborators (researchers and users), timeliness of a research-based intervention (e.g., Mitton et al., 2007; Pentland et al., 2011), and appearing as a credible source (e.g., Farkas, & Anthony, 2007) are valuable elements to favour research uptake. Yet, these same authors do not stipulate what these relationships entail specifically, nor do they explain why (e.g., Levin, 2004; Ward et al., 2009). Even less specification is given concerning the nature of the relationship between intermediate agents and end-users (e.g., Pentland et al., 2011; Kitson, 2009) in education (e.g., Levin, 2004).

Outside of knowledge transfer research, studies have demonstrated that a strong working alliance is one of the explanatory factors behind a successful intervention between a professional and his or her client. As such, two meta-analyses in clinical psychology (Horvath

& Symonds, 1991; Martin, Garske, & Davis, 2000) reported indeed that, albeit moderately, work alliance is consistently related to a successful intervention. In that field of research, they outlined that building trust (e.g., Bennet, Fuertes, Keitel, & Phillips, 2011; Bordin, 1979; Horvath, Del Re, Flückiger, & Symonds, 2011), and the timing of an intervention (e.g., Jennings & Skovholt, 1999) were two important aspects of a working alliance. Thus, the results of this thesis are coherent with what is found in clinical psychology in terms of describing the relationship between intermediate agents and end-users.

In this vein, the present study has not only confirmed the results found in knowledge transfer research suggesting that relationships are a key component, but went a step further by providing details regarding the nature of the rapport between intermediates and end-users. These details have also been backed-up in other fields of research such as clinical psychology, thereby proving both empirical and conceptual support for the Relational Component.

Grounded Theory versus the Cognitive Component in the literature

In much the same way as the Relational Component, several authors researching the knowledge transfer process tackle parts of the Cognitive Component, which emerged as part of the Knowledge Transfer Intervention Theory (e.g., Dagenais et al., 2010; Graham et al., 2006; Nutley et al., 2009; Ramdé, 2011; Ward et al., 2009). In fact, several studies have asserted that stressing the relevance of research was a determinant factor of research-based evidence use (e.g., Dagenais et al., 2012; Harrington et al., 2008; Mitton et al., 2007; Pentland et al., 2011; Pyra, 2003; Ramdé, 2011). Moreover, many studies and reviews of the literature in health care have acknowledged that adapting the format of research-based evidence (e.g., Bero et al., 1998; Corrigan, Steiner, McCracken, Blaser, & Barr, 2001; Dobbins, DeCorby, &

Twiddy, 2004; Harrington et al., 2008; Mitton et al., 2007; Pyra, 2003), and contextualizing evidence for users (e.g., Best, Hiatt, & Norman, 2008; Fixsen, Naoom, Blasé, Friedman, & Wallace, 2005; Forrester, O'Keefe & Torres, 2008; Majumdar et al. 2004; McConnell et al. 2007; NCDDR 2006) were warranted strategies to favour research uptake. Comparably to the Relational Component, an understanding of how the Cognitive Component is operationalized between intermediates and end-users is lacking, especially in the educational context.

Feedback Appropriation theories (Ilgen, Fisher, & Taylor, 1979; Ripon, 1998) based on contexts of performance assessments or individual psychological assessments (termed *cognitive integration* in Plunier, 2012), provide a useful rationale. In accordance with the results formulated in this thesis, these theories offer justification as to why the Cognitive Component's strategies may indeed favour research uptake in school practitioners. As such, they posit that to influence individuals' intention to act in line with the direction of a message, they must first become aware of the message and they must accept it as being true. In other words, the more a person is aware and accepts a message as being real, the more they will be inclined to act in line with that message. Thus, techniques geared towards bringing awareness may be employed to achieve cognitive integration of research use by school practitioners (e.g., Novack, 2009).

Associated with these notions in Psychology is Image Theory (London, 2003), which postulates that individuals are more likely to accept a message that is consistent with their pre-existing mental representations. By *contextualizing research-based evidence to users' concerns and needs*, and by *selecting and adapting research-based evidence to users' language*, intermediate agents are implementing two strategies that bridge the gap between

research and school practitioners' perception of it, which, according to Image Theory, would influence school practitioners' likelihood of accepting research-based evidence.

To summarize, empirical studies in knowledge transfer research have tested some of the strategies associated with the Cognitive Component of the Knowledge Transfer Intervention Theory and suggested that these are a determinant factor of research-based evidence use. These findings therefore provide additional empirical support for the strategies. Moreover, this thesis offers further insight by grouping these strategies according to a common denominator, termed Cognitive Component. The theories of Cognitive Integration and Image Theory explain how and why this component may have an impact on research uptake. Thus, along with the empirical backing, the contribution of these theories provides a theoretical support for the Cognitive Component.

Grounded Theory versus the Political Component in the literature

In the context of knowledge transfer research, other authors focusing on education, and health care proposed different ways to face resistance stemming from the organizational context (Dagenais et al., 2012; Dagenais et al., 2010; Ramdé, 2011), as well as from research users, such as through engaging stakeholders (e.g., Corrigan et al., 2001; Titler, Mentes, Rakel, Abbott, & Baumler, 1999). Nonetheless, the scientific evidence in knowledge transfer research does not directly address the Political Component (e.g., Nutley et al., 2009), much like Graham and colleagues (2006).

Results of this study however, are consistent with the works in business and organizational psychology. As such, *strategies of developing relationships with key players* and *creating a critical mass of people favourable to research* can be explained by Mintzberg's

work (2003). According to this author, all organizations must deal with a political facet wherein there are power relationships between members of an organization. He documented that employees tend to regroup more or less formally or cohesively in order to have more power than others, and in this way form coalitions that gravitate around people acting as leaders (Collerette & Schneider, 2006). Therefore, someone who aims to influence others ought to be part of the dominating coalition in order to exert more power over their entourage. If not, the influencer will have to associate himself to external actors, strong people who are credible, and who can help him or her increase their bargaining power. Applying this reasoning to the present results, intermediate agents are in a more strategic position to influence school practitioners when they associate with identified key players, thereby changing the balance of the power that drives the relationship between them. Similarly, building a critical mass of supporters for research increases the number of people who act as levers. In the perspective of force fields and coalitions, the more people act as levers, the easier research is introduced, and the more their influence can have an impact (Collerette & Schneider, 2006).

In turn, the Political Component's strategies of *avoiding sensitive topics* and by *capitalizing on opportunities to intervene* can be explained with the theories of Impression Management (Rosenfeld, Giacalone, & Riordan, 1995) and Social Influence (Levy, Collins, & Nail, 1998). The former theory proposes that when engaging in impression management, one's goal is to create a positive image in the other person's mind (e.g., Leary & Kowalski, 1990). Additionally, the latter theory states that individuals wishing to influence how other people perceive them and make subsequent decisions ought to use strategies to project a desired image. In other words, by adopting political strategies such as *capitalizing on opportunities to*

intervene or *avoiding sensitive topics*, intermediate agents are managing how school practitioners view them, which in turn, influences subsequent behaviours that are in line with research-based evidence use. Besides, empirical evidence supports the claim that people who demonstrate the skills to effectively manage relationships, (i.e., political skills), are better able to influence situations by projecting more positive images when managing impressions (Harris, Zivnuska, Kacmar, & Shaw, 2006).

In summary, the conceptualization of the Political Component, found in this thesis, is a significant contribution to the field of knowledge transfer as no other study has, to the best of the author's knowledge, directly addressed this aspect and provided empirical proof. Borrowing theories from business and psychology has allowed us to illuminate why these strategies effectively belong in the Political Component and how these may exert an influence on use of research, while at the same time, providing conceptual support for the component.

Grounded Theory versus the Facilitative Component in the literature

Findings presented in this thesis highlight the effort intermediate agents put forward to empower school practitioners. This result is in line with the literature on knowledge transfer, and with the Social Cognitive theories within training programs and activities research. First, according to the literature on knowledge transfer, support strategies (Ramdé, 2011) and knowledge-brokering activities enable the development of the competencies linked to making research-based evidence decisions (Dobbins, 2009a, 2009b; Robeson, Dobbins, & DeCorby, 2008). In his mediation model explaining the factors leading to research-based evidence use by school practitioners of the NANS study, Ramdé (2011) showed that strategies of support (e.g., demonstrating ways to apply research-based recommendations) reinforced expertise in

users, which in turn, would favour the use of research-based evidence. Similarly, knowledge brokers' objective is to develop users' critical thinking based on research evidence. Brokers help users at every step: research consultation, assessment, interpretation and application of research-based evidence adapted to their context. Once users have a repertoire of research-based evidence, intermediaries can also support them through individual meetings (Dobbins, 2009a, 2009b; Waqa et al., 2013). What's more, the broker becomes a model and a mentor who offers users advice (Ridde, Dagenais & Boileau-Falardeau, 2013).

Supporting others in their learning process is also discussed as part of Social Cognitive Theory (Miller & Dollard, 1941), which states that one learns by observing other people's behaviours. Considerable research has shown that individuals observe and reproduce actions and attitudes of others (e.g., Luthans & Davis, 1983; Saks & Haccoun, 2008). Along with another's encouragements, observing others' behaviours can reinforce their feeling of self-efficacy (Bandura, 1997), which is defined as one's judgement regarding their ability to successfully perform a task. Strengthening one's self-efficacy, in turn increases his/her motivation to pursue a course of action in line with their observations. In other words, by being guided by intermediate agents to perform tasks associated with research-based evidence, school practitioners would be learning through modeling, and with intermediates' support, they would be solidifying their self-efficacy which would then motivate them further to use research in their practice.

Consequently, the Facilitative Component is supported by the literature on knowledge transfer in education, wherein support strategies impact school practitioners' expertise, which in turn, impacts their use of research-based evidence. Similarly, we find support for this component in the literature on knowledge brokers. As such, the same objective is pursued

through analogous activities. Beyond that, the mechanisms involved (or the strategies' intent) are further explained through theories in learning and in training contexts. In doing so, it can be argued that our findings are empirically and conceptually reinforced.

On the whole, while authors in knowledge transfer understand that the influence of intermediates is key in shaping practice, information on these actors was scarce and incoherent before this study. To the best of the author's knowledge, no conceptual or empirical model describing the strategies adopted by intermediate agents to promote school practitioners' research-based evidence utilization existed prior to this research. The present study pointed out 32 strategies that possess empirical validity and that can be explained by theories stemming from the multidisciplinary field of knowledge transfer, psychology, and business. In this way, this thesis offers both an empirically validated and a theoretically supported Knowledge Transfer Intervention Theory.

This concludes the section on the theoretical implications of the different components of the Knowledge Transfer Intervention Theory. The next section discusses the nature of intermediate agents in this study compared to the kinds of third party presented in Chapter Two.

Grounded Theory's intermediate agents compared to the prototypes of the third party in the literature

In the review of the literature in Chapter Two, we examined the various terms employed to designate the individual whose mandate is to reduce the knowledge production-use gap, namely by encouraging practitioners' application of research. The prototypes considered included opinion leaders, facilitators, champions, linking agent, change agent, and

knowledge brokers (Thompson et al., 2006; Ward et al., 2009). Given the lack of consensus on a designation, the relative confusion surrounding each title, and the particular context of the NANS project, the main researcher opted for the more neutral term of intermediate agent. After providing a detailed account of the strategies and the intervention process that the participants of this study used to promote school practitioners' uptake of research-based evidence, it is interesting to reflect on the type or types of third party they resemble the most to and how. The relationship between intermediate agents and knowledge producers not having been the focus of this study, the discussion will limit itself to the conclusions that may be drawn from the relationship between the intermediates and the end-users.

Based on the summary and additional information provided in Table 1 (found in Chapter Two), the intermediate agents from this study may be regarded as hybrids between facilitators, knowledge brokers who specifically act as capacity builders and knowledge managers, and change agents. As described in the literature review, "facilitators" are individuals who are formally appointed to the role wherein they assist users in the process of implementing change in their practice, in a non-prescriptive manner (Harvey et al., 2002; Kitson et al., 1998; Thompson et al., 2006). They also seek to support and enable practitioners' use of research-based evidence, while encouraging users' critical reflection. Finally, they may be internal or external to the organization and their activities may be focused on a particular task or be more holistic and multifaceted. Similarly, knowledge brokers who act as "capacity builders" seek to foster self-sufficiency (in researchers and users) and to develop practitioners' analytical and interpretation skills for the use of scientific research (Ward et al., 2009). Connections can be made between these descriptors, and not only the

context of the NANS study, but the strategies described in the Cognitive, Facilitative, and Evaluative components of the Knowledge Transfer Intervention Theory.

First, in terms of the context, the individuals who exercised an intermediary role in the NANS project were appointed to the task, as opposed to champions or opinion leaders who stand out organically because of their personality or their expertise. For all participants, knowledge transfer tasks and activities were only a part of their role. Moreover, they did not possess the authority to enforce school practitioners' use of research-based evidence. Thus, they positioned themselves as supporters and enablers of the process of implementation of research in practice by, not only promoting its benefits, practicality and accessibility but also by empowering practitioners in order to foster autonomous use of research.

Second, turning our attention to the strategies participants employed, this enabling aspect is clearly reflected in the Cognitive, Facilitative and Evaluative components. Indeed, the Cognitive Component, which has been defined in Chapter Four as "convincing practitioners of the relevance of research-based evidence, and offering meaning to its users", details strategies aimed at encouraging critical reflections through the use of tactics such as questioning users' ideas, methods, and beliefs, or focusing on the impacts and benefits of applying research. The Facilitative Component, conceptualized as "guiding users as they take ownership of the knowledge transfer process" captures the essence of the "facilitator" and/or the "capacity builder" through strategies aimed at empowering practitioners in their own process of reflection and utilization of scientific evidence. These strategies included: helping practitioners appreciate the links between their concerns and a research question, encouraging them to experiment with research-based evidence in their classroom, making the researching process explicit, showing users how to transform research-based evidence, and demonstrating

how to apply scientific knowledge into their practice. Finally, the Evaluative Component, viewed as "assessing the effectiveness of research-based evidence intervention", showed that intermediates implemented follow-up mechanisms to evaluate users' progress in their application of research-based actions. This was accomplished so as to encourage users to adopt a more systematic monitoring approach, which can relate to the facilitator's aim of assisting users in the process of implementing change. On the whole, intermediates in this study adopted a more holistic and multifaceted orientation in their activities (as opposed to discrete tasks), all the while using a non-prescriptive approach. In essence, the model itself expressed how intermediates supported users' reflection regarding how scientific knowledge could have an incidence on their practice and modify it.

