

Necessary conditions to implement innovation in remote networked schools: The stakeholders' perceptions

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Abstract: Remote Networked Schools (RNS) is an initiative by the Quebec Ministry of Education, Leisure and Sports (MELS) to investigate solutions that the use of information and communication technologies (ICT) can offer for the preservation of small rural schools in Quebec, Canada. The implementation of RNS mobilized then – as it still does now – the local capacity for innovation of all the stakeholders involved in this networking effort to improve learning. Building on Donald P. Ely's work (1990; 1999), this paper presents the results of an investigation of the RNS educational stakeholders' perceptions of the importance of the conditions that facilitate the implementation of educational technology innovations for the success of RNS in their locations.

Les conditions nécessaires à l'implantation de l'innovation de l'École éloignée en réseau: la perception des intervenants

Résumé: L'École éloignée en réseau est une initiative du Ministère de l'Éducation, du Loisir et du Sport du Québec (MELS), qui a comme objectif d'explorer ce que l'usage des technologies de l'information et de la communication (TIC) peut offrir pour la sauvegarde des petites écoles rurales au Québec, Canada. L'implantation de l'École éloignée en réseau a mobilisé (et continue aujourd'hui) la capacité locale, pour l'innovation, de tous les

intervenants impliqués dans cet effort de mise en réseau pour améliorer l'apprentissage. Partant des recherches de Donald P. Ely (1990; 1999), ce texte présente les résultats d'une étude sur la perception des intervenants impliqués dans l'École éloignée en réseau, quant à l'importance des conditions facilitant l'implantation d'innovations technologiques afin que cela soit un succès dans leur communauté.

Introduction

Remote Networked Schools (RNS) is an initiative by the Quebec Ministry of Education to investigate the solutions that the use of information and communication technologies (ICTs) could offer to preserve and enrich the learning environment of small rural schools (less than 100 students) in Quebec, Canada. These small rural schools face many problems caused by a decreasing clientele, among which poor access to resources (specialized services to students) and people (teacher professional development and student interactions). One of the objectives of RNS is to experiment and document the innovation process of networking (large bandwidth) small schools with a videoconferencing tool and an electronic forum.

Networking activities take various forms depending on the stakeholders: for example, school principals form a community of practice that speak regularly to exchange ideas and challenges associated with their responsibilities as RNS leaders. Teachers from different schools use a videoconferencing tool to plan future online activities for their students. RECIT and pedagogical consultants make themselves available online to teachers to discuss

collaborative activities using the new tools. The research and intervention team is also available online all day to help teachers and students use the tools to support learning. Overall, this systemic initiative requires the collaboration and commitment of all the stakeholders from the school board to the school and the local community to universities and political instances.

After two years of experimentation with three pilot remote schools (Phase 1: 2002-2004), RNS later included 13 pilot remote schools that each had at least two partner schools to interact with. The Ministry selected pilot schools based on isolation and low socioeconomic status (SES) as well as schools with multilevel classrooms. Later on, partner schools were chosen within the same school board to collaborate with the pilot schools. The partner schools generally had characteristics similar to the pilot schools (number of students, SES, etc.). In all there were almost 60 schools implementing RNS in Quebec in Phase 2 (2004-2006). The implementation of RNS mobilized then – as it still does now – the local capacity of innovation of all the stakeholders involved in this networking effort to improve learning.

The originality of this study mainly relies on the fact that it takes place in so many school boards, accounting for as much as 20 % of all Quebec school boards. By the end of Phase 3 (2006-2008), almost every rural region of Quebec will be implementing RNS, making this a level 3 research according to Ellis (2001). A level 3 research characterizes a

large scale research project (numerous control groups, measure of the impacts at several levels, etc.) and is quite rare in education.

Theoretical Framework

Rogers (1995) specifies that there exists a small percentage (less than 30 %) of people that will be innovators or early adopters in a context of innovation. The decision to innovate or not depends a lot on the personal characteristics of the individuals that are part of a system, and that is why there is always an innovation adoption curve. According to Rogers, this innovation adoption curve enables a domino effect that will later allow the diffusion of the innovation throughout the entire system. In RNS, the system mainly consists of four types of educational stakeholders: teachers, school management (school principals), pedagogical consultants and resource people for the development of student competencies using information and communication technology (RECIT). The decision to innovate will also depend on the consideration of the costs and benefits associated with the efforts needed. Hence, status quo will be preferred if the return on investment is too low. Innovation is a social process since the adoption will happen through a domino effect starting with the innovators' impact on the early adopters and so on.

