Flexibles grouping, explicit reading instruction in elementary school

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ABSTRACT

The objective of this collaborative research is to evaluate the impact of a pedagogical intervention that combines flexible grouping and explicit instruction of reading comprehension strategies. The development of competencies is spread over a two years interval. However, despite this quite long implementation period, several Quebec students still had not completely overcome their difficulties in reading comprehension. The study was conducted at an elementary school on the outskirts of Montreal. 76 students participated in the research. Four teachers and one learning specialist planned and experimented these monthly 90-minute classes, which were implemented ten times during the school year. The results show a noticeable reading comprehension improvement, particularly, for students with learning difficulties.

Keywords: reading, elementary school, learning difficulties, teaching, flexible grouping

INTRODUCTION

In 2000, the Quebec Education Reform declares that school mission is to provide qualifications, instruction and socialization while favoring students' educational success. An elementary school curriculum restructuring is also proposed. Henceforth, school levels are divided in two-year cycles so as to take into account the development of competencies that imply long-term pedagogical interventions. The two-year cycles allow schools to better adapt to students' individual learning rhythms and styles; it also provides a framework for differentiated pedagogy (MEQ, 2001). The first cycle comprises the first and second grades of elementary school; the second cycle, the third and fourth grades and, finally, the third cycle consists of the fifth and sixth grades.

A cycle-based instruction allows determining the progression of every student at the end of each cycle. This means that students have two years to develop all the competencies set out in the program before being promoted from one cycle to another. Even though this new curriculum respects the individual learning pace, several Quebec students' still face learning difficulties, notably in reading comprehension. Students with learning difficulties are those who, after analyzing their situation, it is clear that the remedial measures established by the teacher and other members of the school staff over a significant period of time have not been sufficient for them to progress enough so as to meet the minimum requirements of the cycle (MELS, 2007).

It is certainly not an easy task to teach a class grouping several students with learning difficulties, and it is even harder to ensure a personalized follow up (Meese, 2001). In order to meet the diverse learning needs, foster the inclusion of students with learning difficulties while developing the expected competencies, teachers should change their practices and work closely together in a multidisciplinary team (Dubé, 2007).

The number of students with learning difficulties is constantly increasing in regular classes along with the diversity of the learning needs teachers have to cope with. These findings require the development and implementation of specific strategies that will ensure students' success (CSE, 2010). Furthermore, even though the integration of students with learning difficulties in regular classes has a positive impact— as opposed to a separate classroom for students with special needs—(Gross, 2002; Stevens & Slavin, 1995), students with learning difficulties may occasionally require more differentiated and appropriate interventions that help them integrate regular classes more easily (MEQ, 2003).

The general research question is: How can teachers transform their pedagogical practices to contribute to the development of the reading competencies of elementary students with learning difficulties?

REFERENCE FRAMEWORK

In a previous study that analyzed and described certain pedagogical interventions that strengthen the success of elementary school students with difficulties integrated into regular classes, the differentiation, the flexible grouping, the direct and the explicit instruction had proved to be effective (Dubé, 2007). According to this study, an effective intervention that responds to students' different needs should take the form of flexible grouping as, with this type of intervention, students are placed in subgroups that take into account their level of competency in a specific area, within short teaching periods (Dubé, Dorval & Bessette, 2011). Previous empirical studies have analyzed flexible grouping, while others have analyzed the effects of

explicit instruction on the development of elementary school students' competency, particularly for those with learning difficulties.

Flexible grouping

In the framework of our research, flexible grouping implies adapting the groups so that they respect the diverse and changing needs of all students, notably during reading acquisition. Hence, teachers organize the groups taking into consideration students' strengths and difficulties. It is important to note that subgroups can routinely be readjusted as the situation demands in order to respect students' learning needs. Additionally, they also comprise a variable number of students to meet the needs of specific students of one or several different classes (Reutzel, 2003). Subgroups of needs allow young readers to read texts of different levels of difficulty and they also offer students differentiated learning opportunities (Radencich & McKay, 1995). The *Continuous Progress* system assessed by Gullatt & Lofton (1998) has proven to be effective to help at risk students, by providing a continuous monitoring of students as well as of the flexible grouping that take into account the individual progress of each student. Thus, students progress at their own natural pace in subgroups with peers that are at their same or similar level of competency so that everyone is provided the best learning opportunities.