Beyond the typologies of the facilitator and the capacity builder, the intermediates of the NANS project, also acted as knowledge managers. As previously discussed, knowledge managers are persons who facilitate activities related to creation, diffusion and use of knowledge (Ward et al., 2009). Through actively disseminating knowledge, these types of knowledge brokers address the issue of passive dissemination, which has been widely acknowledged as unsuccessful (Armstrong, Waters, Crockett, & Keleher, 2007; Sin, 2008). Thus, by employing the strategies of finding and adapting research-based evidence for their users, found in the Cognitive Component of the Knowledge Transfer Intervention Theory, intermediate agents were acting as knowledge managers who proactively translated research to encourage and facilitate its use.

Lastly, the strategies identified and documented in this thesis revealed that participants went farther than supporting and enabling practitioners in the implementation of scientific evidence. In fact, they attempted to create relationships and an environment conducive to

increasing potential user's openness to research-based evidence, and to easing the facilitation process (i.e., Relational and Political components). Additionally, the strategies identified in the component of Continuous Support and Follow-up indicated intermediates' aim to provide continuity to the process in order to consolidate what users learned and favour a long-term change in their application of research. As addressed in the features of the Knowledge Transfer Intervention Theory, intermediates' overarching goal is to influence school practitioners' behaviour through the use of multifaceted strategies. This rather central feature is mostly captured in the definition of the change agent. As viewed, the change agent is described in Thompson and colleagues' review (2006) as one who is part of a project that has a clear beginning and end, and who proposes scientific knowledge as a solution to a need that they help to emphasize or foster. Moreover, they are experts who assist users in their behavioural changes in relation to the use of research. Perhaps more importantly, Haider and Kreps (2004) highlighted in their definition, the notion of influence that the change agent seeks to exert in users' research-based decisions. Thus, much like these definitions, intermediates in our study were part of a project, the NANS; used tactics to become a credible source in users' perception in order to build a working alliance; fostered a need or capitalized on opportunities to use research-based evidence; and guided their experimentations and change in order to promote self-reliance in the long run or after the end of the NANS.

To conclude, the work accomplished by intermediates as conceptualized in this thesis, can partly be seized in the various existing terminologies presented earlier. The roles described in the literature not being clear-cut to begin with, it is difficult to make all activities or strategies fit into one or any particular classification. This also underscores the dynamic and complex involvement of the third party in the overall process of knowledge transfer. On the

whole, the intermediates are viewed as change agents who, through their intent on influencing school practitioners' research uptake, act as facilitators, capacity builders or knowledge managers depending on the context in order to encourage sustainable improvements.

The discussion on the similitudes between the typologies of the third party and this study's intermediate agents finalizes our review of the theoretical implications. Next, practical implications and recommendations are offered.

Practical implications and recommendations

The model, generated from the data, has the merit of a practical "how-to" for intermediates with the same mandate who wish to have concrete strategies to guide their work with school practitioners. Furthermore, a variety of interventions may be implemented based on the 32 strategies described. As such, the Ministry of Education, Recreation and Sports and those otherwise overseeing the work completed by intermediate agents involved in the NANS project, could offer training, coaching, and continuous learning opportunities for the following elements:

1. The process of Knowledge Transfer Intervention Theory and the different components deemed important to consider when intervening with school practitioners.
2. The interpersonal skills and abilities necessary to develop and maintain relationships and act strategically.
3. Current research on topics of education, underprivileged areas, and relevant connected fields (such as developmental psychology) to remain credible and maintain expertise in research.

4. The current issues school practitioners typically experience, as well as periodic information on how these evolve over time, in order to remain credible and relevant in their interventions.
5. The specific/local context in which intermediate agents will be required to practice, so as to choose the correct strategies to employ, and to facilitate contextualization of research.
6. How to effectively select and adapt research-based evidence for school practitioners.

Finally, high schools would benefit from implementing mechanisms that support intermediate agent's work. One of the key components highlighted by this study is the importance of the relationship between intermediate agents and school practitioners for knowledge transfer, and the continuity of the process to have a greater impact in the classrooms. In this perspective, school Principals play a vital role in showing their commitment and leadership in making research-based evidence use a priority and an objective in their schools. Concretely, they could demonstrate their engagement in the process by granting school practitioners the time to meet with intermediate agents, offering intermediate agents access and leeway while supporting them in the completion of the interventions, assessments and follow-ups.

Ultimately, convincing school practitioners of the relevance of research-based evidence for the benefit of their practice should be a shared responsibility that is lead by all decision-makers. Intermediate agents cannot be expected to act as lone change agents if the Ministry of Education expects to see changes in the perception of research and its use by school

practitioners. Moreover, effective research use requires clear expectations from schools. Ministerial mandates obligating schools to propose the implementation of research-based actions was perceived as a winning condition for intermediate agents, who regularly aimed to contextualize research to practical issues and capitalize on opportunities to intervene. This is an example of the type of clearly articulated commitment that must be demonstrated from all decision-makers.

Now that theoretical and practical implications have been reviewed, the subsequent section looks into the limits of this study.

Limitations of this study

Inherent to the decisions made by the author during the design of the research, and the procedure that followed, there are some limitations to the study that must be pointed out so as to bring nuance to the results and their possible applications.

Different methodological choices that were made during this study, affect the degree to which the results can be generalized beyond the sample of intermediate agents to the greater population of intermediates or across populations (beyond NANS high schools in Quebec). Four limitations are related to this idea.

The first concerns the classification of the theory. In fact, Strauss and Corbin (1998) believe the classification of a theory and the degree of generalizability are intertwined. While some theories may be classified as formal, which are less specific to a group or a place, and may apply to a wider range of disciplinary concerns, other theories are substantive, which are narrow in their scope and focus on a specific issue. Thus, a theory that explains what intermediate agents do to promote research uptake in school practitioners is likely to be

classified as a substantive theory. Indeed, the focus is on a specific population (intermediate agents), and on a specific issue (strategies to influence school practitioners' uptake of research). Moreover, the author's of Grounded Theory asserted that: "theories are constructed, vary in nature, and are not at all the same. Regardless of how theories are constructed, each one is unique" (Strauss & Corbin, 1998, p.24). Thus, the uniqueness of a Grounded Theory may be considered as a limitation in and of itself.

The second limit related to the generalizability of the results has to do with the recruitment strategy that was adopted. Although snowball sampling represents a useful method to recruit participants who stand out for a particular reason, there is also a risk of having a bias of ideas being homogeneous (Erickson, 1979). As such, a key informant would tend to recommend other participants with similar ideas to their own (Patton, 1990; Poupart et al., 1997). To limit the risk of bias linked with homogeneity of ideas, the favoured approach was to access more than one source of reference to pool the participants. First, members of the NANS evaluation team, who had interviewed hundreds of members of School Boards and Ministerial bodies over the years, suggested a few names of informants they believed to meet the main criterion. Their extensive experience along with their expertise in knowledge transfer and educational research in underprivileged areas made their recommendations key to creating a legitimate sample of intermediates. The second source of reference was the CIMD, as their members' expertise and leadership of the NANS strategy required them to work closely with the targeted population. Consequently, triangulating different sources of information served to reduce the risk of common variance bias, and therefore improved the validity of the inferences made from respondents' discourses (Guion, 2002).

One may argue that the sample size on which the results are based represents a third limitation. However, the author respected the best practices in qualitative research to determine when the sampling should end. Following the recommendations of Strauss and Corbin (1998), the author adopted an iterative process by interviewing participants, until empirical saturation was reached (i.e., until no new information was provided). This ensured that the number of participants interviewed was sufficient to identify and cover in detail all the different angles of the topic.

A final limit, related to the generalizability of these findings, stems from the fact that the author collected the data in late 2007 through mid 2008. The strategies used by intermediate agents may have evolved since then. The reasoning behind the design of the research was also dependant on the theoretical framework in knowledge transfer, which was available at the time of the conception of this research. To counter this, the author sought feedback from intermediates participating in the NANS project. Preliminary results were presented on multiple occasions over time, and reactions, and discussions surrounding these were taken into consideration in the interpretation of the data. This iterative approach is inherent to the methodology favoured throughout this study (Strauss & Corbin, 1998).

Finally, the impacts of these strategies on user's practice were neither documented nor measured. Thus, it cannot be assumed that these strategies yielded results, nor can we know what the extent of these results may be. However, these elements were outside the scope of the study, which set out to identify and document the different strategies intermediate agents adopted in order to influence school practitioners' uptake of research, and ultimately described the process of their intervention. Consequently, bearing in mind that these strategies have not been tested for their efficacy, it is advised to remain judicious with their application, and to

view them as guiding principles. As seen in this chapter however, the descriptive nature of these results is nevertheless in line with other models and theories in knowledge transfer.

These limitations and other considerations are grounds for future research prospects discussed thereafter.

Strengths and contributions of the thesis

Albeit its limits, this study features several major strengths and contributions. The most important being the advancement in knowledge transfer research, expressly in the field of education. Researchers in the educational setting are still in the early stages of learning about what strategies are used in school systems to influence research-based evidence utilization, particularly lagging behind efforts in health care (e.g., Levin et al., 2013; Levin, 2011). Having more empirical evidence in education will bring us a step closer to understanding what needs to be done to increase school practitioners' use of scientific knowledge in the hopes of decreasing dropout rates in high schools located in underprivileged areas.

The second contribution, related to the first, is that we now have 32 identified and documented strategies, presented in six groups having a similar intervention focus, defined and detailed in terms of what they are, how they are operationalized and what their intent is. Having well defined strategies, intervention components, and reasoning behind the links between them and having these formulated into a Knowledge Transfer Intervention Theory is a useful model for researchers and practitioners. Researchers may now benefit from a clearer understanding of the construct and further our collective understanding using this study's findings as the basis for future hypotheses. On a practical standpoint, intermediate agents who consider all six components of knowledge transfer intervention, have an advantage over those

who do not benefit from empirically sound guidelines to promote research-based use in underprivileged schools.

A third contribution of this thesis pertains to the "direct" emergence and reference to the Relational, Cognitive, Political, and Facilitative components. As evidenced in the model, the Relational Component, along with the Political and Cognitive components serve to set the stage and provide, through their inter-dependence, the necessary conditions to favour better learning and appropriation of the knowledge transfer process. Moreover, the Facilitative Component provides further support to the literature on knowledge brokers. In addition, the Evaluative and Continuous Support and Follow-up components are supported in one of the leading models in knowledge transfer research, the Knowledge-To-Action (Graham et al., 2006). Consequently, as demonstrated in this discussion chapter, the Knowledge Transfer Intervention Theory finds both empirical and conceptual support in the literature on knowledge transfer, while also making connections to related disciplines.

The fourth and final strength of this thesis is the intentional use of a qualitative methodology, which was a tailored choice based on the research question and the context. As such, the principles of Grounded Theory, a valuable methodology for underexplored phenomenon, were rigorously applied in this study. A main strength of the conceptualization is that it is grounded in the extensive experiential work and knowledge of those interviewed in this study. The author was mindful of remaining as faithful as possible to their discourse by insuring that the elements perceived as important were presented in the model, thereby adding ecological validity to the findings (Bronfenbrenner, 1977). Thus, the Knowledge Transfer Intervention Theory is an empirically-based model. Additionally, the context of the NANS project provided an excellent opportunity to develop our understanding of intermediate agents.

As such, their mandate was formal enough to warrant a study on their knowledge transfer activities, yet vague enough to necessitate an exploratory approach that served to expose the complexity of their relationship with users.

Future research recommendations

The discoveries of this study set the stage for exciting advancements in the field of education. School practitioners' increased use of research-based evidence can possibly improve students' overall experience and even graduation rates. Future research opportunities can even move beyond the field of education. Hence, follow-up occasions for further investigations and explorations include the subsequent suggestions.

Several research projects would be interesting to pursue as a by-product of the findings of this study. The first worthwhile avenue would be to continue the line of questioning on the strategies that emerged from this study: are all of the strategies relevant? Do they all carry the same weight? Or, are some strategies more important than others? It would be relevant to replicate this study in another context, and with different users to find out if the same components and strategies emerge, and to gain insight onto the commonalities and differences between the components and strategies adopted by other intermediate agents. Take a school that is not in a disadvantaged area, or an elementary school for example. Would the Relational Component be as important or even more important with those school practitioners?

A practical avenue of research to consider directly following the current study involves determining the key competencies associated to each component of the Knowledge Transfer Intervention Theory. This would be useful for selection purposes concerning intermediate agents. What's more, it would be advisable to repeat the exercise but to focus this time on the

relationship between knowledge producers and intermediate agents. As such: what is the knowledge transfer process between these actors? Or put differently, how do intermediate agents intervene with knowledge producers? And to what end? This would allow us to obtain a fuller picture of the triad: knowledge producers-intermediaries-knowledge users. Finally, future research ought to continue to focus on the activities and strategies accomplished by intermediaries so that our understanding of the differences between each type becomes better articulated.

The discoveries of a research project are a result of the particulars of the design of a study and limitations thereof. Thus, following the limitations discussed, it would be warranted to develop an instrument with the strategies that emerged from the qualitative analysis in order to test the model empirically. Furthermore, the research community would benefit from testing their efficacy by studying the links associated to what these strategies are meant to do (i.e., build trust and openness, build awareness towards research-based evidence use, empower practitioners to use research-based evidence, etc.). For instance, a model testing the indirect effect of these elements on school practitioners' research utilization could be contemplated.

To pursue the validation of a measurement tool, the model should ultimately be tested within a larger framework of knowledge utilization such as Ramdé's (2011) model. Previously presented in Chapter Two, the author tested a model composed of four components (organizational context, opinion, strategies, and expertise) that act together to reinforce school practitioners' research-based evidence use. In this vein, future research ought to test the current model with a more encompassing one to understand the influence that the intervention components have on the other important factors in knowledge transfer and on knowledge

utilization. On a final note, it would be worthwhile to clarify the types of utilization these strategies are related to.

Conclusion

In conclusion, the field of education is just beginning to learn about what knowledge transfer strategies work to influence school systems (e.g., Arjomand, 2010). Considerable research exploring the activities intermediate agents pursue is still needed (e.g., Levin, 2011; Pentland, 2011). The next areas to investigate include both, developing a measure of intervention strategies in order to test their effectiveness and relatedness to knowledge utilization, and offering insight into how the relationship between knowledge producers and intermediate agents unfolds so as to get a more complete picture of the inter-relationships (i.e., researchers-intermediates-users).

Discovering and describing the forces that influence high school practitioners involves integrating and making connections across several disciplines including organizational psychology, business, education, health care, etc. (e.g., Neimen, 2008). After constructing a theory, a researcher is forced to critically examine, compare, and review literature in appropriate fields of research that accurately reflect the perception of a population and explains a specific process. The resulting theory proposed in this thesis therefore offers new insights and interpretations of the knowledge transfer intervention process and the nature of the rapport between intermediate agents and end-users, thereby serving as a "meaningful guide to action" (Strauss & Corbin, 1998).

