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## Effectiveness of explicit vs. implicit L2 instruction

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# Chapter 6
# General discussion

## 1.    Introduction

In this chapter, we discuss the main findings of this dissertation. Our aim was to investigate the effects of an explicit vs. an implicit L2 instruction program on the development of oral and written skills of 229 high school Dutch students learning French. We wanted to find out which program was more effective on general proficiency measured by (semi)free production tests after three years of instruction. In this discussion, we will explain our findings and show how the implicit program has been able to make the most effective use of the L2 exposure by using a set of principles deriving from a Dynamic usage-based perspective on language development. Finally, we will address the inherent limitations of this classroom study and discuss the generalization of our findings.

## 2.    Main findings

After providing a theoretical frame for this dissertation in *Chapter* 2, we carried out three related studies to answer our research questions. The first study (*Chapter* 3) analyzed the entire data set (n=229) and used two mixed effects models to determine which program was more effective. The second study (*Chapter* 4) analyzed the oral data of a subset of participants matched in scholastic level and amount of L2 exposure (n=41) to compare the effects of each program on measures of fluency, grammar and vocabulary. The third study (*Chapter* 5) analyzed the written data of the same subset as chapter 4 (n=43) to compare the effects of each program on measures of complexity. The two last studies were carried out to get a detailed picture of the differential effects of each program.

### 2.1   Explicit vs. Implicit L2 instruction in the classroom: beyond the dichotomy

This mixed-effect analysis of the entire data set (n=229) showed that a predominantly implicit form-focused program was more effective in the development of L2 oral and written skills after one, two and three years of instruction than a predominantly explicit form-focused program. It concluded that the program that focused most on oral skills at the beginning (the implicit program) and had the most amount of L2 exposure helped developing better oral as well as written skills within one year of acquisition and maintained this difference during the following two years. The implicit program also fostered more L2 exposure in the classroom,

as all teachers in the implicit condition were able to maintain a high amount of target language use in the classroom. However, this difference in L2 exposure was not the decisive factor regarding the difference in effectiveness of the two programs: Using model comparison, we showed that L2 exposure accounted for less of the variance than the program, as the model using Program as a predictor explained 10% more of the variance than the model using Exposure as a predictor.

## 2.2 Effects of a Structure-based vs. a Dynamic usage-based method on oral proficiency

This detailed analysis of the oral data of a sub-set of our participants (n= 41), comparable in terms of amount of L2 exposure and scholastic level, showed that the implicitly-taught participants showed higher levels regarding speech rate, grammatical complexity and L2 use, which all correlated very strongly with general oral proficiency as perceived by the trained raters. This means that the more French words were used, the faster the participants spoke, and the more different sentence types were used, the more proficient the participants sounded. Both programs were found to have the same effects regarding filled pauses use, grammatical accuracy and vocabulary, which correlated only moderately with general oral proficiency. This comparison of how different aspects of language use we related to overall proficiency showed that at the beginning stages of acquisition, fluency and complexity were at least equally important in sounding proficient as accuracy. Strikingly, both programs had the same effects on grammatical measures (except for the use of present tense, which was used more correctly by the implicit group), vocabulary and filled pauses. We concluded that the implicit program, which is a program that did not particularly focus on accuracy, was as much or even more effective on the aspects of grammar we investigated than a program that focused predominantly on grammar.

## 2.3 Explicit vs. implicit instruction: a long-term study on written complexity

The third study looked at the same subgroup of participants, but this time studied the written productions of the learners in detail. Again, the learners (n= 43), were comparable in terms of amount of L2 exposure and scholastic level, and the analysis revealed that the implicit group was more advanced than the explicit group on most measures of complexity. Lexical complexity measures, lexical diversification (Guiraud) and lexical sophistication (average word length), were an exception to this pattern as both groups scored the same. Specifically, the implicit group scored better on fluency (longer texts) and syntactic (longer sentences and T-units) complexity measures and also did better on broad grammatical complexity measure

as they used more conjunctions. This contrasts with the language use of the explicit group who used more determiners (that is to say, NPs). 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 passé-composé, the implicit group used more of the two future tenses, one of which is considered as a more complex construction. Regarding multi-word strings, 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. Also, 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 longer n-grams (7 and 6 word strings). In sum, explicit instruction did not necessarily lead to more complexity as measured in our study.