Many studies have addressed the constraints and impediments of technological innovations in classrooms and schools (Becker & Riel, 2000; Cuban, 1986; Kozma, 2000; Rogers, 1995). In 1999, Ely wrote an article describing what he observed in his own research as conditions that facilitate the implementation of educational technology innovations (henceforth referred to as conditions of innovation). This work built on studies and explorations of resistance factors that come into play in implementation of innovations efforts (see Esminger, Surry, Porter & Wright, 2004; Fullan, 1982; Kotter, 1996). The basic argument of this line of research has been to identify the types of resistance and obstacles that exist in order to design strategies that take them into consideration and achieve better results. Ely's earlier work with Chilshom (1976) on innovation conditions was validated by his review of the literature and further research on his part led to another article (1990) that in turn was used as a framework in as many as nine dissertations up to 2005 (see Esminger, Surry, Porter & Wright,

2004; Surry & Esminger, 2003; Surry, Jackson, Porter & Esminger, 2005). All these studies pertaining to implementation validated Ely's eight conditions, which further supports the relevance of this model to support our study.

In the RNS project, Ely's conditions of innovation were referred to in iterative research reports as indicators of the implementation process at each participating location (see Laferrière, Breuleux & Inchauspé, 2004). Thus, the conditions were used to observe the implementation process from an external point of view. However, we believed the participants' observations of the conditions after one year of implementation were crucial to the innovation efforts and could shed a different light on the RNS project.

The present research builds upon Donald P. Ely's work. Used both as a set of indicators of the innovation adoption curve in each remote site as well as a communication tool in iterative research reports handed back to the educational stakeholders, Ely's conditions of innovation provided the RNS research team with a powerful tool to support their own actions in this social process. From the outset, the conditions were used with local stakeholders as they were an easy and accessible research tool to help them implement RNS in their own system and succeed in their innovative process.

This paper presents the results of an investigation of the conditions of innovation, as the RNS stakeholders themselves perceived the importance of each for the success of the implementation, at the end of both school years of the RNS project (Phase 2), in 2005 and 2006.

Method

At the end of the 2004-2005 school year, the participants of the RNS project, most of whom (10 out of 13) were finishing their first year as a Remote Network School, were asked to complete a questionnaire designed to measure their perceptions about the importance they attributed to Ely's conditions facilitating the implementation of educational technology innovations (1990;1999). This questionnaire allowed us to assess each participant's perception of the conditions relative to the RNS project in their location and has also been used as a tool to help the leaders in their decision making process regarding the

innovation. Similar questionnaires were completed at the end of the following year (2005-2006) by the same stakeholders unless impossible otherwise. The results are presented here.

The questionnaire focused on four conditions of innovation (Surry & Ensminger, 2003):

- **Dissatisfaction with the status quo:** an emotional discomfort that results from perceiving the current method as inefficient or ineffective. This condition does not have as much influence as the other seven (Ely, 1990; 1999).
- **Knowledge and Skills:** an assessment of the current level of skills and knowledge of the product users. Ely reports that this condition consistently ranks as one of the most influential conditions among the eight (Ely, 1990; 1999).
- **Adequate Resources:** the amount of resources currently available to successfully implement the innovation. Resources include finances, hardware, software and personnel (Ely, 1990; 1999).
- **Time:** adequate time and compensated time for users to become educated and skilled in how to use the innovation. This condition refers not only to the organization's willingness to provide time but also the users' willingness to devote learning time for implementation (Ely, 1990; 1999).

Each item of the questionnaire related to one of the four preceding conditions of innovation. The final score for each condition was computed as a percentage. The number of items per condition of innovation was constant and the questions were slightly reformulated in the second questionnaire with the help of an expert in assessment who validated both versions of the questionnaire. The questionnaire was validated according to the following criteria: 1) the questions measured knowledge and perceptions and not established facts about RNS; 2) the questions contained a single idea by statement; and 3) every condition of innovation had the same number of items and the same weight in the whole of the questionnaire.

The remaining four conditions presented by Ely (rewards and incentives, participation, commitment, and leadership) were not assessed through the questionnaire because it was judged too sensitive an issue to assess those conditions without pointing to specific stakeholders after only one year of implementation. For example, leadership and commitment were the responsibility of only one person in most cases. As stated above, the four conditions of innovation reported in this paper are: 1) a dissatisfaction with the status quo (dissatisfaction); 2) the existence of knowledge and skills (knowledge); 3) the availability of resources (resources); and 4) the availability of time (time).

