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Participatory Research in a School Setting: A Process of Acculturation

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This article describes a collaborative research study of university researchers and Grades one and two teachers from an Ontario, Canada French-language School Board. The School Board offered phonological awareness and reading-teaching training to grades one and two teachers with a long-term goal of improving the reading outcomes of the students in these classes. Researchers from University of Ottawa were asked to lead a collaborative research project on the impact of this training on the teacher's pedagogical approaches to teaching reading and ultimately the impact it had on their students. The objective of this article is to report the results of this collaborative research and more specifically to show the originality of SAS^2 (social analysis systems) methodological tools, which mobilized a collective analysis and interpretation of perceptions on the training's impact. We also discuss the difficulties of doing collaborative research in a school setting, where traditional research is better known and expected.

Keywords: participatory research, school, phonological awareness, teacher training

Introduction

Schools are an excellent venue to conduct research studies, since they are faced with a constant challenge, that is, they are expected to foster academic achievement for all their students. A part of this challenge is to deal with the reading difficulties of elementary students, which are a major barrier to their achievement. At the outset of the study, an Ontario French-language School Board (henceforth called the School Board) reported that only 48% of their third grade students achieved the expected outcome level (Levels 3 and 4) for reading in province-wide testing. Improving reading achievement, therefore, became a priority.

This priority is supported by studies reviewed in the "Pre-school Program" (Ontario Ministry of Education, 2005). These studies showed that reading skills are essential for academic achievement and furthermore, that phonological awareness skills in kindergarten to grade three students are a critical building block for learning to read. Other authors, namely, Brodeur, Gosselin, Mercier, Legault, and Vanier (2006) and Dickinson and Tabors (2001), as well as the National Reading Panel (2000), confirmed the critical role of phonological awareness and sound-letter correspondence in reading achievement.

In order to improve student skills in the first stage of reading, the School Board chose to focus on training

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its teachers. A research grant from the CODE[1] (Council of Ontario Directors of Education) provided the funding for a program that included a training package offered to grade one and two teachers and a follow-up study to measure its impact. Hattie's (1992) and Wang, Haertel, and Walberg's (1994) extensive meta-analysis showed that the single and most important factor in student achievement is the teacher. In this article, we report on the results of the follow-up study that we conducted to assess the impact of this phonological awareness training on teaching practices during the second year[2] of the project funded by the CODE. We first describe the objective of the study, then we outline the researcher stance and its justification, and finally, we present the methodology, the findings and a discussion of these findings.

Objective

The objective of this article is to show how collaborative research can be conducted with teachers as opposed to on them. The following pages tell the story of this collaborative study guided by the following research questions:

(1) What mental representations of phonological awareness do teachers of the School Board have and how have these representations changed as a result of receiving training?

(2) What follow-up strategies are teachers willing to implement, with these strategies serving as an indication of their commitment to changing their teaching practices?

Researcher Stance

The study examines a problem originally raised by practitioners in the field with a view to enriching both theoretical and practical knowledge of interest to the practitioners (Campbell & Stanley, 1963; Lincoln & Guba, 1985). University researchers often adopt an outsider stance that of strangers studying a problem in the field to gain a better understanding of it. They, therefore, adopt an observer role as opposed to a participant role. In this study, the participants, administrators as well as teachers, expected us to adopt the outsider stance. Specifically, the administrators wanted us to evaluate the impact of phonological awareness training on their teaching staff[3]. We believed that it is more important to establish mutual collaboration in order to further improve theoretical knowledge, as much as practical knowledge (Anderson & Kerr, 1999; Bartunek & Louis, 1996). Towards that goal, we chose to conduct a collaborative study. This type of study examines a phenomenon not from the perspective of an outsider but from the perspective of the insiders through a concerted effort to build an understanding of the phenomenon together with the participants. In our study, this meant inviting teachers who participated in a training program to reflect on their learning, or lack thereof, between the beginning of their training program and the end of it. This also involved identifying the strategies that were successful in improving phonological awareness in their students. Collaborative research, by definition, involves a reflective process with others, on a specific activity, in this case, teaching practices.

Methodology

The study involved the development of a partnership between teaching practitioners and us, university researchers. Our aim was not "to do research on others" but "to be a part of research" by instilling a

[1] The researchers would like to thank the following sponsor organizations: The CODE and the school board.

[2] The preschool teachers were trained during the first year of financing. The study hereby presented focuses on the teachers that were trained during the second year, who teach in first and second grade of elementary (students from six to eight years old).

