



Comparing inductive and deductive grammatical instruction in teaching German as a foreign language in Dutch classrooms



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ABSTRACT

Recent review studies show that explicit instruction is the most effective way when presenting grammar in a foreign language teaching setting. However, they do not distinguish between types of explicit instruction. This study explores what type of explicit instruction (i.e. deductive or inductive instruction) is more effective for Dutch students learning German. The participants are secondary school students from two different levels of secondary education, viz. HAVO and VWO. We investigate the learning of a complex grammatical structure, the subjunctive for reported speech (Konjunktiv I). Using a pretest-posttest design, we compare the gain scores for a grammaticality judgment test and a writing test for explicit-deductive and explicit-inductive instruction groups and a control group. One-way ANOVA analyses show that both types of explicit instruction have a positive effect on learning gain. Only the grammaticality judgment test displays statistically significant differences between inductive and deductive instruction, with better results for inductive instruction. According to our data the educational level of the participants did not influence the learning effects.

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1. Introduction

In SLA research the central notions in the discussion if, why and how grammar should be taught in second language classes are explicitness (in teaching) and awareness (in learning). The two poles in this discussion are represented by the terms explicit and implicit methods. The debate about the effectiveness of explicit vs. implicit methods for grammar teaching was initiated by Krashen's non-interface hypothesis (1994) considering complexity of grammar structures. Krashen (1994) distinguishes between simple and complex structures and argues that only simple structures can be successfully taught in foreign language education. An opposite view has been outlined in Hulstijn and de Graaff (1994). They argue that complex grammar rules are (too) hard for L2 learners to discover and for this reason they need to be presented explicitly in foreign language classes. Simple grammar, on the other hand, is easily noticeable in the input, so that implicit instruction is sufficient for these rules. Although the results of some subsequent studies confirmed Krashen's hypothesis (e.g. DeKeyser, 2005), two meta-analyses of recent empirical research demonstrate that explicit methods of grammar instruction are more effective than

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implicit ones in general (Norris & Ortega, 2000), and that this is true for both simple and complex grammatical structures (Housen, Pierrard, & van Daele, 2005; Spada & Tomita, 2010).

Recent review studies (Graaff & Housen, 2009; Norris & Ortega, 2000; Spada & Tomita, 2010) indicate a greater effectiveness of explicit types of grammatical instruction, but they do not distinguish between types of explicit instruction, e.g. between an inductive and a deductive approach (see Robinson, 1996 for the relevant instruction typology). In both instructional types, a grammar rule is formulated. Where the deductive approach conveys this rule explicitly to the learner, inductive teaching encourages learners to distill the grammar rule from the offered linguistic input. This study explores the effect of explicit grammar instruction, comparing deductive and inductive instruction for a complex grammatical structure in German. In order to see whether learner characteristics influence the effectiveness of the deductive treatment students from two selective types of secondary education in the Netherlands participated in our study.

2. Literature review

Some recent studies compare the effects of deductive and inductive types of grammar instruction (Erlam, 2003; Haight, Herron, & Cole, 2007; Jean & Simard, 2013; Shaffer, 1989; Vogel, Herron, Cole, & York, 2011). However, these studies do not offer univocal results. Some studies display better learner results with inductive treatment (Haight et al., 2007; Vogel et al., 2011), whereas other studies show that learners with a deductive instruction outperform the inductive group (Erlam, 2003). Additionally, there are researchers who do not observe any statistically significant differences in learner results for the two treatments or mention only a trend in favor of the inductive approach (Jean & Simard, 2013; Shaffer, 1989). Second, whilst the notion *deductive* seems to be applied uniformly, there is no clear consensus for inductive instruction. In all inductive approaches, the learner is encouraged to infer a grammar rule from linguistic input but the extent to which this is guided by a teacher and eventually summarized after exploration differs. Erlam (2003) considers inductive instruction to have a smaller degree of explicitness than in a deductive approach, cf. Norris and Ortega (2000), due to its focus on form with no explicit grammar instruction. Similarly, Shaffer (1989) and Jean and Simard (2013) encourage the participants to infer grammar rules but crucially omit subsequent (re)formulation of the rule by the teacher. A more guided version of inductive instruction is adopted by Haight et al. (2007). In their guided inductive approach, students receive no explicit explanation of the rule but have to construct it themselves in collaboration with the instructor instead. In addition, Vogel et al. (2011) combine this guided inductive approach with explicit rule formulation. Their so-called ‘hybrid’ model of guided inductive instruction consists of a meaning-based contextualized oral activity, as well as construction of the rule guided by the instructor and subsequent explicit rule explanation.

The type of inductive instruction which tends to give the best proficiency results is when grammar is introduced with guidance and with explicit formulation of the rule after exploration, see also Herron and Tomasello (1992). The positive effect of guidance is also observed in a recent meta-analysis of inquiry learning (focusing on hypothesis formulation and inducing underlying principles) in science and mathematics (Lazonder & Harmsen, 2014). This meta-analysis concludes that instruction with guidance is more effective than instruction without support. In sum, more empirical studies including clear definitions of inductive instruction are needed to draw stronger conclusions on a potential difference in effectiveness between inductive and deductive instruction.

Apart from instruction type, learner characteristics such as first language and scholastic aptitude, motivation, age, cognition and learning style also seem to influence the language learning process (see Ortega, 2009 for an overview). There is some evidence pointing to the influence of learner characteristics on the effectiveness of inductive and deductive instruction. In discussing Erlam (2005, 2013) observes “tentative research evidence to suggest that learners who have high language analytic ability may be more able to benefit from an inductive approach to grammar explanation because they are more skilled at hypothesis testing. Other learners may do better with a more deductive approach” (p. 4). Another possible intervening factor mentioned in the studies on inductive and deductive instruction is scholastic aptitude of the learner. Shaffer (1989) refers to studies in which it is argued that “an inductive approach would be too difficult for slower students, and that only brighter students are capable of discovering the underlying patterns of a structure” (p. 396). However, this assumption is refuted in her research. We conclude that the role individual characteristics play in instruction is yet to be explored further.

Also complexity is mentioned in the literature as a potentially interfering factor in effectiveness studies (see Introduction). Spada and Tomita (2010) conclude that no generally accepted definition exists for the notion *complexity* in that various criteria have been formulated in different studies. Tammenga-Helmantel, Arends and Canrinus (2014) address this issue. They combine criteria for the categorization of simple and complex grammar structures used in previous research (Andringa, 2005; DeKeyser, 1995, 2005; Hulstijn & de Graaff, 1994) and list four aspects to define the degree of formal complexity: 1) reliability (the number of exceptions to the rule), 2) structural complexity (the number of steps to apply a rule), 3) semantic complexity and 4) transparency (relation between form and semantics). For each grammatical structure the absolute and relative complexity can be calculated by determining the number of criteria for which the structure turns out to be complex.

Two studies on effectiveness of grammar instruction have recently been executed under conditions similar to ours, i.e. in a Dutch classroom setting: Andringa, Gloppe and Hacquebord (2011) and Tammenga-Helmantel et al. (2014). Andringa et al. (2011) compare the effectiveness of explicit (deductive) and implicit instruction for two grammar structures: the degrees of comparison and subordinate clauses, simple and complex grammar, respectively. They use a pre-post-test design with a grammaticality judgment test and a free written response task. The participants are high school students in a Dutch

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