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Effectiveness of explicit vs. implicit L2 instruction

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Chapter 5

Explicit versus implicit instruction: a long-term study on writing complexity¹¹

1. Introduction

Explicit methods of instruction are very common in foreign language teaching, and there is still a strong belief that explicit grammar instruction is a prerequisite for successful second language learning. This is not surprising as many studies and meta-studies point to a positive effect of explicit grammar instruction (cf. Norris & Ortega, 2000; Spada & Tomita, 2010; Goo, et al., 2015). In addition, there have been studies on the effects of type of instruction on linguistic complexity such as the differential effects on the acquisition of simple vs. complex grammatical rules on oral and written skills (cf. Spada & Tomita, 2010). They also conclude that there is evidence for a beneficial effect of explicit instruction on the use of both simple and complex forms.

However, the effects of explicit instruction may be overestimated (e.g. Doughty, 2003) because research designs often favor explicit types of instruction using proficiency measures relying on “constrained, constructed responses” (fill the blanks, metalinguistic judgement responses) (Spada, 2011; p.228) and studying brief treatments only (Spada & Tomita, 2010). Another issue is time. Implicitly-taught learners have to discover the language patterns on their own, and this process may require more hours of exposure (Rousse-Malpat & Verspoor, 2018). Therefore, studies looking at brief periods of instruction and at grammatical complexity only, might put implicit instructional settings at a disadvantage. Finally, the question remains whether the knowledge acquired in explicit instructional settings can effectively be transferred to learners’ communicative language use. These remaining issues are to be explored more and long-term intervention studies on type of instruction with free response tasks--eliciting uncontrolled foreign language use--are called for.

¹¹ This chapter is based on the following article:
Rousse-Malpat, A. Steinkrauss, R., & Verspoor, M. (in revision). Implicit vs. explicit L2 instruction: a long-term study on writing complexity.

The present ecologically valid classroom study—with all its inherent messiness—aims to explore the instructional effects of explicit and implicit instruction with free response, communicative writing tasks after three years of L2 French instruction on linguistic complexity measures.

2. Background

To explore long-term effects of explicit and implicit instruction, several issues need to be considered. First of all, it is important to define explicit versus implicit instruction, to review findings concerning explicit and implicit instruction, and to understand typical complexity features in L2 French development.

2.1 The effects of type of instruction on syntactic and morpho-syntactic complexity

Defining explicit and implicit instruction is difficult as there are many types of instruction and definitions, which may partially overlap and can lead to ambiguity or misinterpretation (Norris & Ortega, 2000; Spada, 1997; Spada & Tomita, 2010). To define the types of instruction for our study, we start with Spada's definition of form-focused instruction (FFI), which concerns "any pedagogical effort which is used to draw the learners' attention to language form either implicitly or explicitly. This can include the direct teaching of language (e.g. through grammatical rules) and/or reactions to learners' errors (e.g. corrective feedback)" (Spada, 1997; p.73). Within FFI we can distinguish between explicit and implicit instruction. In explicit FFI, "learners are encouraged to develop metalinguistic awareness of the rule" (Ellis, 2008, p.438). In implicit FFI, there may be a form-focused component within a meaning-based method, but the focus is not predetermined, learners receive little form-focused feedback, and the patterns are mostly discovered inductively.

The current study will explore the effect of explicit vs. implicit instruction on linguistic complexity measures and particularly on syntactic, lexical, morpho-syntactic and phrasal complexity measures in L2 French writing. Most related research so far has focused on accuracy, specifically the trade-off between fluency and accuracy, and how focus on form could be incorporated into a communicative lesson. For example, studies on immersion programs in Canada (Genesee, 1987; Swain, 1988; Lightbown & Spada, 1994; Harley & Swain, 1984; Lyster, 1987) concluded that L2 learners benefitted from implicit immersion instruction in that learners sounded more fluent, but learners still had many problems with accuracy. Other studies suggest that exposition to language alone (input flood), also associated

with implicit instruction, did have beneficial effects on the acquisition of syntax in the short and the long term, but that it did not necessarily mean that learners had a better knowledge of grammar (Trahey & White, 1993; Trahey, 1996).

More recently, the attention has shifted to the effect of explicit vs. implicit instruction on the types of constructions (simple versus complex) that lend themselves best to explicit instruction (cf. Housen & Kuiken, 2009). The claim is that some rules are simply too complex to be understood and learned implicitly and thus would need explicit explanation and practice (Hulstijn & de Graaff, 1994).

In their meta-analysis, Spada and Tomita (2010) show that explicit instruction is more effective for both simple and complex structures, and that the effects of explicit instruction last longer too. There are several studies reporting such a positive effect for both types of constructions (de Graaff, 1997; Robinson, 1996; Shook, 1994, Doughty & Varela, 1998; Xu & Lyster, 2014). There are also a few studies with mixed findings. Housen, Pierrard and Van Daele (2005), who defined complexity as the functional markedness of the linguistic structure, looked at the effects of explicit instruction vs. no instruction on passive forms (more complex) and sentence negation (less complex) in French. They included a mix of explicit and implicit knowledge tasks for both oral and written skills: a grammatical judgment task, a controlled written production task and an unplanned oral production task. Their hypothesis was that explicit instruction would work best for the more complex feature (the French passive voice), but results indicated that instruction was equally effective for both language features. No differential effects on different grammatical forms were found, but on the written production task, the instructed group outperformed the non-instructed group.

