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Second language grammar and individual differences

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Abstract

The need for grammar instruction has always been a very controversial issue, although there is a broad consensus in the second language (L2) acquisition field that such pedagogical intervention is facilitative and may even be fundamental in some contexts. Historically, the teaching of grammar in the classroom has witnessed several shifts, from very explicit approaches in the Grammar-translation method (GMT) to the more recent Task-based language teaching (TBLT) approach in which meaning is prioritized but formal aspects of language are not neglected.

Against the backdrop of all these methodological changes, one variable that had not been considered in depth was the learners' individual differences (IDs) in the process of grammar learning. Thus, the aim of the present paper is to consider how different researchers have explored the relationship between IDs and attention to formal aspects of the target language. In particular, the paper will review several experimental studies that have considered IDs such as cognitive styles (field-dependent vs. field-independent), learning strategies, proficiency, intelligence, anxiety and extraversion showing that grammar learning is influenced by those particular IDs. Regarding cognitive styles, it seems that field-dependent learners might benefit from a communicative approach with explicit corrective feedback, the same as low-proficiency learners, whereas field-independent learners benefit from more implicit corrective feedback moves, the same as higher proficiency learners. There is also a wide range of grammar learning strategies that learners use when learning their target language and recent research shows that self-evaluating their learning process can foster L2 grammar acquisition. Anxiety has been shown to play an important role in the L2 learning process as low-anxiety learners repair more errors in communicative exchanges. Different learner IDs can interact, compensating or balancing their possible effects.

The paper will argue that IDs are a very relevant variable in the L2 acquisition process and that they should be taken into account when it comes to putting together an adequate syllabus.

Keywords: individual differences; grammar instruction; corrective feedback; second language acquisition.

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1. Introduction

The need for grammar instruction (GI) has always been a very controversial issue, although there is a broad consensus in the second language acquisition (SLA) field that such pedagogical intervention is facilitative and may even be indispensable in some contexts such as a foreign language context (Nassaji, 2020).

Historically, the teaching of grammar in the classroom has witnessed several shifts. As reviewed by Richards and Rodgers (2001), the Grammar-translation method proposed an explicit approach to GI. The Direct Method proposed a more inductive view of the role of grammar, whereas the Audio-lingual method suggested that grammar is learned through the process of repetition, imitation and reinforcement. In the 70s of the previous century, the importance of authentic communication was emphasized and, as a result, the Communicative Language Teaching (CLT) approach was proposed. In the CLT classroom, GI was relegated to a peripheral role because it was assumed that the process of learning a second language (L2) was just like learning a first language (L1) (Savignon, 1991).

Nevertheless, research in Canadian immersion programs (Lyster, 2007; Swain, 1985) showed that exposure to the target language was not enough for learners to reach an appropriate command of the language. Communicative tasks with no attention to the formal aspects of the language led to a loss of grammatical accuracy in the learners' production (Pica, 2001). However, as communicative exchanges were shown to be facilitative for the L2 acquisition process, Long (1985) proposed the so-called focus on form (FonF) approach, which guided learners' attention to form in a communicative context to make up for the shortcomings of the previous CLT method. GI, thus, recovered its importance in the educational field.

In the circumstances of these methodological changes, the effect of learners' individual differences (IDs) in the process of grammar learning was a variable that was not widely considered. This is the focus of the present paper, which will regard how different researchers have explored the relationship between IDs and grammar learning. In particular, I will review experimental studies that have considered IDs such as cognitive styles, learning strategies, proficiency, intelligence, motivation and anxiety. The paper is organized as follows: first, I will provide an overview on the multidimensional aspect of grammar and the debate about explicit and implicit GI methods. Then, I will briefly summarize some of the most important language teaching approaches and the role of GI in each. The third part of the paper will concentrate on IDs and different experimental studies addressing their role in the acquisition of formal aspects of language. I will conclude the paper with a summary of the main findings and my own reflections of the work done.