[3] And on students, some results. These last results will be disclosed in a future publication.

collaborative culture (Richardson, 1994) that would build a bridge between scientific knowledge and practical knowledge. We wanted to work in partnership, for and with teaching practitioners, by contributing to their professional knowledge (Schön, 1983; 1987). Administrators from the School Board were intent on examining the impact of phonological awareness training. Our aim as researchers was to better understand the importance of phonological awareness for at-risk readers. Teachers were interested in knowing whether learning new strategies to teach phonological awareness would improve the reading achievement of their students. A collaborative study seemed particularly well-suited to achieving such diverse objectives, all of them social in nature (Lavoie, Marquis, & Laurin, 1996). The implications of these different lenses on the same problem also had an impact on our entry into the system (Dolbec & Clément, 2000) and this will be discussed as follows. Perceived by our "partners—particularly teachers—as strangers that had come to evaluate them, we tried to promote a climate of cooperation between two cultures of knowledge" (Desgagné, 1998, p. 37) that have to learn to communicate with one another.

Data Collection Strategies

We used two tools from the SAS^2 (social analysis systems) (Website, http://www.sas2.net) which is a collection of guiding principles and tools designed for collaborative research and social change. These tools allow for the creation of a space conducive to multiple dialogues in any group that wishes to understand and manage complex and unexpected situations (Chevalier, 2006).

Training Program

Teachers were given three and a half days training over a period of four months, that is, one day a month from January to May. The training team consisted of a speech-language pathologist and a teaching consultant from the School Board. The training contents consisted of phonological awareness activities and related strategies for teaching reading comprehension. On each day of training, teaching materials were provided so that participants could experiment the new strategies learned with their students during the month before the next training session. The research team's role in the training sessions was strictly an observer role.

As previously mentioned, two SAS^2 tools were used in the study. The first one, the Socratic wheel, probed the first question. It was administered at the beginning of the first day of training (in January) and on the last day of training (in May) in order to compare the change in their perceptions and beliefs in phonological awareness. The second tool, the rainbow, evaluates elements pertaining to a situation in relation to certain criteria as a way to analyze the impact of change and its implementation. The following paragraphs will further explain these tools.

The Wheel

The wheel is a tool that allows an individual to visualize and compare multiple ratings on a topic area (in this case, knowledge of phonological awareness) before and after training. This rating technique used in the field of participatory research "assesses the same element or situation at different points in time" (Chevalier & Buckles, 2008, p. 297). With that in mind, at the beginning of the training, the participant is invited to rate in a scale from 1 to 10, his/her level of knowledge regarding the skills targeted by the training program (initial level), as well as the level that he/she wishes to attain upon the completion of the training program (anticipated final level). At the end of the training, the participant can revise his/her initial rating by adjusting what he/she thought and he/she knew prior to the training in light of what he/she now knows (revised initial level) and indicates the level that he/she considers has been attained (final level attained). It is hoped that, at the end of the training, the participant can become aware that he knew more than he/she thought at the beginning of the training.

To complete the wheel, individuals are first asked to write down on cards the skills that they consider essential in order to teach PA (phonological awareness) to their students. The process then requires participants to pool their collective intelligence by regrouping their own cards with those of others to form groups of related skills. Once the cards are categorized, the participants agree on a title for each group of cards. The process then reverts to an individual mode. Each individual draws in a circle (the wheel) the number of radiuses that correspond to the number of skills identified by the group (see Figure 1). For each skill, the individual determines, in a scale from 0 to 10, his/her actual level of skill and writes it on the corresponding radius (initial level). The individual then indicates the level that he/she wishes to attain at the end of the training (targeted level). At the end of the training, each individual evaluates his initial level once again (revised initial level) and the level that he/she considers to have truly attained at the end of the training (final level attained). In Figure 1 and Table 1, a group of teachers identified four skills and one teacher shared her evaluation of her initial and anticipated skills at the end of the training (rows 2 and 3). At the end of the training, she indicates (rows 4 and 5) the level that she now considers she initially had (revised initial level) and the final level she felt she has attained (final level attained).