Most studies that were reviewed are semi-experimental in that they usually involve short-term treatments and involve rather controlled tasks to test effects (c.f. Norris & Ortega, 2000; R. Ellis, 2002). One exception is a classroom study by Williams and Evans (1998). It involved free-production data for oral and written skills in the form of discussions and multi-draft papers with peer review. It showed that a focus on form treatment with explicit instruction and feedback, improved the learners' performance on participial adjectives, but not on passive forms, which are seen as more complex.

2.2 The effects of type of instruction on lexical complexity

Overall, studies on the effect of explicit vs. implicit instruction have focused on the complexity of morpho-syntactic constructions. Few have looked at lexical complexity, which refers to the elaborateness of the lexicon, the systemic complexity (Bulté & Housen, 2012) of smaller or larger lexical items, which may include collocations, chunks or formulaic expressions. The difference between simple and complex here often refers to the variety, the size and the diversity of the lexicon and the conventionalized constructions. General findings on morpho-syntactic forms show that explicit instruction has less effect on grammatical forms than on lexical items (Xu & Lyster, 2014; Mackey, 2006; Shook, 1994; Williams & Evans, 1998; Yang & Lyster, 2010). Laufer (2005) argues that input only is not sufficient to acquire lexical knowledge and shows in a review of studies comparing the effects of focus on form(s) tasks vs. meaning based tasks and in an empirical study comparing the effects of focus on forms, that findings clearly point towards a beneficial effect of explicit instruction of vocabulary. In her opinion, especially designed activities involving repeated encounters of the words outside of the context of communication are necessary to increase the active lexical knowledge of the learners and developing their knowledge of vocabulary.

2.3 Developmental phases of L2 French complexity

So far, our literature review has dealt with the effect of explicit vs. implicit instruction on the learners' performance in the L2. Another vein of research in complexity measures has focused less on the effect of instruction, but more on developmental phases and the levels of complexity and accuracy that can be expected at different proficiency levels (e.g. Veronique, 2009; Grandfeldt and Agren, 2014; Ortega, 2012; Verspoor, Schmid and Xu 2012). As our study concerns beginning learners of L2 French, mainly L2 French studies are reviewed here.

Using Direkt-Profil (an automatic analyzer used in the present study too) Barning & Schlyter (2004) analyzed a great number of L2 French texts and suggest that L2 learners of French go through seven stages of morpho-syntactic development before they reach the end of the acquisition continuum. In stage 1, learners use non-finite verbs in the infinitive form and in negation or in front of NP. There are also problems with pronoun use. In stage 2, the use of the present perfect and modal verbs with infinitives emerges. Agreement is still difficult, but subordination and negation are more target like. There are problems with object pronouns and prepositions. In stage 3, the use of verb forms stabilizes. The first person plural is target like, but there are still problems with incorrect verb forms. In stage 4, complex tenses (plusperfect + conditional) appear but are not used target like. The use of the

subjunctive emerges and there are different ways of expressing negation. The use of articles and prepositions is more target like. In stage 5, several complex and less frequent tenses are used correctly: the plusperfect, the future and the conditional. The pronouns *en* 'of those' and *y* 'there', which are syntactically complex in French, emerge as well as some embedded structures. In stage 6, the use of subjunctives becomes more native-like and subject verb-agreement on 3rd person plural is target like. In stage 7, Bartning adds the use of formulaic language (defined as conventionalized multi-word expressions), which distinguishes natives from near-natives.

Focusing on formulaic language that beginners use in early stages of development, Myles (2012) explores developmental phases in L2 French. The oral data from a longitudinal study (2 years) showed that beginners depended heavily on memorized routines, which made them sound more complex than they actually were. According to Myles, these memorized routines helped them early on to overcome the limitations of limited proficiency. Learners make use of key sentences, formulaic sentences listed on a vocabulary list and routines to bridge the linguistic gap they have and convey their message. Other studies on formulaic language show that at high-intermediate and advanced levels, formulaic language was an important factor in sounding more native (Verspoor & Smiskova, 2012) and Verspoor et al. (2012) showed that the relative number of chunks was a strong indicator of proficiency level. Thus, at the beginning, learners seem to use a limited set of formulae to be able to express themselves, but later these phrases give room to more creative language, and finally more native-like chunks appear as a good sign of development.

All in all, studies to date show a beneficial effect of explicit instruction. However, studies on the effect of explicit vs. implicit instruction have focused mainly on accuracy or complexity of morpho-syntactic elements. Many of these studies are based on short-term interventions, and use constrained tests to evaluate the effects of type of instruction. The current study is a departure in three ways: it is not experimental, but based on real classroom practices, it is truly long-term (three years), and it will use free response written data.