In flexible grouping, students of one or several classes are grouped according to similar needs in separate subgroups, for varying periods of time. In this way, students receive an instruction specially adapted to their level of competency that respects their specific learning needs.

In Illinois, United States of America, it was implemented a 19 stages structured program to improve the educational achievement of students particularly in reading. This program focused on assuring academic success for all learners through flexible grouping and differentiated instruction. A total of 87 students of second, third and seventh grades of two Illinois elementary schools participated in the study. Students were involved in flexible grouping where they were offered reading lessons that focus on letter-sound correspondence, common syllable patterns, decoding skills and reading comprehension strategies. Once the program was completed, students used more reading scores, the seventh grade students were the ones that most significantly enhanced their reading strategies. The researchers concluded that small group instruction and the use of varied instructional strategies and materials favor the improvement of reading comprehensios).

Similarly, a five-year longitudinal study was conducted in a Connecticut elementary school. It focused on the reading progress of 435 students who participated in flexible grouping regularly. Their progress was measured by means of two standardized tools—*Qualitative Reading Inventory* and *CMT Reading*. The results of this research showed that students who had progressed the most were those who had participated in flexible grouping from first grade and that, over the five years the study lasted (Castle, Baker, Deniz & Tortora, 2005). The authors state that the effectiveness of the grouping lies on paying careful attention to the group formation. Students having the same needs must be grouped together to allow a high quality focused and systematic teaching. Additionally, groups must often be reconfigured so that the needs and the progress of all students are always respected. According to Castle and his collaborators (2005), the most important advantage of flexible grouping is that it keeps students' attention fixed on a precise and delimited objective while respecting their learning needs and

rhythm. Finally, a group with a reduced number of students increases motivation and selfconfidence as well as it improves concentration.

When teaching reading skills to elementary school students, the organization of the groups has an impact on teaching, learning, and class management. A study was conducted to determine the perception of 29 regular schoolteachers and 20 special education teachers vis-à-vis the different types of classroom groupings they used when teaching reading and the particular effectiveness of each of them (Moody, Sally Watson & Vaughn, 1997). Focus groups and individual interviews indicated that, although classroom groups were determined by the school administration, it was the teachers who should determine the groups of needs. Furthermore, despite the researchers established that teachers mostly taught reading skills in the general groups, they admitted that this kind of grouping was not the one that best responded to all students' needs. They considered that heterogeneous groups should only be used for autonomous practices -individually or in dyads- or during consolidation periods.

Another study conducted in the United States of America looked at the different types of groupings used for teaching reading and their impacts (Schumm Moody & Vaughn, 2000). This study was conducted among 29 teachers and 143 third grade students. It highlighted the fact that, even though teachers most frequently teach reading in the regular groups, these groups do not allow all students to progress. According to this study, when teaching reading in large groups, the students that progress the most are the academically strong and the average. On the other hand, students with difficulties in reading do not progress much neither in the decoding skill nor in the reading comprehension processes. Therefore, large group teaching does not seem to be profitable for all students. The researchers conclude that explicit and intensive teaching is closer to the students' learning needs and they should be adopted to ensure the success of all students.

As several recent studies seem to indicate, reading skills are often taught in large groups notwithstanding that students with difficulties do not seem to progress much within this type of grouping.

Explicit instruction

Explicit instruction emerges from studies conducted on effective teaching practices and derives from direct instruction. This line of research explores the teaching strategies and techniques used by highly qualified teachers that have empirically proved to be effective (Gauthier, Mellouki, Simard, Bissonnette & Richard, 2005). Rosenshine (1986) divides the explicit instruction model into three distinctive and successive phases:

a) Modeling or teaching with demonstrations that makes the practice and the reasoning that otherwise would be implicit, explicit.

b) Guided practice, during which teachers accompany students: they propose tasks to be completed in teams.

c) Independent practice where students solve certain problems by themselves applying what they have learned during the modeling and guided practices.

