

BEGINNING SPELLING AND LITERACY APPROACHES: A COMPARATIVE STUDY BETWEEN FRENCH AND QUÉBÉCOIS FIRST-GRADE CLASSES

LAURENCE PASA* & MARIE-FRANCE MORIN**

**Toulouse University, France & **University of Sherbrooke, Canada*

Abstract. Many studies note the difficulties experienced by young children in learning deep writing systems (such as English and French) compared to those for which the link between the spoken and the written is shallower (e.g., Spanish and Italian). A large percentage of these studies are focused on English. As such, more research needs to be conducted with other first languages such as French. The present exploratory study seeks to understand the effects of these kinds of linguistic variable, along with the impact (which has received little attention) of instructional factors, on the competencies of first-grade, French-language writers. Two kinds of instructional context are examined (integrated approach vs code-oriented approach) in two countries (France and Quebec, Canada). The main findings for invented spelling situations within an integrated-approach framework reveal that French and Quebec pupils construct a more complete view of the writing system. This construction includes both units involving the transcription of phonemes by phonograms and units involving the treatment of inaudible, semiographic information by morphograms.

Keywords: French language; first grade; invented spelling; literacy instructional approaches; spelling development.

Chinese

[Translated by Shek Kam Tse]

論文摘要：很多研究都指出，幼兒學習深層寫作系統（例如英語及法語）時較的困難；而當口語和書面語之間有連繫時（如西班牙文和意大利文），幼兒學習則較淺易。這類的研究，佔大多數是集中研究英語，因此，研究其他語言作為母語（如法語）實有必要。本研究的目標，是要明瞭對一年級法語作者能力有影響的語言因素和課堂指導因素（與這項因素有關的研究不多）。我們在法國和加拿大魁北克測試兩種不同的指導方式（結合模式與編碼為主的模式）。研究結果指出，在結合模式下的自創拼寫，法國與魁北克的學生能建立一個更完整的書寫系統。書寫系統的建立包括音素的錄寫和表音符號對不可聽、半圖像資料的處理。

關鍵詞：法語、小學級、自創拼寫、讀寫指導模式、拼寫發展

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Correspondence to Laurence Pasa, Université Toulouse II, UFR Sciences Espaces et Sociétés, Département des Sciences de l'éducation, Toulouse, France. 5, allées Antonio Machado 31058 cedex 1. Email: pasa@univ-tlse2.fr

Dutch

Samenvatting [Translated by Tanja Janssen]

In veel studies is gewezen op de moeilijkheden die jonge kinderen hebben bij het leren van diepe schrijfsystemen (zoals Engels en Frans), in vergelijking met systemen waarbij de relatie tussen gesproken en geschreven taal oppervlakkiger is (bijv. Spaans en Italiaans). Een groot deel van deze onderzoeken is gericht op Engels. Meer onderzoek is nodig met andere eerste talen zoals Frans. Het huidige exploratieve onderzoek heeft ten doel inzicht te krijgen in de effecten van de taal en – iets wat weinig aandacht heeft gekregen – van het onderwijs op de competenties van jonge Franstalige schrijvers (groep 1). Twee onderwijsbenaderingen zijn onderzocht (een geïntegreerde benadering versus een op code gerichte benadering) in twee landen, Frankrijk en Canada (Quebec). De belangrijkste bevindingen wijzen erop dat Franse en Canadese leerlingen, in verzonnen spellingsituaties binnen een geïntegreerde benadering, een vollediger beeld van het schrijfsysteem construeren. Dit geldt zowel voor eenheden waarbij fonemen worden getranscribeerd met fonogrammen, als voor eenheden waarbij onhoorbare, semigrafische informatie wordt weergegeven door morfogrammen.

French

Résumé [Translated by Laurence Pasa]

De nombreuses études soulignent la difficulté qu'ont les jeunes apprenants à appréhender un système d'écriture qualifié d'opaque (comme l'anglais et le français), par opposition à des orthographes où le lien oral-écrit est dit plus transparent (l'espagnol ou l'italien par exemple). Ces études, très nombreuses en langue anglaise, nécessitent d'être poursuivies dans d'autres langues maternelles, notamment en français. La présente étude exploratoire vise à préciser les effets de telles variables linguistiques, conjointement avec l'influence encore peu étudiée de facteurs didactiques, sur les compétences de jeunes scripteurs francophones, à l'issue de la première année de l'école primaire. Deux types de contextes didactiques ont été retenus (« approche langage entier » vs « approche phonique ») dans deux pays (en France et au Canada dans la province du Québec). Les principaux résultats obtenus en situation d'écriture inventée montrent que les élèves français et québécois issus des contextes de type « langage entier » se construisent une vision plus complète du système d'écriture. Celle-ci inclut à la fois des unités visant à transcrire les phonèmes, les phonogrammes, et des unités qui traduisent une information sémiographique et qui sont inaudibles, comme les morphogrammes.

Mots-clés : système d'écriture français; première année de primaire; écriture inventée; contexte didactique; développement orthographique

German

Zusammenfassung [Translated by Irene Pieper]

Viele Studien halten die Schwierigkeiten fest, die kleine Kinder beim Erwerb ‚tiefer‘ Schreibsysteme (wie z.B. Englisch und Französisch) im Vergleich zum Erwerb solcher Systeme haben, in denen der Übergang von Gesprochenen zum Schriftlichen ‚flacher‘ ist (wie z.B. Spanisch und Italienisch). Ein großer Teil dieser Studien bezieht sich auf das Englische. Mehr Forschung zu anderen Erstsprachen, wie z.B. zum Französischen, erscheint notwendig. Ziel der vorliegenden explorativen Studie ist es, den Effekt der angesprochenen linguistischen Variablen, im Zusammenhang auch des Einflusses der Instruktion, auf die Kompetenzen von französisch-sprachigen Schreibern im ersten Schuljahr zu verstehen. Zwei Instruktionskontexte in zwei Ländern (Frankreich und das kanadische Quebec) werden untersucht (integrativer Ansatz im Unterschied zum code-orientierten Ansatz). Die bedeutsamen Ergebnisse für Situationen der Spontanschreibung innerhalb eines integrativen Ansatzes zeigen, dass Schüler und Schülerinnen aus Frankreich und Quebec eine ausgeführtere Vorstellung des Schreibsystems ausbilden. Diese Konstruktion besteht sowohl in Einheiten, die die Transkription von Phonemen durch Phonogramme enthalten, als auch in solchen, die nicht hörbare, semiographische Informationen durch Morphogramme darstellen.