The current study is part of a larger study in which the effects of explicit versus implicit L2 French instruction in the Netherlands are compared (Chapter 3). The larger study compared 229 learners at different levels in different schools on both oral and written skills over three years of instruction. The current study explores in detail the differences in various linguistic complexity measures in syntax, morpho-syntax, and lexicon of two groups of learners in their final writing samples after three years of study.

The general research question is whether there are differences in the effects of explicit and implicit types of instruction on linguistic complexity in the free writing production of L2 French. In particular we will look at the following measures:

1. Syntactic and lexical complexity: Broad complexity measures such as average sentence length, T-units, text length, Guiraud, word length and a complexity scores (Profil grade).
2. Morpho-syntactic complexity: Specific complexity measures at the morphological and phrasal level such as grammatical words, conjunctions, determiners, prepositions, nominal pronouns, finite verbs, early verb tense, tense (other than present simple) and bi-gram types.
3. Phrasal complexity: Memorized routines, which may make learners seem more complex than they actually were, operationalized by n-grams length and coverage.

3. Method

3.1 Explicit versus implicit instructional programs

The explicit group was taught with an explicit program using a course book called *Grandes Lignes* (Noordhoff, 2014), specifically developed for French as a second language in a Dutch high school context. Even though it is supposed to be task-based, it takes a structure-based approach. Each chapter presents grammatical rules in a pre-determined order. Grammar rules and instruction to the exercises are expressed in the L1. Teachers usually discuss these in the L1. Learners are exposed to the L2 by means of listening fragments and to target language use of the teacher (see next section for more details). Corrective feedback is provided by the teacher.

The course book is organized with one grammatical and vocabulary focus in each chapter. The grammatical rules follow a sequence from simple to complex, alternating morphological rules, such as the use of gender in French nouns and adjectives, or the use of tenses with syntactical rules such as the place of the adjective in a sentence. The book also details the use of fixed expressions or routines called *Phrases Clés*. There are 10 to 12 fixed routines per chapter. These routines usually go hand in hand with the vocabulary topics in the chapters.

Writing is practiced from the beginning with exercises that are built in terms of complexity, going from reproduction to semi-free production. It means that there are tasks for which learners must write a small sample on their own, but what is mainly expected from them is the re-use of the fixed expressions learned

in the chapter. The explicit program is communicative with structure-based components. Therefore, we consider it an explicit form-focused instructional program.

The implicit group was taught with an implicit program using the accelerated integrated method (AIM). AIM was originally developed for French as a second language in Canada (Maxwell, 2001; Rousse-Malpat & Verspoor, 2018). Learners are exposed to stories in the L2 with constructions that match the linguistic level of the learners. Each word is accompanied by an iconic gesture to help the learner understand the meaning. Also, grammatical features such as gender or tense markings, are presented with specific iconic gestures. However, there is no pre-determined grammatical order and there is no explicit instruction on grammatical features. Attention to form may occur when a learner has a specific question, which is responded to on an individual basis and preferably using an inductive approach.

Learners start by learning to understand the story with the help of the iconic gestures and then do activities and games with words and expressions related to the story to form strong associations between forms and their meaning. The program starts off with a great deal of input focusing mostly on oral and listening skills. Learners are exposed to the L2 through the teacher, listening fragments and peers. Corrective feedback is rarely given, only at times to avoid fossilization. The L1 is used occasionally for comprehension checks. After six months of oral input, reading and writing are introduced. Learners are first asked to reproduce the story, but at a later stage to write a creative follow up. The program is communicative with strong meaning-based components. Grammatical rules are never dealt with explicitly. Therefore, we consider it an implicit form-focused instructional program.

3.2 Schools and teachers

Two schools in the Netherlands were involved in this study, selected from the 5 schools involved in the larger study on the effectiveness L2 instruction. These were selected because they were the most comparable in terms of scholastic level and amount of L2 exposure provided in the classroom. Scholastic level was determined by means of a high school entrance test, Cito, which according to Verspoor, de Bot and Xu (2015) is a strong predictor for language development. L2 exposure was estimated on the basis of classroom observations, which showed that the teachers in the explicit group, unlike some of their colleagues, spoke a great deal of French. At the end of the observation period, the learners in the explicit group were estimated to have had 144 hours of L2 French exposure. The teacher in the implicit group, like most of her colleagues using AIM, spoke French almost exclusively, which resulted in about 194 hours of L2 French exposure at the end.

Both teachers had a high level of French proficiency (C1 according to the CEFR; Council of Europe, 2001), a high motivation to teach with the method they were teaching with, a considerable amount of experience (more than 5 years of teaching experience), and a good rating by their learners on teaching qualities. The explicit group kept the same teacher throughout the three years; the implicit group had a new teacher after one school year.

3.3 Participants

This study involves 43 participants. The explicit group is composed of 21 participants (boys N=11, girls N=10) and the implicit group is composed of 22 participants (boys N=11, girls N=11). None of the participants had any previous knowledge of French before the beginning of this study. They were the two groups within the larger study that scored highest on all proficiency scores in their respective modes of instruction.