Knowledge transfer interventions and their inherent strategies need to include multiple perspectives, sources of evidence, and a multidisciplinary approach. Moreover, determining the choice of strategies must consider, and begin with an understanding of the global context and the people involved. The findings of this study are innovative in that they suggest that

empowering school practitioners requires intermediate agents to build and maintain a working alliance with them, to demonstrate the relevance for their practice while providing meaning, and to acknowledge and act on a political dimension through a realistic read on contextual issues. While this increases the odds that school practitioners will be primed and responsive to research, intermediates must not shy away from encouraging school practitioners to test the knowledge acquired through their personal experience against scientific knowledge, and favour an integrated approach in their practice. Finally, many authors in knowledge transfer agree that a sustained presence in time and a structured frame to work in completes this holistic process of intervention (e.g., Arjomand, 2010; Cooper et al., 2009; Graham et al., 2006).

To maximize intermediate agents' influence, we ought to collectively find a way to share the responsibility between all actors implicated in knowledge transfer: from knowledge producers to practitioners. To do so, it will take a change in the educational system's culture towards greater collaboration between the different partners. Ultimately, this will serve to create a knowledge transfer culture that favours the positive consequences of knowledge utilization on targeted populations.

"Education is the most powerful weapon,
which you can use to change the world."

- Nelson Mandela

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Appendix 1

Demographic questionnaire

English translation from its original French version

Name of the School Board or ministerial body: _____

Sex: F / M

Field of training and last diploma attained: _____

Number of years of studies completed: _____

Number of years of experience in the field of education: _____

Number of years of professional experience within the School Board or ministerial body: _____

Current title in the organization: _____

Number of months employed in this position: _____

Number of years of intervention experience in underprivileged areas: _____

Original French version of the demographic questionnaire

Nom de la commission scolaire ou de l'instance ministérielle : _____

Genre : F / H

Domaine de formation et dernier diplôme obtenu : _____

Nombre d'années d'études complétées : _____

Nombre d'année(s) d'activité dans le domaine de l'éducation : _____

Nombre d'année(s) d'expérience professionnelle au sein de la commission scolaire ou de l'instance ministérielle: _____

Position courante au sein de l'organisation : _____

Nombre de mois employé(s) à cette fonction : _____

Nombre d'année(s) d'expérience sur l'intervention en milieu défavorisé : _____

Appendix 2

Interview guide

English translation from its original French version

Hi, my name is Nathalie Awad. I am a Ph.D. student in Organizational Psychology at Université de Montréal. My thesis is part of the evaluation of the NANS project, under the supervision of Christian Dagenais, Associate Professor of the Psychology Department of Université de Montréal. I am particularly interested in one specific dimension of the NANS project: the use of scientific knowledge in the field of education. The goal of this study is to understand both the individual and organizational factors that support school practitioners' use of research. More specifically, I would like to better understand the factors that allow you to effectively support school practitioners in their use of research-based evidence.

Throughout this interview, I will ask you a series of questions in order to get your opinion on the topic of my study. Do you have any questions before we begin?

- Ask participant to sign consent form and answer demographic questionnaire

1. What is your role in relation to the NANS schools?
2. What is considered research-based knowledge for you? Can you provide me with some examples?
3. What is considered knowledge from the NANS evaluation for you? Can you provide me with some examples?
4. Can you describe the tasks you accomplish in terms of knowledge transfer support? (For whom? With whom?)
5. Why do you do it? Why is it worthwhile? What is the purpose of offering support to school practitioners to use research-based evidence?
    a. If you had more time, are there other tasks that you would like to accomplish?

6. Can you tell me about a situation where your knowledge transfer support had a significant impact on a school practitioner? Describe the key elements of your support.
    a. According to you, what are the elements that favoured the success of the knowledge transfer process? (Or what factors led to the success of your intervention?
7. Can you tell me about a situation where you experienced difficulties offering support in knowledge transfer? Describe the circumstances of your experience.
    a. What factors do you think caused those difficulties?
8. What makes school practitioners use research-based evidence?
9. What are your biggest challenges when disseminating research-based evidence? How do you remedy those situations?
10. How does information circulate from you towards schools? How is this information presented?
11. Can you describe the general attitude school practitioners in your schools have towards research?

- Before we finish this interview, do you have other remarks you would like to add or recommendations you would like to make?
- Thank the participant. End of the interview.

Original French version of the interview guide

Bonjour, mon nom est Nathalie Awad. Je suis étudiante au doctorat en psychologie du travail et des organisations à l'Université de Montréal. Ma thèse s'inscrit dans le cadre de l'évaluation de la stratégie d'intervention Agir autrement (SIAA) sous la supervision de Christian Dagenais, professeur agrégé au département de psychologie de l'Université de Montréal. Je m'intéresse à l'une des dimensions importantes de la SIAA, soit l'utilisation des connaissances issues de la recherche dans le domaine de l'éducation. Le but de cette étude est de cerner les facteurs individuels et organisationnels qui, selon vous, favorisent l'utilisation des connaissances issues de la recherche, ainsi que celles issues des évaluations de la SIAA dans les écoles. Plus spécifiquement, j'aimerais mieux comprendre les facteurs qui permettent d'offrir un soutien efficace aux écoles afin qu'ils utilisent les connaissances issues de la recherche.

Au cours de cet entretien, je vais vous poser une série de questions afin de connaître vos opinions sur le sujet à l'étude. Avez-vous des questions avant que l'on débute?

- Faire signer le formulaire de consentement et répondre aux renseignements démographiques

1. Quel est votre rôle auprès des écoles SIAA?
2. C'est quoi pour vous les connaissances issues de la recherche? Pouvez-vous m'en donner des exemples?
3. C'est quoi pour vous les connaissances issues de l'évaluation de la SIAA? Pouvez-vous m'en donner des exemples?
4. Pouvez-vous me décrire les tâches que vous effectuez en termes de soutien au transfert de connaissances? (Auprès de qui, avec qui?)
5. Pourquoi faites-vous cela? Pourquoi est-ce que cela en vaut la peine? À quoi cela va-t-il servir d'offrir du soutien aux intervenants des écoles pour qu'ils utilisent des connaissances issues de la recherche?

a. Si vous aviez plus de temps, est-ce qu'il y a d'autres tâches que vous souhaiteriez réaliser?

6. Pouvez-vous me parler d'une situation où votre soutien en transfert de connaissances issues de la recherche a eu un impact significatif sur un intervenant scolaire? Décrivez-moi les éléments clés de votre soutien.

    a. Quels sont les éléments qui, d'après-vous, ont favorisé la réussite du processus de transfert de connaissances? (ou : quels facteurs mènent au succès de votre intervention?)

7. Pouvez-vous me décrire une situation où vous avez eu des difficultés à apporter du soutien en transfert de connaissances issues de la recherche? Décrivez-moi les circonstances de cette expérience.

    a. Quels facteurs ont occasionné les difficultés selon vous?

8. Qu'est-ce qui fait en sorte que les intervenants scolaires utilisent les connaissances issues de la recherche?

9. Quels sont vos plus grands défis quant à la diffusion de connaissances issues de la recherche? Comment y remédiez-vous?

10. Comment est-ce que l'information circule de vous vers les écoles? De quelle façon ces informations sont-elles présentées?

11. Pouvez-vous me décrire l'attitude générale des intervenants de vos écoles face à la recherche?

- Avez-vous d'autres commentaires à ajouter ou recommandations à faire avant qu'on termine notre entrevue?
- Remercier le ou la participante. Fin de l'entrevue.

Appendix 3

Consent form

English translation from its original French version

This project is part of the doctoral thesis of Nathalie Awad; student in the Organizational Psychology Ph.D. program at Université de Montréal, under the supervision of Christian Dagenais, Associate Professor in the Psychology Department of Université de Montréal and member of the evaluation team for the NANS project. This study aims to better understand the individual and organizational factors that facilitate the support of research-based knowledge use provided by School Boards and other ministerial bodies to school practitioners from NANS high schools, as well as how these factors interact in knowledge utilization.

This study involves participation in a face-to-face individual interview for approximately 60 to 90 minutes at your location. The interview will cover three principal themes: 1) individual characteristics that facilitate an effective support to schools regarding knowledge transfer, 2) importance of the organizational environment to support schools, in terms of structure and culture, and 3) other factors that, according to you, favour support of knowledge transfer in schools in underprivileged areas.

For analysis purposes, the interview will be audiotaped. All information is confidential. The tapings with be conserved for a period of seven years, before being destroyed. The collected data will be sealed in a closed office at the *Centre de Liaison sur l'Intervention et la prévention psychosociale (CLIPP)*. Only the members of the NANS evaluation team and the researchers implicated in the study will have access to the data. In order to preserve your anonymity, all information identifying you, your organization or a member of your staff will be eliminated.

You are entirely free to participate in this study. You may cease your participation at any time, without risk of prejudice. You can decide to answer or not to answer any or all of the

questions asked during the interview, without any justification on your part. Please note that no monetary compensation will be granted for your participation.

For all questions or any further information, do not hesitate to contact:

- Christian Dagenais: department@institution.ca
- Nathalie Awad: department@institution.ca

The research team would like to thank you for your contribution to this study.

I, undersigned, consent to participate after reading and understanding what my implication consists of for this research: "***analyse du rôle, du système et des critères d'efficacité de l'agent intermédiaire entre les systèmes de production et d'utilisation des connaissances scientifiques.***"

_____

Participant (name in block letters)

_____

Signature of the participant

_____

Witness (researcher)

_____

Date

Any complaint related to your participation to this research may be addressed to the Ombudsman of Université de Montréal, by telephone: (514) 342.2100 or by email: ombusman@umontreal.ca.

Original French version of the consent form

Ce projet de recherche s'inscrit dans le cadre de la thèse de doctorat de Nathalie Awad, étudiante au doctorat en psychologie du travail et des organisations à l'Université de Montréal, sous la direction de Christian Dagenais, professeur agrégé au département de psychologie à l'Université de Montréal et membre de l'équipe d'évaluation de la Stratégie d'intervention Agir Autrement (SIAA). Cette étude a pour but de comprendre les facteurs individuels et organisationnels qui facilitent le soutien des commissions scolaires et des instances ministérielles dans l'utilisation des connaissances issues de la recherche et de l'évaluation, des écoles secondaires qui font partie de la Stratégie, ainsi que l'interaction de ces facteurs dans l'utilisation des connaissances.

Cette étude implique la participation à une entrevue individuelle en face à face, dans votre organisation, pour une durée approximative de 60 à 90 minutes. L'entrevue couvrira trois thèmes principaux : 1) les caractéristiques individuelles qui facilitent un soutien efficace aux écoles en transfert des connaissances, 2) l'importance du milieu organisationnel pour soutenir les écoles en termes de structure et de culture, et 3) d'autres facteurs qui, selon vous, favorisent le soutien en transfert des connaissances issues de la recherche aux écoles défavorisées.

Pour des fins d'analyse, l'entrevue sera enregistrée sur une bande magnétique audio. Toutes les informations sont confidentielles. Les enregistrements ainsi que le contenu manuscrit des entrevues seront conservés pour une période de sept ans, avant d'être détruits. Les données recueillies lors de l'entrevue seront conservées dans un local verrouillé au Centre de Liaison sur l'Intervention et la prévention psychosociale (CLIPP). Seuls les membres de l'équipe d'évaluation et les chercheurs impliqués auront accès à ces données. Afin de préserver votre anonymat, toute information permettant de vous identifier, d'identifier votre organisation ou un membre du personnel sera éliminée.

Vous êtes entièrement libre de participer à cette étude. Vous pouvez cesser votre participation en tout temps, sans risque de préjudice. Vous pouvez ou non répondre à toutes les questions posées au cours de l'entrevue, et ce, sans justification de votre part. Veuillez noter qu'aucune rémunération monétaire ne vous sera attribuée pour votre participation.

Pour toute question ou information, n'hésitez pas à contacter :

- Christian Dagenais : department@institution.ca
- Nathalie Awad : department@institution.ca

L'équipe de recherche aimerait vous remercier pour la contribution que vous apportez à cette étude.

Je, soussigné, consens à participer après avoir pris connaissance et compris en quoi consiste mon implication dans cette recherche : « analyse du rôle, du système et des critères d'efficacité de l'agent intermédiaire entre les systèmes de production et d'utilisation des connaissances scientifiques ».

_____

Participant (e) (nom en caractère d'imprimerie)

_____

Signature du (de la) participant (e)

_____

Témoin (chercheur)

_____

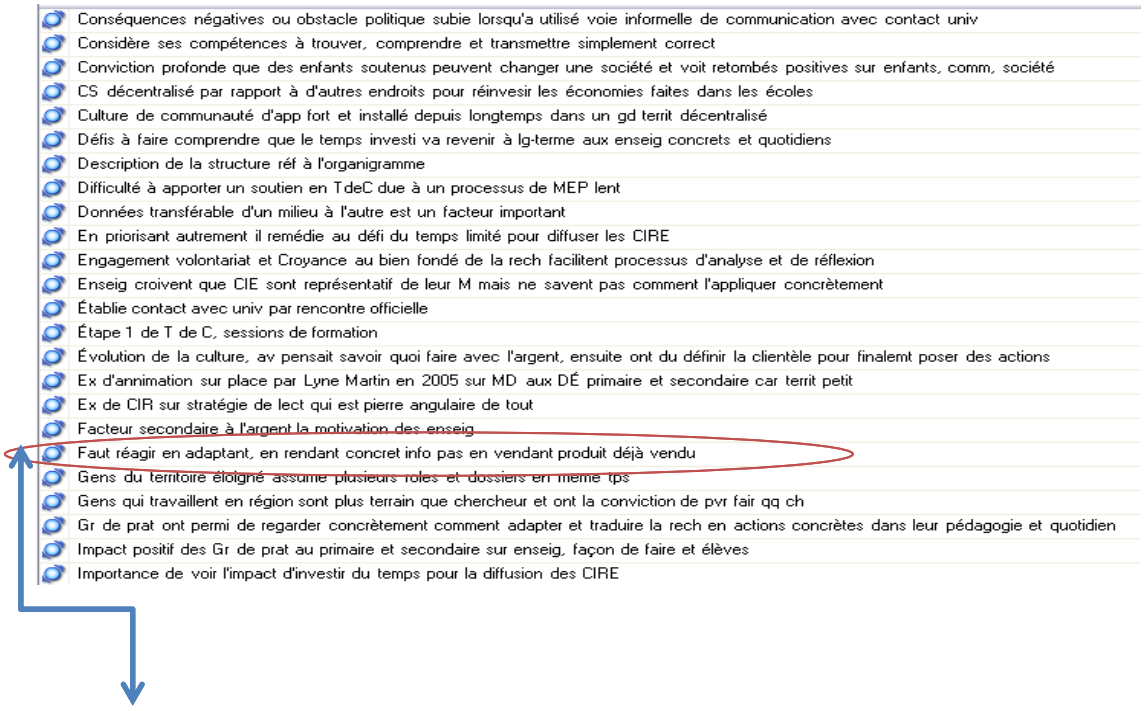
Date

Toute plainte relative à votre participation à cette recherche peut être adressée à l'ombudsman de l'Université de Montréal, au numéro de téléphone : (514) 342.2100 ou à l'adresse courriel : ombusman@umontreal.ca.