2. Background

2.1 Form, meaning, use and the explicit-implicit debate

Grammar is usually defined as the set of rules that determine the correct combination and interpretation of a language. Larsen-Freeman (2009) pointed out that the term grammar, however, is ambiguous. She referred to four interpretations of the term grammar: *Mental grammar*, an internal mental system that generates and interprets utterances, *pedagogical grammar*, the structures and rules compiled for instructional and assessment purposes, *prescriptive grammar*, a set of prescriptions about language forms and their use for a particular language, and *descriptive grammar*, a description of language behavior by proficient users of a language.

Larsen-Freeman (2009) also argued that the dimensions that make up grammar are form, meaning, and use. The formal dimension, which is the structure of the language, includes the morphosyntactic and lexicogrammatical aspects of knowledge, which help to fit lexical items in a construction in the correct grammatical way. She further adds that phonemic and graphemic rules of the target language are also part of the formal grammar

dimension. Larsen-Freeman (2015) introduces the meaning dimension, which is the semantic content of the construction and refers to what a formal construction denotes in both the lexical and grammatical senses i.e., the literal meaning of the lexical items used and the interpretation of the construction in a specific context. Finally, we find the pragmatic dimension, which focuses on the use of the language and grammar in a specific context i.e., why and when a specific item or construction is used.

By adhering to the definition of grammar as a three-dimensional combination of language, we could understand grammar as a skill. In this regard, Larsen-Freeman (2003) coined the concept of "grammaring", which refers to the production of language structures that are meaningful, appropriate, and also accurate. Larsen-Freeman (2014) considered that learning the rules of a target language is important and that classrooms should focus on those formal aspects. Nevertheless, she argued that one does not know grammar by simply being aware of these rules. Using language meaningufully in a context is equally as important for L2 learners to truly gain a higher language ability. Although Larsen-Freeman's view on how to best instruct foreign language grammar might be shared by many SLA professionals and L2 teachers, there seems to be a disparity in the beliefs on how that grammar knowledge should be taught and learned. Pawlak (2021, p. 166) brings forth an important idea that should be taken into account:

> Regardless of the specific building blocks of grammar that are taught or whether instruction takes account of the three dimensions mentioned [by Larsen-Freeman], it should be underscored that the fact that such information is committed to memory does not mean that it will be available for use in real time.

There is another important debate concerning how grammar should be taught and it has to do with the availability of the structures that a learner might have in a real-life communicative exchange. This brings forth two different views on grammar knowledge: explicit and implicit. Explicit knowledge is conscious, learners are aware of the rules of the L2 that they have learned and which are prone to evolve and mature. A setback of this

type of knowledge comes from the fact that it needs to be retrieved from the cognitive processing system and this can hinder real-time communication. Contrary to this, implicit knowledge is intuitive and gained unconsciously and progressively through exposure to input and action. Such different types of knowledge are also put into question. Pawlak (2021) cites DeKeyser (2010), who considered that implicit knowledge might not be completely automatized and one might need to recover conscious rules. For this reason, DeKeyser (2017) argued that such a closed-off distinction of knowledge cannot be made and presented the idea that the notion of implicit knowledge should be substituted by "highly automatized explicit knowledge".

As could be anticipated, the two representations of knowledge above brought forth two different approaches to GI in L2/foreign languages: explicit and implicit. In the former approach grammar rules are provided and discussed to then be put into practice. In contrast, in implicit instruction teachers provide contextualized and authentic language and do not refer to rules or forms at all as the learners are supposed to infer them from use.

In what follows, before focusing on a selection of IDs that might have an impact on GI, I will briefly summarize the evolution of grammar teaching methods.

2.2 Evolution of grammar teaching methods: From grammar-translation to task-based language teaching.

There is clearly no single way in which grammar knowledge can be passed on and researchers and instructors alike have debated which teaching methods would be more useful or beneficial for L2 learners. As the L2 grammar teaching discipline is quite long-lived, it is to be expected that different models have been used.

Historically, one of the first methods is the so-called Grammar-translation method, which is derived from the classical method of teaching Greek and Latin. In grammar-translation classes, students learn grammatical rules and then apply those rules

by translating sentences between the target language and the native language. Richards (2006) mentions that this method paid special attention to habit formation to acquire grammar competence and introduced some activities “memorization of dialogs, question-and-answer practice, substitution drills, and various forms of guided speaking and writing practice.” (Richards, 2006, p.10).