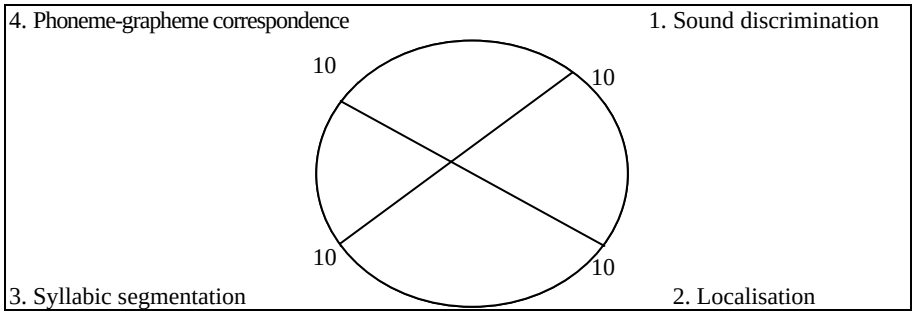

Figure 1. Example of a wheel for phonological awareness strategies.

The individual completes the work by calculating the difference between his/her revised initial level and his/her skill level attained at the end of the training, as illustrated in the matrix below. Since the scale used is from 0 to 10, calculation of the differences can be converted in percentage. For instance, if the difference between the revised initial level and the final attained level is two points out of a total of ten points (for example the individual has a revised initial level of seven and a final attained level of nine), the progress would be rated at 20%.

Table 1

Wheel Matrix

Supporting strategies	Initial level A	Targeted level B	Anticipated progress B-A	Revised initial level C	Final level attained D	Real progress D-C
Sound discrimination	8	10	2	7	9	2
Localisation	5	10	5	7	9	2
Syllabic segmentation	9	10	1	8	9	1
Phoneme-grapheme correspondence	8	9	1	7	10	3

In this example, the teacher considered herself skilled in terms of three of the four strategies before the training begins, as she rated her initial skills with scores of eight and nine. At the end of the training, the same individual attained and even surpassed the anticipated level (she targeted a nine-from-one strategy and mentions having attained a 10). However, she determines having progressed less than anticipated regarding one

of the skills: her knowledge of localisation. When comparing her initial level of skill to her revised initial level for this specific skill, she concluded that she had overestimated the progress she could achieve. As we will see in the results section, by examining the means compiled from all the individual tables, a joint reflection by teachers is initiated with respect to the question of the impact of training on their practices (Question 1). In order to allow for this discussion to take place, the research team calculated the group's average that is the difference between the "anticipated progress" and the "real progress", and in addition, the difference between the "initial level" and the "revised initial level". This last calculation provides a record, in this particular case, of the difference between "anticipated progress" and "real progress".

The Rainbow

In the present study, this tool was used at the end of the training program to help teachers answer the second research question, that is, whether they implemented the phonological awareness strategies learned during the training. In order to prioritize the implementation process, two evaluation criteria were suggested to participants: time (short-term—three months, mid-term—six months and long-term—one year) and degree of control (under our control and under others' control). The first criterion gives a timeline for the strategies to be implemented while the second criterion specifies what is under the control of the participants.

At first, the individuals received one or more cards on which they individually wrote down the strategies they planned to implement. A rainbow drawn on the floor was used as a psychological space on which the cards could be arranged. In this study, the three arcs represented time (short-, mid- and long- term) in which these strategies would be implemented. A vertical axis was used to divide the rainbow between strategies under the control of the participants (left arcs) and those that were controlled by an external party (right arcs) (see Figure 2).