Appendix 4

Analysis and treatment of the data: Example of the stage of microanalysis

The following excerpt is a screen-shot from the qualitative analysis software, representing what a "code" or "label" (i.e., a short expression of each overall idea) is as realized by the principal investigator, in one of the three interviews in which microanalysis was accomplished. Although analysis of the data was executed in French, the reader may still appreciate what the concept of microanalysis concretely entailed. An example, in English, is provided below.

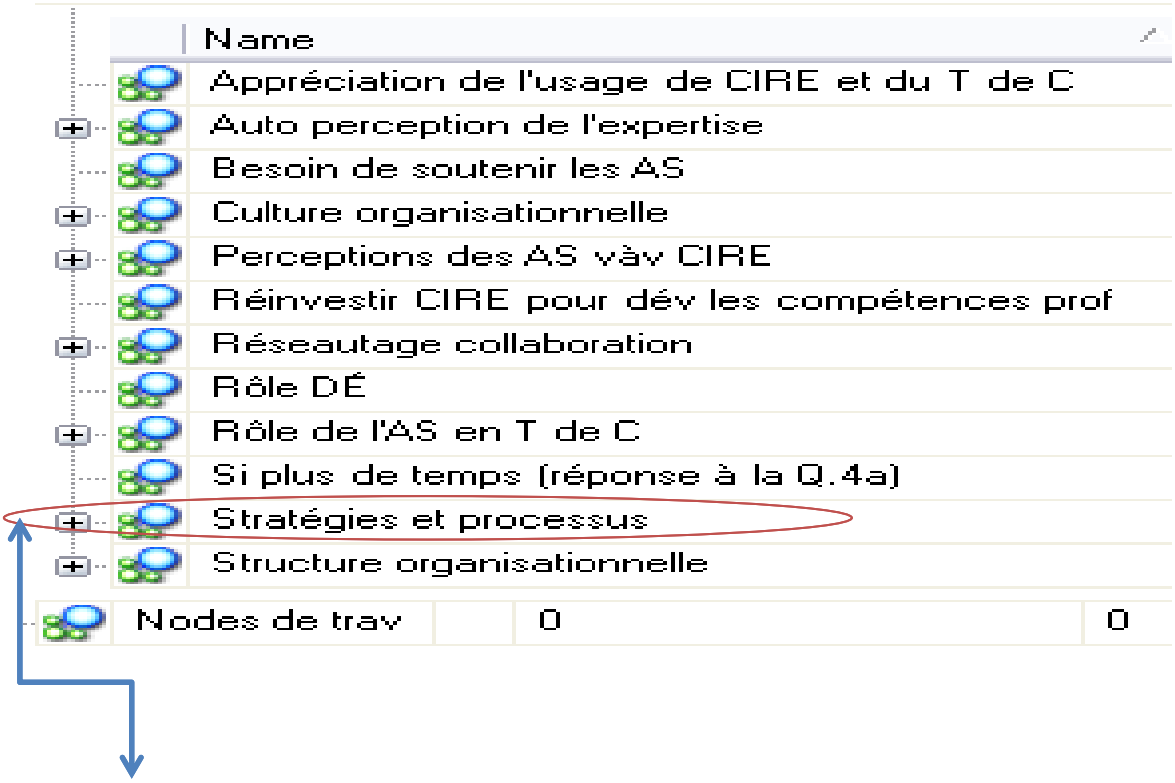


Literal translation: "Need to react by adapting, by making the information concrete, not by selling a product that is already sold."

Appendix 5

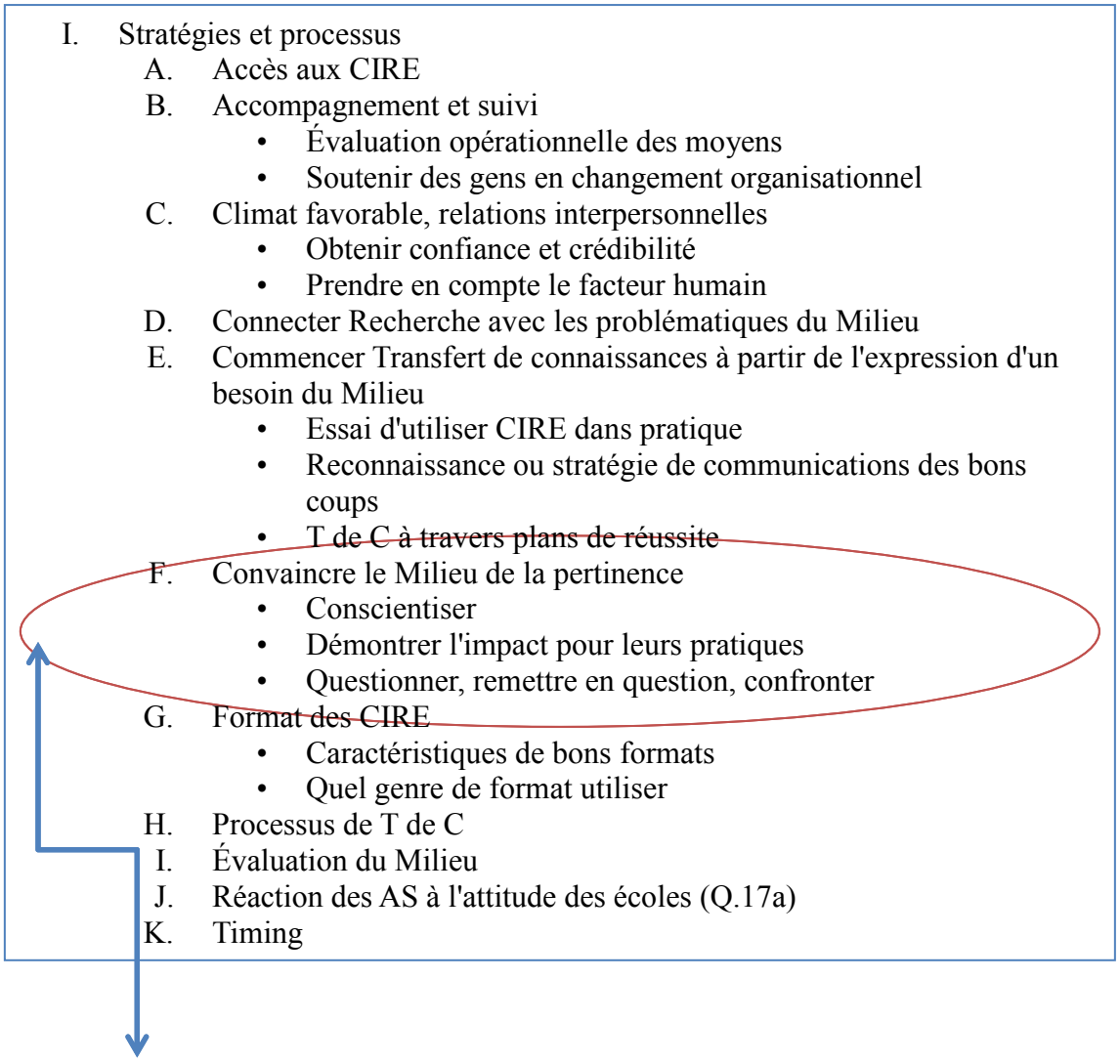
Analysis and treatment of the data: Example of the stage of categorization

The first image is an example of the arborescence of emerging themes. The titles presented are the "categories" (i.e. a more abstract form of concept).



Literal translation of a category: Strategies and process.

In the following second illustration, the reader may appreciate an example of the "concepts" (or in this study, the strategies) that are grouped inside the central "category", strategies and processes.



Literal translation:

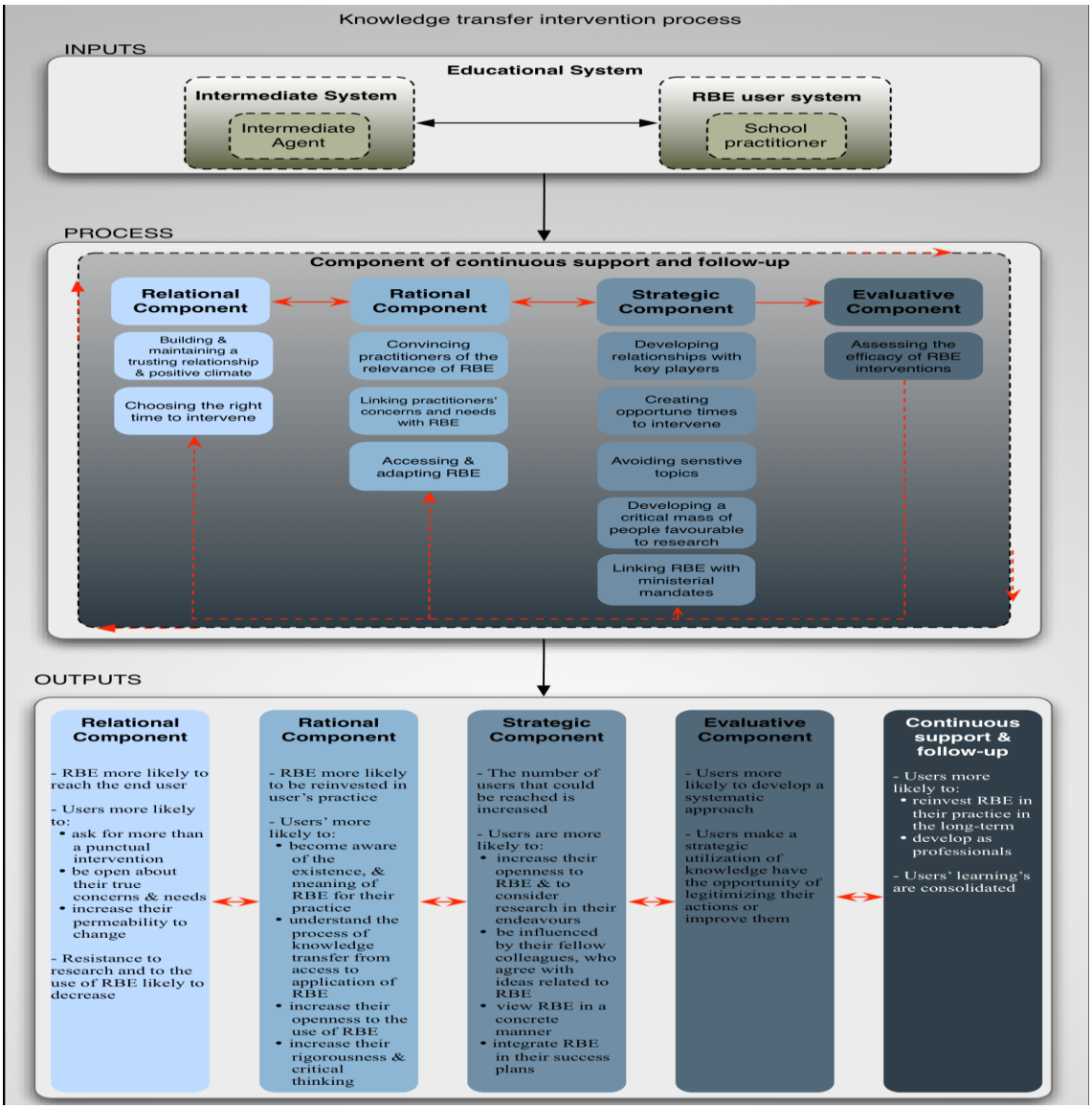
F. Convince the milieu of the pertinence

- Raise awareness
- Demonstrate impact for their practice
- Question, challenge, confront

Appendix 6

Analysis and treatment of the data: Example of the stage of empirical linking of categories

Below is an example of the principal investigator's attempt at modeling, wherein categories are linked differently compared to the final model presented in Chapter Four.



Appendix 7

Citations in English and their original French versions

1. in general, knowledge transmits better when there is a transmitter. There needs to be someone, an intermediary. […] For example, if an evaluation team has investigation results, they send the school a report saying: "call us if you have questions of comprehension", there's no transmitter there. So then, 9 times out of 10, the document will sit on a tablet. – An informant from the CIMD

   « en général, les connaissances passent mieux quand il y a un passeur. Ça prend quelqu'un, un intermédiaire. […] Par exemple, si l'équipe d'évaluation a des résultats d'enquête, ils envoient à l'école un rapport en disant : "Vous nous appellerez si vous avez des questions de compréhension", il n'y a pas de passeur, là. Alors, là, 9 fois sur 10, le document va rester sur une tablette. ».

2. Before a person opens the door to their classroom for you, and showcases the issues they encounter, it takes more than a 'hello' in the hallways. Bringing people to have confidence, to develop that bond of trust; it's been said, there is research that proves it also that it's no coincidence. – A School Board informant

   « Avant qu'une personne vous ouvre la porte de sa classe et qu'elle mette en évidence des problématiques qu'elle rencontre, ça prend plus qu'un "bonjour" dans un corridor. Amener les gens à être en confiance, développer ce lien de confiance-là, ça le dit, il y a des recherches qui le prouvent aussi que ce n'est pas un hasard. ».

3. … we granted, in the initial stages, a capital importance to interpersonal relationships and to the creation of a climate that's favourable to learning and exchange, greatly based on trust and self-esteem, and on the reception and thus, on a favourable climate. So, we paid a lot of attention to all emergences of either competition or discord, or anything. Interpersonal relationships seemed like one of the fundamental elements at the beginning. And this was maintained all throughout." – A Regional Office informant

   « *… on a accordé, dans les premiers moments, une importance capitale aux relations interpersonnelles et à la création d'un climat favorable à l'apprentissage et aux échanges, basé beaucoup sur la confiance et sur l'estime de soi et sur l'accueil et sur un climat favorable, donc. Alors, on était très attentifs à toutes les émergences, soit de compétition ou de mésentente ou quoi que ce soit, que la*

relation interpersonnelle apparaissait un des éléments fondamentaux au départ. Et ça a été maintenu tout le long. ».

4. […] we made sure that in the group, there was an ethic of confidentiality that was implemented. We would agree that what went on around the table would not leave the room. So, from the start, we would put a code of ethics on the table. – An informant from the CIMD

   […] on s'était assuré que dans le groupe, il y avait une éthique de confidentialité qui était mise en place. On s'entendait que ce qui se passait autour de la table, ça ne sortait pas de la porte. Alors, en partant, on mettait un code d'éthique sur la table. ».