Greek

Metafrase [Translated by Panatoya Papoulia Tzelepi]

Πολλές μελέτες σημειώνουν τις δυσκολίες που αντιμετωπίζουν τα παιδιά για να μάθουν «βαθεία» γραφικά συστήματα, όπως τα Αγγλικά και τα Γαλλικά, σε σύγκριση με αυτά, στα οποία η σύνδεση μεταξύ της προφορικής και της γραπτής γλώσσας είναι πιο αβαθής (π.χ. Ισπανικά και Ιταλικά). Ένα μεγάλο ποσοστό από αυτές τις έρευνες εστιάζεται στα Αγγλικά, επομένως χρειάζεται περισσότερη έρευνα και σε άλλες γλώσσες όπως τα Γαλλικά. Η παρούσα διερευνητική εργασία επιζητεί να

κατανοήσει την επίδραση αυτού του είδους των γλωσσολογικών μεταβλητών καθώς και την επίδραση διδακτικών παραγόντων (πράγμα που λίγο έχει προσεχθεί) στις δεξιότητες γραφής Γαλλόφωνων παιδιών της πρώτης τάξης σε δύο χώρες (Γαλλία και Κεμπέκ του Καναδά). Τα κύρια ευρήματα στην επινοημένη γραφή στο πλαίσιο ολικής προσέγγισης αποκαλύπτουν ότι οι μαθητές στη Γαλλία και τον Καναδά κατασκευάζουν πληρέστερη άποψη για το γραφημικό σύστημα. Αυτή η κατασκευή περιέχει τόσο ενότητες σχετιζόμενες με την μεταφορά των φωνημάτων σε γραφήματα, όσο και ενότητες σχετικές με τη διαχείριση μη ακουμένων, σημειογραφικών πληροφοριών από μορφογράμματα.

Polish

Streszczenie [Translated by Elżbieta Awramiuk]

W wielu badaniach zauważa się, że trudności doświadczane przez małe dzieci w uczeniu się ortografii głębszej (takiej jak angielska czy francuska) są większe w porównaniu do tych systemów, w których związek między mówionym a pisanym jest płytszy (jak w hiszpańskim lub włoskim). Duży procent tych prac koncentruje się na języku angielskim. Z tego powodu powinno się prowadzić więcej badań nad innymi językami ojczystymi, takimi jak na przykład francuski. W prezentowanym artykule staramy się zrozumieć rolę czynników lingwistycznych, a także czynników instruktażowych (którym dotychczas poświęcono niewiele uwagi) na kompetencje francuskojęzycznych piszących pierwszoklasistów. Badaniom zostały poddane dwa rodzaje instruktażowych kontekstów (podejście holistyczne vs podejście tradycyjne) w dwóch krajach (Francja i Quebec, Kanada). Najistotniejszym wnioskiem wypływającym z badań pisma małych dzieci jest stwierdzenie, że francuskie i kanadyjskie dzieci uczone holistycznie mają bardziej kompletną wizję systemu pisma. Ich konceptualizacje obejmują zarówno jednostki wymagające transkrypcji fonemów przez fonogramy, jak i jednostki wymagające oddawania niesłyszalnych semiograficznych informacji przez morfogramy.

Słowa-klucze: język francuski; pierwsza klasa; pismo małych dzieci; sposoby nauczania czytania i pisania; rozwój umiejętności ortograficznych

Portuguese

Resumo [Translated by Paulo Feytor Pinto]

Muitos estudos têm realçado as dificuldades das crianças em aprender um sistema de escrita profundo (como o inglês ou o francês) em comparação com as dificuldades em sistemas cuja relação entre o oral e o escrito é mais superficial (por exemplo, em espanhol e italiano). Como uma grande parte destes estudos se centra no inglês, é necessária mais investigação relativamente a outras línguas maternas, como o francês. O presente estudo exploratório procura compreender os efeitos deste tipo de variáveis linguísticas, bem como o impacto, pouco estudado, de factores instrucionais sobre as competências de escritores francófonos do 1º ano de escolaridade. Dois tipos de contexto instrucional são examinados (abordagem integrada vs. abordagem orientada para o código) em dois países (França e Canadá, Quebec). Os principais resultados em situações de ortografia inventada, no quadro de uma abordagem integrada, mostram que os alunos franceses e quebequenses constroem uma visão mais completa do sistema de escrita. Esta visão inclui tanto as unidades implicadas na transcrição de fonemas por fonogramas como as unidades implicadas no tratamento de informação inaudível e semiográfica por morfogramas.

Palavras-chave: língua francesa, 1º ano de escolaridade, ortografia inventada, abordagens instrucionais da literacia, desenvolvimento ortográfico.

1. INTRODUCTION

Despite increasing scholarly interest in understanding young writers, there have been many fewer studies of the processes of learning spelling learning than of learning reading (Treiman & Bourassa, 2000). Indeed, a well-entrenched scholarly tradition has often favoured research into the beginning stages of learning reading among children, based on the assumption that the starting point for the development of written language is reading, not writing. However, studies have revealed the specificity of writing activities, noting in particular the complexity of initiating writing activity (McCutchem 2000; Ehri, 1997).