3.4 The writing assignments

Participants were asked to write a narrative of about 150 words in 20 minutes about 6 times per year. The assignments were hand written in the classroom without any additional help from the teacher or from a dictionary. For the current study we used the two last assignments with the same topics for both groups. Assignment 1, *Write about your favorite book, series or movie*, was written after 27 months of instruction. Assignment 2, *Write about your future, how do you see your life in 20 years*, was written after 34 months of instruction. For the analysis, the measures of these two assignments were taken together and averaged to avoid task effects.

3.5 Measures and tools

3.5.1 Broad measures

Broad measures of syntactic complexity (c.f. Bulté & Housen, 2012 ; Norris & Ortega, 2009) were operationalized as overall text length (i.e. number of tokens), T-unit length (Hunt, 1965) and sentence length, all obtained with the Lextutor text analyzer (Cobb, 2010).

Broad measures of lexical complexity (diversity and sophistication) were operationalized as the Guiraud index (Guiraud, 1954; Bulté, Housen, Pierrard, Van Daele, 2008) and word length (Wolfe-Quintero et al., 1988; Grant & Ginther, 2000) extracted by Direkt Profil (Grandfeldt, Nugues, Agren, Thulin, Persson & Schlyter, 2006; Agren, Granfeldt and Schlyter, 2012).

For a broad measure of morpho-syntactic complexity, we made use of the automatic analyzer Direkt Profil (Grandfeldt et al. 2006; Agren, Granfeldt en Schlyter, 2012) specifically developed to analyze the morpho-syntactic development of written French as a second language. Direkt Profil provides holistic indications on the stage of development of written or transcribed oral data. The software provides three scores on the level of morpho-syntactic development, each one calculated according to a different algorithm. As Granfeldt et al. (2006) point out, we must bear in mind the difficulties that the software has when differentiating between texts of neighboring stages. Moreover, the software only recognizes words that are correctly spelled, which is a tremendous issue with beginner writers, especially in the implicit group. We chose to remedy this problem by averaging the results of their three algorithms. Also, a high degree of reliability was found between the three scores. The average measure ICC was 0.74 with a 95% confidence interval from 0.57 to 0.85 ($F(41)=3.89$, $p<.05$). We have called the average of the three scores obtained the Profil grade.

3.5.2 Specific measures

For specific syntactic complexity measures, we looked at the complexity of specific morpho-syntactic constructions also obtained through Direkt Profil. It provides numbers and ratios of conjunctions, determiners, prepositions, nominal pronouns, finite lexical verbs, and verb tenses (separated in tenses typically learned early vs. late) used in the data. Most of these items are similar to the 'simple features' as defined by Spada & Tomita's (2010) such as tense, articles, plurals, prepositions, subject-verb inversion, possessive determiners and participial adjectives. Direkt Profil also provides information on complex features listed in the meta-analysis, such as dative alternation, question formation, relativization, passives, and pseudo-cleft sentences, but these were not produced by our learners at this stage.

To examine morpho-syntactic complexity in more detail, we looked at tense use and we calculated tense ratios by dividing the number of verbs in each tense by the total number of verbs per participant. We also examined tense variety by adding the number of different tense types used by each participant in both their assignments.

3.5.3 Routines

In an attempt to evaluate the difference in linguistic complexity at the phrasal level, we used different n-gram measures to investigate the use of associated words. Calculating n-grams is a frequency-based approach to formulaic language; n-grams are stretches of words occurring together more than once and have been used

in studies on lexical sophistication (Biber, Conrad and Cortes, 2004) and lexical proficiency (Crossley, Cui & McNamara, 2012; Kyle & Crossley, 2015). To retrieve n-grams and calculate their frequency, we first removed all sentences that were a repetition of the instruction for the assignment from the texts, and then the two writing assignments of all participants following the same instructional method were combined. These two large corpus texts were submitted to Lextutor, which provided a list of n-grams ranging from a length of 2 to 7 words that had occurred at least twice as a combination together with their frequency of occurrence and the proportion of words in the texts that belonged to all n-grams of a specific length (i.e. the coverage of the n-grams). We must add that the corpus tool does not control for meaningfulness and lexicalization of the repeated word strings, so we categorized the examples into meaningful units to interpret the findings.

To examine complexification of bi-grams, we hand coded them as grammatical phrases such as Subj-V, Det-N, Adj-N, Relative-N, Relative-V, Conj-N, V-Prep, Prep-N, Negation, Adv-V, Adv-Adv, Adv-Adj combinations. To calculate the ratios of the different types, the specific types of bi-grams were divided by the total number of bi-gram types.

To check how much of the language was routinized we calculated the overall coverage of all repeated n-grams per group by dividing the number of words involved in repeated n-grams by the total number of words.

To check for the length of memorized routines, we compared the ratio of the number of words of the different repeated n-grams (7 words to 2 words) by the total number of words.