5. "You have to instil a connection of trust, and I was credible because I had experience; I had a big school, I had always worked in underprivileged areas." – A Regional Office informant.

   « Il faut que tu installes le lien de confiance et moi, j'étais crédible parce que j'avais l'expérience, j'avais une grosse école, j'avais toujours travaillé en milieux défavorisés. ».

6. So, earning their trust, showing them that I also have things to show them; that they needn't tell me what to do just because they're directors. […] There always comes a time when we recognize each other's expertise and when we learn to work together. – A School Board informant

   « *Donc, de gagner leur confiance, de leur montrer que j'ai aussi des choses à leur montrer, que ce n'est pas parce qu'ils sont directeurs qu'ils ont à me dire quoi faire. […] Il y a toujours un moment donné où on reconnaît l'expertise de l'un et de l'autre et où on apprend à travailler ensemble.* ».

7. And we prepare ourselves very well. I'll admit to you that… it's not to brag, but I pull out all the stops for the preparation of these meetings, to document myself, and get… in some cases, different viewpoints also. […] But I think that the big part of the issue, is to not talk nonsense; because that, it doesn't take long, when you start speaking nonsense, people realize it […] and… after that, they don't even listen to you anymore. – A School Board informant

   « Et on se prépare très bien. Je vous avoue là que… ce n'est pas pour se vanter, mais j'y mets le paquet pour la préparation de ces rencontres-là, pour se documenter et aller chercher… dans certains cas, des points de vue différents aussi. […] Mais je pense que le gros de l'affaire, c'est de ne pas dire n'importe

quoi, parce que ça, ce n'est pas long, quand tu te mets à dire n'importe quoi, que les gens le réalisent […] et… Après ça, ils ne t'écoutent même plus. ».

8. It's major, in the sense that I work for people, but not to always give them what *they* want. So I have to stay critical in that (context). I have to live with the dissatisfactions that it creates as well. Because you know, its not always pleasant to be told: "we are not happy with the content of this meeting, we thought it would be more like this or like that." That's hard to live with. But then, when we continue the work and that a month later, people say: "Oh okay… That's why we were looking at this or that element" and we see that a light bulb went on, then we tell ourselves it was worthwhile. – A School Board informant

   « C'est majeur dans le sens que moi, je travaille pour les gens. Mais pas pour leur donner toujours ce qu'ils souhaitent eux. Donc, moi, il faut que je reste critique là-dedans. Il faut que je vive avec les insatisfactions que ça crée aussi. Parce que vous savez, ce n'est pas toujours agréable de se faire dire : "On n'est pas contents de la rencontre, on pensait que ça allait être plus comme ci, plus comme ça." C'est dur de vivre avec ça. Mais quand, par la suite, on poursuit le travail et qu'un mois plus tard, les gens disent : "Ah, okay… C'est pour ça qu'on regardait tel, tel élément" et qu'on voit que ça éclaire les lumières, là, on se dit que ça valait le coup. ».

9. And we aren't afraid to bring it up and say: "here, some people think this, but other studies demonstrate the opposite. So, we have to be careful with regards to this or that practice". Hence, we don't add more than is necessary, we tell them like it is with respect to these issues. – A School Board informant

   « Et on n'a pas peur de les amener et de leur dire: "Voici, il y a des gens qui pensent ça, mais il y a d'autres recherches qui démontrent le contraire. Donc, il faut faire attention par rapport à telle ou telle pratique." Donc, on n'en met pas plus qu'il faut, on leur dit ce qui en est par rapport à ces problématiques-là. ».

10. And then, more and more, I would say, the fact that I developed this trust, this credibility, […] I am a recognized resource in the region. I am starting to become more and more legitimized to, at some point, say: "Look, this is not going far enough. Now, let's be honest with each other." – A Regional Office informant

    « *Et là, de plus en plus, je dirais, le fait que j'ai développé ce lien de confiance, cette crédibilité-là, […] je suis une ressource reconnue dans la région, je commence à être de plus en plus légitimée, un moment donné, de dire: "Regarde, ça ne va pas assez loin. Là, on va se dire les vraies affaires." ».*

11. “Very important is this question of choosing the right time. Because you can have the same technique as in another setting and if the timing isn’t right, it won’t work.” – A School Board informant

    « bien important cette question de choisir le bon moment. Parce que tu peux avoir la même technique que pour un autre milieu et si le timing n’est pas bon, ça ne marchera pas. ».

12. “But, as I told you, for me, the times where it really didn’t work, and my colleague also, it was really a question of timing. We weren’t there at the right time. And that; I felt it. You feel it quickly. So much so that in certain cases […], I needed to completely set aside what I had planned to tell them and instead, answer their needs, their questions, their complaints, listen to them, and all that because it wasn’t moving forward at all. And that, as I told you, is very important. But this is when it really didn’t work.” – A School Board informant

    « Mais c’est comme je vous dis, moi, les fois où ça n’a vraiment pas marché, et ma collègue aussi, c’était vraiment une question de timing. On n’était pas là au bon moment. Et ça, je l’ai senti, tu le sens rapidement. Tellement que dans certains cas […], il a fallu complètement que je mette de côté ce que j’avais prévu leur dire pour plutôt répondre à leurs besoins, leurs questionnements, leurs plaintes, les écouter et tout ça, parce que ça avançait pas du tout. Et ça, comme je vous dis, c’est bien important. Mais c’est vraiment les fois où ça n’a vraiment pas marché. ».

13. Often, it’s a question of timing. At what moment will you give this or that presentation, what is happening…? Last year, one of our schools changed considerably their characteristics. It went from a rank of 6 to a rank of 9. So, important changes in terms of students attending the school and, at the same time, they changed school Principal. So much so that the school was in a state of shock at the beginning of the year. And then, they realized the extent of the task; the youth they were getting and the comparison was like pretty obvious to them in regards to the youth they had in June of the previous year, versus those they had in September. It wasn’t at all the same clientele. They had difficulty taking that in and practice changes also, on the administrative level, so that the environment had become somewhat tense. Then, we called someone in to talk to them about underprivileged areas, to tell them that this was an underprivileged area... But they just didn’t feel like being told that. They knew they were in an underprivileged area. So, it was very badly welcomed. And that, that’s difficult because after that, you have to bring that back. We would have been better off doing nothing and waiting for it to calm down a bit and for them to be more receptive. – A School Board informant

« *Souvent, c'est une question de timing. À quel moment tu vas faire telle ou telle présentation, qu'est-ce qui se passe…? L'an passé, une de nos écoles a changé de façon importante ses caractéristiques. Elle est passée d'une cote 6 à une cote 9. Donc, changements importants en termes d'élèves qui fréquentaient l'école et en même temps, a changé de direction d'école. Si bien que l'école était en état de choc en début d'année. Et là, ils réalisaient l'ampleur de la commande, les jeunes qu'ils recevaient et la comparaison était comme bien évidente pour eux, par rapport aux jeunes qu'ils avaient en juin de l'année d'avant versus ceux qu'ils avaient en septembre. Ce n'était pas du tout la même clientèle. Ils avaient de la difficulté à prendre ça et des changements de pratiques aussi, au niveau de la direction, faisaient en sorte que le milieu était comme tendu. Et là, on a fait venir quelqu'un pour leur parler des milieux défavorisés, leur dire que c'était un milieu défavorisé… Mais ils n'avaient juste pas le goût de se faire dire ça. Ils le savaient qu'ils étaient en milieu défavorisé. Donc, la réception a été très mauvaise. Et ça, c'est difficile parce qu'après ça, il faut que tu ramènes ça. On aurait été mieux de ne rien faire et d'attendre que ce soit calmé un peu et qu'ils soient plus réceptifs.* ».

14. "it's often connected to that. Linked to a reluctance of the person in front of you, who doesn't want to hear about it (i.e., research-based evidence)." – A School Board informant

« *c'est souvent lié à ça. Lié à une indisposition de la personne qui est en avant, qui ne veut pas entendre parler de ça*. ».

15. I think that, when a group has reached a point where they want to develop together, they want to analyse, evolve, then, knowledge from research has a big place, because they are ready. They want some. Whereas if I'm a team still confronting myself in: "Who am I? What are my values? What are my competencies? My knowledge? " What I, myself, was realizing, is that people were saying: "Look, we all know, researchers, they're never in the classroom. Listen to what I have to say. I, myself, have competencies; it's been X number years that I teach." So, I had to go through that, accept that we develop that. – An informant from the CIMD

« Je pense que quand un groupe est rendu à un stade où ils veulent développer ensemble, ils veulent analyser, évoluer, là, les connaissances issues de la recherche ont toute une place, parce qu'ils sont prêts. Ils en veulent. Alors que si je suis une équipe qui se confronte encore dans : "Qui je suis ? Quelles sont mes valeurs ? Quelles sont mes compétences ? Mes connaissances ?" Ce que je m'apercevais, moi, c'est que les gens disaient : "Regarde, on le sait bien, les chercheurs, ils ne sont jamais dans la salle de classe. Écoute ce que j'ai à dire. Moi, j'en ai des compétences, ça fait X nombre d'années que j'enseigne." Alors, je devais passer par là, accepter qu'on développe ça. ».

16. …you allow people to process. You make them move forward, but it's not a race that by the end of the year we must absolutely be finished. We'll get to as far as we could have. Respect them in that. – A School Board informant

    «… tu laisses les gens cheminer. Tu les fais avancer, mais ce n'est pas une course, là, qu'il faut absolument que d'ici la fin de l'année on ait fini. On va se rendre jusqu'où on aura pu. Les respecter là-dedans. ».

17. Being able to convince your people that what you do, what you're embarking yourself in is important and is useful; that we don't just do it to answer a command from the Ministry or for all sorts of other reasons. Once you have that, it's about giving meaning to that action. – A School Board informant

    « *Être capable de convaincre ton monde que ce que tu fais, ce dans quoi tu t'embarques, c'est important et c'est utile, qu'on ne le fait pas juste pour répondre à une commande du ministère ou pour toutes sortes d'autres raisons. Une fois que tu as ça, c'est de donner du sens à cette action-là.* ».

18. Because if you don't doubt and if you don't question yourself, you don't move, you're not in action, you're not in motion, you're not progressing. […] So, to move forward, you have to ask the questions, cast doubt a bit and feed them also: "Oh, look, I read this thing. Have you seen it? There is this thing that was done elsewhere". And it also has the effect of modeling, because them also, they begin to search and they exchange knowledge with each other. – A Regional Office informant

    « *Parce que si tu ne doutes pas et si tu ne te remets pas en question, tu ne bouges pas, tu n'es pas en action, tu n'es pas en cheminement, tu n'es pas en progression. […] Fait que pour avancer, il faut poser les questions, semer le doute un peu et les alimenter aussi : "Ah, regardez, j'ai lu telle affaire. Avez-vous vu? Il y a telle chose qui a été faite ailleurs." Et ça a aussi un effet de modèle. Parce que eux autres aussi ils se mettent à chercher et ils s'échangent des connaissances.* ».

19. Listening, compassion, calling into question, mirroring, sometimes rocking the boat… not rocking it to be hurtful, but to play devil's advocate. Placing people in other situations: "And what if we did this? Why wouldn't we do it?" Repositioning certain interventions, creating doubt, creating cognitive conflict and, to a certain degree, an affective conflict among teachers. […] So, to accept, sometimes, that it shakes up during discussions… without confrontation, but exchanging our perceptions. Never leaving without me ensuring that we had, indeed, covered all aspects of the question and that we had tied up any loose ends. Never leaving someone in a state of major imbalance. – An informant from the CIMD

« l'écoute, la compassion, la remise en question, le miroir, des fois brusquer… pas brusquer pour blesser, mais jouer à l'avocat du diable. Replacer les gens en d'autres situations : "Et si on faisait ça ? Pourquoi on ne le ferait pas ?" Replacer certaines interventions, créer le doute, créer le conflit cognitif, créer, jusqu'à un certain point, un conflit affectif chez les enseignants. […] Donc, d'accepter, des fois, que ça brasse dans les discussions… sans confrontation, mais échanger nos perceptions. Jamais quitter sans m'assurer qu'on avait fait le tour, quand même, de la question et qu'on fermait la boucle. Jamais laisser quelqu'un en état de déséquilibre majeur. ».

20. "And my role, is […] to bring people to develop an understanding of the effects that it (i.e. research) can have." – A School Board informant

« *Et mon rôle, c'est […] d'amener les gens à développer une compréhension des retombées que ça [c.-à-d., la recherche] peut avoir.* ».

21. By seeing the impacts it (i.e., the use of research) could have… but that, what it is, is that it requires also some time to analyze, to be capable of seeing that the time that I invest right now will pay off. But it's trying to make people understand that, also (people) who are clouded by their daily work, their present-day, to see the impact that it will have and that will allow them to free up more time in the future. But it's quite the challenge. A big challenge. – A School Board informant

« En voyant les impacts que ça [c.-à-d., la recherche] peut avoir… mais ça, c'est ça, c'est que ça demande aussi un temps d'analyse pour être capable de voir le temps que j'investis présentement, il va me rapporter. Mais c'est essayer de faire comprendre ça aux gens, aussi, qui sont obnubilés par leur quotidien, leur présent, de voir que l'impact que ça va avoir et qui va leur permettre de se dégager plus de temps à l'avenir. Mais c'est tout un défi. Un grand défi. ».

22. I really have to stick to what's concrete and the reality and the problems they are going through. It's imperative that the research elements I bring, that they be solutions to problems they are living. If they're not solutions to problems they are living, the reception will… not necessarily, not be okay, a minority of it won't be ok, but the majority [will say]: "It's interesting..." nothing more. But if it's a concern they are going through in their milieu, and then, I bring elements based on research that can be solutions, like it or not, it will attract people. Some of them will be more reluctant, of course, but they are living the issue. So, in that context, they will be ready to, at least, try something: "It can't be worse than it is now, we are stuck with it now. – A School Board informant

« il faut vraiment que je me colle sur le concret et la réalité et sur les problèmes qu'ils vivent. Il faut absolument que les éléments de recherche que j'amène, ça soit

des solutions à des problèmes qu'ils vivent. Si ce n'est pas des solutions à des problèmes qu'ils vivent, l'accueil va… pas nécessairement n'être pas correct, une minorité va avoir un accueil pas correct, mais la majorité : "C'est intéressant…" sans plus. Mais si c'est une problématique qui se vit dans leur milieu, et que là, j'amène des éléments basés sur la recherche qui peuvent être des solutions, plaît, plaît pas, ça va accrocher du monde. Il y en a qui vont être plus réticents, c'est certain, mais la problématique, ils la vivent. Donc, dans ce contexte-là, ils vont être prêts à, à tout le moins, essayer quelque chose. "Ça ne peut pas être pire que là, on est pris avec, là." ».