Statistical analyses were conducted on the collected data. The independent variables of this study were 1) stakeholder (teachers, school management, pedagogical consultants, and RECIT; and 2) year (2005, 2006) for all of 300 subjects (192 teachers, 60 school management, 27 pedagogical consultants and 21 RECIT). The dependent variables were the educational stakeholders' perception of the importance of the condition of innovation (CI) for each CI (dissatisfaction, knowledge, resources, and time), in percentages. Therefore, the design symbolization for this study is:

Subjects300 (Stakeholder4 x Year2)

The appropriate test for this design is a multivariate analysis of variance (MANOVA) because it has more power than a repeated measures ANOVA when sample sizes are important, such as is the case here (see Stevens, 2002, p. 509).

Results

Descriptive Statistics

Table 1. Means and Standard Deviations of the Perceived Importance of the Conditions of Innovation Collapsed Across Groups and Years (N=300)

Condition of innovation	<i>M (SD) %</i>
Dissatisfaction with status quo	55.73 (1.02)
Knowledge and skills required	82.29 (1.15)
Availability of resources	82.87 (1.11)
Availability of time	67.76 (1.28)

Table 1 shows the means and standard deviations of the perceived importance of each condition of innovation, collapsed across groups. The highest score obtained was resources ($M=82.87$, $SD=1.11$). Judging from this result, it appears the stakeholders perceived the amount of resources available to implement the innovation rather highly. The second highest score was knowledge ($M=82.29$, $SD=1.15$), indicating that the stakeholders perceived the current level of users skills and knowledge as high. Ely ranked this as one of the most influential conditions (1990; 1999). The mean for the availability of time was 67.76 ($SD=1.28$). The lowest mean was that of dissatisfaction with status quo ($M=55.73$, $SD=1.02$) indicating low discomfort with the current practices and methods, i.e., no urgent need to change.

Table 2. Means and Standard Deviations of Stakeholders on Each Condition of Innovation

Conditions of innovation	Stakeholders	<i>n</i>	<i>M (SD) %</i>
Dissatisfaction with status quo	Teachers	192	62.53 (0.90)
	School management	60	60.76 (1.60)
	Pedagogical consultants	27	55.56 (2.48)
	RECIT	21	44.05 (2.65)
Knowledge and skills required	Teachers	192	76.17 (1.02)
	School management	60	82.69 (1.81)
	Pedagogical consultants	27	86.08 (2.81)
	RECIT	21	84.20 (3.01)
Availability of resources	Teachers	192	86.19 (0.98)
	School management	60	81.80 (1.74)
	Pedagogical consultants	27	82.08 (2.69)
	RECIT	21	81.40 (2.88)
Availability of time	Teachers	192	63.03 (1.13)
	School management	60	69.53 (2.01)
	Pedagogical consultants	27	72.05 (3.11)
	RECIT	21	66.42 (3.33)

Table 2 shows the estimated marginal means for each stakeholder on each condition, collapsed across years. RECIT scored the lowest on dissatisfaction ($M=44.05$, $SD=2.65$) while teachers scored the highest ($M=62.53$, $SD=0.90$). Teachers scored the lowest on knowledge ($M=76.17$, $SD=1.02$), while all the other stakeholders scored higher than 80.00. On the availability of resources, all stakeholders scored relatively high: RECIT scoring the highest ($M=81.40$, $SD=2.88$) and teachers the lowest ($M=86.19$, $SD=0.98$). Finally, pedagogical consultants scored the highest on availability of time ($M=72.05$, $SD=3.11$), while teachers scored the lowest ($M=63.03$, $SD=1.13$). At a first glance, we were not surprised that the availability of the resources was judged important for all stakeholders because most of them were poorly served in terms of technological and pedagogical resources because of their geographical isolation.