This practice would promote the development of competencies, notably with young students (Anderson, 1983).

Inspired by Rosenshine (1986) and Swanson & Deshler (2003), we present the explicit instruction in seven stages:

1. Identify the activity goals and the performance expected from the students.

- 2. Identify former necessary background knowledge.
- 3. Model a demonstration that makes the practice and the reasoning that would otherwise be implicit, explicit—that is, modeling.
- 4. Pose questions to students, to objectify.
- 5. Provide independent practices and group instruction where they can apply the strategies—guided practice.
- 6. Assess performance and provide feedback regarding the answers and strategies they have implemented.
- 7. Provide autonomous practice during which students perform certain tasks by themselves reinvesting what they have learned during the modeling and guided practice.

According to several studies associated to cognitive psychology, explicit instruction would be effective to facilitate reading acquisition, learning math, grammar, and first language (Rosenshine, 1986). Explicit instruction would also improve the success of students with learning difficulties (Swanson & Hoskyn, 1998; Bissonnette, Richard, Gauthier & Bouchard, 2010). In addition, this approach encourages the intentional use of cognitive and learning strategies that make visible the cognitive procedures used during the reading process. It is claimed that explicit instruction increases students' feeling of competency, self-esteem, and accountability, as well as their engagement. Explicit instruction would also enable them to attain a better understanding of their difficulties and it would offer them the means to overcome them. It would definitely enhance quality learning (Beckman, 2002). Nowadays, a lot of researchers promote awareness among teachers on the merits of the use of this approach, and that, for all students, notably when they talk to future teachers (Hamman, 1998). Explicit instruction is highly effective when associated to students' self-efficacy strategies (La Paz, 1999) and to favor adolescents' learning process (Swanson & Deshler, 2003). To sum up, explicit instruction aims to make visible the cognitive procedures students follow, being the teachers' role that of the model reader (Giasson, 2000).

The analysis of related scientific literature would suggest explicit instruction (Rosenshine, 1986; Swanson & Hoskyn, 1998, Swanson & Deschler, 2003; Gauthier & *al.*, 2005) and flexible grouping (Gullatt & Lofton, 1998; Baumgartner & al., 2003; Castle & *al.* 2005) have beneficial effects on teaching. Besides, if we take into account the increasing number of students with learning difficulties integrated to regular classes in Quebec, this research proposes to experiment with an intervention that has never before been articulated in a Quebec elementary school. It is a study that combines flexible grouping and explicit instruction of reading comprehension being its main objective to evaluate its impact on the reading comprehension skills of elementary school students, specially on students with learning difficulties.

METHODOLOGY

Four teachers and one learning specialist undertook this collaborative research at an elementary school on the outskirts of Montreal. The subjects (n = 76) were second-cycle elementary students— third and forth grades—; many of them had learning difficulties. All students were subjected to a reading comprehension pretest and a reading comprehension posttest that consisted of two parts: a 387 words literary text and a questionnaire with 25 items.

Pretest results made it possible to group students in 5 subgroups of needs before the intervention started. A post-test was given after a total of ten subgroup meetings.

Students

Students were from four distinctive classes of the same elementary school. Below is a chart that shows their distribution:

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n = 76

n = 42 third grade

n = 23 fourth grade

n = 11 students/second cycle class with behavioral disorders
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Flexible grouping

The pretest allows targeting students' learning needs so as to group them accordingly. The reading subgroups of needs met for short teaching periods –generally 90 minutes.

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n = 76
Subgroup1 n = 9
Subgroup 2 n = 13
Subgroup 3 n = 14
Subgroup 4 n = 19
Subgroup 5 n = 15
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Students having a very low competency level in reading were grouped in subgroup 1, and according to their learning needs, students having a very high competency level were grouped in subgroup 5.