## 3.   A predominantly explicit vs. implicit program

While the three studies have shown an overall advantage of the implicitly taught group in terms of both holistic ratings and detailed linguistic analyses for spoken and written production, one of the stances of this dissertation has been to go beyond the dichotomy of explicit vs. implicit L2 instruction and to embed both teaching methods studied here into a larger notion that incorporates more aspects of a teaching method than the type of its grammatical instruction alone. We did so because of the nature of our investigation, which has been to take an ecologically-valid and longitudinal approach to the question. The limitations of this type of research (and there are many of course) are discussed later in this chapter; however, we would like to stress that our intention was to determine the effects of each types of instruction as they appear in the complex and sometimes messy reality of the classroom. *Chapter* 3 laid out the rationale behind our choice and showed that in classroom study, it is important to broaden our perspective and define our methods by going notions such as beyond grammatical accuracy and focus on form because they interact with other variables such as the amount of L2 exposure, the type of activities or the amount of L2, to form the complex and dynamic system that a second language instructional program actually constitutes.

We therefore agree that we cannot attribute the success of the implicit program only to its implicit instruction of form but rather to the combination of the principles of the program as a whole. In the next section will explain why we believe the implicit program was effective taking a Dynamic usage-based perspective to explain the findings.

## 4. A DUB explanation on the effectiveness of the implicit program

### 4.1 Effects of both types of instruction on proficiency, fluency, vocabulary and accuracy

It seems that our longitudinal analysis of free-production data contradicts the results of recent meta-analyses on the effectiveness of explicit vs. implicit instruction (Norris & Ortega, 2000; Spada & Tomita, 2010; Goo et al., 2015), which all found that explicit instruction within a meaning-based approach is more effective than implicit instruction with relatively large effects sizes and durable positive effects.

However, this might be because our implicit program is not one without any kind of attention to form. The program contained implicit attention to form (gestures), inductive grammar, and pushed output (in the form of drills and repetition). Our study showed that the implicit program led to better general oral and written proficiency, which seemed to be an effect of the learners 'better fluency, higher linguistic complexity and greater L2 use. This is in line with other studies on writing proficiency, which also found that the implicit group was better at syntactic complexity but also at lexical richness (Gruber, 2012). The explicit group in that study, however, was better at accuracy and essay scores while this was not the case in our data. We think that the difference to our study is that we did not measure many aspects of accuracy and that our participants were at the beginning stages of the acquisition, where accuracy might develop differently.

We did not find differences in terms of vocabulary at the single-word level. Our findings are not in line with other studies on lexical development showing that explicit instruction should be more effective regarding lexical items (Xu & Lyster, 2014; Mackey, 2006; Shook, 1994; Williams & Evans, 1998; Yang & Lyster, 2010). However, our results show that the implicit group was able to overcome their limited lexicon and sound more proficient by automatizing routines or constructions instead of automatizing grammar. This agrees with Myles (2012), whose study on oral skills showed that beginners depended heavily on memorized routines which made them sound more complex than they actually were.

Our study also showed that the implicit program achieved at least the same level of L2 accuracy or sometimes better accuracy (for the present tense) than a program with an explicit attention to form. This does not support the strong belief among teachers that that explicit teaching of forms (often in the L1) is a prerequisite for learning an L2 accurately (West & Verspoor, 2016). We must admit that we

only traced grammatical accuracy on three constructions (present tense, negation and gender), but our results seem to accord with other studies on studies using free-response data (Andringa, de Glopper & Hacquebord, 2011) that showed that explicit and implicit instruction led to equal use of the target grammatical structures. We think that the implicitly taught learners probably start by making many errors in the beginning but that with exposure and time, those errors eventually drop. This is found in other studies (Tilma, 2014; Rousse-Malpat et al., 2012), showing that the drop of errors occurs after 10 months of acquisition. We think that the absence of a predetermined order of acquisition of grammatical rules in the implicit program allowed an individual process of language learning as argued for in CDST theories on language development (de Bot et al., 2007), eventually leading to lower error rates.

## 4.2  The dynamics behind FL learning with an implicit program

At the beginning of this dissertation (*Chapter* 2), we presented evidence from Usage-Based theories that the mechanisms involved in language learning do not revolve around grammar rules but involve the association of language forms with meaning in the appropriate context. Those constructions, also called Form Use Meaning Mappings (FUMMs; Verspoor, 2017) can be specific or schematic and need to be learned as a whole rather than as single, separate words. Langacker (1987) stated that this process of entrenchment and conventionalization was dynamic and shaped through a great deal of repeated use in a meaningful context. This view on language development is compatible to a CDST perspective, which emphasizes that a learner's resources (cognitive processes including attention) are limited and sub-systems may compete until they are synchronized (Van Geert & Verspoor, 2015). In fact, Verspoor, de Bot & Lowie (2008) showed that trying to develop both writing and speaking in the early stages of L2 development may go at the expense of each other, pointing to competition between different systems of language use.

