

A REVIEW OF THE CURRENT EMPIRICAL RESEARCH ON GRAMMAR INSTRUCTION IN THE FRANCOPHONE REGIONS

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Abstract

This paper presents the main trends and results of the empirical research on grammar instruction across the “francophonie” for the 2005-2016 period. In addition to fostering writing and reading abilities in pupils, grammar instruction in the francophone world aims at giving pupils a metalinguistic knowledge of the working of the French language. From a methodological point of view, one key feature of recent research is the importance of direct observations in the classroom, both for the teachers’ and the pupils’ work. The research topics reveal a new interest in the teachers’ work, notably the beginning teachers, and a focus on everyday practices. Grammar instruction is very present in the francophonie and some of its notable features include the presence of mixed contents (traditional and new grammar), notional economy, and a strong separation between the study of grammatical “rules” and their applications in exercises or texts. While insisting on the fact that grammatical knowledge learned by pupils first will be partial, transitory and instable before it is more complete and stable, the experimentation of innovative teaching methods has shown promising results for the acquisition of new knowledge (heuristic approach) and for the stabilization of knowledge (innovative dictations). The fragility of both experienced and beginning teachers’ grammatical knowledge, notably in syntax, is a recurrent finding. On the pupils’ side, there is a renewed interest in the pupils’ ordinary work and their ability to do grammar. Recent research has shown a correlation between explicit grammatical knowledge and successful grammatical spelling; performances in writing are declining, and the use of more detailed criteria for the analysis of pupils’ text reveal that a large part of the errors are linked to syntax.

Keywords: empirical research, French L1, grammar instruction, review of literature

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1. INTRODUCTION

I present in this paper the main trends and results of the current empirical research on grammar instruction across the “*francophonie*”. In order to provide a good description of the research while restricting the review to current research, I have chosen to focus on the last decade (more precisely, the 2005-2016 period). After a brief contextualization of grammar and grammar instruction in the francophone world (aims, object, and methods), I will give some methodological precisions with respect to the choice of the empirical work reported in this paper and present its organization.

The teaching of grammar in *francophonie* is a long-standing tradition. As is well known, French exhibits in its written form a lot of agreement marking which may often not be audible (agreement of adjectives within the noun phrase and as subject complements or object complements¹, agreement of the verb with the head of the subject noun phrase, and the well-known conundrums of past participle agreement). Given this system, an explicit knowledge of the grammatical apparatus explaining the agreement system is widely seen as inescapable, and as Chervel (1977) points out, French (and francophone) pupils must receive explicit instruction on grammatical spelling. However, French grammar is much more than agreement, and is currently supposed to be taught in a wider perspective.

1.1. Aims of grammar instruction

Grammar instruction may be considered to have at least the following aims (Chartrand, 1996, 2012; Boivin & Pinsonneault, 2008). The first and, for many researchers, most important aim is to improve the pupils’ mastery of writing, and, although less prominently, their reading and oral communication. In addition to the agreement system, the pupils should for instance learn to construct well-formed complex sentences, and use them properly in a text. Grammar instruction should also help pupils develop an explicit knowledge of the way the linguistic system works (as part of a culture on language), as well as a rigorous method for intellectual work. In addition, the explicit knowledge of the grammar of their own language may help the pupils learn a second language in school (Genevay, 1996; Nadeau & Fisher, 2006)

¹ Subject complement *and* object complement *respectively translate* attribut du sujet *and* attribut du complément direct (cf. *SIL French/English Glossary of Linguistic terms*). They occur with verbs such as être (to be), sembler (to seem), devenir (to become), etc. For instance, in *Julie is very intelligent*, the adjectival phrase *very intelligent* is the subject complement. Note that the term “complement” in the context of “subject complement” and “object complement” is not used in its strict sense of sister of a lexical head.

1.2. *The choice of a grammatical description*

Until the 1970s the grammatical descriptions of French available for schools were mainly inspired by “traditional grammar”, a grammar itself influenced by Latin grammar and whose analyses relied heavily on semantic criteria rather than syntactic ones². In the 1970s, under the influence of modern linguistics, grammar instruction in France and Switzerland has moved from traditional grammar to *grammaire nouvelle* (new grammar, or modern grammar). In Quebec, modern grammar entered a new curriculum for secondary schools in 1997, and for primary schools in 2000. Modern grammar presents itself as a much more accurate description of the language, influenced by the progress of linguistics and adapted (or transposed) to the needs and capacities of pupils (cf. Gobbe, 1980; Chartrand, 1996; Béguelin, 2000; Nadeau & Fisher, 2006; Boivin & Pinsonneault, 2008). This description, without ignoring meaning, primarily relies on the syntactic properties of phrases and sentences. The main tools of this new grammar are a model for the sentence (the basic sentence, e.g. an NP and a VP, possibly with other optional phrases) and the syntactic manipulations (moving, erasing, adding, replacing). The notion of *phrase* is crucial: the sentence is not a series of juxtaposed words, it is made of phrases that combine words together in a hierarchical structure. The basic sentence model is not exclusive to French; for instance, Haussamen & al. (2003: 85) propose this model in the context of English grammar teaching. Aside from a sentential grammar, a textual grammar has emerged, which focuses on two basic rules for the construction of coherent texts (Charolles, 1978): the rule of repetition (enforced by the presence of NPs and pronouns in the text); and the rule of progression (theme/rheme, textual markers).

The basic sentence model’s relevance may need some additional explanation (cf. Boivin, 2012). Despite its simplicity, it provides a powerful framework for the analysis of the actual sentences, simple and complex, produced in the language. The assumption is that, aside from particular constructions, realised sentences are derived from the basic model through the application of transformations. One key tool in grammatical analysis is thus the reconstruction of the basic sentence, which consists in returning to the basic word order and to replace the pronouns with full phrases or sentences. For instance, sentences like *Valérie les a envoyés à des amis* (V. send them to some friends) or *Marie-Josée l’a longtemps espéré* (M.-J. hoped for this for a long time) can be reconstructed as *Valérie a envoyé ces messages à des amis* (V. send these messages to some friends) or *Marie-Josée a longtemps espéré qu’elle deviendrait une grande cantatrice* (M.-J. hoped for a long time **that she would become a great opera singer**). Reconstruction of the basic sentence can help solve syntactic difficulties in writing (such as the choice of personal or relative pronouns, or the presence of “orphan” subordinate clauses). The basic sentence model is a tool in reading as well, as it reveals the predication relationship ex-

² For a detailed history of pedagogical grammar in France, see Chervel (1977).

pressed by the sentence, and also supports the reflexion on grammatical spelling. Moreover, the basic sentence model is relevant in order to solve grammatical spelling problems. First, the basic sentence model is helpful in the identification of the subject of the sentence with syntactic manipulations, as verbal agreement, and past participle agreement with *être* depend on the subject. Second, since the grammatical description independently integrates the movement of the direct complement in various transformations made from the basic sentence (formation of interrogative and exclamative sentences, substitution by a pronoun inside the VP, movement of the relative pronoun), it makes clear the contexts in which past participle agreement with *avoir* does occur (cf. Boivin, 2012; Chartrand et al., 1999).

Currently, grammatical descriptions based on modern grammar are used in the curricula in Switzerland and Quebec. Although the French curricula explicitly require the teaching of French grammar, they seem less precise on the question of the underlying grammatical description. It is worth noting that instead of the term *grammar*, the notion of *observation réfléchie de la langue* (reflective observation of the language) was introduced in the curricula in 2002, withdrawn in 2007 and re-appeared as *étude de la langue* (study of the language) in 2016³.

1.3. The methods for teaching grammar

Along with this modern grammatical description comes a new way of teaching. Like other school subjects, grammar has traditionally been taught in a frontal, expositive fashion: the teacher states the “grammar rules”, and the pupils try to apply them in exercises usually composed of unrelated sentences. Inspired by cognitivism and sociocognitivism theories, the heuristic approach (cf. notably Barth, 1987; Chartrand, 1996) suggests the following main steps in order to teach grammar: (1) observation of data; (2) formulation of hypotheses; (3) testing of hypotheses; (4) formulation of a generalization or a rule, allowing its use in other contexts. The combination of modern grammar with the heuristic approach creates a new paradigm which emphasizes the regular phenomena of the language and their explanation; in this paradigm, grammar is a system that can be understood rather than a list of unrelated rules that have to be learned by heart. Linking grammar and writing is also important under this view: pupils should “reinvest” their new pieces of grammatical knowledge into their texts.

The heuristic approach just described is also called inductive, because the pupils are supposed to move from observations to hypotheses; it is opposed to a deductive approach where the rule is given and the pupils determine if they should apply it in a given context. The observations may be made from a corpus (constructed by the teacher with or without the pupils; it can be composed of words, phrases, sen-

³ It should be noted that the grammatical terminology used in schools may vary across the francophonie (cf. Chartrand & De Pietro 2010).

tences, or entire texts). The hypotheses are tested on the initial corpus and on new data, and may, as suggested by Chartrand (1996) be further verified in grammars. At the end of the process the pupils have established a rule or a generalization on the basis of their own observations, confirmed by one or more grammars. The heuristic approach is not incompatible with exercising; the pupils may well apply their knowledge in such contexts, notably in order to refine and stabilize it. The teacher has a key role during the whole process, from the choice of the initial corpus to the final collective formulation of the rule or generalization, which must be shared by the whole class.

1.4. Methodological precisions

The bibliographical research for this paper was conducted⁴ using the following keywords: *français (langue), grammaire, didactique, enseignement* (eg. *French language, grammar, instruction, teaching*). If the results seemed scarce with specific categories (*grammaire, didactique*), we moved to larger categories, the term *grammar* sometimes being too strong a filter. We searched the education and humanities databases *Eric, Francis, Erudit, Repères*, which index the journals of the field. Following the practice in French L1 instruction (cf. Fisher and Nadeau, 2007) we made an additional verification of the European journals' tables of contents (*Pratiques, Repères, Enjeux, Le français aujourd'hui, La lettre de L'AIRDF*), because even though "grammar" may not appear as an indexed keyword it may be the topic of a paper that would otherwise have escaped our search. We also searched the catalogs of three university libraries in Quebec (*Université de Montréal, Université du Québec à Montréal, Université Laval*), and Canadian and European databases for doctoral dissertations. Among the numerous results yielded by our bibliographical search, a first corpus of 146 references on grammar instruction was selected.

I further examined the references in order to keep only the empirical work, i.e. work analyzing a set of data collected with specific instruments and according to clear criteria, answering precise questions with a reproducible methodology (number of subjects and justification of their choice; number of texts; description of the instruments used to collect the data; choice of the items and categories of analysis; clear delimitation of the "case" to be studied, etc.). I added work such as current research reports and some other papers that had not been identified in the bibliographical search. Given these criteria, 45 references were selected as reporting empirical work on grammar instruction for the period and were analyzed for the writing of this paper.

As was pointed out by Fisher & Nadeau (2007) in their review of the research methods in grammar instruction, it seems fair to say that a the majority of the research in the field is theoretical, a reality also apparent in the review of 20 years of

⁴ *The bibliographical research was made under my direction by Katrine Roussel, Ph.D. candidate at the Université de Montréal.*

Repères articles on grammar instruction made by Élalouf (2012). Theoretical work is sometimes supported by relevant empirical data, but as noted by Fisher & Nadeau (2007) this does not suffice to qualify as empirical research.

The topic of grammatical spelling is the most developed in empirical research on grammar instruction; it could be the object of a review of its own and it was intentionally given less importance in this paper. The progressive acquisition of grammatical spelling has received a lot of attention in psychology and psycholinguistics, and some of this work have been published in English (cf. Fayol, Thévenin, Jarousse & Totereau, 1999; as well as Brissaud's 2011 review and the references therein, notably work by Fayol and Jaffré). An important body of empirical work was also conducted on the teaching and learning of grammatical spelling (cf. Brissaud, 2011); we have selected for this paper some of the empirical work on grammatical spelling that pertains more generally to grammatical knowledge and instruction.

Some publications can be identified as milestones for empirical research on grammar instruction during the period: a collection of papers entitled *Pratiques d'enseignement grammatical* edited by J. Dolz & C. Simard in 2009, and two thematic issues of *Repères*, *La construction des savoirs grammaticaux*, edited by C. Brissaud & F. Grossmann also in 2009, and *L'étude de la langue, des curricula aux pratiques observées*, edited by C. Garcia-Debanc, V. Paolacci and M.-C. Boivin in 2014.

Prior to the period covered by this article, thematic issues of journals were devoted to grammar instruction with some empirical contributions, notably two issues of *Repères: Pour une observation réfléchie de la langue à l'école*, edited by F. Grossmann and D. Manesse in 2003, and *La grammaire à l'école. Pourquoi en faire? Pour quoi en faire?* edited by F. Grossmann and D. Vargas in 1996. The interested reader can also find in Chiss & Muller (1993) an early history of grammar instruction (1970-1984) in the young field of *didactique du français*, with a precise description of the types of research and an overview of their results.