23. In addition, if there are many issues in a milieu and we are not able to focus ourselves, to target something specific to work on together collectively, and we become dispersed, we would then be scattering our energy everywhere. Then, on an organizational level, we'd risk losing out. – An informant from the CIMD

« En plus, s'il y a plusieurs problématiques dans le milieu et qu'on est pas capable de se centrer, de se cibler sur quelque chose de particulier à travailler ensemble collectivement, et qu'on a trop de dispersion, là, on saupoudre nos énergies partout. Là, sur le plan organisationnel, on risque d'être perdant.».

24. I have a school, amongst others, which has a lot of data from research and then, you take it from there. […] And then, when people see that there is an issue and the more it's glued to their reality, their students, their school, well then, they open up. And they are lucky to have their schools' data. Nothing is more advantageous than that. – A Regional Office informant

« j'ai une école, entre autres, qui a plein de données de recherche et là, tu pars de ça. […] Et là, quand les gens voient qu'il y a une problématique et plus c'est collé sur leur réalité, leurs élèves, leur école, ben là, ils s'ouvrent. Et ils ont la chance d'avoir des données "école". Il n'y a rien de plus gagnant que ça. ».

25. Because school Principals and teachers are people who don't have time to read 300 pages or 150 pages. They have to rapidly be in comprehension mode and get to the heart of the matter. So, one of the tasks was to ensure the transformation from a raw product to a consumable product. After which, sometimes, it also demands, despite that, a human intervention. – A Regional Office informant

« Parce que les directions d'école et les enseignants, c'est des gens qui n'ont pas le temps de lire 300 pages ou 150 pages. Il faut qu'ils soient rapidement en mode compréhension et arriver au cœur de la chose. Fait qu'une des tâches, c'était ça : c'était d'assurer la transformation du produit brut en produit consommable. Et après ça, des fois, ça demande aussi, malgré ça, une intervention humaine. ».

26. … when you play the role of a transmitter, you have to know that what you are passing along has to be adapted to the needs of those who you are passing it on to. It's not realistic that you can pass exactly the same things to everyone. – An informant from the CIMD

    « quand tu joues le rôle de passeur, il faut que tu saches que ce que tu passes va devoir s'adapter aux besoins de celui à qui tu le passes. Ce n'est pas vrai que tu peux passer exactement les mêmes choses à tout le monde. ».

27. As I've told you, I don't care to diffuse the state of research as a whole. It would be drowning them with information. But finding solutions to problems they are going through; that, is helpful. And you are well received in these cases. – A School Board informant

    « Je vous l'ai dit, je ne tiens pas à leur diffuser l'état de la recherche au complet, ça serait les noyer d'informations. Mais trouver des solutions à des problématiques qu'ils vivent, ça, c'est aidant. Et tu es bien accueilli dans ce temps-là. ».

28. "We did a pre-selection of the data that was most interesting, either because they demonstrated progress, or these data that prompted the most questions, that became important to present to the school, which maybe had elements of answers." – A Regional Office informant

    « on a fait une présélection des données qui étaient les plus intéressantes, soit parce qu'elles démontraient un progrès, celles qui soulevaient le plus de questions, qui devenaient importantes de présenter à l'école qui, elle, avait peut-être des éléments de réponse. ».

29. Often, an element that I see that is facilitating also, is when the clientele is identified or the path for use is clearly identified, that, I know people will say: "This, this concerns me, but that, that does not". And they do their pruning that way. – A School Board informant

    « Souvent, un élément que je vois qui est facilitant aussi, c'est quand la clientèle est identifiée ou la voie d'utilisation est identifiée clairement, ça, je le sais que les gens vont dire: "Ça, ça me concerne, ça, ça me concerne pas." Et ils font leur élagage de cette façon-là. ».

30. But when research comes in from outside (i.e., the school), then, it has to be organized because it's not about disseminating everything and anything, any which way. We have to see how we can touch people, what will touch [them]. So, going

myself to search for that information, organizing it in order to transfer it… – An informant from the CIMD

« Mais quand arrivent les recherches de l'extérieur [c.-à-d., de l'école], là, il faut l'organiser parce que c'est pas de diffuser tout, n'importe quoi, n'importe comment. Il faut voir comment on peut toucher les gens, qu'est-ce qui peut [les] toucher. Donc, d'aller moi-même chercher cette information-là, l'organiser pour la transférer… ».

31. You have to be able to give them access to research, because if they have to go through all the steps of scanning, peeling through research and all that, we are going to lose them. So it has to become accessible for them in a simple way all the while giving them access to the main research. – A Regional Office informant

« il faut pouvoir leur donner accès à des recherches, parce que s'il faut qu'ils fassent toute la démarche de veille, d'épluchage des recherches et tout ça, on va les perdre. Donc, il faut leur rendre accessible d'une façon simple tout en leur donnant accès à la grande recherche. ».

32. "I think there is work to be done to facilitate appropriation, of vulgarizing, of the importance of making connections between these data and the practice of these people […] it has to be illustrated." – A Regional Office informant

« je pense qu'il y a un travail pour faciliter l'appropriation, de vulgarisation, de l'importance de faire des liens entre ces données-là et la pratique de ces gens-là. […] il faut l'illustrer. ».

33. There is an exchange that is concrete, that is direct. So, of course it's not only to just send information: "You should do this because research says so." It has to be wrapped in a context where the teacher knows that he/she will be supported to be able to do the intervention; who knows that he/she will be able to have something that is much more encompassing than a stripped down research result. – A School Board informant

« Il y a un échange qui est concret, qui est direct. Donc, c'est sûr que ce n'est pas juste d'envoyer l'information : "Ça, il faudrait que tu fasses ça parce que la recherche le dit." Il faut que ça soit emballé dans un contexte où le professeur sait qu'il va être soutenu pour pouvoir faire de l'intervention, qui sait qu'il va pouvoir avoir quelque chose qui est beaucoup plus englobant qu'un résultat de recherche tout nu de même. ».

34. And this is how it was presented to school Principals; by handing them, well, the official 58 page version, but also the memory aid that had only 4 pages, but that were the important 4 pages, if you will. And it was animated. It was… to ensure everyone's understanding. It wasn't just submitted, as I was saying earlier, it's contextualized. – A School Board informant

    « Et c'est comme ça que ça a été présenté aux directions, en leur remettant, bon, la version officielle de 58 pages, mais l'aide-mémoire, qui avait seulement 4 pages, mais que c'était les 4 pages importantes, si on veut. Et ça a été animé. Ça a été… pour s'assurer de la compréhension de tous, là. C'est pas juste déposé, comme je disais tantôt, c'est contextualisé. ».

35. For example, I visit a school, I work with its Principal and I see that he has difficulties, I say: "Bob[4], what would you think if we looked at this? Would it suit you if I sent you something on this subject? I read something lately and it's very interesting. There's an experiment, actually in Gaspésie on it. Would you like me to send it to you?" And then, they're happy. And at some point, sometimes, it will elicit other needs. So, they call me back: "Nancy, you know, the teachers, when we got together, they asked me this thing. Do you have anything to propose for me? So, it works in reverse sometimes. – A School Board informant

    « *Par exemple, je vais dans une école, je travaille avec une direction et je vois qu'il a des difficultés, je dis: "Bob, qu'est-ce que tu en penses si on regardait ça? Est-ce que ça te conviendrait que je t'envoie quelque chose là-dessus? J'ai lu quelque chose dernièrement et c'est bien intéressant. Il y a une expérience, actuellement, en Gaspésie, là-dessus. Est-ce que tu aimerais ça que je te l'envoie?" Et là, ils sont contents. Et un moment donné, des fois, ça va susciter d'autres besoins. Alors, ils me rappellent : "Nancy, tu sais, les enseignants, quand on s'est réunis, ils m'ont demandé telle affaire. As-tu quelque chose à me proposer ?" Fait que c'est à sens inverse, des fois. ».*

36. Even if tomorrow I had chewed up all the research results and that I… it wouldn't be the unique solution to my problem. It would be a part of the solution, but there would still be a need to find ways to communicate that information, to ensure that people… And me, I think that we need to proceed not with documents that we send by email, not with notes that we send through reports. Teachers are… they have too much; they throw it away. We have to get in there with people. – A School Board informant

[4] Names used in this citation were changed to preserve participant anonymity.

« Quand même que demain j'aurais tout mâchouillé tous les résultats de recherche et que je… ça serait pas la solution unique à mon problème. Ça serait une partie de la solution, mais il faudrait trouver des façons de communiquer cette information-là, de s'assurer que les gens… Et moi, je pense qu'il ne faut pas y aller par des écrits qu'on envoie par courriel, pas par des notes qu'on envoie des communiqués. Les profs sont… ils en ont trop, ils jettent ça. Il faut y aller avec des personnes. ».

37. "And teachers need to… they like to have their say. So you can't just go, present it and leave. For me, these are opportunities for exchanges also, and for questioning." – A Regional Office informant

« Et il faut que les enseignants… ils aiment ça aussi avoir leur mot à dire. Fait qu'il ne faut pas juste qu'on aille présenter ça et on s'en va. Pour moi, c'est des opportunités d'échange aussi, des questionnements. ».

38. "we take advantage of occasions, such as general meetings or group meetings, cycle team meetings in schools to pass information and make it come alive, instead of just virtual or paper." – A School Board informant

« on profite d'occasions, comme les réunions générales ou des réunions d'équipe, des rencontres d'équipe cycle dans les écoles pour faire passer de l'information et la rendre vivante, plutôt que juste virtuelle ou papier. ».

39. We take them (i.e., research studies), we read them, we chew them and we gather them onto a page and a half, two pages, with questions. Because teachers, they work with questions. A teacher, he/she asks questions in a class. So, we take them up on that and then, we go give them questions that could be meaningful to them. – A Regional Office informant

« on les [c.-à-d., les recherches] prend, on les lit, on les mâche et on les ramasse en une page et demie, deux pages, avec des questions. Parce qu'un professeur, ça fonctionne avec des questions. Un professeur, ça pose des questions dans une classe. Donc, on les reprend avec ça et là, on va leur donner des questions qui pourraient être signifiantes pour eux autres. ».

40. We would always go with a PowerPoint presentation in which we tried to vulgarize as much as possible, to simplify as much as possible the data so that people didn't get the impression… You know, sometimes, there are some who are deterred just by thinking: "They're going to present us a bunch of numbers with statistical analyses." No, we tried to proceed simply so that people really get to what's essential. – A School Board informant

« on y allait toujours avec une présentation PowerPoint où on essayait de vulgariser le plus possible, de simplifier le plus possible les données pour pas que les gens aient l'impression… Tu sais, des fois, il y en a que ça les rebute juste de dire : "Ils vont nous présenter plein de chiffres avec des analyses statistiques." Non, on a essayé d'aller simplement pour que les gens aillent vraiment à l'essentiel. ».

41. I can't force these people (i.e., school practitioners) to do anything. […] This is a reality. So, to counter this, we had to develop trusting relationships with key people. And with time, I was able to develop, if you will, good relationships that were fruitful… that gave good results and led to interesting things. – A Regional Office informant

« Je ne peux pas obliger ces gens-là [c.-à-d., les intervenants scolaires] à faire quoi que ce soit. […] C'est une réalité. Alors, pour contrer cette chose-là, on a dû développer des relations de confiance avec des personnes clés. Et au fil des ans, j'ai pu développer, si tu veux, des belles relations qui ont donné fruits… à des beaux résultats et à des choses intéressantes. ».

42. these meetings are mandatory for teachers, this year or it's systematically on the agenda and the Principal is present. That is very important. Teachers see that it's serious and that it's important and that the Principal attaches importance to it. It's a presence of the Principal, also, and a discussion focused on that. – A Regional Office informant

« c'est des temps de rencontres qui sont obligatoires pour les enseignants, cette année ou c'est à l'ordre du jour de façon systématique et la direction est présente. Ça, c'est bien important. Les enseignants voient que c'est sérieux et que c'est important et que la direction y accorde de l'importance. C'est une présence de la direction, aussi, et un discours centré là-dessus. ».

43. There was also through the grapevine, namely in each of the regions, what we called Regional Resource people. And there is a Regional Resource person who works on at-risk high school students. So, for me, she became a work colleague and through her, I could infiltrate research data, so that they would be reassessed with the teachers; or, she recommended that I go with her or I recommended she come with me if we were speaking about a particular strategy. So, this, it was more… I say through the grapevine, but it was ok to do so, it was more in complementarity with our roles and our functions of support. – An informant from the CIMD

« Il y avait aussi, par la bande, c'est-à-dire dans chacune des régions, on a ce qu'on appelle des personnes ressources régionales. Et il y a une personne ressource régionale qui travaille sur les élèves à risque au secondaire. Alors, pour

moi, c'est devenu une collègue de travail et via elle, je pouvais infiltrer des données de recherche, qu'elles soient, elles, réactualisées avec les profs ou elle recommandait que j'aille avec elle ou je recommandais qu'elle vienne avec moi si on parlait d'une stratégie particulière. Donc, ça, c'était plus… je dis par la bande, mais c'était correct de le faire, c'était plus en complémentarité de nos rôles et de nos fonctions en soutien et accompagnement. ».

44. It's someone who has an interest in, and who has a motivation related to the theme of intervention in underprivileged areas. At the beginning, that's what I'm searching for. I am looking for someone competent and motivated. We don't always have a choice, because we have to ask managers to appoint or designate people. So, often we have to use our role of influence so that we have the best people… not the best *people*. THE best *person*. […] In fact, it's more than competence, it's that he has an interest and a motivation and that he accepts to play his/her role of disseminator and transferor fully for groups with which he works. […] So, these people in the network, are key and determinant people. – A Regional Office informant

« C'est quelqu'un qui a un intérêt et qui a une motivation liée à la thématique des interventions en milieux défavorisés. Au départ, c'est ça que je cherche. Je cherche quelqu'un de compétent et de motivé. On n'a pas toujours le choix, parce qu'on doit demander à des gestionnaires de pointer ou de nommer des gens. Alors, il faut souvent utiliser notre rôle d'influence pour qu'on ait les bonnes personnes… et non pas LES bonnes personnes. C'est […] LA bonne personne. […] En fait, c'est plus que compétent, c'est qu'il ait un intérêt et une motivation et qu'il accepte de jouer pleinement son rôle de diffuseur et de relayeur auprès de groupes avec lesquels il travaille. […] Fait que ces gens-là, dans le réseau, sont des personnes clés et déterminantes. ».