When collapsed across stakeholders, the data shows that the perception of the importance of the dissatisfaction with status quo dropped from 2005 ($M=58.05$, $SD=1.30$) to 2006 ($M=53.40$, $SD=1.57$). The mean for availability of time also dropped from 72.64 ($SD=1.63$) to 62.88 ($SD=1.96$). On the other hand, the means of the other two conditions of innovation increased from 2005 to 2006; availability of resources went from 80.85 ($SD=1.41$) to 84.89 ($SD=1.70$) while knowledge and skills leaped from 77.90 ($SD=1.47$) in 2005 to 86.67 ($SD=1.78$) in 2006. We were not surprised by the fact that the availability of the resources was still considered important in 2006 even though most of the computing purchases were made in the first year and the large bandwidth was available in almost every school board by then. Nevertheless, certain technical difficulties persisted, and the demand for pedagogical support increased. Also, we find it quite interesting to note that the stakeholders still considered important the knowledge and the skills after a second year. Together with a strong demand for professional development, this can illustrate the stakeholders' commitment to the implementation of RNS.

Table 3. Means and Standard Deviations of Year on Each Condition of Innovation

Conditions of innovation	Year	<i>n</i>	<i>M (SD) %</i>
Dissatisfaction with status quo	2005	182	58.05 (1.30)
	2006	118	53.40(1.57)
Knowledge and skills required	2005	182	77.90 (1.47)
	2006	118	86.67 (1.77)
Availability of resources	2005	182	80.85 (1.41)
	2006	118	84.89 (1.70)
Availability of time	2005	182	72.64 (1.63)
	2006	118	62.88 (1.96)

Statistical Results

First, the MANOVA showed a significant multivariate effect of Stakeholder, $F(12,794.914)=7.658$, $p<0.001$. This means the stakeholders perceive the importance of the conditions of innovation differently. Univariate analyses on each dependent variable showed significant effects of Stakeholder on dissatisfaction, $F(3,292)=15.790$, $p<0.001$, knowledge, $F(3,292)=7.056$, $p<0.001$,

and time, $F(3,292)=4.437$, $p<0.001$. Figure 1 illustrates this effect.

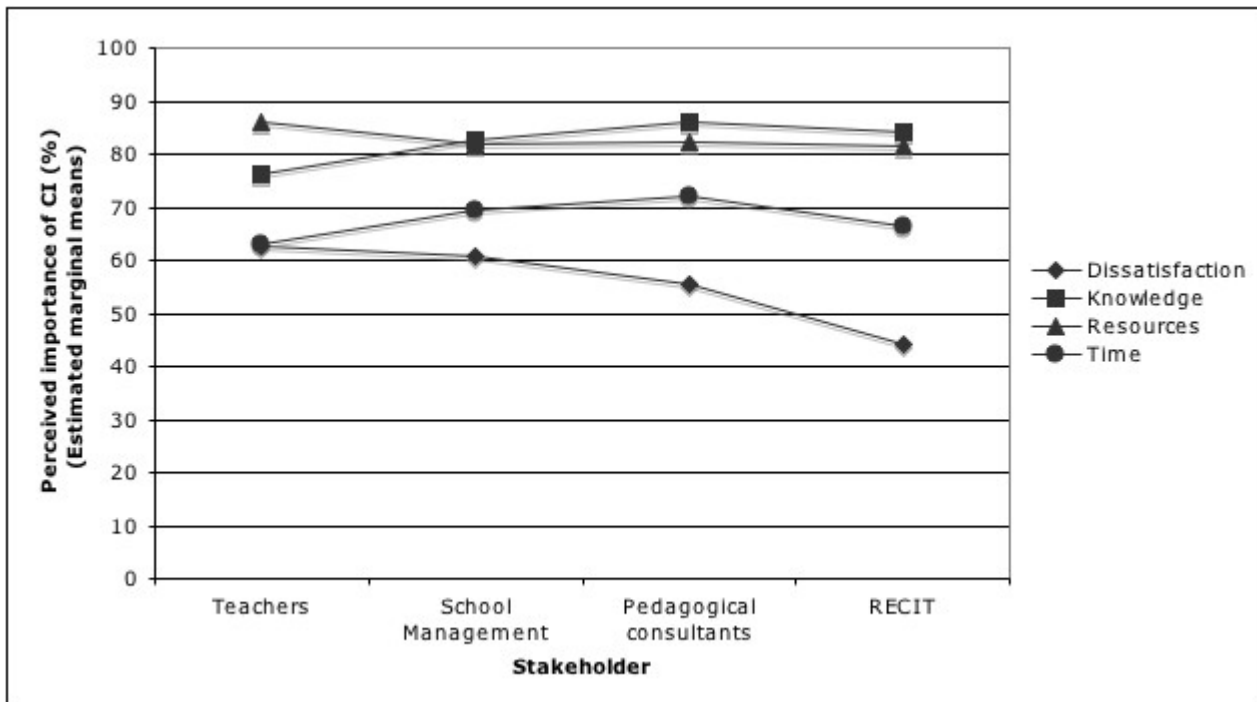


Figure 1. Significant multivariate effect of Stakeholder on the conditions of innovation.