Our main finding is in line with those theories and shows that the implicit program, which heavily focuses on oral skills (speaking and listening), works better on the development of both oral and written skills, already after one year of acquisition. The implicit program provided the FUMMs in stories, repeating them in many different ways. Through frequent activations, they became entrenched, which favored the development of fluency and complexity. In addition, it focused on listening and speaking at the beginning of the program and not on reading and writing, which according to CDST, frees up resources and avoids competition between too many skills.

This sounds similar to the audio-lingual methods that were found ineffective in the 1980's (as explained in Hutchinson and Waters, 1990).The difference to the approach in the current study is that audio-lingual methods focused mostly on input and listening skills and presented linguistic patterns without much meaningful context, whereas the implicit program in our study made use of both oral skills (listening and speaking) and provided learners with FUMMs within a meaningful context, thereby exposing the learners to the same language forms multiple times, using gestures, visuals, paraphrases and translations. Learning, therefore, could occur on many more different levels (Schmid, 2015; 2017) than in an audiolingual approach.

The explicit program, on the other hand, focused on all skills at the same time. While the learners in this program improved over time, their proficiency level was never as high as that of the learners in the implicit program. We argue that the explicit program did not achieve the same levels of proficiency because, apart from focusing on all skills at the same time, it did not succeed in presenting and entrenching the FUMMs in the learner's cognitive system. The reasons for this is that the explicit program is based on the idea that the language system needs to be learned in separate sub-systems (grammar, vocabulary, pronunciation), thereby presenting only single aspects of language at a time and training their learners in assembling those sub-systems in producing language instead of activating learning on many different levels by presenting FUMMs in context.

## 4.3  Meaningful use of L2 exposure

In our opinion, the effectiveness of the implicit program therefore is more related to the way L2 exposure is made meaningful than to how form is instructed. The implicit program was effective because it was designed in such a way that language learning was about sharing meaning using conventionalized constructions instead of fabricating sentences by assembling utterances according to rules. The implicit program favored initial drilling and repetition to foster the development of fluency already from the beginning. All those principles and activities ensured that the L2 exposure provided to the learners was made meaningful by engaging the learners in many different ways in usage events where the input was revisited differently every time, and where strong associations to retain the FUMMs could be made by the learners.

As argued in the previous section, the implicit program was able to integrate a set of didactics that were in accord with the cognitive mechanisms involved in learning a language implicitly through repeated use and entrenchment of FUMMs.

One of our results in *Chapter* 3 was that even though L2 exposure was a significant factor in explaining our results, it was not the main predictor. In fact, *Chapter* 4 and *Chapter* 5 showed that the explicitly taught group, in spite of enjoying a high amount of L2 exposure, ended up being less fluent and less complex than the implicitly taught group in both skills.

## 5. Other factors for the success of the implicit program

However, besides these cognitive explanations, there are other more practical aspects of the implicit program that may explain its success in a FLI context. First of all, according to our results, it seemed easier for the implicit teachers to provide higher amounts of L2 exposure (between 90% and 95% of the class in French) than for the explicit teachers (between 40% and 60% of the class in French). This ease of implementation of the target language can be explained by the fact that the implicit program (the AIM method) is very strict in the didactics that teachers follow. All AIM teachers have taken a course to learn the gestures and the principles of the AIM method, which is fully scripted, ensuring that all teachers do the same in class. Also, the focus on oral skills at the beginning combined with the high amount of repetition and the use of gestures makes it easier for learners to engage immediately in a meaningful conversation in the target language very quickly (such as asking to go to the bathroom, or explaining that somebody is sick). This step might be to easily overlooked in the explicit program where the focus does not lie on the expression of the basic needs of the learners but on the acquisition of the vocabulary and grammatical points of each lesson.

It seems then, that in a FLI context poor in external input (Kouraogo, 1993), providing teachers with a clear program including steps and scripts to follow can support them to achieve an amount of L2 exposure and L2 use that enables learners to learn the language at a significantly faster rate. This seems more difficult to achieve by a program that focuses on grammar and accuracy.