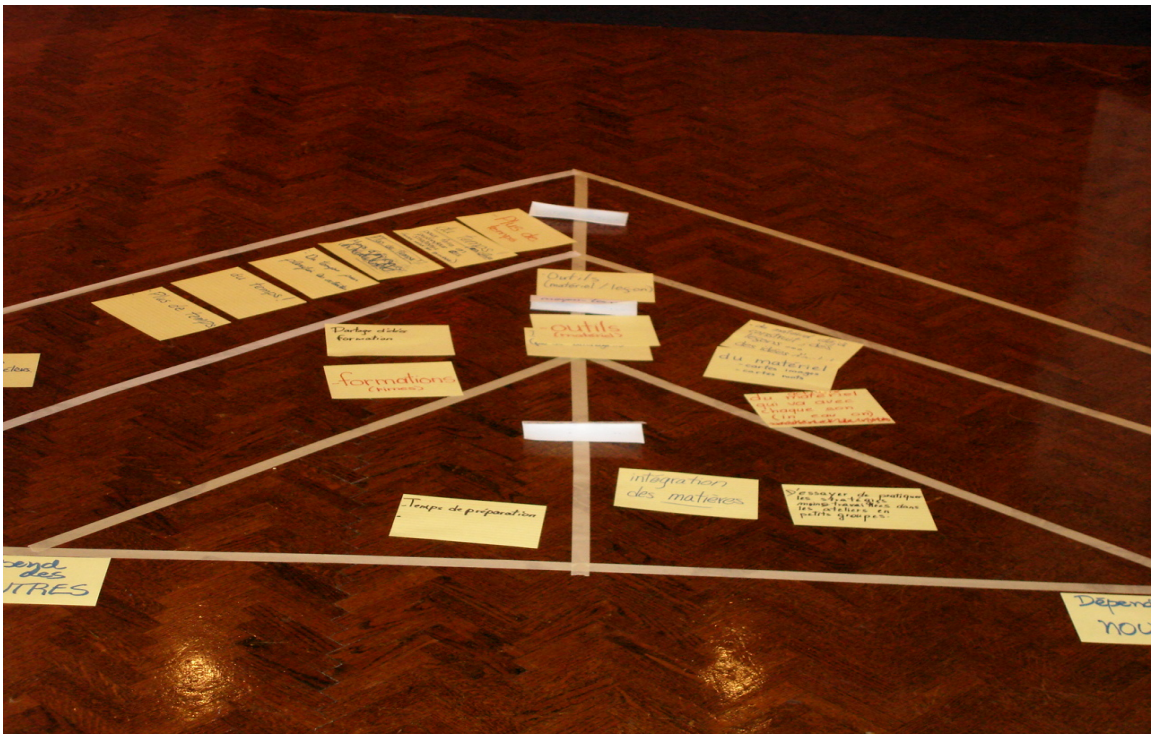

Figure 2. Example of a rainbow created by teachers at the end of their training.

All participants took turns presenting one of their strategies (written down on a card) and through group

discussion, it was decided where that strategy belonged to in the rainbow. For example, strategies that depended on others (where "others" refer to the school administration team, the school district and the ministry) were placed at the right of the vertical axis. The group also decided whether the strategy was to be implemented in the short- (first arc), mid- (second arc) or long- term (third arc). If others in the group had a similar strategy card, both cards were placed in the same pile. The group had to discuss where the card should go and when there was dissension in terms of the placement of the card, a negotiation ensued until consensus was reached. This procedure was repeated until there was no card left. Finally, one last discussion took place, which gave the rainbow technique all its power. Participants had to discuss and examine the balance between the number of implementation measures under participants' control compared with those under the control of "others". If they determined that the measures under their control were underrepresented, participants could revise this situation and could even modify the prioritization of the time factor (short-, mid- and long- term) pertaining to the implementation of these strategies.

Results

By examining individual wheels by grade, the mean difference between the targeted progress (obtained at the beginning of the training) and the real progress (obtained at the end of the training) could be calculated. The mean difference between the initial perception of their knowledge and the revised initial perception of their knowledge was also calculated to determine whether there was progress or not. These last results show that the group, as a whole, considered that, at the beginning, it knew more (revision of its initial assessment—increase) or less (revision of its initial assessment—decrease) than initially thought. In Figure 3, the scale seems different for the two series of results. However, the two scales used are the same from 0 to 10. The apparent difference is due to the fact that the anticipated progress and the real progress vary only between one and four, so that the wheel automatically generated by Excel shows a four-point scale while the difference between the initial knowledge and the revised initial knowledge is greater.

When collaboratively reflecting on the results compiled with the wheel for the entire group, teachers became aware that their initial knowledge of the targeted skills was already quite high (with the exception of rhymes and rebus which are slightly lower). During the group discussions, one teacher clarified this situation by mentioning that she mostly acquired a more thorough declarative knowledge: "I noticed that many things were already a part of my teaching practice, but I did not know the correct terminology to name these things". Teachers who took part in the discussion mostly gave the same explanation. When analyzing their own results, most of them mentioned that the training allowed them to better explain and justify their practices. In addition, they stated that they had gained a better theoretical knowledge of the basic principles and postulates of phonological awareness. Finally, they admitted to having a better idea of how to apply their theoretical knowledge to their practice. A teacher summarized the interpretation of the majority very well by stating that "The assessment of my initial level was correct but my initial knowledge was limited to theoretical knowledge". Another teacher added: "We were already applying these practices, training reinforced them. When teaching grade one, if we forget these practices, things are not going well".

The anticipated progress was also generally high (between 30% and 40%) and tended to reach the maximum skill level (around nine and ten) with the exception of two skills: sound discrimination and counting syllables. For the real progress on the other hand, the average progress was between 20% and 30%, which is considerable given the high level of initial knowledge. However, real progress was weaker than targeted

progress, particularly for the initial sound and counting syllables skills. A teacher explained these last results by stating: “I knew more than I thought I did”. However, she added the following: “I believe I have made a lot of progress with regards to the implementation of phonological awareness. I understand that I still have a lot of things to learn”. Her words summed up what others also expressed.