Pairwise comparisons based on the estimated marginal means indicate that teachers perceive the importance of the dissatisfaction with status quo significantly higher than pedagogical consultants and RECIT. These comparisons also show that RECITs' perception of the importance of dissatisfaction with status quo was significantly lower than all the other stakeholders.

For us, these low means for dissatisfaction with the status quo indicate that pedagogical consultants and RECIT are generally satisfied with the current practice. We believe that it is problematic in the sense that dissatisfaction is needed as a lever for implementation. On the one hand, pedagogical consultants play a leading role in the remote schools because of their granted expertise with the new curriculum and a constructivist approach to learning. On the other hand, RECITs have a better understanding of the importance of implementing the use of ICT in classroom practice and they hold the expertise to do so in their school board. But if both stakeholders are generally satisfied with the actual practice, how can they act as catalysts for change? In other words, if it's not broken, why fix it?

Pairwise comparisons also indicate that teachers perceive the importance of the knowledge and skills required significantly lower than all the other stakeholders. In other words, school principals, pedagogical consultants and RECITs perceive the importance of the knowledge and skills needed to implement RNS rather highly. Also noteworthy is the fact that from the start, pedagogical consultants and school principals received the most professional development pertaining to the new curriculum and the theoretical perspectives underlying it, mostly because they have a more flexible schedule than teachers. Furthermore, could this be a question of the teachers' more practice-based knowledge and language about the curriculum compared to the other stakeholders' greater ability at expressing their theoretical understanding of the curriculum and as such, be better able to express what they perceive as important?

Also, teachers perceive the availability of time significantly lower than school management and pedagogical consultants. This is one of the main surprises of this analysis. A common justification for the lack of commitment to RNS is the lack of time to implement it in a context that also includes a curriculum reform. In this case, it seems that it is rather the people who accompany them in the implementation of the innovation who are more convinced of the importance of the availability of time. It is good sign for the teachers that the people helping them are aware that they need time to innovate.

Second, the MANOVA showed a significant multivariate effect of Year, $F(4,289)=12.424$, $p<0.001$. This means that the conditions of innovation were perceived differently in 2005 and 2006. The stakeholders' perceptions of the conditions of innovation were indeed expected to change over time as they themselves became more and more involved in their own RNS project and actions. Univariate analyses on each dependent variable showed significant effects of Year on dissatisfaction, $F(1,292)=5.218$, $p=0.023$, knowledge, $F(1,292)=14.465$, $p<0.001$, and time, $F(1,292)=14.615$, $p<0.001$. Figure 2 illustrates this effect.

As we can see in Figure 2, the overall perception of dissatisfaction with status quo has significantly dropped from 2005 to 2006. Availability of time has also dropped significantly in 2006. On the other hand, the perception of the

knowledge and skills required has significantly increased in 2006.

We could say that as the stakeholders gained experience in RNS, they became less dissatisfied with the current situation of small rural schools. The implementation of the large bandwidth in the schools, the new computers and software had a positive impact on the motivation of the students, which is often a major factor of satisfaction for teachers. Moreover the possibilities of interacting with new people offered by the electronic network contributed without a doubt to a decrease in the professional isolation of all the stakeholders. We could also say that they all have a better idea of the time needed to adapt their practice and, accordingly, they perceive it as less important than they did during their first year. However, their greater experience in a RNS has given them a better idea of the skills and knowledge they still need to acquire to improve their practice as RNS educational stakeholders.