Table 27. Summary of the linguistic complexity measures.

Broad	Specific	Routines
Text length	Conjunctions	Bi-gram types
Sentence Length	Determiners	N-gram coverage
T-units	Prepositions	N-gram length
Guiraud	Nominal Pronouns	
Word length	Finite Verbs	
Profil grade	Present tense	
	Tense (other than present simple)	
	Tense ratios	
	Tense variety	

3.6 Analyses

For normally distributed data, independent sample t-tests were used to compare the groups. For non-normally distributed data, we used a Mann-Whitney U test. For each result, we also computed the effect size (Cohen's d for the t-test, r for the Mann-Whitney U test). We used an alpha level of .05.

4. Results

4.1 Broad measures

Table 28. Broad measures of length (**p<.001).

	Tokens per text***					Sentence Length in words***					Number of T-units***				
	Mean	SD	t	df	Cohen's d	Mean	SD	t	df	Cohen's d	Mean	SD	t	df	Cohen's d
Explicit	66.20	15.27	8.34	26.91	>.8	9.16	2.44	5.40	41	>.8	10.57	5.58	6.73	41	>.8
Implicit	146.25	42.05				14.02	3.35				19.63	2.66			

Results in table 28 show that the implicit group wrote longer texts, with longer sentences containing more t-units.

Table 29. Broad measures of linguistic complexity (**p<.001).

	Guiraud				Word length				Profil Grade***			
	Mean	SD	t	df	Mean	SD	t	df	Mean	SD	t	Cohen's d
Explicit	5.9	0.5	0.69	33.7	39	4	0.22	-5.5	2.28	0.44	2,8	0.88
Implicit	6.09	0.9				3.9	0.38		2.76	0.63		

Table 29 shows that the groups did not differ in vocabulary complexity (Guiraud) nor in sophistication (word length). The implicit group obtained a significantly higher Profil level than the explicit group.

4.2 Specific measures

Figure 6. Specific morpho-syntactic measures of complexity (* $p < .05$.)

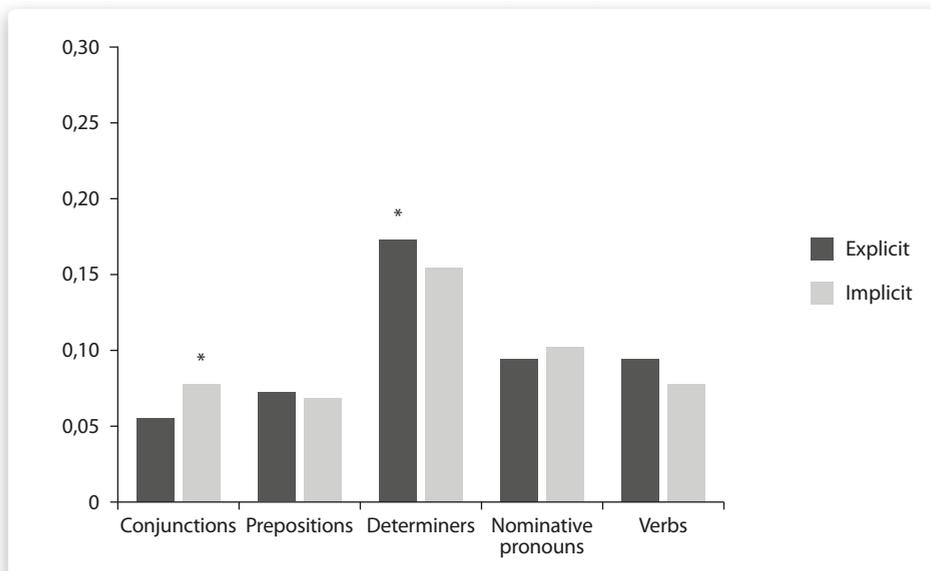


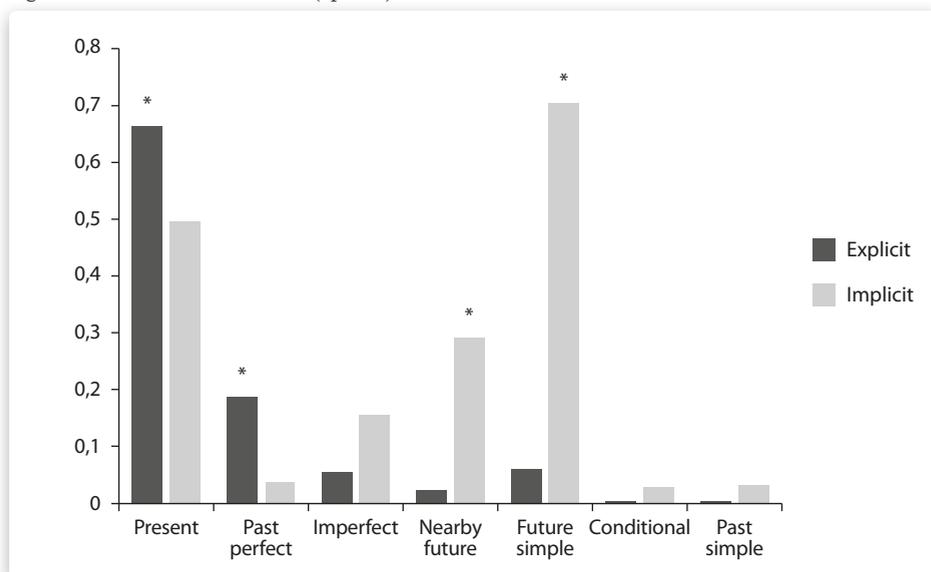
Fig. 6 shows that the two groups only differ in their use of conjunctions and determiners. A Mann-Whitney U test indicated that the explicit group had both a significant higher ratio of determiners ($Mdn=0.17$) than the implicit group ($Mdn=0.15$), $U=142.5$; $p < .05$; medium effect size ($r=-0.3$). At the same time, an independent samples t-test showed that the implicit group had a significant higher ratio for conjunctions ($M=0.08$; $SD=0.01$) than the explicit group ($M=0.05$; $SD=0.01$); $t(40)=4$; $p < .05$. Cohen's d reported a large effect size ($d > .8$).