In the field of study focused on the development of spelling abilities, work initiated by Chomsky (1971), Read (1986), and Ferreiro and Teberosky (1982) has influenced the emergence of a constructivist perspective on the development of young writers in invented spelling situations, this before beginning school or during the first grade. Generally speaking, these foundational studies draw out the diversity of writing types mobilized by learners. This diversity is linked to the progressive understanding they construct of the writing system to be learned.

These same studies have inspired many researchers from different countries who have studied first writing experiences by kindergarten and first-grade writers. Ferreiro's work has been replicated in many studies of young children with different first languages (Hebrew: Tolchinsky, Landsmann & Levin, 1986; German: Prêteur & Louvet-Schmauss, 1992; French: Besse, 1990; Fijalkow & Fijalkow, 1992; Jaffré, 1992; English: Kamii, Long, Manning, Manning, 1993). While they lend validity to Ferreiro's model, this body of research has refined it and drawn out the fact that the degree of ease observed in learning spelling could depend on structural characteristics specific to the language learned. For example, in comparing the conceptualizations by young French and German children upon beginning school, Prêteur and Louvet-Schmauss (1992) noted a significant difference in favour of German children, due apparently to the greater regularity of German orthography, thereby easing the shift from spoken to written language. These researchers are in line with an increasing body of research focusing on the importance of a given language's properties on the acquisition of writing. This consideration of the influence of linguistic factors in learning writing has rekindled research focused on the first learning experiences of young writers.

1.1 The specificity of written French

In comparison with other languages such as Finnish or Italian, French orthography is relatively deep given the high degree of irregularity in phoneme-grapheme correspondences. The French language has 36 phonemes and around 130 graphemes (Catach, 1995).¹ As such, there is a difference between the graphic representation of French and its phonetic reality, which contains 16 vowels, 17 consonants and 3 semi-vowels.² Written French is a plurisystem containing three kinds of distinctive and/or significant written units or graphemes: phonograms, related to the phonographic principle, and morphograms and logograms, which are related to the semiographic principle (Catach, 1995). More precisely, phonograms are written units responsible for transcribing sounds (phonemes) from spoken language (e.g., the function of the grapheme EAU is to transcribe the last phoneme of [bato]). For

¹ Depending on the model of the French language, this number can vary slightly. This variation is related to whether or not certain phonograms are considered, such as the termination of packing.

² Semi-vowels are more complex in that they do not have a single written form for transcribing them and they are the most difficult phonemes to identify in the sound chain.

their part, the role of morphograms in words is to carry morphological information³, whereas logograms translate a close relationship between a specific written symbol and a word. Their main function is to distinguish homophones ([Sɛʁ] *chair*, *chaire*, *cher*; [u] *où*, *ou*, *août*, *houx*). Indeed, when we consider the coexistence of these three elements in the French writing system, we cannot fail to notice that the foundations of written French are above all phonographic in nature. As Catach (1995) notes, 80% to 85% of the written signs in a given French text transcribe phonemes while 3% to 6% of the other written units are morphograms and the balance are logograms.

When learning written language, young French-language children also face socially established norms that govern the writing system, which only adds to their task. As such, spelling norms are added onto the linguistic norm constitutive of the writing system. The existence of these spelling requirements related to the relative depth of the French language leads us to make a distinction between two types of writing. Some writing productions by young writers can be considered as conventional in that they respect the rules of written representation specific to the linguistic system, while other written productions are orthographically acceptable in that they not only respect these rules, but also the social conventions governing written language. For example, writing ÉLAIFEN for [elefã] is plausible and acceptable according to the rules of transcription in written French. However, only ÉLÉPHANT is accepted as the correct spelling.

Until now, few studies have considered the specific characteristics of the French language in understanding writing learning among French-language children. However, it seems clear that more studies in this regard are needed. Indeed, some studies have suggested that learning writing among French-language children differs from the experience of learners of other languages (Morin & Montésinos-Gelet, 2005; Prêteur & Louvet-Schmauss, 1992). Moreover, above and beyond differences related to linguistic contexts, other contextual and environmental elements might also play a role in the beginning stages of writing.

1.2 Contextual factors in literacy development

It is important for studies of learning writing to go beyond a subject-centred psychological approach and to adopt a socio-constructivist view (Vygotski, 1962) which considers social context, educational setting and teaching practices. This view considers the subject (learner)–object (written language) dyad as a function of a third determinant: school. Introducing social context into the study of learning writing leads to a pluralist model of learning, that is, the notion that learning forms can vary according to the instructional and teaching context (Fijalkow, 2000). In this regard,

³ One of the particularities of written French is the morphological information, which is silent in spoken French. For example, the silent-consonant *s* used to signify the plural of nouns (*un enfant/des enfants*, the word *enfant* being pronounced in the same way). In written French, there is also the vowel *e* which is typically silent at the end of words (e.g., *fille*, *village*), even if it should be noted that in certain French-speaking regions (south of France) there is a tendency to pronounce this *e* at the end of words.

the issue becomes one of understanding how and to what extent the way in which written language is presented to children influences their writing competencies.

In the French-language literature, comparative studies are few, whereas in English-language countries, studies focus on the effects of differing teaching practices on learning writing. In France, the main reason for the absence of comparative studies is due in part to the homogeneity of pedagogical contexts. Given the centralization of the French educational system, and notwithstanding the various dated names given to the teaching methods (*global, natural, active, phonetic, synthetic, analytic* and so on), French teaching practices are relatively homogeneous and traditional (centred on the phonographic aspects of written language). Innovative practices based on a literary and functional approach to teaching reading-writing are in the minority (Fijalkow, 2003; (Fijalkow & Fijalkow, 1996). Few teachers stray from reading manuals (forty or so first-grade manuals are available on the pedagogical market) and draw on children's books or social texts⁴ despite the fact that official guidelines say nothing about the kind of instructional material that must be used.