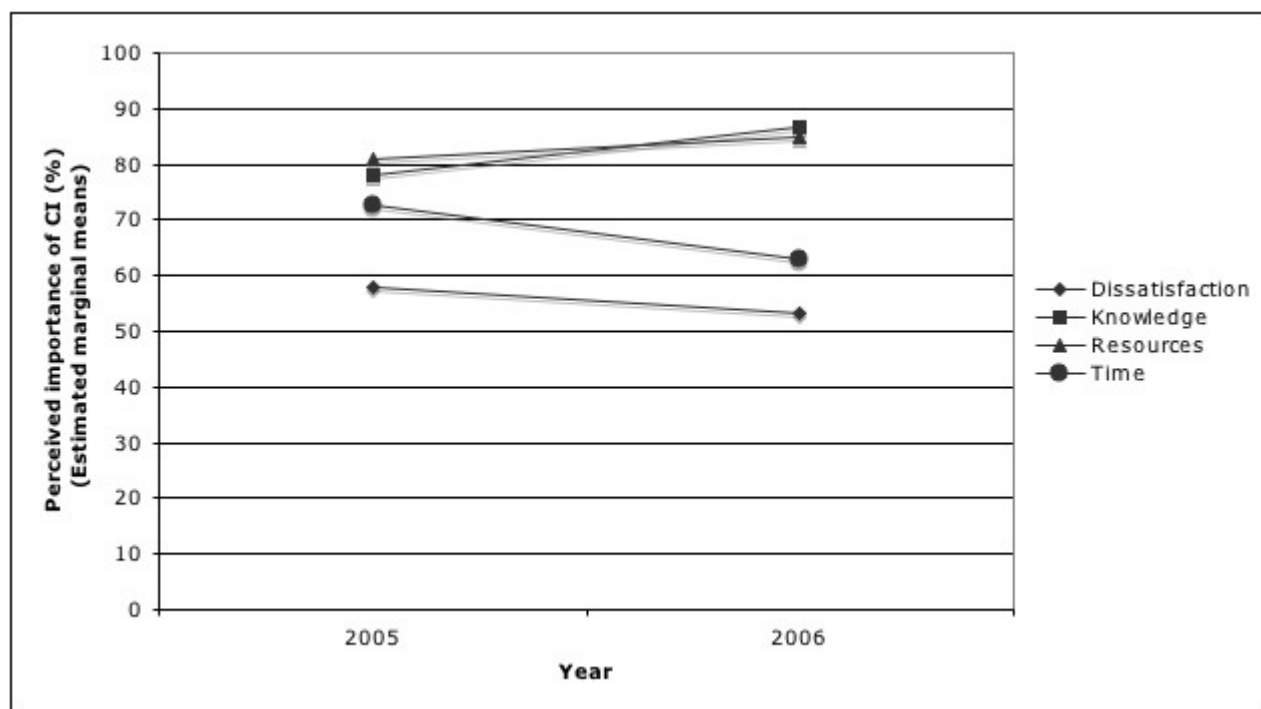


Figure 2.

Significant multivariate effect of Year on the conditions of innovation.

Third, the MANOVA showed a significant multivariate Stakeholder \times Year interaction effect, $F(12,794.914)=5.499$, $p<0.001$. This means that the perception of the importance of the conditions of innovation varied significantly from 2005 to 2006, differently depending on the stakeholders. Univariate analyses on each dependent variable showed significant effects of Stakeholder \times Year on dissatisfaction, $F(3,292)=13.279$, $p<0.001$ and resources, $F(3,292)=2.853$, $p=0.038$. Figure 3 illustrates this multivariate effect.

Figure 3 shows that while the teachers' dissatisfaction with status quo dropped significantly from 2005 to 2006, the RECIT's perception of this condition significantly increased. We believe that the RECIT were overly satisfied with the actual situation compared to the teachers they were supposed to help through the changes. After a first year as RNS, teachers became more satisfied with the situation while the RECIT adjusted their perception to the work that lay ahead.

Figure 3 also shows that while school management, pedagogical consultants and RECIT's perception of the importance of the availability of resources significantly increased in 2006, the teachers' perception decreased significantly. Based on our experience, we believe that this is explained by the fact that the material resources were provided during the first year (computers were installed, large bandwidth Internet access was taken care of, etc.), resources that are very concrete to stakeholders outside the classroom, which were first perceived as crucial. Then in the second year, with the material resources in place, these stakeholders came to perceive highly the importance of the extra human resources needed to succeed in the implementation. For teachers, the need for human resources arose as soon as the material resources were provided so the importance of this condition was probably perceived as early as the first year. In 2006, as stakeholders outside the classroom began to assess the resources needed in their schools, the teachers had already gained new skills and knowledge that made them more autonomous in their practice, and this may explain the decrease in their perception of the importance of this condition.