Explicit instruction

From September to May, the four teachers and the learning specialist planned together the ten interventions that combined flexible grouping and explicit instruction of reading comprehension strategies. The strategies to be taught during the sessions were determined according to the specific learning needs targeted by the teachers and the learning specialist during the monthly planning sessions. Every month, students participated in explicit instruction situations taken from literary texts and designed to promote the development of reading comprehension strategies. The strategies explicitly taught during this research were planned respecting the before, during, and after reading approach:

Before Reading Activating background knowledge Predicting text content <u>During Reading</u> Rereading Understanding of difficult words Self-questioning Confirming/making new predictions Creation of mental images <u>After Reading</u> Integration of text information to background knowledge (Giasson, 2000; Turcotte, 2007)

A descriptive analysis was made to compare the results of the pretest with those of the post-test taking into account the average of all students in the cycle; then the average obtained by the students of each of the subgroups of needs was considered.

In a second phase, a Wilcoxon test was administered to compare the results of the pretest and the post-test, for each of the subgroups of needs. This non-parametric test was carried out to verify the following hypothesis: $H_0 \Rightarrow$ after the intervention, there is no difference in students' reading comprehension skills; $H_1 \Rightarrow$ after the intervention, there is a difference in students' reading comprehension skills.

When the null hypothesis is rejected, it means that the effect of the intervention is statistically significant. The Wilcoxon test was chosen because it is powerful enough if we take into account that each subgroup included between 7 to 19 students (Howell, 2006). For a unilateral test, the threshold signification level is fixed to $\alpha = 0.01$.

RESULTS

The results presented in Figure 1 show the average obtained by all students in the reading comprehension pretest and post-test. The results were rounded to the nearest tenth. On average, 76 second cycle students, third and forth grades, saw their scores rise from a 62.1% (standard deviation 18.7) to a 70.5%, (standard deviation 15.7). The average score rise between the pretest and the post-test was of + 8.4%.

The results for each of the 5 subgroups are shown in Figure 2. We observe that the 3 subgroups of students that had a very low level of competency in readings, they had not even meet the minimum 60% pass rate before the experimentation, saw their score rise. Subgroup 1— that of students with learning difficulties—saw its score rise from 34.6% to 54.8%. Subgroup 2 saw its score rise from 45.5% to 58.8%, and subgroup 3 saw its score rise from 56.0% to 70.8%. The other two subgroups grouped the competent and highly competent students in reading comprehension. Subgroup 4 saw its score rise from 69.5% to 75.6%, and subgroup 5 saw their score drop from 89.1% to 83.3%. These results, as well as the standard deviation for each of the subgroups, can be seen in Table 1.

The descriptive analysis of all students' average indicates in scores, however, when looking at the results for each of the subgroups of needs, there is a rise on the reading comprehension results for 4 out of the 5 subgroups. Only the students in the most competent subgroup have not seen their average improved.

Subsequently, students' results were submitted to the Wilcoxon test to compare the scores between the pretest and post-test. We chose a one-tailed test and the significance level of p to see if the difference between the pretest and the post-test was significant. As table 2 shows, we obtained a significance value of <math>p = 0.008 * for subgroup 1, p = 0.002 * for subgroup 2, and a significance level of p = 0.000 * for subgroup 3. Subgroups 4 and 5, where the most competent students were placed, did not show significant thresholds, as observed among students who had reading difficulties before our experiment. Our results show that the three subgroups of students having the lowest competency in reading in the pretest are the ones who

saw their scores increase the most. Indeed, there is a significant difference between the pretest and post-test, so that we can reject the null hypothesis, for subgroups 1, 2, and 3. We can indeed confirm the positive effects of this intervention in the reading comprehension skills of students with learning difficulties.

DISCUSSION

With respect to the goals of the research: to evaluate the effects of an intervention combining flexible grouping associated with explicit instruction on reading comprehension improvement of elementary students, particularly those with learning difficulties; the discussion will cover the main findings emerging from the results of the study.

The descriptive analysis shows that the intervention led to an increase of the reading comprehension skills of the participating students. Previous research on explicit instruction has proven that this kind of instruction is effective to promote the success of all students (Rosenshine, 1986; Swanson & Hoskyn, 1998, Swanson & Deschler, 2003; Gauthier & *al.*, 2005). As for the positive effects of flexible grouping, it has been proven to be effective when used with short, focused teaching sessions. This type of grouping can contribute significantly to the development of reading skills. A research paper by Castle, Baker, Deniz & Tortora (2005) observed that the effects were most evident in younger students, particularly, if used for over a year.