Table 30. Specific measures of tense use.

	Finite lexical verbs				Tense ratio (other than present simple)				Early tense ratio			
	<i>Mdn</i>	<i>U</i>	<i>Z</i>	<i>p</i>	<i>Mdn</i>	<i>U</i>	<i>Z</i>	<i>p</i>	<i>Mdn</i>	<i>U</i>	<i>Z</i>	<i>p</i>
Explicit	1	191,5	-0,49	0,62	0,26	179	-1,03	0,3	0,11	168	-1,31	0,19
Implicit	0,92				0,26				0,10			

Results of Mann-Whitney U (table 30) showed no significant difference between the two groups.

Figure 7. Use of different tenses (* $p < .05$).



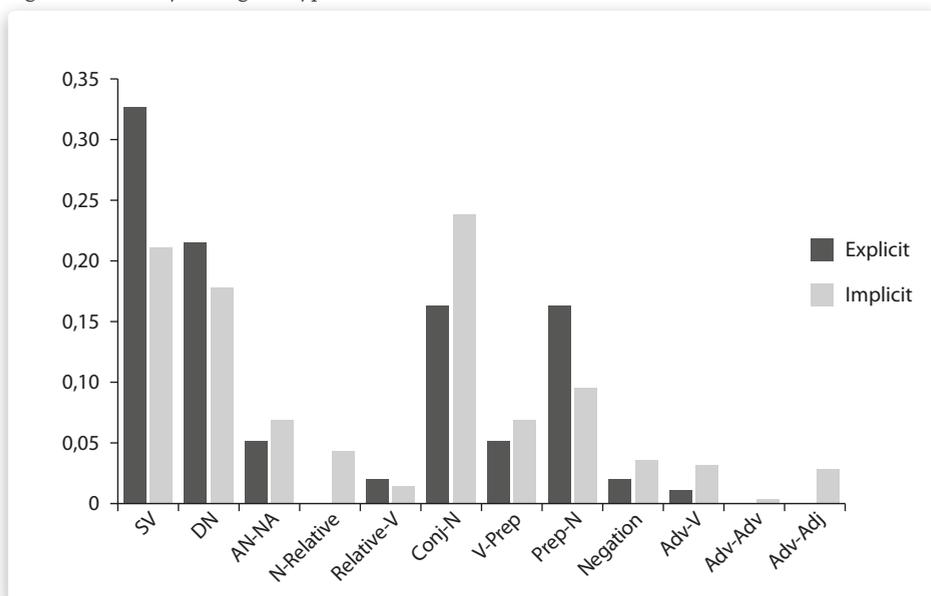
Even though the groups wrote on the same topics, Fig. 7 shows that the explicit group used relatively more present tense and past perfect than the implicit group. The implicit group used more nearby future and future simple than the explicit group. Effect sizes were large (see appendix D1 and D2 for the complete overview). No differences were found for the use of the imperfect. The number of occurrences of the conditional or past simple, which are relatively more complex tenses, acquired at a later stage of acquisition, was too low to analyze statistically. Only two participants in each group were able to use them.

For tense variety, a Mann-Whitney test indicated that the implicit group used significantly more different types of tenses ($Mdn=4$) than the explicit group ($Mdn=3$), $U=97.5$, $p < .05$, $r = -.49$.

4.2.1 Routines

The first analysis examines the complexification of bi-grams by looking at the diversity of bi-gram types. This gives us information on the grammatical composition of the sentences.