1.5. Organization of the paper

Building on Fisher and Nadeau's (2007) classification of the themes of research in grammar instruction for the francophone world, the paper will be organized according to the following topics, which emerged from the analysis of the literature. I will present in section 2 the research on the *teachers' work (ordinary teaching practices, innovative teaching methods, teachers' knowledge and representations)*. Following the practice of empirical research in the field, the teaching practices and methods include in this paper the choice of the content and its actualization in the classroom. I will then turn to research on the *beginners' knowledge and representations*, presenting in section 3 results from research on students, trainees and beginning teachers. Section 4 of the paper will focus on *pupils' knowledge and representations in ordinary contexts and after interventions*, and on *pupils' performanc-*

es, and section 5 will provide an overview of the grammatical objects⁵ involved in empirical studies on grammar instruction.

2. THE TEACHERS' WORK

As noted by Fisher and Nadeau (2007), the empirical study of teaching practices in class has emerged as a strong trend at the beginning of the millennium, and it indeed developed up to 2016 into a rich body of work, both on ordinary practices and on the implementation of innovative ones. In what follows the word *practice(s)* refers to something done in class by the teacher and that can be directly observed. It includes the choice and the implementation in class of the teaching method(s), it is the teaching in action. The word *method(s)* had a more abstract meaning in the sense that it is a generic term (Legendre, 2005) which refers to the approach, the general way in which the knowledge may be made accessible by the teacher to the pupils (for instance, heuristic methods; expositive, frontal methods; collaborative and cooperative methods)⁶.

2.1. Description of ordinary teaching practices

Innovative research described the teachers' everyday teaching practices. In these contexts, data are mainly collected through films of lessons in the classroom and various other instruments such as the teachers' planning and the class material.

The Geneva team: entering the classroom to observe everyday grammar instruction

A first and very influential description of the teaching practices in grammar comes from the work of the Swiss team GRAFÉ (*Groupe de recherche pour l'analyse du français enseigné*) based in Geneva (cf. notably Dolz & Schneuwly, 2009; Schneuwly & Dolz, 2009; Canelas-Trevisi & Schneuwly, 2009; Canelas-Trevisi & Bain, 2009). The general aim of the research project was to describe how two objects (the relative clause and the argumentative text) were actually taught in the classroom, in ordinary settings. Dolz & Schneuwly (2009) and Schneuwly & Dolz (2009) report on the teaching the relative clause, a grammatical object chosen for its richness and complexity, and notably because it should trigger the use of syntactic manipulations. This multiple case study describes the content and its organization, as well as the teaching methods. Thirteen teachers were filmed in their classroom (8th and 9th

⁵ In this paper, the term grammatical object or simply object refers to any linguistic topic, issue or phenomenon that is taught, learned, or otherwise discussed in the literature. In that sense, noun phrases, relative clauses, verbs, as well as the notions of phrase or sentence are grammatical objects. The complements or a verb are referred to as direct objects and indirect objects.

⁶ See dictionaries of education such as Legendre (2005) and Wallace (2015).

grade) teaching ordinary lessons on relative clauses (65 periods of 45-50 minutes, representing more than 1000 pages of transcripts). The influential methodological tool called *synopsis*, introduced by Geneva team, is an account of the unfolding of the lessons according to categories such as the activity, the topic, the social organization of the classroom which allows the reduction of the massive amount of data collected. The analysis focuses on the macrostructure of the series of lessons and allows an internal comparison of the 13 teachers.

The results indicate seven categories of contents regarding the relative clauses, falling into two classes (Dolz & Schneuwly, 2009; Dolz, Schneuwly, Sales Cordero & Toulou, 2009). A stable core of content—observed in all series of lessons—is constituted by a general presentation of the relative clause, the syntactic features of the relative clause (either in terms of antecedent and relative pronoun or in terms of transformations applied to a pair of sentences) and a typology of relative clauses based on the relative pronoun (relatives introduced by *qui, que, dont*, etc.). A more peripheral content is found in about half the classes: the notion of simple and complex sentences (a prerequisite to the understanding of the relative clause), the double role of the relative pronoun (a syntactic complementizer and a proform replacing a phrase), and the role of the relative clause in writing (relevance for the goal of the writer). The authors also point to two types of organizations for the series of lessons: 6 out of 13 involve what they call “direct access” to the grammatical object through the relative pronouns, the observation of relative clauses in texts, the observation of various subordinate clauses and the manipulations of sentences to create relative clauses; 7 out of 13 rather involve “indirect access” to the object, through a work on prerequisites: simple and complex sentences, and the situation of the relative clause in the linguistic system.

The teaching methods mainly involve metalinguistic work (Dolz & Schneuwly, 2009; Dolz, Schneuwly, Sales-Cordero & Toulou, 2009). The most frequent activities observed in class are, in order, 1) the production of sentences by combination of two sentences to embed a relative clause in a main clause (embed sentence A in sentence B⁷, 37% of the activities); 2) the analysis of sentences containing relative clauses (most often unrelated sentences, exceptionally sentences from a text, 22%); 3) the theorization of the contents (definition, classification, distinction between forms, creation of summaries, recaps, etc., 19%); and 4) the identification of relative pronouns in sentences or texts, 16%. Other types of teaching designs represent 6% of the activities. Regarding the contents, a minute observation of the teaching of the relative pronoun *dont* (*of which*) allowed the authors to conclude that the pupils’ linguistic errors or difficulties do influence the teachers’ choice of the contents.

⁷ This is reminiscent of sentence combining, a well-known exercise in the Anglo-Saxon world; in this case it is limited to the formation of sentences containing relative clauses.

From a temporal point of view, the prototypical lesson is composed of the following phases (Dolz, Schneuwly, Sales-Cordero & Toulou, 2009): identification, decomposition and definition, transformation, comparison, exercises.

Based on their observations of the teachers' work, Dolz & Schneuwly (2009: 148) propose seven features of ordinary teaching practices for grammar instruction. Three features pertain to the content. First, the teachers ground the basic notions in a context, they are aware of the prerequisites and they recognize the necessity of a conceptual progression of the notions. Second, the teachers decompose the grammatical object and work on specific components or features of the object. Third, they use mixed contents (coming both from traditional and modern grammar), a feature that seems justified notably by stylistic and normative reasons. Aside from these features of the content, the following four features pertain to the teachers' practices: 1) the teachers clearly divide their teaching between "theory" and "exercises"; 2) they pursue, at least in the context of the relative clause, a strong stylistic goal (the pupils must be able to write and read such sentences); 3) they choose to use only a few key concepts in class (notional economy); and 4) they take into account the pupils' errors, notably the existence of non-standard relative clauses in familiar and popular French (cf. Gapany & Apothéloz, 1993; Béguelin, 2000), in order to make choices in their series of lessons.

Regarding non-standard relative clauses, Aeby-Daghé (2009) shows that teachers make very little use of grammatical knowledge in this context. The teachers do not build on existing grammatical knowledge to help their pupils understand the phenomenon, and "there is very little space for a grammatical reflection using the relevant tools" in this context (p. 357).

Drawing from the same corpus, Canelas-Trevisi & Schneuwly (2009) describe the grammatical terminology across the 13 series of lessons. The series of lessons fall into two types: 8 series featuring the modern terminology, e.g. *phrase P* (sentence S), *phrase de base* (basic sentence), *phrase enchâssée* (embedded sentence), and 5 series involving the semantic term *proposition*, with no reference to a syntactic model. This separation reflects the content of the teaching material and the underlying model of analysis, but it also indicates, according to the authors, that old knowledge (traditional grammar learned by the teachers in school) does not easily give way to new one (modern grammar learned at the university), a reason explaining the mixed contents.

Canelas-Trevisi & Schneuwly (2009) also propose a case study involving two contrasting series of lessons, one of represent each type (modern vs. traditional terminology). In the first one, the teachers present all the relevant elements for constructing the relative clause and the object unfolds rather smoothly, in spite of some obstacles. Surprisingly, the syntactic manipulations are not used to help solve problems in the construction or analysis of the sentences. In the second series of lessons, the teacher present together the syntactic, semantic and stylistic properties, but no tools are given to distinguish between them. The combination of two sentences is done on stylistic grounds; the teachers do not give any systematic pro-

cedure or manipulations. The authors observe that the contents prescribed by the curriculum are more present in the first series than in the second. However, even with a more syntactic approach, the first series does not go “beyond the succession of surface units” (p. 158) and uses traditional tools for the identification of the antecedent (semantic) and the grammatical functions (questions). Moreover, the role of the various operations remains unclear in both series of lesson.

In the same project Canelas-Trevisi & Bain (2009) observed the teaching of adverbs and connectors in 17 series of lessons on argumentative texts. In 5 series of lessons, the word *adverb* occurs 21 times whereas the word *connector* has 300 occurrences, and is one of the most frequent terms in the corpus. In their case study of 8 lessons of 45 minutes, the authors observe that the teachers do not systematically show the textual role of adverbs, notably because of the vague criteria for its identification and the fragmentation of the knowledge on this topic. The notion of *connector* in two representative series of lessons also remains vague and it is not very useful for the pupils, since it is not connected enough to the various levels of textual analysis. The authors note that the pupils struggle with the basic syntactic notions at the level of the sentence (p. 174), an important fact that may create obstacles for their work at the textual level.

Declared and observed teaching practices in Quebec

Combining quantitative and qualitative methods, the large project *État des lieux de l'enseignement du français* (ELEF, *A review of the situation of French L1 instruction*) notably aims at describing the actual teaching practices and contents for French L1 in Quebec, and includes a description of grammar instruction. A large sample of 801 secondary school teachers answered a questionnaire, and ten secondary school teachers participated in a multiple case study. Each teacher was filmed for a series of 5 to 7 lessons constituting a cohesive unit, with at least 15% of the time devoted to grammar instruction.

The results (cf. Chartrand, 2011; Lord, 2012; Chartrand & Lord, 2013) indicate that 94% of the teachers declare teaching grammar at least once a week. Grammar instruction (“*faire de la grammaire*”) is the most frequent activity in the French language classes in Quebec (the other activities being, in order: reading, vocabulary study, writing, dictation, oral communication). Despite this frequency, 55% of the teachers believe that they do not teach enough grammar. Regarding the content, 75% of the teachers declare teaching modern grammar, and 59% of the teachers declare using the terminology prescribed in the curriculum.

Aside from the fact that grammar instruction does indeed take up a lot of time in the classroom, the observation of the 10 classrooms draws a very different picture (Lord, 2012; Chartrand & Lord, 2013). The teaching methods are expositive and frontal (the teachers gives definitions, rules, examples, etc.), and there is no genuine grammatical reasoning (no cause to effect links, no links between “rules”, etc.). The contents are presented quickly and in a superficial manner, and there is

little progression in the content from one year to the other. Pupils mainly engage in exercises: identification of a grammatical object (for instance, the relative pronouns); exercises for the automation of spelling (e.g. verbal agreement); and “correction”, i.e. the presentation of the right answers of the exercises or the dictation. In other words, the pupils are not very active from a cognitive point of view. There is very little time for individual or team work: the classroom is generally under the direction of the teacher, and the pupils are in a receptive role. In the classroom, the contents are mostly those of traditional grammar, and the authors strongly state that there is no trace in the series of lessons of one of the aims of grammar instruction for the last 30 years, e.g. to learn that language is a system that can be understood, and that grammar is a cultural object (Chartrand & Lord, 2013: 522).

In a more specific context, Ouellet (2014) is working with 10 teachers and 191 pupils from 6th grade, 7th grade, as well as *exceptional pupils (élèves en adaptation scolaire)*, i.e. having difficulty, henceforth EP) beginning their secondary school. Aside from drawing the ordinary and exceptional pupils’ profiles regarding grammatical spelling (cf. supra) their aim is to identify the ordinary teaching methods for grammatical spelling, to verify the existence of links between the methods and the pupils’ profiles, and to identify means of improving pedagogical differentiation for grammatical spelling. The teachers’ ordinary practices were documented through journals and interviews.

For grammatical spelling, the most frequent notions used in instruction are agreement systems and grammatical categories. Agreement within the NP represents 25% of the content in grammatical spelling in 6th grade and with EP and much less in 7th grade. Past participle agreement is the second most frequent agreement taught at all levels, and verbal agreement is the third one. The most frequent teaching methods are exercises aiming at the application of the rules, as well as presentation of the rules, a result in line with Chartrand & Lord’s findings. Grammatical analysis and the use of syntactic manipulations represent 8% of the activities reported in ordinary classes and 6% for EP. The use of an inductive approach is extremely rare. The authors stress the heterogeneity of the material, which includes, in order, exercises booklets, examples of sentences, and a grammar textbook. At the three levels, the pupils receive little help from the teacher (although more explanations are given in 6th grade). There is also less modeling in 7th grade than in 6th grade and in EP classes. Ouellet (2014) stresses the fact that traditional practices (and, seemingly, traditional reasoning), and notably the absence of syntactic manipulations, are characteristic of the classes in their sample.