In Quebec, there are few comparative studies and teaching practices are equally homogeneous. However, ministerial directives are more explicit than those in France (see Pasa et al., 2002 for a comparative study), even though some teachers use innovative practices in the classroom (Nadon, 2002). In addition to these more precise official directives, teachers are strongly encouraged to use government-approved pedagogical material (Ministère de l'éducation du Québec).⁵ Because of this, Quebec teachers who use social texts and children's literature are in the minority.

In contrast, in Anglo-Saxon countries, non-centralized educational policies have led to the implementation of genuinely differing teaching programs. This non-centralization has also given rise to comparative studies of the evolution of practices in teaching reading and writing. The prevailing traditional approaches of the 1950s based on drawing out the relationship between phonemes and graphemes (e.g.: *phonics, code-oriented, skills-based* approaches, traditional basal reading programs, direct-instruction approaches) gave way to a wide variety of differing practices. Among these practices, the whole-language or language-experience approach, largely attributed to Yetta and Kenneth Goodman (1986, 1992), is the most widely used one in American elementary schools (Stahl, 1996).

Although the whole-language approach is apparently difficult to define (Gunderson, 1996), its adherents appear to share a certain number of principles. The first of these principles is the conviction that spoken or written language must be presented in its entirety, and used and learned for authentic purposes—expressing oneself, communicating, informing, etc. (Goodman & Goodman, 1979; Kucer, 1991). In the classroom, this translates into using real-world reading-writing situations, drawn from children's literature (Tunnell & Jacobs, 1989), without focusing on linguistic units in a de-contextualized manner (such as grapheme-phoneme correspondences) and without relying on artificial tasks (such as traditional application exercises or

⁴ For example., newspapers, advertisements, books, etc.

⁵ Le Ministère de l'éducation du Québec (Ministry of Education) has approved seven different school manuals for teaching French in the first cycle of elementary school (grades one and two), which has resulted in few differences among pedagogical tools.

reading stories conceived for learning purposes – such as those found in manuals). A second principle involves focusing on the learners and the trust placed in them to manage their learning: the teaching program cannot be determined completely in advance, but must respond to student needs in situations in which they attempt to use language for communication purposes (Freppon & Dahl, 1991; Stahl, 1996).

As can be seen, so-called traditional approaches and whole-language approaches are articulated around different considerations: traditional approaches concern themselves with a body of knowledge to be transmitted to students (above all, the phonographic aspects of writing) whereas whole language approaches are learner centred. They also have different representations of learning and of the nature of written language which they feel must be presented to children: the whole versus the parts (Cheeck, 1989; Stahl, 1996; Templeton, 1991). The opposition between these two teaching approaches has given rise to a considerable number of comparative studies, the conclusions of which have varied over time. Before 1970, most of these studies favoured a phonic approach to writing (see Chall, 1967 and Adams, 1990 for a presentation of the “Great debate”). Subsequently, the comparative literature on the subject has provided a more nuanced portrait.

Various meta-analyses and reviews of the issue, each based on a review of around 50 comparative studies (Graham & Harris, 1994; Stahl, McKenna, Pagnucco, 1994; Stahl & Miller, 1989), reveal that whole-language approaches are significantly more effective in kindergarten than in grade one where their effects are almost identical to those of traditional approaches (see also Manning & Kamii, 2000). There is a consensus among these authors to the effect that a whole-language approach is particularly well suited to young learners inasmuch as it offers a stimulating environment favouring metacognitive effort and enables them to familiarize themselves with the behaviour of readers and writers. Moreover, most of the cited comparative studies argue that the whole-language approach is better with regard to the representations of writing and the learning of reading and writing elaborated by learners.

With a view to clarifying the effect of contrasted teaching practices, various studies have attempted to see whether traditional approaches were, as is often thought to be the case, better suited to helping students acquire the “core competencies” needed for word identification. In that it is based on an abundant scholarly literature, this hypothesis has engendered heightened interest. Indeed, Foorman’s (1995) review of the issue reveals that studies of word identification and the relationship between phonological awareness and reading-writing acquisition are clearly in favour of explicit teaching of the language code at the beginning of formal teaching (Ginsberg, 2000; Krashen, 1999; Stanovich & Stanovich, 1995). However, other studies show that children discover the alphabetical principle and learn the rules of grapho-phonetic correspondences in whole-language classes where, contrary to what is often thought, these aspects are indeed taught, though in a meaningful context and without a pre-established program (Dahl & Scharer, 2000; Dahl *et al.*, 1999; Freppon & Dahl, 1991; Lapp & Flood, 2002; Morris *et al.*, 2003; Slaughter, 1988).

2. RESEARCH OBJECTIVES

The divergence of findings with regard to the effects of instructional contexts on learning an alphabetical language such as English or French is suggestive of the need for further exploration of the link between teaching and learning. In this light, we conducted a comparative study with a view to drawing out the effects of certain aspects of written language as a teaching object. If, as teachers often feel, the difficulties experienced by children are due to: the particularities of spoken language; the nature of the writing system or the complexity of the spoken-written relationship in French, then all French-language pupils should encounter them, irrespective of the approach taken by their teacher. If, on the other hand, instructional strategies in this regard have an effect on learning processes, then the difficulties experienced by children could well vary from one context to another. As such, we compared two samples of French-language children (one in France, the other in Quebec) in two instructional settings: one centred on teaching the phonographic code by means of a reading manual, and the other focused on a whole-language approach using children's literature. As such, even though the children were confronted with the same linguistic object, some strategies might be developed by all the children whereas others might be specific to each kind of instructional setting.