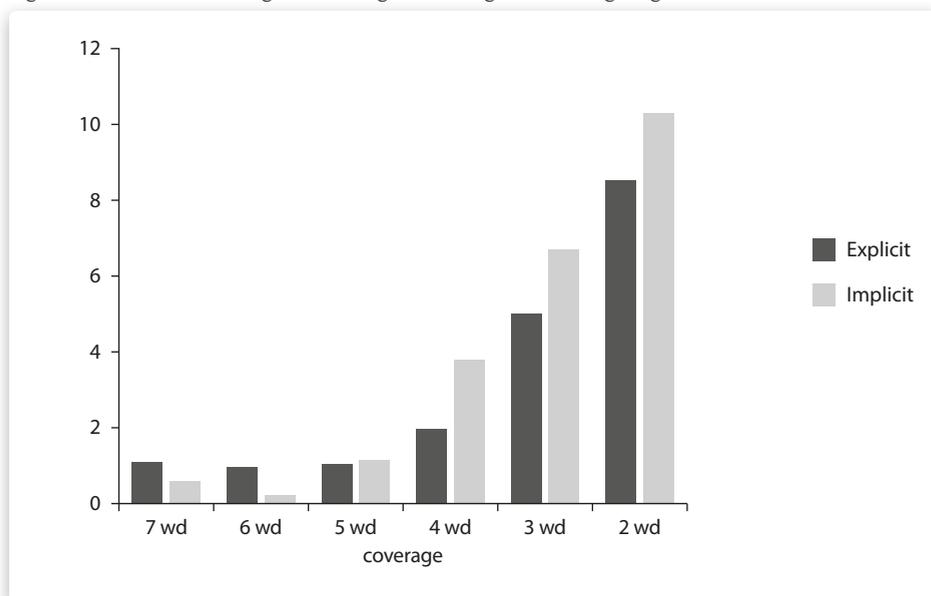
Figure 8. Diversity of bi-gram types.



In Fig. 8, we can see that the explicit group uses more noun-verb combinations as well as determiner-nouns, relative pronoun-verb and preposition-nouns combinations (*je suis; le film; que j'ai; à la*). The implicit group, on the other hand, seems to make more use of adjective-noun, relative pronoun-noun (*une grande; que tu*), conjunction-noun combinations (*et je; parce que*), negations (*n'est pas*), and adverb combinations (*sont très*). It thus seems that the implicit group uses more different grammatical categories that elaborate on nouns or verbs and increase the length of a sentence. Text length of course can be very well explained by the greater number of conjunction-noun combinations.

Figure 9 shows to what extent language was routinized by examining the n-gram coverage and length. The groups differed in the total percentage of coverage of all n-grams of 2 to 7 words in their texts. The implicit group has a higher percentage (22.8%) than the explicit group (18.6%), (see Appendix E for an overview of the n-grams).

Figure 9. Distribution of n-gram coverage according to the string length.



While the explicit group tends to use longer word strings (7 and 6 word strings), the implicit group seems to use more shorter word strings.

5. Discussion

The study compared a great number of complexity measures produced by two groups of learners in two free-response writing assignments after three years of instruction. The explicit group was taught with a program with a great deal of explicit instruction and the implicit group was taught with a program with hardly any explicit instruction. As the study is a classroom study with two different types of instruction, we must bear in mind that many other factors than just the explicit or implicit instruction are involved. However, as far as L2 exposure was concerned, the explicit group was relatively similar to the implicit group. The groups were also quite similar in scholastic level.

What is most important though is that most meta-analyses (Norris & Ortega, 2000; Spada & Tomita, 2010; Goo et al. 2015) point to the fact that explicit instruction is relatively more effective than implicit instruction on a great number of variables, and the argument has been that learners may not recognize and master the more intricate linguistic patterns if they are not made aware of them explicitly. The findings in this chapter clearly suggest otherwise. This discrepancy—pointed out by the authors of the meta-analyses themselves—has been that most of the

findings in favor of explicit instruction are based on short-term interventions and evaluation may have been biased because of constrained tests that favor explicit learners. Therefore, a longitudinal study with free response data was called for.

Our learners had three years of L2 French instruction. We based our analyses on their last two writing assignments with exactly the same topics. The implicit and explicit groups scored the same on lexical complexity measures, lexical diversification (Guiraud) and lexical sophistication (average word length). In most other measures, the implicit group was more advanced.

The implicit group scored better on syntactic (longer text, longer sentences and T-units) complexity measures. The implicit group also scored better on broad morpho-syntactic complexity measures, operationalized as the average of the three Direkt-Profil morpho-syntactic developmental scale scores. The implicit group used more conjunctions, but the explicit group used determiners (that is to say NPs). Bi-gram analyses showed that the implicit group elaborated their sentences more with adverbs, negations and particularly conjunctions, while the explicit group used more non-elaborated phrases with subject-verb, determiner-noun and preposition-noun. The elaboration may be a good explanation for the significantly longer sentences and T-units for the implicit group. According to Norris & Ortega (2009), the use of coordination is the first step in the development of syntactic complexity, followed by subordination and then complexification at the phrasal level.