Aside from the inferences about teachers’ knowledge that can be drawn from the description of ordinary practices, there is very little research directly aiming at describing the in-service teachers’ grammatical knowledge and representations about grammar and grammar instruction. Chartrand & Lord (2013) report that 41% of the 801 French L1 in-service teachers declare having an “excellent knowledge” of modern grammar, while at the same time 75% of them would like to have additional training on new grammar (Chartrand & Lord, 2013), a wish also expressed by

6th grade, 7th grade and EP teachers (cf. Ouellet, 2014). An overwhelming 96.5% of the teachers surveyed by Chartrand & Lord (2013) believe that grammatical instruction is very important and useful for reading and writing. 75% of them believe that the pupils do not have sufficient grammatical knowledge at the end of secondary school (11th grade), knowing grammar being, for the teachers, “being able to construct well-formed and understandable sentences” and “knowing the main grammatical rules”.

Some unexpected gems in ordinary classrooms: the discursive communities in the French RAhORL project

Following the introduction in 2002 the French curriculum of the notion of *observation réfléchi de la langue*), Lepoivre-Duc & Sautot (2008) filmed 30 grammar lessons in 3rd, 4th and 5th grade, in order to document the ordinary teaching practices. Their paper reports on a few “gems” in which the pupils are especially autonomous and active in their reflexion on a linguistic problem.

According to Lepoivre-Duc & Sautot’s analysis, the “gems” exhibit the characteristics of an “educational scientific discursive community” (*communauté discursive scientifique scolaire*), in the sense of Bernié (2002). Notably, the community’s *discourse* is shaped by the practices of the community of reference (here, the professional linguists and grammarians); the community establishes a set of relevant questions, able to generate a problem and support problem solving, and is thus *scientific*; however, the community is *educational*, because the discussions and problems do not aim at producing new knowledge and the community is under the control of the teacher.

The authors show that the teacher and the pupils, like the linguists and grammarians, (1) create and use corpora in order to answer their questions, and make a classification and a generalisation in relation to the facts, using categorization, correlations, analogies, etc.; (2) use linguistic operations (substitution, erasing, addition—and we could add movement) as well as grammatical judgments; (3) use previous knowledge in order to understand new facts, for instance by looking for more examples and counterexamples; produce intermediate and final pieces of writing (in the form of tables, notes, procedures, etc.); (4) compare and confront the various solutions to a problem made by members of the community notably by working together.

In order for such contexts to foster learning, there must be space for the pupils to speak and reflect, and the teachers must conclude the discussion/reflection, must state for the whole classroom the conclusions of the inquiry (this is called “institutionalization”, cf. Brousseau, 1986).

Conclusion on ordinary teaching practices for grammar instruction

As shown by the description of teaching practices in ordinary settings in the *francophonie*, the aims of grammar instruction are very practical (reading and writing); the study of grammar is not used as an opportunity to understand language as a system and as a cultural object. The contents taught in the classroom are a mix between traditional and new grammar in Switzerland, whereas they are rather traditional in Quebec. When used, the syntactic manipulations have at best an unclear role, otherwise the manipulations are absent from ordinary grammatical work in the classroom. A rigid separation between the transmission of the content by the teacher and its application by pupils is noted in Switzerland, a situation that seems to be similar in Quebec given the overwhelming presence of expositive methods and exercises.

Aside from the observation of teaching practices in the classroom, the research in the field has involved the experimentation and evaluation of innovative teaching methods.

2.2. Implementation and evaluation of teaching methods

A large body of research was devoted to the implementation of innovative approaches for teaching grammar, to the descriptions of their unfolding in the classroom and of their effects on pupils' knowledge and performances in writing. In France, an implementation and evaluation of the heuristic approach was conducted on a large scale in the RAhORL project (Lepoivre-Duc & Sautot 2009), and other work such as Sève & Ambroise (2009). In Quebec, many projects testing innovative teaching methods were realized in the context of a national plan for the improvement of writing (cf. Nadeau & Fisher, 2014; Boivin & Pinsonneault, 2014a; Ouellet, 2014).

We will present in turn the description of innovative methods and the conditions described for their successful implementation in class. The effects of the innovative methods on the pupils' writing performances are presented in the sections on the pupils' knowledge, representations and performances (cf. supra).

Implementation of a heuristic teaching method in class

Lepoivre-Duc & Sautot's large action research project involves 40 teachers or pedagogical counselors of the Lyon region (France) and aims at testing heuristic methods for grammar instruction based on Barth's (1987) theoretical framework (contextualization, decontextualization, recontextualization). Lepoivre-Duc & Sautot (2009) compare the work of two teachers teaching the same series of lessons in grammar, in order to identify the effects of their respective interventions on the unfolding of the lessons (*l'effet-maitre*, the teacher's effect), as well as potential obstacles to the implementation of heuristic teaching methods. The two teachers

have created together a series of lessons on the expansions within the NP and taught the lessons in their respective multi-level classrooms of 3rd, 4th and 5th grades. The series of lessons were filmed and subsequently discussed by the teachers during an interview with the researchers. The analysis focuses on the first lesson, in which the pupils had to classify a set of noun phrases into four categories. Teachers A and B have very different implementations of the series of lessons, which yields different results in the classroom. This result suggests that there is a teacher's effect, which seems to follow from the understanding that each teacher has of the purpose of the activity. Teacher A sees the activity as a true conceptualization activity, whereas Teacher B sees the activity as a classification exercise. Teacher A takes up 1h30 to do the activity; there is a lot of verbal interactions in the class (1h20) and A utters only 40% of the words during the activity, 60% being uttered by the pupils. Teacher B takes 45 minutes to do the activity, utters 93% of the words and limits the verbal interactions with the pupils to 25 minutes. The two teachers' discussions with the pupils regarding their classification of the phrases present a striking contrast: B looks for the right answer from the pupils and writes it down on the blackboard, whereas A also notes the errors in order to discuss why an item should or should not be classified in a certain way, erasing the wrong classifications as the discussion progresses. (This type of work is reminiscent of the zero-error dictation method, cf. *supra*). In both classrooms, very little grammatical terminology is used (and this may be linked to the fact that some pupils did not realize at first that they were doing grammar). In addition to the features of teacher A's work already mentioned, the authors identify some key features of a successful implementation of the heuristic method for grammar instruction. First and foremost, the teachers must establish what Lepoivre-Duc & Sautot (2009) call "a grammatical epistemology" in the classroom: in the context of a heuristic approach, the pupils minimally have to know that they are doing grammar, otherwise they will refer to the framework they believe to be relevant to do the task (here literary concepts were used by some pupils for the classification of the NPs, which makes perfect sense since the NPs were titles of books and chapters from their reading workshop). This point is particularly important when using new methods. The teachers' lack of use of the grammatical terminology may also have contributed to the absence of a "grammatical epistemology" for some pupils. Second, although teacher A's professional interventions were much in the spirit of heuristic methods, the devolution to the pupils of the discovery and the conceptualization calls for a method for stabilizing the classroom's knowledge that both teachers lacked.

In their small-scale action research, Sève & Ambroise (2009) develop and implement a teaching method for grammar with French elementary school pupils. The method's characteristics are to take into account the pupils' representations as a starting point, to make them active in their learning process, and to develop their metalinguistic point of view. Moreover, the researchers want to make sure that the teachers have the necessary linguistic knowledge to be able to use the method, and present it in a reproducible format. The series of lessons was created, moni-

tored and adjusted through a two-year collaborative work between a researcher and a teacher. Data were collected through films and teacher's notes during the second year of the implementation in one class, with 6 pupils aged 7 and 8 (2nd and 3rd grade).

The authors report the following results for four activities. First, with images as a starting point, the pupils induced some basic semantic, syntactic and morphological properties of verbs and nouns, they learned to name these two classes of words and to assign a grammatical category to new words. Second, with NPs and VPs as a starting point, the pupils identified three types of combinations: plausible sentences (*Les petites filles de l'école vont à la danse le mercredi/The little school girls go to dance on Wednesdays*); imaginary sentences (*Les petites filles de l'école pondent des oeufs dans leur nid/The little school girls lay eggs in their nest*) and non-sentences (**Les petites filles de l'école suit sa mère sur le chemin/*The little school girls follows her mother on the road*). This crucial classification distinguishes in a very simple terminology between grammatical sentences (plausible and non-plausible/imaginary) and ungrammatical sentences (non-sentences), and it is relevant in other exercises and contexts. Third, with basic sentences (NP VP) as a starting point, the pupils had to separate the sentences in two chunks (physically cutting a paper band with scissors!) and this led to a discussion on the effect of cutting the sentences in various points. The pupils' observations, generally relevant, pertained to theme/rheme and focus effects. It was a first approach, but the pupils did not grasp the syntactic organization of the sentence into NP VP and did not reinvest the notions of nouns and verbs learned in the first activity. Fourth, with NPs and VPs with phonologically audible plural forms as a starting point, the pupils tried various combinations forming sentences (plausible or not) and non-sentences, and were able to observe the verbal plural agreement. The authors conclude that the series of lessons was slow and yielded partial and transitory knowledge, but a real metalinguistic posture in the pupils, a real sense of the presence of an organization in the language, as well as some spontaneous uses of the new pieces of knowledge in the pupils' texts.

Stabilization of grammatical knowledge: the innovative dictations and grammatical spelling

Nadeau & Fisher (2014) describe the implementation in class of two innovative dictations methods for the teaching of grammatical spelling and its impact on the pupils' performances (cf. supra for a description of the pupils' performances). Their two-year experimentation involved 40 classes, 27 in primary and 13 in secondary schools with average to low-income socioeconomic profiles.

Innovative dictations do not aim at discovering or learning new rules. The principles and goals of innovative dictations are the following: 1) to elicit and foster the verbalization of pupils' declarative and procedural knowledge on grammatical spelling; 2) to help consolidate and stabilize the pupils' knowledge, more specific-

ly (cf. Haas, 2002) to move from transitory knowledge to stable knowledge, notably by removing some obstacles through explicit discussion; 3) to bring the pupils to use the reasoning independently in revising their own texts. The project involved two types of innovative dictations, the *zero-error dictation* (*dictée zéro-faute*) and the *sentence of the day* (*phrase dictée du jour*). In the *zero-error dictation* (inspired by the interactive dictation proposed by Arabyan, 1990), a text composed of a few sentences is dictated to the pupils. After each sentence, the pupils ask their questions with respect to grammatical spelling. The teacher's main role is to redirect the question to the class, in order for the answer to emerge from a discussion between pupils. At the end of the discussion, the teachers sums up the reasoning and validates the correct spelling (hence the *zero-error*). Building on the *spelling negotiation workshop* (*atelier de négociation graphique*, cf. Haas, 2002), the *sentence of the day* was proposed by Cogis & Ros (2003). Every day, a new sentence is dictated to the class and the pupils propose their various spelling for problematic words. The teachers' role remains the same. These innovative dictations are very different from traditional dictations, the latter mainly being evaluation tools and not learning activities (cf. Simard, 1996). Nadeau and Fisher have integrated the syntactic manipulations into the innovative dictations methods and have encouraged the use of the metalinguistic terminology.

Fisher and Nadeau (2014a) compare the features of the innovative dictations in 11 classes of their sample that show a contrast in the progress of the pupils (low and high progress classes), with respect to the presence of two indicators: metalinguistic terminology and syntactic manipulations. The innovative dictations took place over two years, most of the time on a weekly basis, in lieu of the traditional dictations. The average rate of use of the metalinguistic terminology for the 3rd and 4th grade classes is 9,8 metalinguistic term (verb, noun, subject, etc.) uttered per minute, and 11,1 for the 5th and 6th grade. The initial rate is lower in the low progress classrooms than in the high progress classroom; the final rate in the low progress classrooms increases but remains below the strong progress classrooms' final rate. The progress is not higher in classes where the metalinguistic terminology is mostly uttered by the pupils. However, the average number of utterances of metalinguistic terms on the part of the teacher is 5.7 per minute in the low-progress classes and 7.6 per minute in the high-progress classes (cf. also Wilkinson, 2009). A redundancy index was established in order to compare the volume of metalanguage uttered by the teacher (tokens) to the inventory of the terms (types). Redundancy on the part of the teachers could be fostering a certain degree of "deepening" of the pupils' knowledge and seems to have a positive effect: the redundancy index is lower (2.2) in low-progress classes and higher in (2.7) is high-progress classes.