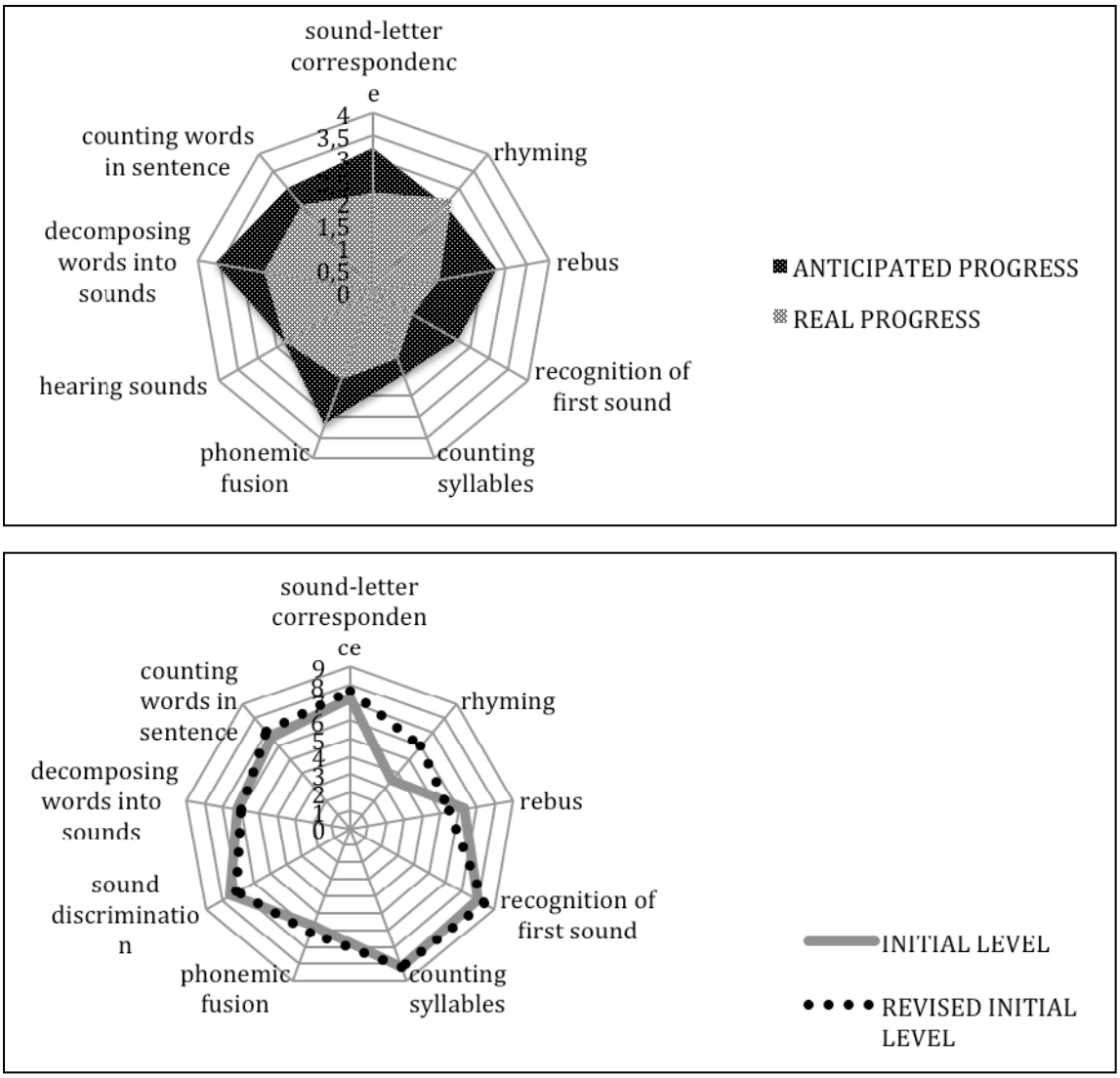

Figure 3. Socratic wheel results.