## 6. Limitations of the design and generalization of the findings

Each study that this dissertation is composed of has its own share of limitations that have been discussed in the previous chapters. Here, we would like to point at several aspects of our corpus that must be borne in mind whilst interpreting and generalizing our findings. While we very carefully tried to control the limitations resulting from the very nature of our quasi-experimental classroom study, they could still have an impact on our findings.

Firstly, we know from previous studies (Schultz, 1996; Wentzel, 1998) that teachers' and learners' attitude and motivation can have an impact on the performance in a second language. In our study, we recruited the teachers according to several criteria in order to limit the effect of differences between the teachers. The teachers were all at least C1 speakers of French, had at least 5 years of experience as a teacher and were rated as "popular" by their students in the background questionnaire. Additionally, we also controlled for teacher beliefs on instructional methods to ensure that all the teachers were happy with the method they were teaching with. Only one teacher was teaching two groups with two different methods and admitted to be more in favor of implicit teaching. Because her students' results did not differ from the average results of the rest of each group, we decided to keep her in the study. In the mixed-effects analysis of the entire data set (*Chapter 3*), we were careful to include any factor that might be influential as random effects, where Class and School appeared to be more important than Teacher, probably because the teacher is already integrated into those factors. In the other studies (*Chapter 4 and 5*), the teachers involved were only teaching one teaching method and they stated that they believed the type of instruction they were using to be the most effective.

Secondly, the lack of information relative to the learners' individual differences other than their scholastic level may also be a point of concern. While we administered one attitude and motivation test at the end of each school year (three in total) to the students, the response rate we obtained after year 1 was not sufficient to include these results in the mixed effect analysis. The question of motivation would be a research question in itself as we did not collect the data that would allow a causality analysis. Even though we might have found a correlation between motivation and proficiency, we would not have been able to establish which factor causes the other. High or low motivation in French as a second language in the third year of high-school can also be very much related to the choice of a foreign language (French, German or Spanish) in the fourth year of high-school. The nature and rationale behind this choice is often complex and does not always match up with the proficiency level in the language chosen. Further studies on the link between language proficiency, teaching methods and motivation regarding the choice of a language in year 4 in Dutch high-schools are very much needed to explain the decrease of pupils that choose French as an optional language (Cito pers map, 2013, 2014, 2015, 2016, 2017).

Thirdly, we must point out that both groups differed in the number of hours of French lessons and of L2 exposure. The implicit program was able to provide 90 to 95% of French exposure in the lessons whereas the explicit program only

ranged from 40 to 60%. Even though our mixed-effect models (*Chapter* 3) showed that the program explained more of the variance than the amount of L2 exposure, we must admit that it is a major difference that we did not expect to find so clearly before we started collecting the data. We did however account for the difference in L2 exposure in *Chapter 4 and* 5 by comparing two groups with a similar amount of L2 exposure and hours of French lessons. Other longitudinal projects that are investigating the role of L2 exposure in L2 and L3 acquisition in Dutch high schools (Stadt, Hulk & Sleeman, 2016; 2018) show that the amount of exposure in the L1 and the L2 has an impact on language transfer in the L3. The focus of these studies is different than ours but the finding shows that the amount of language exposure is important, so it is very welcome that other studies are investigating this longitudinally and with more detail.

Lastly, we have found that an implicit program as operationalized in this dissertation is more effective than an explicit program after three years of instruction, but we do not know exactly why it is more effective. We discussed that it might be a mix of principles such as the frequency of exposure, the learning environment, the amount of authentic input, the enhanced output or the scaffolding in the form of gestures (which all are in line with a Dynamic usage-Based perspective on language learning) that makes the difference, but follow-up studies are needed to yield more insight into the specific aspects that contribute to the effectiveness of foreign language instruction in classroom settings.

Given all the limitations previously mentioned and taking into account all the precautions we took to control for the many variables that are present in a classroom study, the large effect sizes we found do suggest that our results are generalizable to all high-schools that recognize themselves in the principles and characteristics of the implicit or explicit program, in which the target language is taught as a foreign language for beginners and in which exposure outside of the classroom is limited. We do not want to overgeneralize this finding to all language learning contexts including those where the target language is taught as a second language, because we do realize the importance of exposure outside of the classroom, as shown in other studies on English for instance (Verspoor et al., 2012). Neither do we want to overgeneralize our findings to older learners because a teaching method such as AIM might be considered as "childish" by learners older than 15 years old. However, we think that our results can inform foreign language teaching beyond the borders of the Netherlands, particularly in other European countries struggling with the same issues, if the most important principles of the implicit program are kept and the sources of input are age-appropriate.