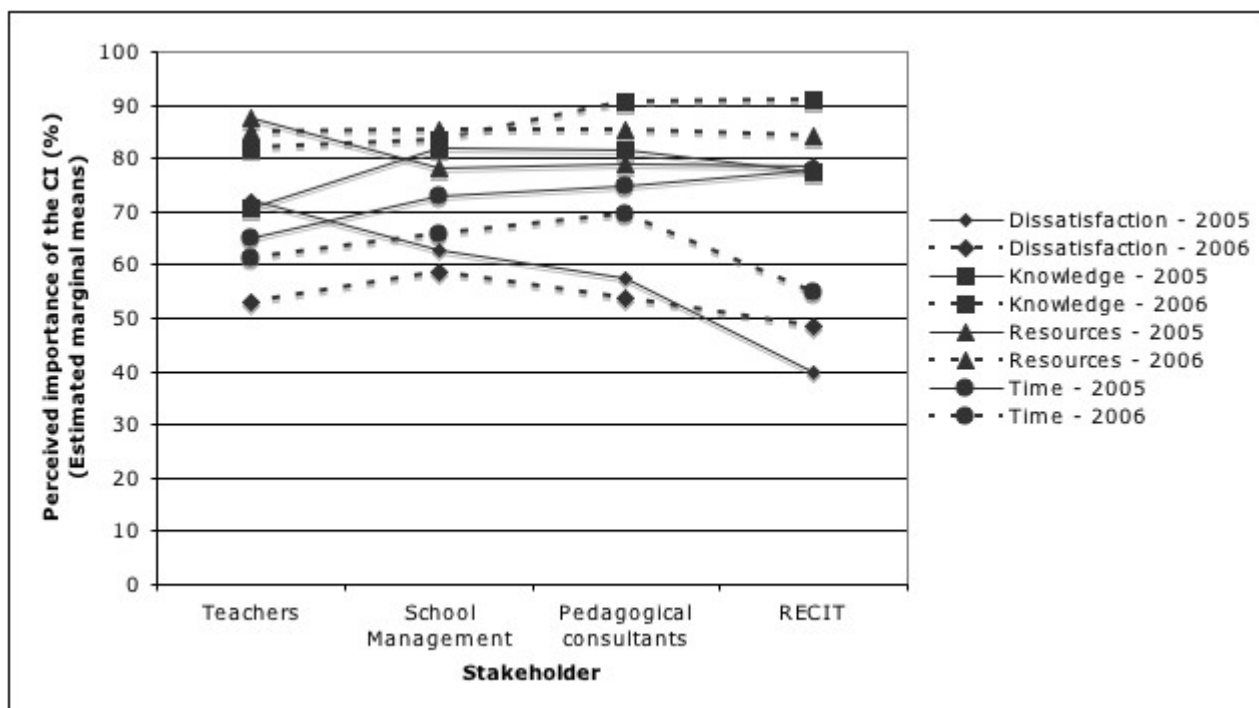


Figure 3. Significant multivariate Stakeholder × Year interaction effect.

In 2006, all the stakeholders' perceptions of the importance of time decreased, especially management and RECITs, although it was not a significant decrease. We believe this reflects an increased knowledge of the innovation in the sense that the practices that appeared in the first year of implementation are now part of new routines for each of the stakeholders and are thus less time-consuming.

Discussion

The results presented above confirm our own experience as members of the research and intervention team. A first result of interest is that for all the stakeholders, dissatisfaction with the status quo scored the lowest mean (see Table 1). Although Ely (1999) stated that this was not the most important condition, we believe that in the RNS project, it is a major constraint to the implementation of new practices at the different levels of the school systems. It appeared that RNS is sometimes perceived as another “flavour-of-the-month” project, not as a new routine to be integrated in their year plan. Another factor may have to do with some of the resistance to the new curriculum, which was heavily criticized in the Quebec media. These two perceptions may have played a part in the stakeholders' overall satisfaction with their actual practices. Also surprising is the fact that the stakeholders do not seem to mind the fact that they could lose their jobs (the lack of personnel in remote regions may leave an impression that the risk is non-existent) or do not really believe their schools