With respect to the use of syntactic manipulations, the authors mention one key feature, the presence of a conclusion. After a manipulation is done on a sentence, a conclusion must be drawn on the resulting sentence to determine whether it is grammatical or not (cf. Boivin, 2009), and this conclusion in the reasoning is

present in the high-progress classes: 61% of the manipulations are followed by an explicit grammaticality judgment in the high-progress classrooms, whereas 48% are in the low-progress classrooms.

According to Fisher & Nadeau (2014a), the improvement of grammatical spelling requires explicit teaching based on the real functioning of the linguistic system as well as on the pupils' learning processes and abilities. The effectiveness of the innovative approaches requires the use of the tools of modern grammar (the basic sentence model, the syntactic manipulations, and the relevant metalinguistic terminology). Similarly, Ouellet (2014) reports that, among their 10 classes, the classes having shown the highest improvement in grammatical spelling are those in which the teachers chose active methods, more specifically innovative dictations. Another example of the use of innovative dictations (negotiated dictation in 5th grade in Belgium) can be found in Lonez & Meurice (2007).

Some key features for a successful implementation of innovative methods

In addition to the description of the implementation of innovative methods in class, researchers also identify some key features for their successful implementation.

Nadeau & Fisher (2014) describe the innovative dictations practices, their appropriation by teachers and their evolution over two years. Each teacher's work was filmed at two moments of the year. The teachers were interviewed; they also wrote their observations and experiences as journals entries. There were regular group meetings during the year with the researchers, and for both years, the last one was filmed. The implementation has required time and effort on the part of the teachers, and the possibility to engage in a discussion with peers and with the researchers (group meetings), hence to answer their questions, has been key in the teachers' perseverance in the practice. With respect to the changes observed in the teaching practices, the analysis of the films shows an increase in the use of metalinguistic terminology and syntactic manipulations in the classroom. More generally, the authors note that it becomes easier for the teachers to lead, in their classroom, discussions fostering grammatical reflections. The teachers report that their relationship to errors has changed: they analyze the underlying reasons for the pupils' errors and they have a different attitude towards mistake (this latter point seems to be related to the fact that mistakes are seen as the reflection of a state of knowledge). The teachers are also more aware of the fact that the pupils need to be active and interact with others in order to learn.

In Boivin & Pinsonneault (2014a), the researchers and the participating teachers created together series of lessons based on a heuristic approach (cf. Barth, 1987, Chartrand, 1996; Dolz, Noverraz & Schneuwly, 2001): the pupils had to formulate and test a hypothesis, they also had to draw conclusions. Moreover, the work integrated grammar and writing notably because the lessons were explicitly based on the goal of solving pupils' real writing problems, which they had to acknowledge, characterize and understand. All the grammatical work was done with writing in

mind, to invert Myhill's (2005) phrase, and the last activity of each series was the writing of a short text. The data concerning the implementation of the series of lessons in class were collected via the teachers' journals (entries after each lesson), telephone conversations with the researchers after each lesson, and films. Boivin & Pinsonneault (2014a) share Nadeau and Fisher's (2014) conclusion and state that the appropriation of a new method, here a heuristic method based on integrating grammar and writing, requires a great deal of change on the part of the teachers. The teachers' journal notes and the telephone conversations indicate that the teacher appreciated the fact of being accompanied in the creation of the lessons and especially in the day-to-day implementation of the new methods. This follow up seems to us to be a key element of successful changes of practices.

Conclusion on the implementation and evaluation of teaching methods

The research on the implementation of heuristic methods highlights the fact that, in the process of learning grammar, knowledge will be partial and transitory. The pupils will discover and face temporary truths (Sève & Ambroise, 2009) that will be revised and refined in subsequent work. The idea that learning grammar, just like scientific inquiry, may somewhat be work in progress is very present in empirical research on heuristic methods, with the direct corollary that the pupils' pace of learning is slow (Sève & Ambroise, 2009; Lepoivre-Duc & Sautot, 2009), much slower in appearance than with expository methods.

In order to move from partial and temporary knowledge to complete and stable knowledge, activities such as innovative dictations elicit the pupils' declarative and procedural knowledge, partial, temporary, even erroneous, and make the metalinguistic reasoning explicit for the whole class. As was the case for the heuristic methods, the pace of innovative dictations is rather slow in order for the discussion to unfold properly (Nadeau & Fisher, 2014). Metalinguistic activities such as innovative discussion have so far focused on grammatical spelling, but they could also be applied *mutatis mutandis* to the syntactic construction of sentences, as in Nadeau et al. (2016).

The discourse of the classroom experimenting innovative teaching methods is characterized by the fact that the pupils speak, and that their errors or half-baked answers are considered as interesting elements to think about and to advance the reasoning (Lepoivre-Duc & Sautot, 2009; Nadeau & Fisher, 2014). The repetition of metalinguistic terminology by the teacher and the use of syntactic manipulations with explicit conclusions by the pupils are correlated with positive results in the pupils' writing (Fisher & Nadeau, 2014a).

Last but not least, all the work cited above involved close interactions between the in-service teachers and the researchers, in the creation of the activities as well as in the monitoring and adjustment of their day-to-day implementation in class. Nadeau & Fisher (2014) also involved regular group meetings in order for the teachers to share their experimentations and to find answers to their questions. In

other words, support and guidance are crucial in the successful implementation of innovative teaching methods.

2.3. Conclusion on the teachers' work

The research reveals that, although in some cases the pupils have some space to express their thoughts (Dolz & Schneuwly, 2009), the ordinary practices in the classroom are often expositive, with a rigid separation between theory and exercises and a large amount of time devoted to grammatical exercises and their correction (Dolz & Schneuwly, 2009; Chartrand & Lord, 2013). The experimentation of innovative methods shows that a change of practices is possible if the teachers receive the appropriate support to persevere in spite of the initial discomfort of the change. With this idea in mind, we now turn to the teachers' knowledge, representations and training.

3. TEACHERS' TRAINING: BEGINNERS' KNOWLEDGE AND REPRESENTATIONS

The main focus of the current research on knowledge and representations in grammar and grammar instruction involves "beginners": students, trainees and beginning teachers, sometimes in comparison with experienced teachers. The empirical research on teachers' training is a very active emerging field, but at this point the theoretical work outnumbers the empirical work. As an indication, Gagnon & Baslev (2012) in their review of the research in 20 years of the *Repères* journal (1990-2010) indicate that while 12.4% of the all the papers are on teachers' training, only 3 out of the 58 papers on teachers' training are empirical studies (5%).

In what follows, the term *student* will refer to a person studying at the university and having no or almost no experience in teaching; the term *trainee* (cf. French *stagiaire, enseignant-stagiaire, étudiant-stagiaire*) will designate a pre-service teacher, a person in training with current or previous practice of teaching acquired in the course of the training, and the term *beginning teacher* (translation for *enseignant débutant*) will refer to in-service certified teachers with less than 3 years of experience (unless otherwise specified). The term *beginners* will refer globally to these three groups, and the terms *future teachers* to the first two.

Given the variety of participants and contexts involved (students, trainees and beginning teachers; teaching in primary or secondary school, with different national curricular background), and the rather cohesive research designs, I generally present the main results of each research regarding grammatical knowledge, knowledge of teaching methods, as well as representations and relationship to grammar and grammar instruction, and identify in conclusion the converging and diverging dimensions. It should also be kept in mind that the future teachers' curricula and training vary across the francophonie, notably regarding the number of

hours devoted to grammar and grammar instruction, and the way the teaching practice is intertwined with the university courses.

3.1. Grammatical knowledge

Researchers have investigated declarative grammatical knowledge on a variety of key notions, for future primary school teachers in Switzerland (cf. Panchout-Dubois, 2011), and for future secondary school teachers in Quebec (Gauvin, 2016). In France, Élalouf (2014) explored the knowledge of beginning and experienced secondary school teachers on the notion of basic sentence, Gourdet (2010) compared the definition of verb provided by beginners and experienced primary school teachers, and Paolacci & Garcia-Debanc (2005) described future teachers' knowledge on punctuation. Finally, still in France, Rondelli (2010) reports on the knowledge of textual grammar in beginners and experienced primary school teachers.

In order to describe the future Swiss primary school teachers' knowledge on sentence grammar Panchout-Dubois (2011) administered a questionnaire containing 6 exercises on key grammatical topics that she considered necessary for teaching to 130 students in their 2nd year of the three-year training program for primary school teachers of the Vaud Canton⁸. Half the score was attributed to the answer itself and half to the written justification. The average result for the test is 60.1%, with a maximum at 93.1% and a minimum at 2.7% (for ease of exposition I give the results, presented on 72 in the text, in percentage). A majority of students (61.6%) have a score of 65% or less in the grammar test: 20.1% of the students (27/130) have scores under 50%, and 41.5% of them (54/130) have scores between 51% and 65%. 32% of the students (42/130) have scores between 66% and 82%, and 5% (7/130) have scores between 83% and 93%. The best average score is 83.8% (13,4/16) for the question on the classification of a phrase as NP or PP, and as a complement within the VP or a sentential complement (out of the VP). Although they show a difficulty in identifying the passive verbal form, the students also perform well for the distinction between verbal forms (infinitival, simple and complex tenses, indicative and subjunctive moods) with an average score of 78.1% (12.5/16). With an average score of 54.2% (6.5/12), the students show some difficulty with the internal structure of NPs, more specifically with the difference between category and function, and with the hierarchical organization of the phrase. They also exhibit a problem with grammatical categories, more precisely when they have to distinguish between adverbs and prepositions on the one hand, and pronouns and determiners on the other, their average score being 47.5% (3.8/8). Finally, the students obtain very low scores (38.3% or 4.6/12), when asked to identify

⁸ In many federations, education and teachers' training is a responsibility of the federated states. This is the case in Switzerland and in Canada, where respectively the cantons and provinces are responsible for the domain of education.

grammatical categories and functions in a complex sentence (although the subject is correctly identified, they do not identify the indirect complement or the subject complement). Finally, the lowest scores (36.3% or 2.9/8) are obtained regarding the forms ending in *-ant* (adjectives, present participle, and gerundive). The latter is according to Panchout-Dubois (2011) the most remote with respect to the notions taught in primary school, but it is still useful for teaching.

Gauvin (2016) aims at describing the knowledge about grammar and grammar instruction as well as the relationship to grammar and grammar instruction of future secondary school teachers of French L1 in Quebec. Regarding the future teachers' knowledge, Gauvin (2016) presents the answers of 85 students and trainees (2nd and 3rd year students enrolled in a four-year university bachelor's degree) to a questionnaire containing 60 open and closed questions, and analyses the teaching practices of 8 trainees (3rd year students). Half of the trainees give a syntactic definition of the noun phrase, based on the presence of a head N. The expansions within the phrases (NP, VP) are generally not themselves considered as phrases, but rather as string of words, indicating some difficulty with the hierarchical notion of phrase and with recursivity. While the identification of the category NP is quite easy for the students, the identification of the NPs' grammatical function is difficult. Complex grammatical functions such as subject complement and object complement are not well recognized by the students, and the grammatical functions of the subordinate clauses are not well identified. The identification of the function of predicate for a VP is difficult if the VP is a single word (such as the intransitive verb *dormir, to sleep*). The basic sentence model, which is taught at the university, seems to be limited for the students to the minimal sentence (NP/VP or subject/predicate), the possibility of having optional phrases as sentential complements being ignored by the students.

Élalouf (2014) reports on the results of a questionnaire on the notion of basic sentence and its use by 15 beginning (less than five years of experience) and 10 experienced college teachers (6th to 9th grade), from the Parisian suburbs (often from "difficult" neighborhoods). As an element of context, she notes that in the French curricula the basic sentence (NP VP, with the possibility of adding optional phrases) does not have the status of a model used to analyze a variety of sentences, as proposed notably by Riegel et al. (2014). The main result is that 9/25 participants use the notion of basic sentence, whereas 16/25 do not. Only the 3 experienced teachers using the basic sentence model conceive it as some version of the NP VP analysis, link it to the syntactic manipulations and view it as a tool for generating sentences and for metalinguistic analysis. For the 6 beginning teachers using it, the basic sentence model of the form NP VP + optional phrases coexists with, and is sometimes assimilated to, the traditional description of the linear order SVO, indicating a difficulty in understanding the notion of phrase and hierarchical organization in syntax. The 6 beginners do not mention the basic sentence's role as a writing and metalinguistic tool. For the teachers who use some version of it, the model is generally seen as useful to solve reading problems (notably, by removing

the non-obligatory elements to see the basic structure emerge). The 16 teachers not using the basic sentence model rely on the traditional SVO linear description and on the graphic definition of sentence (initial capital letter, period). They do not see any utility for the notion of sentence in reading, and its relevance in writing is limited to the idea of “one proposition, one tensed verb”.