In the 70s of the previous century, the importance given to grammar knowledge diminished, and new syllabi were developed to satisfy the communicative needs of L2 learners. Hymes (1972) explains that the CLT method intends to teach the language in a context where authentic meaningful input is provided so meaning and communicative competence will be at the forefront and grammar accuracy will have a diminished role. Krashen (1985) Input Hypothesis shapes the theoretical principles of this method. This hypothesis assumes that humans have an innate capacity to handle acquisition and that language is learned by processing compressible input so GI and corrective feedback are not needed and are even discouraged. As Mitchell (2000, p. 285) put it: “[…] explicit grammar study was seen as pedantic, lacking in intrinsic value and inefficient as a means of developing practical communication skills, especially oral skills.”

However, evidence from Canadian immersion programs (Swain, 1985) showed that even after hundreds of hours of exposure to meaningful input, learners still struggled with their speaking and writing skills and it was clear that there was a need to pay attention to the formal aspects of language. In fact, Pica (2001) observed teacher-student interactions in various content classrooms and she reported that meaning-focused communication tasks resulted in a loss of grammatical accuracy. Teachers only provided students with content feedback that was related to the meaningful aspects of their production and did not correct their formal mistakes. On the whole, it could be said that the lack of GI in the CLT can lead to a communicative problem "Communication cannot take place in the absence of structure, or grammar, a set of shared assumptions about how language works, along with a willingness of participants to cooperate in the negotiation of meaning" (Savignon, 1991, p. 268).

Back in 1980, Long realized that conversational adjustments found in native-speaker and learner interactions and also in learner-learner interactions were facilitative for L2 acquisition. Those adjustments (clarification requests, comprehension checks, repetitions etc) led to the learners' attention to formal aspects of the language. Long (1996) established the difference between a *focus on forms* approach to language, in which parts of the language are taught separately with the underlying assumption that the learners will synthesize pieces for use in communication, and a *focus on form (FonF)* approach, an instructional treatment that "overtly draws students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning and communication." (Long, 1991, pp. 45-46). The FonF approach draws heavily on Schmidt's (1990) views about the importance of attention in SLA, specifically on noticing features in the input, and on Swain's (1985) Output Hypothesis, as output production facilitates noticing.

Interest in task-based language teaching (TBLT) has increased in the past decades (see Ellis et al., 2020 for a review). TBLT constitutes an approach to language teaching that prioritizes meaning, like CLT, but does not neglect the formal aspects of language. In fact, Ellis (2016), one of the major proponents of TBLT, considers that FonF is a set of pedagogical interventions designed to draw the learners' attention to a linguistic form in a communicative context. This focus on form can be either pre-planned or it can be incidental as learners engage in meaning-based activities. Ellis and Yuan (2004) identified four ways in which tasks can be manipulated so that attention to form is drawn: manipulating task design (+/- complexity), manipulating task planning (providing time for learners before they complete the task), providing corrective feedback and by means of interaction and collaborative dialogue (García Mayo, 2014, 2021).

Nowadays, there is plenty of evidence supporting the need for GI both from classroom-based studies and laboratory studies. In fact these studies support the effectiveness of GI embedded in communicative methods. For example, Norris and Ortega (2000) conducted a quantitative meta-analysis to compare the effectiveness of different L2 instruction methods. Comparisons on pre-treatment and post-treatment achievement scores helped them to conclude that FonF was the most successful method.

However, opinions on how to teach grammar are still varied these days. Sato and Oyanadel (2019) administered a survey among Chilean English as a foreign language (EFL) teachers to gather their beliefs about GI in communicative tasks. Results were mainly positive towards integrated GI in communicative exchanges. However, Uysal and Bardacki (2014) showed that EFL teachers in Ankara believed that communicative tasks were secondary to GI as most of them were only familiar with the Grammar-translation method but not with FonF.

Selecting the most effective GI approach is not an easy task as an approach that works for a group of learners might not be adequate for another. Thus, several SLA researchers have paid special attention to IDs and their role in the acquisition of formal aspects of the language, which is the focus of the next section of this paper.