Statistical analysis reveals that the comparison between the pretest and the post-test is statistically highly significant for the three subgroups of students who had reading difficulties before the experimentation. This collaborative research objective was to focus special attention on students with learning difficulties. Therefore, we can openly claim that it has achieved its objective since the three subgroups of students having the lowest competency in reading where the ones that showed the most statistically significant difference between the pretest and the posttest. However, the most competent students, those of subgroup 5, saw their average post-test results to be lower than during the pretest. To understand these results, we hypothesize that the most competent students were less simulated by the post-test, which had the same literary text and the same questionnaire; thus, they used their memory rather than the reading comprehension strategies learned during the intervention. Another hypothesis is that the most competent students 'results could be attributed to the ceiling effect. Previous research has shown that explicit instruction is effective, particularly with students at risk or with difficulties (Swanson & Hoskyn, 1998; Gauthier, Mellouki, Simard, Bissonnette & Richard, 2004; Bissonnette & al., 2010; Dubé & al., 2010).

CONCLUSION

Our results show an increase of the average scores obtained in reading comprehension for all students. The analysis of the results of each subgroup of needs indicate that the most significant effects in reading comprehension improvement were observed among students with learning difficulties. Positive effects are favored by the possibility of working with students on a specific notion taking into account their particular learning needs. Hence, students' attention is focused on a particular reading strategy, for 90 minutes, in a subgroup with a reduced number of students. These subgroups foster appropriate exchanges and interactions and specific questions can be given specific responses.

The monthly multidisciplinary planning meetings contributed to the transformation of the teachers' teaching practices and to develop a consensus on the concepts to be taught using differentiated and explicit instruction. Organizing flexible grouping for short periods helped providing teaching-learning situations according to the student's competency level and planning for the explicit instruction of comprehension strategies. The intervention has significantly contributed to the success in reading comprehension of students with learning difficulties included in regular classes.

This collaborative research has been tested in only one elementary school. To qualify for an extension of results, this study should be repeated in several Quebec elementary schools with different characteristics: rural, urban, semi-urban, disadvantaged, and advantaged backgrounds. Future research should include a control group for each cycle of elementary school to better compare the effects of the intervention.

The monthly meetings have favor the team work between the teachers and the learning specialist who were also able to share their pedagogical practices. This study is an example of how important collaborative research is at school. Furthermore, this type of project offers valuable opportunities for using the results of empiric studies and adapts them to students needs as well as to teachers and other school members' pedagogical goals.

We recommend, however, that in order to optimize the effects of the association of flexible grouping with explicit instruction and to better respond to students' learning needs, subgroups of needs should always be reorganized taking into account students progress as well as all other changes that may require a student to be placed in another subgroup. In addition, it is important to implement the groups of needs in the early stages of elementary school, and that, for several years.

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Appendix

Figure 1. Average scores in reading comprehension



Pretest and post-test average scores for all 2nd cycle students

Figure 2. Average scores in reading comprehension for each of the subgroups



Table 1. Average and standard deviation of pretest and post-test for each of the subgroups

	Pretest (%)	Standard	Post-test (%)	Standard	Ν	
		deviation		deviation		
Subgroup 1	34.6	9.9	54.8	9.6	9	
Subgroup 2	45.5	4.8	58.8	17.3	13	
Subgroup 3	56.0	5.4	70.8	12.4	14	
Subgroup 4	69.5	5.2	75.6	13.7	19	
Subgroup 5	89.1	5.0	83.8	10.3	15	

Table 2. Statistic and p-value of Wilcoxon text for each of the subgroups

	Statistic Z	Sig.
Subgroup 1	-2.670	0.008*
Subgroup 2	-3.063	0.002 *
Subgroup 3	-3.533	0.000*
Subgroup 4	-2.122	0.034
Subgroup 5	-1.990	0.047

* p < 0.01

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