3. METHODOLOGY

3.1 Population

This comparative study was of 72 children in two samples of first-grade students (average age: 6.5). One group was in France and the other in Quebec (Canada's French-language province). Each sample was made up of 36 children in classes taught by teachers who were similar in terms of gender (female), age (between 35 and 40) and professional experience (around 12 years), but dissimilar in terms of instructional practices employed. In each class, we only retained the 12 least advanced students at the beginning of the school year⁶ (on the basis of the results for various reading, writing and linguistic awareness tasks). The instructional contexts differed as a function of: the conceptions the teachers had of the object to be taught; their teaching objectives; the kind of activities used in class and the variety and nature of reading supports.⁷

In both the French and the Quebec samples, one teacher relied on a reading manual and used activities that emphasized learning phonographic correspondences and mastery of letter- and letter-sound combinations, and, to a lesser extent, a lexicon of

⁶ *In this exploratory study, we focused on writers who were the most likely to provide us with information about the process of knowledge construction. In addition, our interest in these students who were less advanced in their spelling skills was also in line with a social concern for facilitating literacy development at the start of schooling so as to favour overall school success. Consequently, this study's findings cannot be generalized to the population as a whole.*

⁷ *These were identified by means of various data collection activities (interviews and questionnaires, observations, document review).*

frequent words and word tools. Teaching activities were centred on reading with little use of written productions.

In the other French and Quebec classes, the teaching activities were based on children's literature and social texts intended to situate the learning of writing in a more cultural and social context. The class activities presented all aspects of the writing system (phonographic, morphographic and logographic components). Written productions were encouraged from the beginning, and oral expression, reading and writing activities were jointly conducted.

These distinct instructional orientations led us to name these classes respectively: code-oriented approach F and code-oriented approach Q for the traditional French (F) and Quebec (Q) settings; and integrated approach F and integrated approach Q for the more innovative French and Quebec settings.

3.2 Material

We asked the 72 children to write seven words belonging to the same semantic field: *coccinelle*, *crocodile*, *cygne*, *écureuil*, *éléphant*, *grenouille* and *rat*.⁸ These words vary in terms of certain linguistic characteristics: oral length (between two and eight phonemes); syllabic structure (CV –Consonant-Vowel– CVC, CCV or CVG –Glide or semi-vowel), phonemic polyvalence (apart from *rat*, each word contains between one and five phonemes having several possible transcriptions), grapheme length (unigrams vs. digrams, morphograms (*rat* and *éléphant*) or silent letters at the end of the word (*coccinelle*, *crocodile*, *cygne*, *grenouille*).

3.3 Testing

Individual testing took place between late May and early June in the six classes. The children were given the following instructions: "You are going to write six words that you might not know. I know that you don't know how to write a lot, but it's okay if you make mistakes. It's only to see how you write." The words were dictated in a random order varying from one child to the next. During the test, repetition was used only to encourage the children. The observers offered no help and only asked the children to write the words as best as they could, the way they thought the words should be written.

3.4 Coding

The children's writing was coded at the level of the entire word. Over and above exact response, we sought to identify the nature of the observed difficulties.

A first distinction between *non-phonological writing* and the other productions served to isolate written productions in which there was no attempt at encoding. The written segment produced by the child had little or no relationship to the word's oral form: the chosen letters did not correspond to the phonemes in the word (e.g.,

⁸ *Ladybug, crocodile, swan, squirrel, elephant, frog and rat.*

pdfêfrè for *coccinelle*; *flftlesprsvese* for *crocodile*; *pfaneghk*, *tfipbica* or *reffpse* for *grenouille*; *anicâiief* for *éléphant*), and/or the length of the written segment was not proportionate to the duration of the oral chain (e.g., *rainerar* for *rat*; *vvel* for *grenouille*). In this category, we also placed segments which only had a very partial phonological relationship with the word to be written (a syllable coded phonographically; e.g., *êitefêi* or *aeuquaen* for *écureuil*).

A second distinction between *transcriptions which conformed to the oral form of the word* (see Table 1) and *partial or erroneous transcriptions* enabled us to grasp the children's mastery of written language in phonographic terms (relative to phoneme-grapheme correspondences).⁹

Table 1: Examples of transcriptions conforming to the oral form

Rat	Cygne	Éléphant	Écureuil	Grenouille	Coccinelle	Crocodile
ra	sinie	élerfan	équireuy	grenouye	qoksinel	crocodil
raz	signe	éléphen	écurei	grenouy	cocsinelle	crocodile
ras	cign	etléfan	écureille	grenouil	coksinaile	qurocaudile
rad	sygne	élesfen	etcuroeil	grenouille	koxsinêl	krocodil
rae	cinille	élaifans	écureuille	grenouie	coqcinêl	crocodile
rant	sinlle	éléphant	équroeuille	grenouslle	coqsinelle	quraucaudil

To produce a transcription which conforms to the oral form of the word, children have to conduct an exhaustive phonetic decomposition and code each phoneme with a corresponding grapheme. To do so, they use a known rule of phonographic correspondence, at times by using a "free application" of this correspondence (Catach, 1995), that is, without bearing in mind the rules of intra-word position (e.g., the child does not consider positional and distributional rules in choosing Q to transcribe /k/ before /y/ in *équireuil* for *écureuil* or I to code /j/ at the end of *écureui*). The child can also use a combination of several graphemes to code a phoneme (e.g., /&/ or /no/, coded by N + a grapheme corresponding to /j/: *cinille* for *cygne*). Lastly, some children used a morpheme to code one phoneme or two one after the other (e.g., *estlesfan*, *grenouslle*, *etcuroeil*, *coksinaile*, *coqsinelle*).