45. You see, it's really a relay from person to person, tools, and knowledge that are transferred and that this person, you empower them. It's really what there is behind support; you empower people or one person, who finally, will have influence over another group based on what you did. It's really a chain of transfer from person to person, competencies, knowledge, and new practices. – A Regional Office informant

« Tu vois, c'est vraiment un relais de personne à personne, d'outils et de connaissances qui sont transférés et que cette personne-là, tu l'habilites. C'est vraiment ce qu'il y a derrière le soutien et l'accompagnement, tu habilites des personnes ou une personne à, finalement, avoir de l'influence sur un autre groupe à partir de ce que tu as fait. C'est vraiment une chaîne de transfert de personne à personne, de compétences, de connaissances et de nouvelles pratiques. ».

46. “You have to know what exists and at a given time, you have to know, at the right time, to find these things (i.e., research evidence), and to use them in what you’re doing.” – A Regional Office informant

« Il faut savoir ce qui existe et un moment donné, il faut savoir, au bon moment, aller chercher ces choses-là [c.-à-d., les connaissances scientifiques], et s’en servir dans ce qu’on est en train de faire. ».

47. To explain our successes or explain the things that don’t work… And when people do that, I think it creates moments that are very strategic where, you come, when you are supporting, with data or research-based evidence. […] when people decide to invest themselves around a concern for example […] when people start a project and that they’re convinced that what they would have to do is this, this, or that thing with regards to motivation, reading, at that moment… […] Or also, they are experiencing certain difficulties or they have certain results, but not as much as they would want, and then, sometimes also, these are moments that are very strategic to say: “Let’s go see. Maybe you acted on certain things, but what does research say about it?” […] at these moments, people are open and available. – A Regional Office informant

« S’expliquer nos succès ou essayer de s’expliquer les choses qui ne fonctionnent pas… Et quand les gens font ça, je trouve que ça crée des moments très stratégiques où, arriver, quand on est en soutien et en accompagnement, avec des données ou des connaissances issues de la recherche. […] quand les gens décident de s’investir autour d’une problématique, par exemple… […] quand les gens démarrent un projet et qu’ils sont convaincus que ce qu’ils auraient à faire c’est telle, telle et telle chose par rapport à la motivation, la lecture, à ce moment-là […] Ou, encore, ils éprouvent certaines difficultés ou ils ont certains résultats, mais pas autant qu’ils voudraient, et là, des fois aussi, c’est des moments très stratégiques pour dire : “On va aller voir. Peut-être que vous avez agi sur certaines choses, mais qu’est-ce que nous dit la recherche par rapport à ça ?” […] à ces moments-là, les gens sont ouverts et disponibles. ».

48. You have to renew your success plan after 3 years, and we would like you to, instead of basing it only on an analysis of the situation and to say: “here’s what we’re going to do”; before saying that, what is worthwhile? Therefore, to inform yourselves on practices concerning the boys, on practices concerning the scholastic progress of the youth in your schools and on practices concerning underprivileged areas. – A School Board informant

« Vous avez à renouveler vos plans de réussite après 3 ans, et on aimerait que plutôt que de vous baser uniquement sur une analyse de la situation et dire: “voici ce qu’on va faire”, avant de dire ça, qu’est-ce qui est payant? Donc, de vous

informer sur des pratiques concernant les garçons, sur des pratiques concernant le cheminement scolaire des jeunes dans votre école et sur des pratiques concernant les milieux défavorisés. ».

49. By placing requirements in a success plan and by asking them (i.e., NANS schools) to refer to research, this is an element in which they are forced to go towards [scientific] knowledge. They are forced to go see. They do it in varying degrees, according to the school, according to their capabilities. – A Regional Office informant

« en mettant des exigences dans un plan de réussite et en leur [c.-à-d., les intervenants des écoles du projet NANS] demandant de faire référence à la recherche, ça en est un élément où ils sont forcés d'aller vers les connaissances [scientifiques]. Ils sont forcés d'aller voir. Ils le font à des degrés divers, suivant les écoles, suivant leurs capacités. ».

50. The way in which we carry out planning (i.e., success plans); that has a considerable impact on practices in class, much more than would taking people and sitting them down for three hours to give them training, because we do it with them. When we arrive and we take, for example, we highlight our difficulties and we say: "We have higher levels of drop-outs, a lot of untouched homework, a lot of absenteeism, a lot of this and that…" We look at these different issues together and we think together. But it's in this stage of thinking together that, from time to time, then, I arrive and I say: "You see, in association with school, family, there is this important element. We have discovered that…" I don't say: "Research tells us that…" "We have discovered this or that thing… That could maybe guide us on the ways of doing things. What do you think?" And my work as an animator is to create, to instigate these questions and to come in, inconspicuously, and say: "Look, there is this, this, this." And then, often, people adhere and say to themselves: "It's true." – A School Board informant

« la manière dont on travaille les planifications [c.-à-d., les planifications de réussite], ça a un impact considérable sur les pratiques en classe, beaucoup plus que de prendre des gens et de les assoir trois heures pour leur donner une formation parce que, on fait avec les gens. Quand on arrive et qu'on prend, exemple, on met en évidence nos difficultés et qu'on se dit : "On a beaucoup de décrochage, beaucoup de devoirs non faits, beaucoup d'absentéisme, beaucoup de ci et de ça…" On regarde ensemble ces différentes problématiques et on pense ensemble. Mais c'est dans cette étape-là de penser ensemble que, de temps à autres, là, moi, j'arrive et je dis : "Vous voyez, en lien avec l'école, la famille, il y a tel élément qui est important. On a découvert que…" Je ne dis pas : "La recherche nous dit que…", "On a découvert que telle, telle chose… Ça, ça pourrait peut-être nous pister sur des façons de faire. Qu'est-ce que vous en pensez?" Et

mon travail d'animatrice, c'est de créer, de susciter ces questions-là et d'arriver, l'air de rien, en disant : "Regardez, il y a ça, ça, ça." Et là, souvent, les gens adhèrent et se disent : "C'est vrai." ».

51. That's how I entered more into the milieus. So, when there was an objective to their action plan, I told them: "On that subject, if you want, I could come support you, we could look at what we can do." So, that, that was much more effective, directly in the school. – An informant from the CIMD

« C'est comme ça que je suis plus rentrée dans les milieux. Alors, quand il y avait un objectif à leur plan d'action, je leur disais : "Là-dessus, si vous voulez, je peux venir vous soutenir, on peut regarder comment on peut faire." Alors, ça, c'était beaucoup plus efficace, directement dans l'école. ».

52. People who have extremely rigid ideas on certain subjects… there are subjects that are more delicate than others. Integration of students with difficulties, the question of having to repeat school years, participation, openness of the school towards parents and the community. People who went through really negative experiences with regards to that; despite the fact that we produce research data, they are still very centered on the negative experience they've encountered or that someone else told them about. And at that moment, it's difficult. It's difficult to… People close up quite quickly and we hear answers such as: "Ah yes, research is nonsense. One says one thing in one direction and six months later, they come up with another one that says something in another direction." These people are pretty cynical with regards to the content of research. "Ah yes, them, its going well in their university office, doing research, but they haven't… Let them come try to apply this in my class." These, I've been through experiences like that where we didn't go very far. It's possible though. Me, I'm not saying that there's nothing to do with these people. You have to increase their receptivity, slowly, on other topics on which they are less in conflict with. – A School Board informant

« Les gens qui ont des positions extrêmement arrêtées sur certains sujets… Il y a des sujets qui sont plus délicats que d'autres. L'intégration des élèves en difficulté, la question du redoublement, la participation, l'ouverture de l'école aux parents et à la communauté. Les gens qui ont vécu vraiment des mauvaises expériences par rapport à ça, malgré le fait qu'on sorte des données de recherche, ils sont encore très centrés sur l'expérience négative qu'ils ont connue ou que quelqu'un d'autre leur a racontée. Et à ce moment-là, c'est difficile. C'est difficile de… Les gens se braquent assez rapidement et on entend des réponses du genre : "Ah oui, la recherche, ça dit n'importe quoi. Une dit quelque chose dans un sens et six mois après, ils en sortent une autre qui dit autre chose dans un autre sens." Ces gens-là sont assez cyniques par rapport au contenu de recherche. "Ah oui, eux autres, ça va bien dans leurs bureaux à l'université, faire des recherches, mais ils n'ont pas… Qu'ils viennent donc essayer d'appliquer ça dans ma classe." Ça, j'en ai vécu des

expériences comme ça où on est pas allé très loin. C'est possible, par exemple. Moi, je ne dis pas qu'il y a rien à faire avec ce monde-là. Il faut accroître la réceptivité, tranquillement, sur d'autres sujets sur lesquels ils sont moins en conflit. ».

53. Small research summaries, small topics… "Research says this, this research experiment arrived at that conclusion." And then: "Ah yes, this makes sense. Where did you get this study?" "It was published on this site, it appears at this place…." We come with another topic like that, that is less… people come to say: "Look, the topic that you talked about last time, supposedly that evaluation, its more beneficial to proceed this way. I read this other thing. I fell on this article." And so, this way, we increase permeability to change and to research data. And it could be advantageous. It supposes an attitude of… it supposes a lot of patience in these contexts. – A School Board informant

    « Petits résumés de recherche, petits sujets… "La recherche dit telle chose, telle expérience de recherche en est venue à telle conclusion." Et là : "Ah oui, ça a bien de l'allure. Où tu as pris ça cette recherche-là ?", "Ça a été publié sur tel site, ça apparaît à tel endroit…" On revient avec un autre sujet comme ça, qui sont moins… Les gens en viennent à dire : "Regarde, le sujet dont tu as parlé l'autre fois, supposément que l'évaluation, c'est plus payant de procéder de telle façon, moi, j'ai lu telle autre affaire. Je suis tombé sur tel article." Et là, on accroît de cette façon-là, la perméabilité aux changements et aux données de recherche. Et ça peut être avantageux. Ça suppose une attitude de… ça suppose pas mal de patience dans ces contextes-là. ».

54. You don't transfer the information the same way, you don't address subjects the same way and you'd better work with small groups, work with a couple of volunteers because you know that in your 30, there are a few who are interested. Working with […] a few teachers this way, so that when one day you address these questions in a large group, you can have a critical mass of people who will tell the others: "No, now, us, we don't think that this is the best way, to kick students out in order to lead them to succeed." You could have created a little bigger dynamic… a critical mass of people who will support a certain number of more progressive ideas. – A School Board informant

    « tu ne transmets pas l'information de la même façon, tu n'abordes pas les sujets de la même façon et tu as nettement intérêt à travailler avec des petits groupes, à travailler avec une couple de volontaires, parce que tu sais que dans tes 30, il y en a quelques-uns qui sont intéressés. En travaillant avec […] quelques enseignants comme ça, de façon à ce qu'un jour, tu vas aborder ces questions-là en grand groupe, tu peux avoir une masse critique de gens qui vont dire aux autres : "Non, là, nous autres, on pense pas que ce soit la meilleure façon, de mettre les élèves dehors, pour les amener à réussir." Tu peux avoir créé une dynamique un peu plus

grande… une masse critique de gens qui vont supporter un certain nombre d'idées un peu plus progressistes. ».

55. People weren't open, there was no reception, they had preconceived judgment, there was… You see, maybe individually, they would have been nicer, as is often the case, but collectively, there is a climate that is totally unfavourable that made it so that it was a lost cause to continue to speak on this or that theme because there was a systematic blockage. In fact, it's exactly the opposite of what I was explaining to you earlier. They weren't volunteers, the timing was not good, and we didn't have time to work on the interest, to entice possible gain. It was exactly like all learning. It's very much linked to, maybe, to the group's receptivity or to the strategy that was established on my part to bring the knowledge. – A Regional Office informant

« *Les gens n'étaient pas réceptifs, il n'y avait pas d'accueil, ils avaient un jugement préconçu, il y avait… Tu vois, peut-être qu'individuellement, ils auraient été gentils, comme c'est souvent le cas, mais collectivement, il y a un climat tout à fait non favorable qui a fait en sorte que c'était peine perdue de continuer à parler de tel ou tel thème, parce qu'il y avait un blocage systématique. En fait, c'est exactement l'inverse de ce que je t'expliquais tantôt. C'était pas des volontaires, le timing n'était pas bon, on n'avait pas eu le temps de travailler l'intérêt, de susciter le gain possible. C'était exactement comme tout apprentissage. C'est lié beaucoup, peut-être, à la réceptivité du groupe ou à la stratégie qui avait été instaurée de ma part pour apporter la connaissance. ».*

56. "Now, the challenge is that you have to enable teachers to do it. You can't go do it in their place. Because what we want is for teachers to develop these competencies." – A Regional Office informant

« Là, le défi, c'est qu'il faut que tu habilites les enseignants à le faire. Il ne faut pas que tu ailles le faire à la place. Parce que ce qu'on veut, c'est que les enseignants développent ces compétences-là. ».

57. "we don't want to fall into a recipe either. It's more about guiding them, to orient them toward potential solutions." – A School Board informant

« on ne veut pas tomber dans la recette non plus. C'est plutôt de les guider, de les orienter vers des pistes de solutions. ».

58. "We took a number of things (i.e., research-based evidence) and we showed them that they had links with […] the issues they were tackling." – A Regional Office informant

« on a pris un certain nombre de choses [c.-à-d., les connaissances issues de la recherche] et on leur a montré que ça avait des liens avec […] des problématiques qu'ils abordaient. ».

59. That's to say that they had occasions to experiment in their classrooms and to get feedback after on how it went, what worked, what didn't work so well. And to… In fact, to develop further. Because, at some point, we want teachers to train themselves. – A Regional Office informant

« C'est-à-dire qu'ils ont eu des occasions d'expérimenter dans leur classe et d'avoir des retours après sur comment ça a été, qu'est-ce qui a fonctionné, qu'est-ce qui a moins bien fonctionné. Et de… En fait, de faire du développement. Parce qu'à un moment donné, on veut que les enseignants se forment. ».

60. What is important is to know what's available, and to show them (i.e., school practitioners) where they could search, through a data set, the 4 or 10, amongst the 100; those that would, in relation to what they're currently doing, be enlightening. – A Regional Office informant

« ce qui est important, c'est de savoir ce qui est disponible et de leur [c.-à-d., les intervenants scolaires] montrer là où ils pourraient chercher dans un ensemble de données, les 4 ou les 10 données qui sont là, parmi 100, qui sont celles qui, actuellement, dans ce qu'ils sont en train de faire, seraient éclairantes. ».

61. So, I present them a video presentation of Chouinard, presenting his model. I present them a model in Word format, while telling them what would be important, what we highlight, what we retain, what we leave out in all that. People work in workshops. This is the way we integrate things. – A School Board informant

« Donc, je leur présente une présentation vidéo de Chouinard qui présente son modèle. Je leur présente un modèle en format Word en leur disant qu'est-ce qui serait important, qu'est-ce qu'on passe au crayon marqueur, qu'est-ce qu'on retient, qu'est-ce qu'on enlève là-dedans. Les gens travaillent en atelier. C'est de cette façon qu'on intègre les choses. ».