Gourdet (2010) explores the knowledge of French primary school teachers on the notion of verb. 100 participants (students, trainees and certified teachers) answered one open question asking them to define the verb as a teacher in the second cycle of primary school (3rd, 4th, 5th grade). The participants fell into four groups: (1) 22 students in linguistics, enrolled in the course “grammar instruction” in the context of a bachelor’s degree, who may or may not become primary school teachers; (2) 27 trainees, enrolled at the IUFM⁹ and teaching one day a week; (3) 26 beginning teachers, in their first year of full time teaching, and (4) 25 experienced teachers, with at least a 3-year experience, who are enrolled in a continued training. The answers were coded with respect to the linguistic properties to which they referred: syntactic (8 codes); morphological (7 codes); semantic (4 codes) and phonological (2 codes).

In their definition of the verb, the participants referred in average to three properties, except for the trainees (4.2 properties); 14 participants referred to a single property and 14 participants to 5 properties or more; no participant mentioned a phonological property.

77% of the participants use at least one morphological property, with differences among the groups: 41% of linguistic students and 96% of the experienced teachers. If they do use a morphological property, the students and trainees refer to the conjugation, whereas the teachers (beginning and experienced) refer to the notion of morphological change in relation to tense. A syntactic property is mentioned by 73% of the students, 85% of the trainees, 69% of the beginning teachers, and 56% of the experienced teachers. The presence of a subject in relation with the verb is the preferred syntactic property among the participants. When a semantic property is used (around 60% of the trainees and beginning teachers and 70% of the students and experienced teachers), the notion of action is present to define the verb. Finally, the average number of words in the definition is different for the students and trainees on the one hand (44 and 43 words, respectively) and the beginning and experienced teachers on the other hand (32 and 28 words, respectively). The author indicates that the traditional semantic notion of action is still present and is not accurate by itself to define the verb, he also notes that the morphological features seem to override the syntactic analysis of the verb, notably for the experienced teachers of his sample.

⁹ Institut universitaire de formation des maîtres (*University institute for teacher training*). Currently École supérieure du professorat et de l’éducation (ESPE), part of the university at the master level.

Paolacci & Garcia-Debanc (2005) have two objectives, namely to describe the declarative and procedural knowledge of trainees on punctuation, and to describe the training sessions of the trainees, a very rare occurrence of empirical research on the effective training of future teachers. Relying on the method known as “didactic engineering” they created a training on punctuation, to be implemented by the “professors-trainers” (*professeurs-formateurs*) from the IUFM. Two groups of trainees (primary and secondary school) notably had to analyze the punctuation in the text of a 6th grade pupil and to add the punctuation in a text. The data were collected through films, notes by the trainees and notes on the blackboard; the session lasted three hours for primary school trainees and four hours for secondary school trainees.

In both groups, many trainees explicitly say that they their own lack of knowledge of the norm (rules) of punctuation makes it hard for them to evaluate the pupils’ punctuation; some trainees even wonder if there is a norm for the comma and some mention that the norm is not fixed. In the second group (secondary school trainees), some trainees are able to refer to their own expert but implicit knowledge: they seem to know what the norm requires but cannot well explain it. The trainees have identified the pupils’ adequate performances and they have also tried to understand the pupils’ reasoning instead of only noting the mistakes. In the task of adding the punctuation, the primary school trainees did not well understand the directions. The trainees rather have tried to think about a variety of solutions for the pupils and did not perform the task themselves. In contrast, the secondary school trainees are able to verbalize in writing what they did to add punctuation. They use syntactic and morphological criteria to identify sentences (the presence of subjects and tensed verbs), as well as textual and semantic criteria (global reading, identification of ambiguity—and, we suppose, choice of the most relevant meaning). The trainees’ classifications of a set of various exercises on punctuation in another task point to a sense of the various roles of punctuation (notably syntactic, semantic, and dialogic).

Paolacci & Garcia-Debanc (2005) also report a contrast in the unfolding of the training session and the work of the professors-trainers. The primary school group of trainees was composed of people who already knew each other and had worked together as a group for a few months, whereas the secondary school trainees’ group was formed at the beginning of the experiment. In the first group, the work routine is well established and the trainees communicated easily. In the unfolding of the session, the professor-trainer helps the trainees, reformulates their proposals, and elaborates an oral synthesis at the end of the session. The trainees themselves write up on the blackboard when ideas are put together. In the other group, the professor-trainer has the same kind of practice, except for the times where there are large group discussions: there the discourse is mainly the fact of the trainer, and the writing on the blackboard is as well.

Rondelli (2010) describes the French primary school teachers’ declarative knowledge on textual coherence. The 25 participants were beginning or experi-

enced teachers (the cardinality of the subgroups was not given and the results do not differentiate between the groups). In two open questions, the participants had to define textual coherence and to explain what, for them, indicates that a text is coherent. The teachers' definitions were decomposed in 68 elements classified according to 11 macro-criteria for the definition of textual coherence. The main macro-criterion has to do with the notions of progression, repetition, and logical unfolding and it is present in 31/68 elements of definition; the absence of rupture is present in 8 elements. Other criteria mentioned by the teachers include verbal tenses, adequate syntax and spelling, the reader's understanding and the possibility to anticipate the next steps, a coherent universe, punctuation, and pragmatics. The answers to the second question were almost the same, although the place of the reader and the importance of a coherent universe were more salient. The author concludes that although the teachers' knowledge is generally relevant, it is rather outdated and oversimplified, far from the current scientific knowledge on discourse analysis.

Aside from a direct elicitation through questionnaires, the beginners' grammatical knowledge can be inferred from the observation of their teaching practices, as in Gauvin (2016) and Cogis, Élalouf & Brinker (2009), or by the analysis of their evaluation practices, as in Van Bereven, Dumortier & Dispy (2013) and Rondelli (2010).

According to Gauvin (2016), the grammatical knowledge of the 8 trainees in their 3rd and 4th year is globally "fragile". The observed trainees exhibit a confusion between grammatical category and functions, and they use some procedures ascribed to traditional grammar (such as questions to identify the verbal complements). The basic sentence model and the syntactic manipulations, although they are considered by students as important tools for grammatical analysis, represent 10% of the tools used by the trainees. However, this relatively small presence seems more than the "total absence" reported by Lord (2012) in the everyday practice of Quebec's in-service teachers (cf. *infra*). Their metalinguistic terminology seems rather accurate, with 10% of it judged 'imprecise'. The trainees' strongest knowledge is related to past participle agreement, which suggests that for this part, the trainees rely on their own secondary school knowledge.

In France, Cogis, Élalouf & Brinker (2009) explore the grammatical knowledge of future primary school teachers via the notion of phrase¹⁰. As contextual information, the authors note that the notion of phrase was present and linked to the syntactic manipulations in the 2002 French curricula, whereas it almost disappeared in the 2007 curricula. Cogis, Élalouf & Brinker observed the teaching of 10 trainees in 4th and 5th grade in a very low income ZEP (*zone d'éducation prioritaire*:

¹⁰ *The English word phrase is the translation of French syntagme. The transposed terminology for syntagme used in the classrooms in the francophone world is groupe (group), for instance groupe nominal (noun phrase).*

*priority education zone*¹¹). The trainees had to develop the notion of phrase in a grammatical (not orthographic) perspective, and to foster the use of syntactic manipulations by pupils. In the face of the task the trainees show initial discouragement (and even refusal), because of their lack of knowledge. Their practice revealed that they did not well understand the notion of phrase. They vastly used it as referring to a linear sequence of words, not a hierarchical construction. They also had trouble understanding that a phrase can be a single word, seemingly because of the term *group* coined by the transposed terminology. The authors also note that the phrases semantically denoting an individual or a set in the world, namely NPs, are more easily conceived as phrases than the phrases not denoting such objects, for instance VPs or AdjPs. Regarding the syntactic manipulations, the trainees could hardly think about and propose manipulations going beyond the need to justify agreement. The authors also observe some terminological problems: in order to let the pupils grasp a concept, it is important not to name it too early in the process, but it is hard for the trainees to find temporary designations for the object of study, and an ambiguous terminology therefore adds up to unclear concepts. Cogis, Élalouf & Brinker (2009) conclude that the trainees they observed lack some of the grammatical knowledge necessary for teachers.

Some research describes the beginners' knowledge via the evaluation of pupils' work. Van Bereven, Dumortier & Dispy (2013) describe how students assess the linguistic norm in pupils' texts. The 34 students (beginning trainees, they have done about 12 hours of in class training) had to "correct" two pupils' copies in about 30 minutes (time not controlled). They were given a minimal and optional list of codes for categories (such as lexical spelling, grammatical spelling, vocabulary, syntax, punctuation, conjugation) to which they could add codes of their own. The vast majority of the students (32/34) used the codes, and 9 of them added some codes. They notably had some difficulty to identify and point the syntactic errors. Three related phenomena were observed. First, some students were very severe, and overcorrected the texts; some added errors that were not present in the pupils' texts, and some errors (such as verbal agreement with coordinated subjects) were systematically overlooked by the students. Similar observations were made in Rondelli (2010), who shows how 25 beginning and experienced teachers actually apply their knowledge in the evaluation of anaphoric pronouns in a set of seven texts written by pupils. Most of them correctly indicated that the choice of a third pronoun (*il*) was to be linked to an appropriate antecedent. Some teachers exhibited a relative severity in their appreciation of the context of interpretation of a pronoun, some noted as a mistake the correct use of *celui-ci* (*the latter*), and some allowed semantic reference, contrary to the norm.

¹¹ Unesco's translation.

Conclusion on grammatical knowledge

The notion of phrase, and especially the idea of a hierarchical organization within the phrase, seems to pose problems to beginners across the board. The internal structure of phrases, and notably the internal organization of the complements of the head into phrases (recursivity), is ill understood by future teachers, for phrases in general (Cogis, Élalouf & Brinker, 2009), for NPs (Panchout-Dubois, 2011; Gauvin, 2016), and for VPs (Gauvin, 2016). The organization of the sentence itself into NP+VP is not well distinguished from the linear order (SVO) of the sentence (Élalouf, 2014).

Beginners declare notions such as the basic sentence model and the syntactic manipulations to be important (Gauvin, 2016) but make little use of them (Gauvin, 2016; Élalouf, 2014). For instance, they rely on traditional procedures instead of manipulations to identify verbal complements (Gauvin, 2016), or cannot use the manipulations beyond their relevance for agreement (Cogis, Élalouf & Brinker, 2009). In the Quebec context, the results indicate that the beginners' grammatical terminology, although sometimes imprecise, is generally accurate (Gauvin 2016), whereas the trainees observed in France struggle with terminology (Cogis, Élalouf & Brinker, 2009).

Grammatical categories and functions also emerge as zones of difficulties for beginners. The beginners easily identify NPs (Panchout-Dubois, 2011; Gauvin, 2016), but may have problems with other grammatical categories, such as prepositions, adverbs, pronouns and determiners (Panchout-Dubois, 2011). Quebec beginners do not easily identify the various grammatical functions of NPs (Gauvin, 2016), and although the Swiss beginners excel at distinguishing verbal and sentential complements (Panchout-Dubois, 2011), the beginners in these two studies have problems identifying the grammatical functions in complex sentences, as well as the subject complement and object complement (Panchout-Dubois, 2011; Gauvin, 2016).

The various verbal forms are well distinguished, except for the passive (Panchout-Dubois, 2011), and the verbs are mainly defined on morphological and semantic bases (Gourdet, 2010).

As noted by Gauvin (2016), the beginners' grammatical knowledge is rather fragile. The research suggests, in my view, that beginners struggle with two sources of knowledge: the grammatical knowledge learned at the university (and/or to prepare for the admission contests in France), and the grammatical knowledge learned in school, which is more often traditional, uncertain, partial and implicit. The fragility of this knowledge may explain in part the three phenomena observed in relation with evaluation: being too severe, adding errors and overlooking errors (Rondelli, 2010; Van Bereven et al., 2013). More generally, it may be difficult in this context for teachers and future teachers to really understand grammar as a system and to use it fully to support reading and writing instruction.

3.2. *Teaching methods: a gap between declarative knowledge and observed practices*

In general, there is a gap between the declared knowledge on grammar instruction and the actual practices observed in class (Gauvin, 2016). I present in this section the main findings on the declarative knowledge and the observed practices of beginners, as well as the main features emerging from the literature as key to moving towards expertise.