Whenever the word to be written contained a morphogram (*rat*, *éléphant*), the observed appropriate transcriptions were either missing the silent letter or involved an erroneous choice. In this case, the chosen written form was a letter likely to fulfil the morphographic function (e.g., *éléfens*, *éléphand*) or the letter *e* (frequent at the end of a word, e.g., *rae*, *éléfane*). Lastly, this category also contains productions in which a silent *e* at the end of a word was left out or added on (e.g., *cign*, *grenouill*,

⁹ This classification was based on the work of Treiman (1993) and various earlier psycholinguistic studies. Transcriptions which conformed to the oral form of the word to be written were called "legal spelling," as opposed to "illegal spelling" for transcriptions which did not conform.

coccinèl, crocodil, écureuille) as well as productions in which the link between the determiner “un,” which the child wanted to write, and a vowel at the beginning of the word was noted (e.g., un *neléfen*, un *nezcureille*).

We take *partial transcriptions* to refer to productions in which some phonemes were not coded, with the others being transcribed by graphemes (and sometimes by morphemes) chosen for their phonetic value (*snlle, etlesan, etcurill, grnoulle, codle*). At times, omissions stemmed from the use of the name of a letter to code two consecutive phonemes (e.g., L for /ɛl/ in *coccinelle*: *cosinl*, Q for /ky/ in *écureuil*: *éqrel*).

With regard to erroneous transcriptions (or non-conforming complete productions), all the word's phonemes were coded, but some of them were coded by means of graphemes which did not translate the phoneme in question (e.g., *ret. sine élesfon crenougne cacsinel, crocobile*). More infrequently, there were reversals, in which a series of graphemes in the produced segment did not follow the phoneme order in the oral form of the word (e.g., *etcruei, gernoui, qoqsiêne*). Lastly, this kind of writing was at times related to an unconventional transcription of a morphogram (e.g., *rag, rai, ral* or *rar* for *rat*).

4. RESULTS¹⁰

For the 504 productions (72 subjects x 7 words to be written) completed at the end of the school year, non-phonological writing was in the minority (4%), partial and erroneous transcriptions were roughly equal (respectively 19.9% and 19.5%), conforming transcriptions were in the majority (43.1%), and correct spelling accounted for 16.7%.

Table 2 Distribution in % of writing types in the four settings

	Code-oriented approach Q	Integrated approach Q	Code-oriented approach F	Integrated approach F
Non-phonological writing	13.1	2.4	1.2	2.4
Partial transcriptions	21.4	31.5	7.0	13.7
Erroneous transcriptions	12.0	17.3	31.0	19.6
Conforming transcriptions	45.2	32.7	54.8	46.4
Correct spelling	8.3	16.1	6.0	17.9

4.1 Non-phonological writing

Of the 72 children, only seven produced non-phonological writing (1-2 children per setting). The children produced such writing for only one or two of the seven words

¹⁰ The comparisons for all of these results are based on an analysis of variance.

to be written, except in the code-oriented approach Q class, in which two children produced non-phonological writing for five or six words, which explains the higher percentage for this kind of answer in this class (13.1% vs. 2.4% or 1.2%; see Table 2). The scarcity and non-exclusiveness of this kind of writing at the end of the school year (the children who used a non-phonological procedure only did it for certain words) indicates that all the children had understood the alphabetical principle. Although this kind of writing persisted among seven children, it would seem that this was due to a strategic approach to the task: some children produced a series of letters unrelated to the word's oral form when the phonemic analysis struck them as too costly in terms of cognitive effort or when they had insufficient phonographic knowledge to translate the phonemes they had identified. As such, for the less advanced children and for a certain period of time, the alphabetical principle was only partially mobilized.

4.2 *Partial and erroneous transcription*

Partial transcriptions were observed largely in Quebec (see Table 2). They accounted for 21.4% of the productions in the code-oriented approach Q class and 31.5% in the integrated approach Q class. It should be noted that in the latter class, there were many more productions than in the two instructional contexts in France (7% for the code-oriented approach F and 13.7% for the integrated approach F group $-F(3, 71) = 4.535; p < .01$).

For the most part, erroneous transcriptions were observed in the code-oriented approach F group (31%; see Table 2) whereas Quebec children in a similar setting produced the least (12% $-F(3, 71) = 3.05; p < .05$). On the other hand, they were roughly equal in France and in Quebec for the other kind of instructional setting (17.2% for the integrated approach Q and 19.6% for the integrated approach F).

These results appear to be due to differences between French and Quebec students on the one hand, and differences related to the instructional context on the other (indeed, the interaction between the two variables is significant $-F(3, 68) = 6.292; p < .01$). In general, when the Quebec children did not know the word (correct spelling) and when they were unable to reproduce its oral form (conforming transcriptions), they tended to produce partial transcriptions. In similar situations, the French students produced erroneous transcriptions. These initial results indicate that, generally speaking, the French students tended to be able to identify the phonemes in the words to be written. However, they had difficulty in choosing the phonogram to be used to transcribe the identified phoneme. For the Quebec students, on the other hand, the greater proportion of partial transcriptions suggests that they had more difficulties with the phonemic analysis of words, which rendered what they wrote incomplete from a phonographic perspective.