could eventually be closed down. What is also interesting is the fact that the condition of knowledge and skills required, one of the most important conditions according to Ely, scored second highest overall, a little under availability of resources. Generally then, the most important condition was considered highly important across all stakeholders, which should help trigger the domino effect, but we believe that in the present case, low dissatisfaction may have acted as an opposing force, slowing the innovation process down. We tend to agree with Kotter (1996) who stressed the importance of breaking up the status quo to allow innovation and avoid sticking to the same routine. We also believe this may very well be a case of espoused theory versus theory-in-use (Argyris & Schön, 1974) because, among other things, of the reform context in which RNS takes place and what is generally expected from the stakeholders. For example, they may know what answers to give to reach the desired situation, they may know what is expected from them as regards the new curriculum or the RNS project and believe that it reflects their behaviour (espoused theory) but their actual behaviour implies a different theory (theory-in-use) whether it is because they lack the capacity to do otherwise or because other factors in the system prevents them from doing so. Argyris & Schön have said that there may be an important difference between the two because many factors can influence the capacity of stakeholders to actually put some of their knowledge and skills to use. Another result that strikes us is that the RECIT scored the lowest mean on the dissatisfaction condition (see Table 2). It was expected that they would be the ones most dissatisfied with the status quo since they are expected to be early adopters (Rogers, 1995) of educational technologies, as their position requires them to be. RECIT are also expected to be the most informed of and concerned by the current state of ICT use in schools (Bracewell, Sicilia, Park & Tung, 2007; Cuban, 1986, among others). Thus it seems that they are overall rather satisfied with the state of their current practice. Unfortunately, we fear this situation cannot trigger a profound reflection on how they support teachers to implement ICT. Moreover, pedagogical consultants also scored rather low on the dissatisfaction condition. This seems problematic to us as they share educational leadership, especially in the small contexts of the RNS where human resources are scarce. They are also the ones who have received the most up-to-date professional development regarding educational perspectives and the new curriculum. Also noteworthy is the fact that pedagogical consultants, school management and RECIT all score

rather highly on the required knowledge and skills condition, probably because they had more opportunities to engage in professional development activities related to the new curriculum and a constructivist approach to learning. In light of these results, we believe that it is crucial to help the stakeholders outside the classroom (principals, pedagogical consultants and RECIT) so that they can better influence the teachers in their innovative process. Since they have more theoretical knowledge about the new curriculum, they could have a positive impact on the design of networked learning activities coherent with the new curriculum. We also firmly believe in a greater recognition of the experienced RNS teachers' new knowledge and skills by the other stakeholders because the focus and the pressure points of the innovation are ultimately on the classroom. Only then will a more effective match be possible between the various stakeholders toward reaching their respective goals. For now, as this study has shown, perceptions between teachers and stakeholders outside the classroom remain very different. Finally, the complexity of a systemic innovation such as RNS requires an ongoing dialogue between stakeholders as well as coherent decision-making processes at every level. That is why we believe that the research design with its iterative process must be preserved in the following phases. Sharing the results of the data collection quickly with stakeholders can help to orient their decision-making process. Moreover, it encourages the stakeholders not to slow down the diffusion of the innovation.

Conclusion

The findings of this investigation demonstrate that the need to change one's practices to innovate was not perceived as very important by the stakeholders, whatever the stakeholder's role, something which we believe had the greatest impact on the rate of diffusion of the innovation. How do we deal with stakeholders who are comfortable in their practices, which they know they will keep if they stay in those particular schools? Furthermore, the implementation of RNS requires the mobilization of many stakeholders and this is not the only activity in which they are involved throughout the school year. Stakeholders often describe RNS as simply another project in the entire set of school activities and not as a daily integrated practice, a perception that most probably hinders the innovation process. The analysis of the latest questionnaires (2005-2006) has helped us figure out how the stakeholders' perceptions changed after their second year of implementation. For one part, the

stakeholders' perceptions of the importance of each CI decreased in 2006, most notably for dissatisfaction with status quo and availability of time. For the other part, the stakeholders' perceptions increased, as is the case for the availability of resources and the knowledge and skills needed.

These results have guided the decisions of the Ministry stakeholders in Phase 3, which started in September 2006. It has influenced us as members of the research and intervention team as well. For example, how will we be able to support the diffusion of innovation if the urgency to change is not perceived and if the participants prefer the status quo? Is there a way to change this perception? How can we improve time and professional development opportunities to answer the teachers' needs so that they can innovate more rapidly? The stakeholders in small rural schools have major challenges to overcome because of the little number of students in their class (lack of interaction for the students, several grades and curricula to be taught, lack of motivation of the students, limited access to resources, etc.), but also to ensure that the school remains an educational environment of equal quality no matter where they are located. We look forward to seeing the evolution of the stakeholders' perception of the importance of the conditions of innovation in Phase 3. Launched in 2007, it now focuses on the institutionalization of RNS in these educative communities and we believe that the stakeholders' perceptions will once again play a major role in its different outcomes.

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