Declared and observed teaching methods

Quebec future secondary school French teachers declare that the contextualization of grammar instruction in writing, reading and oral communication is important (Gauvin, 2016). However, the trainees observed do not often contextualize their grammatical teaching; some of it is contextualized in writing, none in reading or in oral communication. Regarding the general teaching methods, 60% of the students who answered the questionnaire cannot explain the deductive and inductive approaches for grammar instruction. The idea that the language can be explained by an underlying linguistic system seems to be minimal, as more than 50% of the students believe it is important to teach “tricks” that are supposed to help solving writing problems (notably with the spelling of homophones). As is well known, the grammatical reasoning underlying the trick (very often substitution) is not shown and never is the trick related to the general working of the linguistic system (cf. Nadeau & Fisher, 2006; Boivin & Pinsonneault, 2012). One of the features of grammar instruction declared most important in the questionnaire, i.e. the use of a heuristic approach, is almost absent in the trainees’ observed practice. Their main method is frontal, although only 14% of the students declare this type of teaching to be important. Grammar instruction is often made “on the spot”, (cf. Chabanne’s 2004 *décrochés immédiats*) in order to solve a writing problem; this is for the trainees the way *par excellence* to contextualize grammar instruction. More than 50% of the trainees’ interventions in grammar instruction rely on syntax, and around 10% on semantics. Aside from frontal teaching, the “correction of exercises” is the most frequent activity in the trainees’ classrooms. The most frequent form of interaction is question/answer/validation, which is exactly what Cogis, Élalouf and Brinker (2009) observed.

Indeed, Cogis, Élalouf & Brinker (2009) note that although they declare that active methods should be employed with the pupils, French future primary school teachers have difficulty in implementing such methods. The trio question/answer/validation is the dominant method in the 10 trainees’ classes observed by the authors. This approach is also revealed by the recurring presence of evaluative words or phrases in the trainees’ discourse in class, such as *good, false, error, proposals that should be rejected*, and the infamous “*on va maintenant corriger*” (we will now “correct”). The trainees had difficulty in scaffolding the pupils’ elaboration

of knowledge. The authors notably observe a circularity problem with the instructions for the activities, which often supposes that the notion to be learned is already known. In very rare cases the trainees sum up the knowledge on the blackboard at the end of an activity.

Still in France, Élalouf & Peret (2009) present a case study of a beginning teacher, about the homophones *et* and *est*. The beginning teacher was filmed during a grammar lesson six months into her first year of teaching in a 3rd grade classroom. She prepared the lesson herself, without using a textbook. In order to foster the pupils' participation, the example sentences were about a well-known football player; however, the syntactic manipulations such as transforming *est* into its future form *sera* were somewhat blocked because of meaning and the pupils' knowledge of the world (*#Zidane sera un joueur de l'équipe de France*; lit. *Zidane will-be a player of the team of France*). During the activity, the pupils were looking for ready-made answers, and Élalouf & Peret (2009) observe that there is a risk of using the manipulations only as formal exercises without understanding their role in the analysis of the language. According to the authors, the teacher lacks the relevant linguistic knowledge, and this has an effect on the pupils' work in class. Despite those difficulties, the beginning teacher makes the pupils talk about their observations of the situation.

The French team formed by Paolacci and Garcia-Debanc have done important work in developing the study of the practice of beginning teachers. Garcia-Debanc (2009) describes and compares the teaching of two beginning teachers in their first year of practice with respect to the subject/verb relationship. The researcher conceived a series of lessons (didactic engineering) which the teachers experimented in their classrooms. Garcia-Debanc (2009) analyses and compares the interactions in both classrooms during the first activity of the series whose goal was for the pupils to explicit their conceptions with respect to the notion of subject and verb. They had two tasks: (1) *Explain: how do you identify the subject of a verb?*, and (2) *Write down two sentences, one in which the subject seems to you to be easy to identify, and the other in which it seems to you to be hard to identify. Identify the verb and the "subject phrase"*.

The two beginning teachers adopt very different approaches in their implementation. In the class discussion on the pupils' sentences, teacher A does not take into account the erroneous or approximate answers, she ignores them and moves on to find the right answer. Most of the pupils do not participate in the discussion. According to the author, this avoidance of discussion can be traced back to a lack of grammatical knowledge, in this case on the existential construction *il y a* in French. Teacher B exhibits a different approach: she makes sure that the pupils have time to think and express themselves; in the presence of an incomplete answer, the other pupils complete the idea; she uses a relevant and coherent metalinguistic terminology, and she fosters the "incessant circulation" between the case at point and the more abstract syntactic structure of which the sentence is an instance.

Paolacci & Garcia-Debanc (2009) report on two case studies of primary school beginning teachers. The first involved the observation of a beginning teacher over three years, during 5 classes. One course was observed in March 2006 while he was a trainee teaching 1st grade. When he became a teacher with full responsibility, two 3rd grade courses were observed in March 2007, and two 1st grade course in February 2008, all in ordinary classes from Toulouse's suburbs. The classes filmed were on the sentence, a requirement of the researchers. The results reveal an overall difficulty for the beginning teacher to anticipate the unfolding of events. In the annual planning, the notions are not linked one to another, there is no hierarchy and no priority is observable. The teacher created a good first corpus for observation, with sentences appropriate for the level. However, he did not expect the depth of the grammatical notion of negation which involves not only syntactic, but also semantic, and notably scope properties, that are detected by the pupils but for which the teacher is unprepared. (For instance, in a sentence like *Tomorrow we will not leave with them* the natural interpretation can be paraphrased as *we will leave, but not with them*, where the negated verb does not correspond to a negation of the event of leaving). In the second activity on the sentence, the pupils had to identify negative sentences in a text that they had already read. The task was too difficult for the pupils, because the matrix sentences themselves were not negative, but some subordinate clauses were. The authors observed on the part of the teacher a failure to distinguish between a negative sentence and a negated verb¹², which also suggests an insufficient preparation. The pupils have done what they could and identified negated verbal forms. Regarding the methods in general, the teacher encourages the pupils to talk and takes into account their input. The main difficulty for this beginning teacher is the anticipation of the questions that may arise given his choice of examples; in other words, the insufficient preparation and linguistic knowledge has an effect on the unfolding of the course.

The other beginning teacher is in his third year of practice, and was observed for a year while doing a 20-minute daily activity which is a variation on the *sentence of the day* (cf. infra) in a multi-level class (3rd, 4th and 5th grade) in a very socially diverse neighborhood of downtown Toulouse, which could qualify as a ZEP. The sentence is forged by the teacher or comes from the pupils' texts, and the goal of the activity is to establish a metalinguistic posture on the part of the pupils, some of which are in great difficulty. The grammatical notions involved in the activity may or may not have been seen before or be in the curriculum. The activity took place every day in the first part of the year and then twice a week for the rest of the year and 7 activities were filmed over the whole year. In his multi-level class,

¹² A negative sentence bears negation on the verbal head of its VP. For instance *S'il pleut, nous n'irons pas au parc* (If it rains we will not go to the park) is a negative sentence. A positive sentence may contain a negative verbal form in a subordinate clause. For instance *S'il ne pleut pas, nous irons au parc* (If it does not rain, we will go to the park) is not a negative sentence but it contains a negated verbal form.

the teacher lets the youngest talk first, and then moves to the older pupils; there is an authentic discussion. The goal is reached: the pupils do talk about the language and develop a metalinguistic posture, in a context where there is not “evaluation” or “correction”.

Conclusion on the beginners’ teaching methods: moving toward expertise

The above description reveals that, although it is not always the case, the beginners generally have a very normative and rigid approach to grammar teaching. There is little place in the classroom for discussion and discovery, and the pupils as well as the teachers are looking for the right answer to come up as quickly as possible. There seems to be a gap between declared knowledge and actual practice, the observed method are generally frontal and the correction of exercises is a very important activity in the classroom (Gauvin, 2016; Cogis, Élalouf & Brinker, 2009), as was also observed in the practice of in-service teachers (Lord, 2012). The mere presence of syntactic manipulations does not guarantee that the approach is heuristic (Élalouf, 2014).

In light of the description of the beginners’ teaching practices, it is possible to identify some key factors with respect to teaching methods in grammar, in order for the beginners to move towards expertise (cf. Cogis, Élalouf & Brinker, 2009: 74-75; Garcia-Debanc, 2009: 120).

- 1) Take the *time* necessary for research, discussion and validation, keeping in mind that there is no urgency in finding the “right” answer, and that sometimes there is no right answer.
- 2) Clarify the teachers’ role with pupils: to elicit the pupils proposals; to reformulate the pupils’ contributions; to consider positively partial, approximate or erroneous contributions to the discussion, notably by asking for explanations or justifications, and as noted by many, to anticipate the pupils’ questions and difficulties.
- 3) Clarify the teachers’ role regarding the subject matter: to make explicit the criteria and procedures, notably by helping the pupils with the syntactic manipulations; to create an explicit and constant linkage between the examples and the relevant linguistic structure (generalization and stabilization of knowledge); to summarize the relevant grammatical properties, notably in writing; to assure a certain progression in the depth and difficulty of a topic; to create a corpus of examples and use it in a controlled fashion in class.

The smooth unfolding of a grammar lesson also depends on the quality of the teachers’ *linguistic knowledge*, as attested by most of the research presented in this section. The teachers’ linguistic knowledge shapes the lesson notably in the creation of a *corpus* for grammatical work (cf. Cogis, Élalouf & Brinker, 2009) and more generally in the choice of the material, and with respect to the anticipation of the pupils’ questions and difficulties (cf. Élalouf & Peret, 2009; Cogis, Élalouf & Brinker, 2009; Paolacci & Garcia-Debanc, 2009). Furthermore, the quality of the

discussion with the pupils in class also depends in part on the teachers' linguistic knowledge, which enables him or her to take into account the content of the various proposals made by the pupils (Garcia-Debanc, 2009). In other words, the teachers' linguistic knowledge provides the foundation for grammar instruction to reach its aims.

3.3. Representations and relationship to grammar and grammar instruction

There is little research directly aiming at documenting the students, trainees and beginning teachers' relationship to grammar and grammar instruction. Gauvin (2016) indicates that 80% of the 85 future secondary school teachers in her study consider their grammatical knowledge to be sufficient or excellent; she notes that, given the students' answers to the questionnaire, they seem to be overconfident in that respect.

Through the observation of the future primary school teachers' work in the classroom, Cogis, Élalouf & Brinker (2009) note that the trainees do not seem to understand that grammatical analysis is not a static object resulting from some external revelation, but rather is an evolving body of knowledge resulting from an analysis. They report that trainees exhibit a profound insecurity with respect to grammar instruction, a "real disarray in having to teach something that they know that they do not know well" (Cogis, Élalouf & Brinker, 2009: 71). Moreover, the trainees do not conceive a grammatical description beyond grammatical spelling: "for the trainees, who follow directly Chervel's (1977) observations, grammar equates grammatical spelling; doing grammar is the equivalent of studying agreement in order to write without mistakes. Without grammatical spelling, the study of the language has no object" (Cogis, Élalouf & Brinker, 2009: 61).

3.4. Conclusion on teachers' training

The subfield of teachers' training in grammar and grammar instruction may be one of the most important for the implementation of real changes in the classroom with respect to language teaching. The crux of the matter is for the beginners to continue moving away from traditional grammatical descriptions and traditional methods. This requires a solidification of their grammatical knowledge as well as a real implementation of less expositive teaching methods, where the "correction" of exercises stops taking the lion's share at the expense of real discussions.

It is interesting to note that grammatical spelling is seen as equivalent to grammar by some beginners (Cogis, Élalouf & Brinker, 2009) and that it is the subpart of the grammatical system where the beginners' knowledge is the most accurate and robust (Gauvin, 2016). As noted by Chervel (1977), grammatical spelling is traditionally at the heart of the justification for doing grammar in school.

With the notable exception of Paolacci & Garcia-Debanc (2005), what the students learn and how they are trained at the university, as trainees and in the vari-

ous training institutes in the francophone world remains the *face cachée* of the empirical research on teachers' training.

4. PUPILS

Turning to the research on pupils' in relation with grammar instruction, I will present the main results of the research on the pupils' knowledge, representations, processes and metalinguistic activity, as well as the research on their performances, in ordinary contexts and following the implementation of innovative teaching methods. I will end the section with a brief examination of recent large-scale studies of pupils' performances.

4.1. *Pupils' knowledge and performances*

This section is devoted to studies on the pupils' knowledge, representations, processes and metalinguistic activity in ordinary contexts, as well as assessments of their grammatical knowledge and performances after interventions in class.

Pupils' knowledge and performances in ordinary contexts

a) Explicit knowledge. In a very important contribution to the field Nadeau & Fisher (2009) show the usefulness of explicit grammatical knowledge in writing, more specifically for agreement marking. The participants, 42 pupils in 6th grade, took two dictations containing various NPs structures, and had to identify the NPs and their internal elements. The analysis of the plural marking in NPs indicates that 91% of the pupils who correctly identified the NPs and their internal elements also correctly marked agreement inside the NPs. However, the understanding of the NPs is not yet very stable in the 6th grade pupils, with 72% and 57% success rates in the NP identification task for each dictation. The success of the identification of the elements inside the NPs depends on the complexity of the internal structure: on average, 72% for the simple NPs (Det-N), 60% for NPs with adjectival complements (Det-N-AdjP), and 50% for N of N structures.