When we consider the influence of instructional contexts within a single sample, we can note that there are differences. Among the Quebec students, those in the integrated approach Q group produced more partial and erroneous transcriptions (31.5% and 17.35) than those in the code-oriented approach Q group (21.4% and 12%). This result can be accounted for by a different distribution in the other answer

categories (non-phonological writing, as we have just seen, in conforming transcriptions and spelling –see Table 2). For the French students, those in the integrated approach F produced more partial transcriptions (13.7%) but fewer erroneous transcriptions (19.6%) than those in the code-oriented approach F group (respectively 7% and 31%). Indeed, in the productions of the integrated approach F group, there was a relative homogeneity in the distribution between partial and erroneous transcriptions. This was not the case for the students in the code-oriented approach F group. In this group, the children performed well in terms of phonemic analysis, due no doubt to the instructional effort devoted to developing phonological and phonographic competencies. Here, the main errors were related to the choice of graphemes needed for coding the identified phonemes.

4.3 Transcriptions conforming to the oral form of words and correct spelling

Conforming transcriptions (i.e., those which reproduce the oral form of the requested words) account for the majority of results in the code-oriented approach F (54.8%, see Table 2), the integrated approach F (46.4%) and the code-oriented approach Q (45.2%) groups. However, it was the children in the integrated approach Q group who produced the least (32.7% – $F(3, 71) = 2.693$; $p < .05$).

As for correct spellings, there are differences between the two instructional contexts. Regardless of whether they were from France or Quebec, the children in the integrated approach groups performed better: respectively 17.9% and 16.1% of the productions were instances of correct spelling in the F and Q integrated approach groups. Exact responses were much lower in the other instructional context: 8.3% in the code-oriented approach Q group and 6% in the code-oriented approach F class. These performance differences are significant for the French sample (17.9% vs. 6% – $F(3, 71) = 2.217$; $p < .10$). (17.9% vs. 6% – $F(3, 71) = 2.217$; $p < .10$).

As we have just seen, to the extent that children in the integrated approach Q produced the least number of conforming transcriptions, the differences between them and French children in a similar instructional context are significant (32.7% for the integrated approach Q group and 46.4% for the integrated approach F group – $F(1, 47) = 4.632$; $p < .05$). When they were unfamiliar with a word, productions by the children in integrated approach F group were more likely to take into account its oral form. For their part, children in the integrated approach Q group produced partial transcriptions (31.5%). These observations corroborate the preceding observation that the Quebec children were not as advanced in their ability to discriminate the phonemes in the words to be written.

Lastly, the gaps between the code-oriented approach Q and code-oriented approach F group are not significant for correct spelling or for writing which conforms to the oral form of words. The children in these groups had similar performance levels and did less well than those in the integrated-approach groups.

Before discussing the various kinds of productions, it should be noted that the impact of teaching practices varies from one sample to another. A statistical comparison of the productions of Quebec children reveals that the influence of instructional context is less than is the case for the French classes. For the Quebec children,

there are no significant differences for the five kinds of productions, whereas the code-oriented approach F children tended to produce more erroneous productions ($F(1, 35) = 3.083$; $p < .10$) and produced significantly fewer correct spellings than the integrated approach F children ($F(1, 35) = 6.89$; $p < .05$). This result could be explained by the fact that there are sharper differences in the various teaching practices used in France than in Quebec. One indication of this phenomenon is the characteristics of the material used in the code-oriented approach classes. French reading manuals are focused exclusively on mastery of the phonographic dimension whereas those in Quebec present other dimensions of the language even though they have the same objective (see Pasa et al., 2002).

4.4 *Correct spelling and instructional context*

This first analysis reveals differences in performance which appear to be due to the kind of approach to teaching writing used in the observed classes. Generally speaking, in both France and Quebec, the children who performed the best at the end of the school year were those who had benefited from teaching practices which, from the outset presented all dimensions of the writing system, used writing activities early on, and used material taken from children's literature and social texts. Indeed, when we consider the results for children in the integrated approach Q and the integrated approach F groups, there are only minor differences in correct spellings (16.1% vs. 17.9%). The fact that these children performed better with regard to spelling norms suggests that they received more exposure to a procedural variety. Teachers who deal with language in all its complexity enable their pupils to use their phonographic (indirect phonographic procedure) and word (direct lexical procedure) knowledge.

With a view to enhancing our interpretation and thereby to providing a better understanding of the orthographic treatment performed by the children, we conducted an infra-word analysis focused on the graphemic units produced by the children in both samples.¹¹ To do so we determined:

- 1) the proportion of correct phonograms produced for all the 2,736 phonograms to be produced (938 phonograms x 72 children);
- 2) the proportion of correct morphograms produced for all the 432 morphograms to be produced (6 morphograms x 72 children);
- 3) for all the morphograms to be produced, the proportion of correct morphograms (the letter *t* at the end of *éléphant*, *rat*) and the proportion of silent letters (silent *e* at the end of *coccinelle*, *crocodile*, *cygne*, and *grenouille*).

The data are consistent with the foregoing results in that they show that the French and Quebec subjects in the integrated approach groups were more advanced in terms of orthographic treatment. They produced a higher proportion of correct phonograms and morphograms than the children in code-oriented approach groups, even though these differences are not statistically significant (see Table 3 in the Appendix). With regard to the correct phonograms used by the children, we observed that

¹¹ These complementary data are presented in the Appendix (Table 3).

for both the French and the Quebec samples, the integrated-approach groups performed better (73% vs. 66.4% for the French sample and 66.1% vs. 58.3% for the Quebec sample; see Table 3).

More specifically, it is interesting to note that the integrated approach Q and integrated approach F groups differed considerably from the code-oriented approach Q and code-oriented approach F groups with respect to the presence of correct morphograms (respectively 39.6% and 29.2% vs. 16.7% and 8.3%). The difference in performance between the integrated approach Q and the code-oriented approach F are statistically significant ($F(3, 71) = 2.822; p < .05$).