The implicit group was also more sophisticated in their use of tenses. While the explicit group expressed themselves mostly in the present tense or the past perfect, the implicit group used more of the two future tenses, one of which is considered as a more complex construction by Bartening & Schlyter (2004). The implicit group also used a greater diversity of tenses, especially in the second assignment. The first assignment concerned the participants' favorite book or series, which can be written in the present tense or in the past perfect, which is what both groups did. The second assignment, however, was about the participants' future and how they saw themselves in 20 years. Here, one would expect the use of the future tense more, which is what we found for the implicit group, but much less so for the explicit group. It thus seems that the implicit group was more appropriate and native-like in the tenses they chose. The implicit group had seen a story and sung a rap in which the future simple was incorporated. The explicit group had been taught the near future explicitly at the beginning of their L2 learning experience, but they had practiced it less over time.

At the phrasal level, the implicit group used more short routines operationalized as n-grams. An n-gram was considered a “routine” if it occurred twice or more in the texts. Overall, the implicit group used a larger repertoire of the shorter conventionalized expressions (2-5 word strings) such as *tout à coup le loup; après quelques semaines le premier* so the total coverage was higher. However, the explicit group used more longer n-grams (7 and 6 word strings). The longer n-grams remind us of the memorized formulaic sentences that Myles (2012) mentioned such as *Je suis tout à fait d'accord avec; j'ai trouvé que cette actrice jouait très*. These differences may be related to the type of instruction. In the explicit program, students had memorized the longer *phrases-clés* and were able to use these meaningfully but they lacked access to the shorter routines, which the implicit method offers abundantly in the stories.

In sum, we may conclude that the implicit group scored significantly better in almost all syntactic and morpho-syntactic measures. We may conclude that more complex constructions do not need to be explained explicitly to be discovered and used by learners, provided they are given enough time and exposure to discover them. However, exposure alone is not enough apparently, as the explicit group in our study had about the same amount of time of instruction and L2 exposure as the implicit group. Therefore, we may assume that the positive effects of the implicit group are mainly due to specific features of the program.

The first six months of their L2 learning, the AIM method focuses on oral skills only, which forces the learner to listen well and not depend on visual written input. The AIM method provides narratives with authentic phrases and a story line. Each separate word is accompanied with an iconic gesture, but learners hear these words in complete phrases and sentences. We assume the iconic gestures help form strong associations between the words and their meaning, and the frequent repetition of similar phrases in scripted playful lessons-- a key feature of the method--helps form strong syntagmatic associations. The learners also seem to profit from the complexity of the authentic input given to them. Spada (1997) states that “L2 learners appear to benefit from input which contains linguistic features at stages which are more advanced than their level of development in some instances (e.g. with relative clauses and possessive pronouns), but may require input which is targeted to the next stage of development in others (e.g. question formation)” (p.80).

Whereas AIM relies purely on oral input and output for six months, the explicit method has written input from the very beginning and practices writing, usually within restricted exercises. The students are usually asked to reproduce

small routines and simple sentences but are seldom pushed to be creative. They are exposed to longer memorized routines (*phrases-clés*), which are limited to ten or twelve per chapter, but they are not often asked to repeat these again.

This has been a classroom study, therefore ecologically valid, but the downside is that it may not have been controlled for sufficient variables. On the other hand, this study was part of a greater study in which the general findings were even more in favor of the implicit groups. For this study we took the best explicit group with the most exposure to L2 French. However, our findings—with a limited number of participants in two intact classes in the Dutch secondary school context—may not be directly generalizable to other contexts.

Another point of debate could be that using free-production data is biased towards implicit instruction, which was based on story telling. However, both groups had participated in the three-year long study and written short narratives at least six times; moreover, the explicit instruction included reading and writing from the start and practiced writing relatively more. We tried to alleviate topic effects by using the same two assignments written towards the end of their third year.

6. Conclusion

This classroom study explored the effects of explicit and implicit instruction after three years of L2 French instruction on linguistic complexity measures in writing. Until now, a wide range of studies have found that explicit instruction within a meaning-based approach is more effective than implicit instruction with relatively large effect sizes and durable positive effects (Norris & Ortega, 2000; Spada & Tomita, 2010). However, these findings may have been biased as treatments have been brief, which is a disadvantage for implicit learning. Moreover, they have used “highly constrained discrete-focus linguistic tasks” that favor explicit instruction (Spada, 2011, p. 228). To meet such flaws, DeKeyser (2008) suggests conducting more realistic experiments “in actual classrooms, with much larger fragments of language” where students are learning to achieve communicative ability rather than “just learning for the sake of the experiment” (p. 337). This suggestion has sketched out the purpose of the current study.

We investigated writing free-production data of 43 beginners of L2 French who had had three years of instruction with similar amounts of L2 exposure. The explicit group had a traditional focus on explicit grammar; the implicit group was taught with the AIM method, which includes a great deal of scripted exposure and

playful repetition. The data was compared in terms of broad and specific measures of syntactic, morpho-syntactic and lexical complexity, as well as measures of phrasal complexity. Results after three years clearly show that implicit instruction with the AIM method leads to better writing complexity at various morpho-syntactic levels but also in text length and the use of short routines. No differences were found for lexical complexity. In conclusion, explicit instruction does not necessarily lead to more complexity as measured in our study.