In relation to these results, it may be interesting to note that an analysis of 1715 metalinguistic comments made by 114 pupils in 3rd, 4th and 5th grade indicates that they conceive the plural as a relationship between words and that, aside from the identification of the plural on nouns, the semantic conceptions are less efficient for agreement marking (Lefrançois, 2009).

Some research highlights the gaps in the pupils' explicit knowledge. Gauvin's (2005) analysis of 846 verbalizations on past participle agreement made by 11th grade pupils (6 high and 6 low-achieving) shows that 78% involve adequate knowledge for high-achieving students, and 52% for low-achieving students. The term "past participle" is uttered 3 times in the verbalizations, and in 72% of the cases the source of error in the agreement is the lack of identification of the past

participle. These results suggest that explicit knowledge is useful for pupils. From a more general point of view, Élalouf (2005) describes the grammatical knowledge of 235 French pupils, 6th to 11th grade, who had to answer 10 questions on the basis of sets of 4-5 sentences, and to explain their answer. The main results show the persistence of a semantic approach to grammatical problems, the use of irrelevant syntactic manipulations, the confusion between the manipulation of substitution and a stylistic reformulation as well as the use of the questions in order to identify grammatical functions. Moreover, the pupils showed great difficulty with the metacognitive task asking them to explain their reasoning, some suggesting that there was nothing to explain.

For exceptional pupils, the profiles established by Ouellet (2014) on the basis of 191 pupils' dictations and written compositions and 76 average pupils' metagraphic comments indicate that the exceptional pupils make 50% more errors in grammatical spelling than the ordinary pupils, and that their declarative knowledge is significantly lower than the ordinary pupils' knowledge. There is a striking difference in the proportions of the types of procedures employed by ordinary pupils and by exceptional pupils. Ordinary pupils' procedures are morphosyntactic (43% in 6th grade, 47% in 7th grade), morphosemantic (30% in 6th grade, 28% in 7th grade) and phonographic (21% in 6th grade, 13% in 7th grade). The syntactic manipulations are not used by 6th graders and represent 5% of the procedures of the 7th graders. The exceptional pupils exhibit a reverse order in the list of procedures, with phonographic coming first (35%), followed by morphosemantic procedures (28%) and morphosyntactic ones (24%). Noting the quasi-absence of syntactic manipulations in the pupils' procedures, the authors note that they are also absent from the teaching.

b) Descriptions of pupils' metalinguistic work. Although less studied in the period than the teachers' work, the pupils' grammatical work in class has received some attention since 2005. Through a fine observation of the pupils' grammatical work on relative clauses, Jacquin (2009) identifies the main obstacles faced by the pupils. The use of *dont* (*of which*), which is not always a part of the pupils' variant of French, is difficult. Moreover, the situation of communication in which the pupils work also seems to create an obstacle: they must give orders to others and the relative clause does not seem to them to be a natural tool to do so. Surprisingly, the analysis of the subject relative pronoun *qui* proves difficult for the 8th grade pupils. It is also shown that a narrow focus on the "antecedent" of the relative pronoun obliterates the global analysis of the sentence and a better understanding of the workings of the relative clause.

In order to describe the features of the pupils' metalinguistic work, Boivin (2014) selected 41 excerpts from 12 lessons of 75 minutes on the relative clause, in which the cognitive work of the pupils is intense and serious. The quantitative analysis indicates that the 385 interventions made by 8th and 10th grade pupils can be described as affirmations (58%), questions (27%) and hypotheses (15%). Among the pupils' affirmations, 66% are true, indicating a good quality in their grammatical

work. The metalinguistic terminology is present in 34% of the interventions, and the questions really are the locus of metalinguistic terminology for the pupils. It is indeed remarkable that 62% of the questions are formulated using metalinguistic terminology, whereas 94% of the hypotheses are made without it. Syntactic manipulations are found in 18% of the pupils' interventions. They are relevant with respect to the problem at hand in 78% of the cases, and most of them are conclusive (61%), i.e. allow the pupil to draw an appropriate conclusion. This is an important point, since the presence of a conclusion for syntactic manipulations is correlated with high progress classrooms (cf. supra, Fisher & Nadeau 2014a). Although 77% of the grammaticality judgments expressed by the pupils are implicit (typically via a successive application of manipulations), 78% of them are adequate, another interesting fact with respect to the conclusive character of syntactic manipulations.

Focusing on the learning of the verb in a 7th grade classroom, Gauvin (2011) and Gauvin & Boivin (2013) inferred the pupils' knowledge from their work during 9 lessons (about 9 hours), globally and with respect to a turning point where the knowledge is institutionalized (cf. Brousseau, 1998), i.e. shared and made explicit for the entire group of pupils. The analysis of 361 pupils' interventions shows that 46% of the interventions refer to declarative knowledge about the verb, whereas 54% involve procedural knowledge, the latter augmenting to 64% of the interventions after the institutionalization; the pupils correctly identify the verb in 54% of the cases prior to institutionalization and in 67% of the cases after institutionalization. Decisive properties in the identification of the verb (e.g. possibility of negation and conjugation) and non-decisive properties (obligatory presence of V in the sentence) are not distinguished in the teaching: the pupils do not learn that the verb *is the only grammatical category* that can bear negation and that can be conjugated; and the pupils do not especially rely on decisive properties in their work. However, when they use decisive properties, their performance in the identification of the verb is better: they correctly identify the verb in 79% of the cases, and this suggests that their explicit grammatical knowledge is useful. Some pupils experienced difficulty in using conjugation as a test for identifying the verb: they did not apply the conjugation in the context of the sentence at hand, and ended up conjugating nouns homophonous with verbs, such as *juge* (*judge*). This illustrates the need to understand the role and functioning of the manipulation, in order not to use it in a mechanical fashion (cf. Brissaud & Grossman, 2009).

Manipulations and grammaticality judgments were investigated in the qualitative analysis of pupils' grammatical work made by Boivin (2009). This study of the features of 8th and 10th grade pupils' work in recurring events-types selected from 12 lessons on the relative clause indicates an erroneous conception of the manipulation of substitution, in the context of a relative clause containing the relative pronoun *dont* (*of which*), as well as a variation in the grammaticality judgments of the pupils, who notably allow the presence of resumptive pronouns in such contexts (cf. *un homme dont sa fille vit en Haiti/a man whose his daughter lives in Haiti*).

Pupils sometimes use syntactic manipulations in order to express an idea for which they lack the relevant declarative knowledge¹³ (cf. Boivin, 2007, 2009). The use of syntactic manipulations and the basic sentence model in the pupils' work was documented by an analysis of 7th pupils' work on the verb (Gauvin, 2011; Gauvin & Boivin, 2012). Drawing from 22 lessons representing more than 20 hours of grammatical work in 7 classes, the authors selected 118 excerpts where the knowledge in the classroom makes a leap forward, stagnates or even regresses and examined these factors in relation with syntactic manipulations (97 excerpts), and the basic sentence model (21 excerpts). When the manipulations are correctly applied (notably applied within the relevant sentence), there is progress in the class' knowledge; whereas the application of the manipulations outside of the sentence yields stagnation or regression. Moreover, when the manipulations are not used in order to solve the problem, there is stagnation or regression; this is for instance the case when a question is employed in order to identify the subject in the sentence. In the few cases where the basic sentence model is indeed used, the knowledge greatly progresses; the cases where it was not used when relevant involve stagnation or regression of the knowledge.

The progress and stagnation of knowledge in the classroom was also key in Boivin (2007), a case study of an excerpt of a lesson on relative clauses in a 8th grade class in Switzerland. The didactic situation in the classroom is blocked: the teachers' grammatical analysis of a difficult relative clause (e.g. *la femme dont la beauté égalait la santé*) is erroneous and is not understood by the pupils, who make numerous interventions pointing to the differences between the proposed description and the correct one. The characteristics of the pupil who helps resolve the situation by moving the grammatical knowledge of the classroom forward are (1) a "conciliation" capacity (the pupil is able to allow his own knowledge to coexist with the proposed knowledge), and (2) the use of syntactic manipulations in a comparative manner. The analysis also shows that the linguistic competence of the pupils is relevant and useful (notably but not only in the use of manipulations), and that, for the teacher, the capacity to conduct the advancement of the knowledge in class is dependent on the anticipation of the pupils' hypotheses and a clarification of the knowledge to be taught (cf. infra).

¹³ For example, a Swiss pupil wanted to express that a relative clause beginning with *dont* was related to the subject of a sentence and not to the direct object. He didn't use the terminology but he replaced the relative clause by the PP *de l'étranger* both into the subject and object NP, and insisted on the contrast in the grammaticality of the resulting sentences: *Les yeux de l'étranger projetaient des flammes* vs. **Les yeux projetaient des flammes de l'étranger* (lit.: The eyes of the stranger were projecting flames vs. The eyes were projecting flames of the stranger). The use of the manipulations helped him express an idea for which he didn't have the proper words (Boivin, 2007).

Pupils' knowledge and performances following experimental interventions in class

One of the most challenging issues faced by the introduction of new grammar and the use of heuristic, active methods is the evaluation of their effectiveness with respect to the pupils' knowledge and performance in class. The early research on the topic yielded mixed results (cf. Kilcher-Hagedorn, Othenin-Girard & de Weck, 1987), at least in part because it was difficult to implement the new approaches and contents in the experimental classrooms.

In the project described before, Fisher & Nadeau (2014a, 2014b) and Nadeau & Fisher (2014) measured the impact of the innovative dictations on the pupils' performances in a dictation for 777 pupils as well as a composition for 722 of them. The results show that 82% of the pupils progress; the progress is significant ($p < 0.001$) between the pre-test and post-test, except in 9th grade. For instance, in year 2, the 8-10 years old pupils showed a 10.6% progress in the numbers of words spelled correctly, the 10-12 years old a progress of 7.7%, and the 12-13 years old a progress of 4.4%. According to the authors, this progress is also notably higher than the progress reported in Manesse & Cogis (2007, cf. supra). The innovative dictations are particularly beneficial for low-achieving pupils, whose progress is superior to the progress of other pupils regarding verbal agreement and the spelling of grammatical homophones.

Boivin & Pinsonneault (2014, 2016) proposed a theoretical model for the integration of grammar and writing in L1 instruction. In order to test the impact of the application of the model on pupils' writing, they created in collaboration with teachers 5 series of lessons that were implemented by the 5 teachers in their class. Recall that the approach was heuristic, and that the series of lessons targeted the pupils' difficulties in writing and ended with the immediate reinvestment of the new knowledge in the writing of a text. The interventions took place over 6 periods (less than two weeks) and the data were collected immediately before and after the interventions; the control groups had similar conditions. The results suggest that the series of lessons globally had a good impact on the pupils' knowledge and performances. After experimenting with a syntactic approach to the spelling of homophones, the 7th grade pupils' performance increased 15%; the approach was especially useful for low-achieving pupils. After the formulation over the course of instruction of a clear and functional rule on verbal agreement, the 8th grade pupils did not perform better. However, the interviews reveal that the pupils have a better understanding of the rule and that their metalinguistic terms are more accurate. This suggests that the new knowledge is present but not stabilized enough to be transferred into a writing task. In 9th grade, a series of lessons tackled the syntactic problem of coordination. Although the generalized difficulty of pupils with the identification of the grammatical categories (e.g. necessary preliminary knowledge) has slowed down the lessons, the pupils were able to continue with help from the teacher. The errors in coordinating sentences go down from 1.8 per 100 words to 1.1 per hundred words, and 70% of the pupils get better scores after

the intervention. Finally, an intervention on past participle agreement took place in 10th grade. Given the pupils' previous knowledge, the series of lessons had to include basic notions such as the distinction between simple and complex verbal tenses, the existence of two auxiliaries (*be* and *have*), the distinction between direct and indirect object, and the movement of the direct object in some constructions. In other words, the foundation on which one can anchor the rules of past participle agreement were not strong enough in pupils and the work on past participle agreement itself was premature, according to the researchers, given the existing pupils' knowledge.

An important aspect of the innovative dictations and the heuristic approach described above is that they are especially beneficial to the low-achieving pupils, who greatly improve their performances.

4.2. *Pupils' performances in writing*

This section presents studies—often large scale ones— that assess the pupils' performances in writing. In the history of the field, the seminal study on pupils' performances is the DIEPE group research report (1995), which compared the performances of 7000 9th grade francophone pupils, from Belgium, France, New Brunswick and Quebec. In a 194 items MCQ covering spelling (lexical and grammatical), vocabulary, syntax, and text, the pupils had to identify the correct form or the error. The success rate for the questionnaire was 68% for the Belgian and French pupils, 60% for the Quebec pupils and 48% for the New Brunswick pupils.