This more detailed analysis supports our hypothesis that the integrated-approach groups were led more to build a more complete vision of the writing system, one which included units intended to transcribe phonemes and also other written signs, such as morphograms, which are carriers of morphological information and are inaudible. With regard to the morphographic dimension, the favourable results for the integrated approach groups also provide support for the idea that this instructional context enables a direct mobilization of lexical procedure.

Moreover, these complementary data draw out the fact that the advantage displayed by the French children in the area of constructing the phonographic dimension disappears when it comes to the morphographic aspects. The Quebec subjects produced a greater proportion of correct morphograms, be it in the integrated approach Q group (39.6% vs. 29.2% for the integrated approach F group) or in the code-oriented approach Q group (16.7% vs. 8.3% for the code-oriented approach F; see Table 3). In contrast, the better performance of the French children with regard to the presence of silent letters (see Table 3) can be explained by a peculiarity of the spoken language of our French sample, namely, they were from the south of France, where the typically silent *e* word-finals are pronounced. This pronunciation peculiarity is not found elsewhere, even among French-language individuals in Quebec.

5. CONCLUSION

The general objective of this article was to discuss a comparative study of certain peculiarities of written language, as a teaching object, by examining two distinct instructional contexts – the integrated approach and the code-oriented approach. This study involved the analysis of data collected during a word writing task administered to first-grade French-language writers in France and in Quebec (Canada). The data were examined with a view to characterizing the different kinds of writing produced. Overall, the data reveal that there are variations according to culture (France or Quebec) and to instructional contexts.

With regard to the cultural context, we observed that there were more partial transcriptions in the Quebec classes and erroneous transcriptions occurred more frequently in the French classes. The French children appeared to be more advanced with regard to constructing the phonological dimension of writing inasmuch as they had fewer problems with the phonemic analysis of words. These results strike us as being due to differences between the French and Quebec educational systems. One hypothesis explaining this difference is that the level of analysis of oral language is

generally higher among French children when they begin primary school (Morin & Montésinos-Gelet, 2005). This difference can be attributed to the length of kindergarten in France and to differences in the official teaching programs. In France, kindergarten includes the three years preceding primary school whereas in Quebec, it only lasts for one year. In addition, in France, official guidelines are more explicit than in Quebec with regard to the importance of learning situations favourable to understanding the alphabetic principle (Pasa et al., 2002).

With regard to the influence of instructional contexts (integrated vs. code-oriented approaches), children taught by means of the integrated approach produce more correct spellings, even though writings which conform to the oral form of the words to be produced are also present. These data lead us to suggest that these children receive more encouragement to mobilize varied, though concomitant, writing procedures. Indeed, the mobilization of their knowledge about phoneme-grapheme correspondences (phonographic procedure) and about the graphic form of words (lexical procedure) leads the children in the integrated-approach groups to write in a way that is closer to the norm than is the case for the children in the code-oriented-approach groups.

In addition, our study also supports studies which show that young writers are able to develop a certain diversity in the writing procedures they use (Rittle-Johnson & Siegler, 1999). Through an in-depth analysis of the graphemes (phonograms and morphograms) produced by the children in our samples, our study also reveals that the treatment of the morphographic dimension was of a high level, particularly among the children in the integrated-approach groups. The simultaneous consideration of phonographic and morphographic information leads us to concur with recent suggestions by Seymour, Aro and Erskine (2003) to the effect that the spelling development of children learning a deep written language involves a dual foundation – phonographic and morphographic.

Lastly, with regard to the influence of linguistic variables, in the case of silent letters, we observed some variations due to peculiarities of the children's spoken language. However, on this particular point, other studies are needed to shed more light on the impact of variations in spoken French on the beginning stages of learning writing.

In conclusion, in line with earlier work, we observed behaviour which indicated that the children actively construct their knowledge. Similarly, environmental, cultural, educational and linguistic variables play a determining and structural role in learning writing (Fijalkow, 2000; Graham & Harris, 1994; Sénéchal, 2000; Stahl, McKenna, Pagnucco, 1994; Stahl & Miller, 1989).

However, there are certain limits to this study and there are still some outstanding questions. Firstly, our sample size (72 children) raises issues related to statistical significance. As such, we cannot make generalizations given that a study of a small number of children is not all that representative. Secondly, there are issues with the equivalence of French and Quebecois teaching practices. We grouped the children according to a few indicators (teacher views of the object to be taught; teaching objectives; kinds of activities and material used in class). However, it is likely that the classes which we took as similar vary in terms of elements that we did

not consider. Indeed, research is needed in order to identify the most distinguishing aspects of first-language teaching.

However, given that it was an exploratory study in a natural setting, this study could give rise to a systematic operationalization. Indeed, the data collected enabled us to clarify certain avenues of thought which will need to be reviewed in terms of future experimentation. We are left with the conclusion that larger replications need to be conducted in order to improve our understanding of the environmental factors and the interrelationships at the beginning stages of writing.

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LAURENCE PASA

Université Toulouse II

UFR Sciences Espaces et Sociétés

Département des Sciences de l'éducation

Toulouse

France

5, allées Antonio Machado

31058 cedex 1

Email: pasa@univ-tlse2.fr

MARIE-FRANCE MORIN

Département d'études sur l'Adaptation scolaire et sociale

(Department of Special Education)

Faculty of Education

University of Sherbrooke

Quebec

Canada

2500, boul. De l'Université

Sherbrooke, Québec

J1K 2R1

Email: marie-france.morin@usherbrooke.ca

APPENDIX

Table 3 Distribution of the different correct graphemes produced in the four contexts

	Code-oriented approach Q	Integrated approach Q	Code-oriented approach F	Integrated approach F
Correct phonograms	58.3	66.1	66.4	73
Correct morphograms (morphograms + silent letters)	50	59.7	50	60.4
Morphograms	16.7	39.6	8.3	29.2
Silent letters	66.7	69.8	70	76