In the final analysis, the Socratic wheel showed us that progress was not as spectacular as anticipated, because the initial knowledge level which teachers rated for themselves was very high, making it impossible for them to progress as much as they wanted to in only three and a half days of training. These results do not preclude teachers acknowledging that they have learned a lot, especially on the diversity of the strategies for teaching phonological awareness. One of the teachers explained this situation by stating the following: “I have been exposed to many new strategies, so I will continue to progress towards the path that leads to the use of as many of the strategies I have learned (underlined by the author)”. Another stated:

> I feel I have learned a lot, particularly in the way that I present the various components to the students. However, I

> still have a lot of work to do in order to integrate everything into my practice! Next year, I will think of a slightly different class routine.

The rainbow was instrumental for teachers in deciding which phonological skills and activities implement in their respective classes. Once the rainbow was completed, teachers noticed that they had mostly selected short-term strategies that rely on others' control. Once aware of this, they decided to identify new strategies that were under their own control, which are included in the following analysis.

A common feature of their projects is a clear commitment to implement the majority of strategies learned, as of the following school year. One participant gives a good summary of their ideas when stating the following: "I feel that I have learned a lot, particularly in the way that I introduce the various components to the students. However, I still have a lot of work to do in order to integrate everything into my practice!". Research participants also expressed satisfaction with "the fact that we received tools from both training sessions and that is time gained!". They greatly appreciated "the modeling received that provides directions and models to follow".

In addition, they agreed on the need to work in teams or networks called COL[4] (community of learners): "We should share materials, discuss how we use them and these moments together will encourage us to do even more". A teacher from another group added: "It would be interesting to share some ideas, as we do in COLs in order to benefit from our training sessions". Another participant added, "We have to work in networks, send each other activities by email and it can be done!". However, teachers agreed that it is a process that requires time in order to plan, share ideas for their practices and develop materials "Now, we know how to do it" and that this time they control the implementation.

Conclusions—Lessons Learned

One limitation in applying the collaborative research model was our sporadic presence in the field. We only participated in two or three days of training. As a result, this irregular presence did not allow us to establish a trusting relationship with our teaching partners. This situation rendered collaborative work more difficult. In collaborative research, a close relationship is the key. The collaboration between the two trainers and the researchers, while conducting the research, proved to be steadier and collaboration in the analysis of the findings, successful. Since contact between teachers and researchers was sporadic during the study, a visible tension was presented due to the fact that teachers felt a legitimate need to review the terms of their collaboration and their consequences. From this experience, we learned that more time has to be spent establishing contact and discussing the objectives and reciprocal expectations of all parties involved at the start of this type of study.

Our collaboration with the teachers ended up being even more problematic and tension ridden due to compulsory attendance imposed by the School Board. Training sessions took place during workdays and teachers were relieved from their regular teaching duties. They not only had to be presented at the training sessions, but also when we proceeded to the interpretation of the findings. We were only informed of this mandatory participation just prior to the interpretation of results. Confused by this situation, we discussed it

[4] In Canadian education, professors Coral Mitchell and Larry Sackney have defined a PLC (professional learning community) as one where teachers and administrators take an active, reflective, collaborative, learning-oriented and growth-promoting approach to the mysteries and challenges of teaching and learning. PLC has come to mean schools where the entire staff are involved in data-based decision-making about student needs, where they defined school goals and directions to meet those needs and engage in ongoing study, discussion, testing and reflection to change their practice (L. Miller, Professional Learning Community, "Professionally Speaking", p. 1).

with them and clarified ethics standards by which we abide, including their right to refuse to participate and withdraw their participation at any time. After the discussion, all the individuals decided to participate in a collaborative interpretation, although some of them refused to sign the consent form. Thereupon, we came to an agreement that we would not be using comments of those who had not signed the form when came the time to write the report. In a follow-up to this study, conducted a year later, the researchers noticed that several teachers who had refused to participate in the first study not only agreed to participate in the follow-up but also took an active part in the discussions, stating that they wanted to give evidence of the positive impact of the training on their educational practice. Instilling a culture of collaboration remains a work in progress, which requires commitment to a steady presence in the field. Finally, collaborative construction can only be fruitful if participants are free to participate or not.

As a result of this experience, we have learned the importance of clarifying with school administrators, from the outset, the ethics requirements of our research. We insist on the ethical obligation of free voluntary participation. We seek to become reflective partners as we work at ensuring that the research conducted is relevant in terms of its conduct as much as its benefits for all partners. After all, we strive to make sure that the discussion is relevant and useful to our partners who have a say in the conduct of the experiment and its conditions (Desrosiers, Genet-Volet, & Godbout, 2004), and most of all control of the interpretation and meaning ascribed to the experience.

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