Knowledge on lexical and grammatical spelling is deteriorating in French pupils, as shown by a well-known and influential study by Manesse & Cogis (2007), who describe the performances of 2700 pupils from 5th grade to 9th grade with the same dictation as Chervel & Manesse (1989). The 83-word text dictated to the pupils (*Les arbres*, by Fénelon) contains 37 variable words in four sentences. 50% of pupils of the 1989 study made less than 7 errors (lexical or grammatical) whereas only 22% of the pupils of the 2007 study did so. Agreement marking is especially problematic; the pupils of the 2007 study making 50% more mistakes than the pupils of the 1989 study, the most problematic cases being verbal and adjectival agreement. The average success rate for verbal agreement is 70%, and there is an improvement of 1 to 1.5 agreement markings in average a year from 5th to 9th grade.

In order to evaluate the pupils' performance in syntax in addition to grammatical spelling, Boivin & Pinsonneault (2014a) analyzed 136 texts, 139 dictations and 29 metagraphic interviews produced by 5 groups of pupils from 7th to 11th grade. The most frequent errors in texts are syntactic (homophones, punctuation and complex sentences), followed by errors on grammatical spelling (agreement with the subject and agreement within the NP). In the dictations, the most frequent errors are also agreement with the subject, agreement with the direct object (a context absent in the pupils' texts), number marking on anaphoric pronouns, and homophones. In the pupils' reasoning with respect to their texts, the most frequent

types of explications are syntactic. The comments are generally exact or mainly exact (48% in 9th grade, 60% in 10th and 11th grade). The pupils explain by using demonstrations and grammaticality judgments, and rarely rely on declarative knowledge. Metalinguistic terms are present in 33% of the interventions in 7th grade and in 60% of the interventions in 10th and 11th grade. When metalinguistic terms are used, they are generally appropriate.

The performances of pupils with respect to syntax and grammatical spelling presented above are replicated for the most part, and expanded in Boivin & Pinsonneault (2014b, in press). This work analyzes the errors pertaining to syntax and grammatical spelling in almost 1000 texts collected by the Quebec Ministry of Education in the context of national writing examinations, written in 2010 by Quebec pupils from 4th, 6th, 8th and 11th grade and representative of the relevant population. The texts were coded using a coding system very close to the linguistic descriptions and adapted from Boivin & Pinsonneault (2014a), with 4 hierarchical levels comprising 118 codes. In order to measure the validity of the coding, 6% of the corpus was coded by all coders and the resulting intra-class correlation coefficient was of .945. The errors' rate was expressed by the number of errors per hundred words, in order to compare the results between pupils¹⁴. One of the most important results of this study is that for all grades, the rate of syntactic errors is higher than the rate of grammatical spelling errors. For instance, in 8th grade, the average rate of syntactic errors is 6.31 per hundred words, and the average rate of grammatical spelling errors is 3.34. The difference in the rate of errors in syntax and grammatical spelling is significant for all grades. In syntax, the average rate of errors is about 12 per 100 words in 4th grade, and less than 4 in 11th grade. In grammatical spelling, the rate of errors per 100 words is 4.5 in 4th grade and .5 in 11th grade. The difference between 6th grade (3.10 errors/100 words) and 8th grade (3.34 errors/100 words) is not significant. This could notably be attributed to the presence of more complex NPs in the older pupils' texts (agreement with subject, agreement within NP). Punctuation, which relies on a syntactic analysis of the sentence, is the most frequent category of errors, for all grades. Errors pertaining to agreement of the adjectives and determiners within the NP are very frequent: they occupy the second rank in 6th and 8th grade, and the 3rd rank in 11th grade. The construction of the simple sentence (construction of the NP, the VP and the PP, notably verbal complements, and choice of the prepositions) is no simple matter: it is the 3rd source of errors in 6th and 8th grade, and the second source of errors in 11th grade. Errors of that type include **Se rappeler de quelque chose* (erroneous preposition), **Je lui ai demandé* (missing direct object). Finally, agreement

¹⁴ *The ratio of the number of errors per context where the error is possible would be an interesting measure, possibly more accurate to account for the pupils' competence. However, this measure involves a detailed analysis of the content of the text in order to identify the contexts (number of clauses, number of noun phrases, number of relative clauses) and it was beyond the purpose and means of the study to make such an inventory.*

depending on the subject (verbal agreement, agreement of the subject complement and of past participle with *être*) is also an important source of errors, as well as homophones, except for 11th grade pupils.

5. THE GRAMMATICAL OBJECTS ADDRESSED IN THE EMPIRICAL STUDIES ON GRAMMAR INSTRUCTION

The grammatical objects were not the thread running through the presentation of the research reported in this paper. It thus seems interesting to provide an approach to the empirical research on grammar instruction via the grammatical objects¹⁵. This point of view is presented in Table 1 below, using and slightly adapting the classification made by Boivin & Pinsonneault (2014a, 2014b).

Table 1 gives an overview of the various grammatical objects discussed in the studies, in relation to the topics of the sections of the article and the relevant studies. Given the state of development of the discipline and the limitation of this article to empirical studies of the last decade, it is not expected that all grammatical objects be covered or addressed in the same fashion. We can nevertheless observe that most grammatical objects are discussed in studies on teaching (sections 2 and 3 of the paper), as well as in studies on pupils' knowledge and performances (section 4 of the paper). The basic sentence and the verbs are good examples of such discussions. It is interesting to note that complex sentences are almost limited to the topic of relative clauses, nearly leaving aside other subordinate clauses and other constructions of complex sentences such as coordination and juxtaposition. The same remark applies to the various types and forms of sentences, with only negation studied in the work reported. As explained in the introduction, the treatment of grammatical spelling in this article is limited to studies pertaining to grammatical instruction more generally and to studies of pupils' performances, but I have included it in the table for the sake of completion.

¹⁵ *Many thanks to an anonymous L1 reviewer for this suggestion.*

Table 1. Summary of the grammatical objects involved in the studies reported in this article

Grammatical object		Section of the article	Source
Linguistic norm			
In general		3.1 Beginners' grammatical knowledge	Dumortier & Dispy (2013)
For syntax and grammatical spelling		4.2 Pupils' performances in writing	Boivin & Pinsonneault (2014b, in press)
Syntax			
General		3.1 Beginners' grammatical knowledge	Panchout-Dubois (2011) Gauvin (2016)
		4.1 Pupils' knowledge and performances (explicit knowledge)	Élalouf (2005)
Phrase		3.1 Beginners' grammatical knowledge	Cogis, Elalouf & Brinker (2009)
Grammatical categories	Verb	2.1 Ordinary teaching practices	Lepoivre-Duc & Sautot (2008)
		3.1 Beginners' grammatical knowledge	Gourdet (2011)
		4.1 Pupils' knowledge and performances (metalinguistic work)	Gauvin (2011) Gauvin & Boivin (2013)
	Verbs, nouns	2.2 Implementation and evaluation of teaching methods	Sève & Ambroise (2009)
	Homophones	3.2 Beginners' teaching methods	Elalouf & Peret (2009)
		4.1 Pupils' knowledge and performances (after intervention)	Boivin & Pinsonneault (2012, 2014a)
Simple sentence	Basic sentence	2.1 Ordinary teaching practices	Grafé (Canelas-Trevisi & Schneuwly, 2009)
		2.2 Implementation and evaluation of teaching methods	Sève & Ambroise (2009)
		3.1 Beginners' grammatical knowledge	Elalouf (2014)
		3.2 Beginners' teaching methods	Garcia-Debanco (2009)
		4.1 Pupils' knowledge and performances (metalinguistic work)	Gauvin (2011) Gauvin & Boivin (2012)
	NP structure	2.1 Ordinary teaching practices	Lepoivre-Duc & Sautot (2008)
		2.2 Implementation and evaluation of teaching methods	Lepoivre-Duc & Sautot (2009)
Complex sentence	Relative clause	2.1 Ordinary teaching practices	Grafé (6 articles)
		4.1 Pupils' knowledge and performances (metalinguistic work)	Grafé (Jacquin, 2009) Boivin (2007, 2009, 2014)
	Coordination	4.1 Pupils' knowledge and performances (after intervention)	Boivin & Pinsonneault (2014a)
Punctuation	General	3.1 Beginners' grammatical knowledge	Paolacci & Garcia-Debanco (2005)
Types and forms of sentences	Negation	3.2 Beginners' teaching methods	Paolacci & Garcia-Debanco (2009)
Grammatical spelling^a			
General		2.1 Ordinary teaching practices	Ouellet (2014)
		2.2 Implementation and evaluation of teaching methods	Nadeau & Fisher (2014); Fisher & Nadeau (2014a, b)

Grammatical object	Section of the article	Source
Agreement within NP	4.1 Pupils' knowledge and performances (after intervention)	Nadeau & Fisher (2014); Fisher & Nadeau (2014a, b)
	4.2 Pupils' performances in writing	Manesse & Cogis (2007)
Verbal agreement	4.1 Pupils' knowledge and performances (explicit knowledge)	Nadeau & Fisher (2009)
Past participle agreement	4.1 Pupils' knowledge and performances (after intervention)	Boivin & Pinsonneault (2014a)
	4.1 Pupils' knowledge and performances (explicit knowledge)	Gauvin (2005)
	4.1 Pupils' knowledge and performances (after intervention)	Boivin & Pinsonneault (2014a)
Textual grammar		
General	3.1 Beginners' grammatical knowledge	Rondelli (2010)

^a For practical reasons, Table 1 departs from the internal organization of grammatical spelling provided by modern grammar (cf. Boivin & Pinsonneault, 2008, 2014a, 2014b), which involves three agreement systems: a) agreement within NP (plural marking on N, agreement of adjectives inside NP, agreement of determiner); b) agreement depending on the subject (verbal agreement, agreement of the past participle with *être*, agreement of the subject complement); c) agreement depending on the object (agreement of the past participle with the object, agreement of the object complement).

6. CONCLUSION: TRENDS AND PERSPECTIVES FOR FUTURE RESEARCH

This paper has shown the vitality and the breath of the empirical research on grammar instruction in the francophone world. From a methodological point of view, one key feature of recent research is the importance of direct observations in the classroom, for the teachers' and the pupils' work as well. The tools developed to analyze the data regarding the teachers' work and the pupils' knowledge and performance have become more precise and allow more detailed analyses. An important weakness emerges from the analysis regarding the breadth of the data analyzed: very often, a fraction of the data is analyzed, because of the lack of financial support for the research in the field, especially in France, a point already noted for spelling by Brissaud (2011) but which seems to be true for grammar instruction as well. This situation may also explain, at least in part, the quasi-absence of collaborative work on grammar instruction across the francophone countries.

The research topics are quite balanced between teachers and pupils, with a new interest in the teachers' work, notably the beginning teachers. The study of everyday practices has shown that grammar instruction is very present in the *francophonie*. Some notable features of grammar instruction include the mixed contents (traditional and new grammar), notional economy, and a strong separation between the study of grammatical "rules" and their applications in exercises or texts. While insisting on the fact that grammatical knowledge learned by pupils first will be partial, transitory and instable before it is more complete and stable, the experimentation of innovative teaching methods has shown promising results for the acquisition of new knowledge (heuristic approach) and for the stabilization of knowledge (innovative dictations). The fragility of both experienced and beginning

teachers' grammatical knowledge, notably in syntax, is a recurrent finding. On the pupils' side, there is a renewed interest in the pupils' ordinary work and their ability to do grammar. Recent research has shown a correlation between explicit grammatical knowledge and successful grammatical spelling, but a lot remains to be done in that respect. Performances in writing are declining, and the use of more detailed criteria for the analysis of pupils' text reveal that a large part of the errors are linked to syntax.

Some topics for future research in grammar instruction emerge in light of the portrait that I have provided in this paper. The studies reveal serious gaps in both in-service and beginning teachers' grammatical knowledge and teaching practices; these seem to be themes for which empirical research, and notably action-research, could really make a difference for grammar instruction. The notion of "stabilization of knowledge", introduced in relation to pupils' learning, stresses that taking the necessary time and using knowledge in various contexts help foster learning, and it seems worth pursuing, notably in light of the results on heuristic teaching methods, which all note the key role of time. Given the fragility of the teachers and beginners' grammatical knowledge, the notion of stabilization of knowledge would also in my view be a very interesting one to explore for teachers' training. Various means of stabilization of grammatical knowledge could be devised and experimented; one promising avenue is the use of metalinguistic discussion for solving syntactic problems, inspired by the innovative dictation approach. As was shown in the paper, empirical research on grammar instruction is naturally built on the aims of grammar instruction: to support the mastery of the language and to provide a reasonable understanding of the working of one's own language.

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