62. We are going to lead them to integrate it (i.e., research-based evidence) and to translate it, try to see how this is useful to them, and how it can be translated in elements that are concrete in relation to their practice. – A School Board informant

« On va les amener à s'approprier ça et le traduire, essayer de voir en quoi ça leur est utile et comment ça pourrait se traduire dans des éléments concrets au niveau de leurs pratiques. ».

63. all the methods that we put in place in schools, when a school lists their methods, [the school] has to put monitoring mechanisms in place in order to be able to say at the end of the line: "did this method produce results or not? I looked at my objective, it was reached, and I didn't even implement this method. So, it's not why I reached my objective. – A School Board informant

« tous les moyens qu'on met en place dans les écoles, quand une école écrit ses moyens, elle doit mettre en place un mécanisme de suivi des moyens, de façon à être capable de dire en bout de ligne : "[est-ce que] ce moyen-là a donné des résultats ou pas? J'ai regardé mon objectif, il a été atteint, et je n'ai même pas mis en place le moyen. Donc, ce n'est pas pour ça que j'ai atteint mon objectif." ».

64. They're written so that they can be easily measured, the objectives I mean, and the methods are also labelled and with a monitoring mechanism that is put in place […] So, I look at the result, at the end; what it produced with this school, the fact of having supported them, supported the milieu, the committee, all that so that they could work in this direction, the result is conclusive at the end […] it will be easy to say: "the methods that I put in place, did they allow me to reach the objective?" Yes, because my objective is easily measurable. I have targets, all is in place, it allows me to do that. At the same time, I have monitoring mechanisms that will allow me to say: "Is it because my method wasn't good or because I didn't put it in place that I didn't reach my objective?" So, all the elements are in place at the moment in order for them to easily implement [their] success plan and evaluate at the end of the line and afterwards go towards another phase. – A School Board informant

« Ils sont écrits de façon à ce qu'ils puissent facilement être mesurés, les objectifs, j'entends, et les moyens sont aussi libellés et avec un mécanisme de suivi qui est mis en place […] Donc, je regarde le résultat, à la fin, ce que ça a donné avec cette école-là, le fait de les avoir accompagnés, accompagné le milieu, le comité, tout ça pour qu'ils travaillent dans ce sens-là, le résultat est probant à la fin.[…] ça va être facile de dire : "Les moyens que j'ai mis en place, est-ce qu'ils m'ont permis d'atteindre l'objectif?" Oui, parce que mon objectif est facilement mesurable. J'ai des cibles, tout est là, ça me permet de faire ça. En même temps, j'ai des mécanismes de suivi qui vont me permettre de dire : "c'est-tu parce que mon moyen n'était pas bon ou parce que je ne l'ai même pas mis en place que je n'ai pas atteint mon objectif ?". Fait que tous les éléments sont en place en ce moment pour qu'ils puissent facilement mettre en œuvre son plan de réussite et l'évaluer en bout de ligne et par après aller vers une autre phase. ».

65. "They (i.e., people who commit to a process) decide to follow this and to document what they're doing, in general, after a certain amount of time, they obtain positive results." – A Regional Office informant

« ils [c.-à-d., les gens qui s'engagent dans une démarche] décident de suivre ça et de documenter ce qu'ils font, en général, au bout d'un certain temps, ils obtiennent des résultats positifs. ».

66. Well, if in a milieu we are able to demonstrate that with this intervention and this and that condition we had an impact, well if in 10 milieus we conclude the same thing, we're going to be able to, at some point, to be able to talk also about a practice that is valid, or in any case that is… I find that the more we're going to work on this, the more we're going to help people develop rigor toward it. – A School Board informant

« Bon, si dans un milieu on est capable de démontrer qu'avec telle intervention et telle, telle condition on a tel impact, ben si dans 10 milieux on constate la même chose, on va être capable, un moment donné, de pouvoir parler aussi d'une pratique qui est valide, en tous cas, qui est… Moi, je trouve que plus on va travailler là-dessus, plus on va aider les gens à développer une rigueur par rapport à ça. ».

67. The more people enable themselves to follow and to evaluate what they're doing, the more, I think, that it's in their interest to rely on things that are research-based. Because it, finally, it corroborates what they're doing, and it tells them that they are absolutely right to maintain it. These are arguments to justify this, it's…or it helps them polish and adapt what they're doing. And this, we have work to do. – A Regional Office informant

« Plus les gens s'habilitent à suivre et à évaluer ce qu'ils font, plus, je pense, qu'ils ont de l'intérêt à s'appuyer sur des choses qui sont issues de la recherche. Parce que ça vient, finalement, ça vient ou corroborer ce qu'ils font, et ça leur dit qu'ils ont tout à fait raison de maintenir ça. C'est des arguments pour le justifier, c'est… ou ça vient les aider à peaufiner et adapter ce qu'ils font. Et ça, on a du travail à faire. ».

68. Develop the critical aspect to say: "We're implementing some things…" That's good. But myself, my role among these people (i.e., school practitioners) is to bring them to say to themselves: "It's not simply because we're doing this that we're going to get effects." So, we're going to look at what will be the effects; are they ones we're seeking or if we're going to end up with undesired results… And from there, to have the critical mind to say to oneself: "But, what didn't we do right" or "What did we do and what happened that provoked another situation, etc." So, this is it, to develop a critical mind. – A School Board informant

« Développer l'aspect critique de dire : "On met en place des choses…" Ça, c'est bien. Mais moi, mon rôle, auprès de ces gens-là [c.-à-d., les intervenants scolaires]

c'est de les amener à se dire : "Ce n'est pas juste parce qu'on le fait que ça va avoir des effets." Donc, on va regarder quels vont être les effets, est-ce qu'ils sont ceux qu'on recherche ou si on va aboutir à des résultats pas souhaités… Et à partir de là, avoir l'esprit critique de se dire : "Mais qu'est-ce qu'on a fait de pas correct" ou "Qu'est-ce qu'on a fait et qu'est-ce qui s'est produit qui a provoqué une autre situation, etc." Donc, c'est ça, développer l'esprit critique. ».

69. And then, for them, it was becoming very disappointing because now, it's as if I was ruining their fun. And so sometimes, it's a reason for certain guidance counsellors to not go so far, sometimes. Because I realized that for some, to become very rigorous towards this way of doing, etc., they're like somewhat scared to put it out there sometimes. It's not the case for everyone, thankfully, but for many, there's this. – An informant from the CIMD

« Et là, pour eux, ça devenait très décevant parce que là, c'est comme si je leur gâchais leur plaisir. Et ce qui fait que des fois, c'est une raison, pour certains conseillers pédagogiques, de ne pas aller si loin, des fois. Parce que je me suis rendue compte que pour certains, que devenir très rigoureux par rapport à cette façon de faire-là, etc., ils ont comme peur de s'afficher parfois. Ce n'est pas le cas de tout le monde, heureusement, mais pour plusieurs, il y a ça. ».

70. We have a challenge to bring the school community and all of practitioners to rely to a greater extent on this knowledge to make more judicious choices, better targeted actions, that are more likely to be more effective. For me, in the school milieu, it's not independent from another challenge, which is to bring people to monitor more what they're doing, to evaluate it and to document it. This, this is not really an integral part of the culture in education […] When we ask the milieu, for example: "What do you do that you find particularly pertinent from the last couple of years in your milieu in relation to the question of underprivileged [area]? What could you talk about? What seems to produce results [in your school]?" People are little… First, people, I think, often, haven't necessarily done this in a very systematic way, collecting information, data, observations. – A School Board informant

« on a un défi d'amener le milieu scolaire et l'ensemble des intervenants à s'appuyer davantage sur ces connaissances pour faire des choix plus judicieux, des actions mieux ciblées, qui sont susceptibles d'être plus efficaces. Pour moi, dans le milieu scolaire, ce n'est pas indépendant d'un autre défi qui est celui d'amener les gens à suivre davantage ce qu'ils font, à l'évaluer et à le documenter. Ça, ça fait pas beaucoup partie de la culture en éducation […] Quand on demande au milieu, par exemple : "Qu'est-ce que vous faites que vous trouvez particulièrement pertinent depuis quelques années dans votre milieu par rapport à la question de la défavorisation? De quoi vous pourriez parler ? Qu'est-ce qui semble donner des

résultats chez vous ?" Les gens sont peu… D'abord, les gens, je pense, souvent, n'ont pas nécessairement fait ça de façon très systématique, là, collecter des informations, des données, des observations. ».

71. These schools must be accompanied. It's all well and good to give… the same thing, I'd say, for the training that guidance counsellors give to teachers. Offering training and leaving things there, that won't amount to much. It's the same thing for our school Principals. We inform them, they adhere to that. When they leave from here they're happy, they've learned something, now everyday life takes over. If we don't go accompany them in the process to really put this in place and follow this very rigorous process, it won't produce any results, it won't penetrate. – A School Board informant

    « il faut que ces écoles soient accompagnées. C'est bien beau de donner… la même chose, je vous dirais, pour la formation que les conseillers pédagogiques donnent aux enseignants. Donner une formation et laisser ça là, ça ne donne pas grand-chose. C'est la même chose pour nos directions d'école. On les informe, ils adhèrent à ça. Quand ils sortent d'ici, ils sont contents, ils ont appris quelque chose, maintenant le quotidien prend le dessus. Si on ne va pas les accompagner dans la démarche pour vraiment mettre ça en place et suivre cette démarche très rigoureuse, ça ne donnera pas de résultats, ça ne pénètrera pas. ».

72. And myself, I've identified ways of doing things, like regularity. Whether I have a meeting with people or not, at day 5, I'm in the rural area, we'll let's go, I'm in the rural area. I didn't ask myself if I was going or not. No. I was in the rural area. People hadn't necessarily asked for appointments, I didn't have any meetings planned, but people saw me there. And, all of a sudden, well, when people had questions, people turned to me. – A School Board informant

    « Et moi, j'ai identifié des façons de faire, comme la régularité. Que j'aie une rencontre avec des gens ou pas, le jour 5, je suis en [région], ben go, c'est en [région]. Je ne me demandais pas si j'y allais ou pas. Non. J'étais en [région]. Les gens n'avaient pas nécessairement demandé des rendez-vous, je n'avais pas de rencontre de prévue, mais les gens me voyaient là. Et tout à coup, bon, quand les gens avaient des questions, les gens se tournaient vers moi. ».

73. There was a frequency of meetings. The frequency was every 5 or 6 weeks. I experimented with all sorts of frequency. Three weeks was too fast because they didn't have time to integrate and experiment in the classroom. And after 6 weeks, it was too far, we'd lose track. […] The length of the meetings varied. In certain groups, it was an hour and a half; in others it was three hours. Hour and a half meetings are always feasible, but we wouldn't get to metacognition. It's not long enough. […] The number of practitioners in the group: minimally, I'd say 6 to 8

people; maximum 12 people. Even 12, it's starting to be big, if we want everyone around the table to get a chance to express themselves. – An informant from the CIMD

« *Il y avait une fréquence des rencontres. La fréquence était aux 5 ou 6 semaines. J'ai expérimenté toutes sortes de fréquence. Trois semaines, c'était trop rapide parce qu'ils n'avaient pas le temps d'intégrer et d'expérimenter dans la salle de classe. Et après 6 semaines, c'était trop loin, on perdait le fil. […] La durée des rencontres variait. Dans certains groupes, c'était deux heures et demie, dans d'autres, c'était trois heures. Des rencontres d'une heure et demie, c'est toujours faisable, mais on ne se rend pas jusqu'à la métacognition. Ce n'est pas assez long. […] Le nombre d'intervenants au sein du groupe : minimalement, je dirais 6 à 8 personnes, maximum 12 personnes. Même 12, ça commence à être gros, si on veut que tout le monde autour de la table ait la chance de s'exprimer.* ».

74. So, we went and then, what we agreed upon with them is a game plan: "We'll come back. We'll support you. You guys will have things to do in the mean time, but at each meeting, we will come back and look at how you have progressed in your things." It was there, it became like an obligation for them… – A School Board informant

« Alors, on est allé et là, ce qu'on a convenu avec eux, c'est d'un plan de match: "On va revenir. On va vous accompagner. Vous autres, vous allez avoir des choses à faire entre temps, mais à chaque rencontre, on va revenir et regarder comment vous avez avancé dans vos choses." C'était là, c'est devenu comme une obligation pour eux… ».

75. And there are people who come to trainings and are bored and would be better off reading a good book or spending 3 hours doing research to move things forward rather than be there, present in a training. There are those who are willing, who play the game, but that will often stop there because if there isn't support, if there isn't a rigorous follow-up that's done, they'll think it was very interesting and we'll talk about it as a nice memory but it stays there. And there are those that want nothing to do with it. And this, you have to be conscious of this. And these people, they need a different framework. […] So, we always have to grasp to whom we are addressing ourselves to, to differentiate, bottom line. – A School Board informant

« Et il y a des gens qui viennent à des formations et qui s'ennuient et qui auraient avantage à prendre un bon livre ou à passer trois heures à faire des recherches pour faire avancer plutôt que d'être là, présent à une formation. Il y a ceux qui veulent bien, qui se prêtent au jeu, mais qui vont souvent s'arrêter là parce que s'il n'y a pas d'accompagnement, s'il n'y a pas un suivi rigoureux de fait, ils vont penser que ça a été très intéressant et on en parle comme étant un beau souvenir,

mais ça reste là. Et il y a les autres qui ne veulent rien savoir. Et ça, il faut être conscient de ça. Et ces gens-là, ils ont besoin d'un cadre différent. […] Donc, il faut toujours saisir à qui on s'adresse, faire de la différenciation dans le fond, là. ».

76. "[…] the support, as I'm telling you, guarantees us a dynamic link between the question of the knowledge and a more certain development of professional competence." – A Regional Office informant

« […] l'accompagnement, comme je vous dis, nous garantit un lien dynamique entre la question de la connaissance et un développement de compétence professionnelle plus assuré. ».

77. So, I'd say that when the person who puts a project and everything in place leaves, we have to make sure that if we put something in place, that the person who has the responsibility to put it in place, they have to be there… otherwise… So, I'd say that there are conditions that aren't there. This is often what explains failure. – A Regional Office informant

« Fait que je dirais que quand la personne qui met en place un projet et tout ça quitte, il faut s'assurer que si on met quelque chose en place, que la personne qui a la responsabilité de le mettre en place, il faut qu'elle soit là… sinon… Fait que je dirais qu'il y a des conditions qui ne sont pas là. C'est souvent ça qui explique l'échec. ».

78. "I have a power of influence, but it's not I who will say: 'you have to be here'." – An informant from the CIMD.

« Moi, j'ai un pouvoir d'influence, mais c'est pas moi qui va dire : « Tu es obligé d'être là. ».