3. Review of empirical studies on individual differences

In what follows I will review a selection of studies that explore the correlation between different cognitive and affective IDs and their impact on the acquisition of L2 grammar. Among all the different IDs, and due to space constraints, I have chosen a few that I thought were most interesting and gave relevant results in different teaching environments. Studies on cognitive styles, learning strategies, proficiency, intelligence, anxiety and extraversion will be presented chronologically in each subsection. The study of IDs could have the potential to help teachers select more appropriate instructional designs and teaching techniques that are more compatible with their learners' cognitive and personality characteristics.

3.1. *Cognitive styles*

Language is a cognitive process (Piaget, 1923) and learning a language is one that requires the learners' cognitive abilities to understand and decode rules and structures. Messick (1984, p. 5) defines cognitive style as 'consistent individual differences in

preferred ways of organizing and processing information and experience' (p. 5). Riding and Rayner (1998) conceptualize cognitive style as an individual's preferred and habitual approach to organizing and structuring information. There are several definitions of cognitive styles depending on the author and field of expertise. Reid (1995), for example, distinguished three different types: field-dependent (FD), analytic-global, and impulsive-reflective. Different researchers have related the role of cognitive styles in shaping learning.

Rassaei (2015) considered the FD and field independence (FI) learning styles dimensions and aimed to relate them to L2 knowledge. Jonassen and Grabowski (1993, p. 87) defined these cognitive styles as being 'the degree to which a learner's perception or comprehension of information is affected by the surrounding perceptual or contextual field'. Ehrman (1996) explained that FI learners are characterized as being more analytical and are, therefore, more capable to direct their learning and detect transparent structures. In contrast, FD learners' attention span is weaker and they focus on whole aspects so their capacity to structure their own learning is not as developed as that of FI learners. Additionally, Ehrman (1996) claimed that FD learners thrive in social exchanges so they might favor instructional approaches that encourage interaction.

In his study, Rassaei (2015) took the differences between FI and FD learners into account and aimed to determine whether each cognitive style could benefit from implicit CF moves in which instructors reformulated the students' utterances in the correct form by means of recasts, as in (1):

(1) Student: she is biologist.
Teacher: she is a biologist.
(Rassaei, 2015: 508)

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Seventy six (n = 76) EFL adults (aged 33-46, mean age = 36) participated in the study. They had Farsi as their first language (L1) and an intermediate proficiency level in English. They held graduate degrees and, besides the regular English courses passed during undergraduate and high school education, they also had an average experience of 23 months of English instruction in private language teaching institutes as shown in

questionnaires that they filled prior to the study. The students were assigned into FD and FI groups by the means of the Group Embedded Figures Test (GEFT), a tool developed by Witkin, Oltman, Raskin and Karp (1971) in which students had to locate and trace a simple figure situated within a complex one. Following this test, four subgroups were created: recasts–FD, recasts–FI, control–FD, and control–FI. The control groups received no CF on errors in the target structures (referential indefinite *a*, and anaphoric definite *the)*. In contrast, the treatment groups were corrected by means of full declarative recasts, as shown in (1) above.

Four picture story tasks were used for the treatment sessions (recasts sessions) and also classroom sessions in which the control group participated with one task presented to all participants of both the recasts and the control groups in each session. Each group was presented with six sequenced pictures accompanied by a 100-word narration, given time to retell the story in groups and then narrate it in front of the class. Apart from the treatment sessions, two different testing methods were used to assess the participants' knowledge of the target forms in order to analyze the impact of the recasts treatment: a writing test (WT) and a picture description task (PDT). For both tasks, students were given different sequences of pictures. In the WT task, they were asked to write a story description using word prompts that would force them to use the target structures. In the case of PDT, participants had to describe the happenings in the pictures.

Analysis of the scores obtained by each group in the WT and PDT posttests showed that the FI-recast group outperformed the FD-recast group and both control groups. In contrast, the FD recast group showed no significant improvement from the groups that did not receive the treatment. These results showed that recasts are more beneficial for individuals with a FI cognitive style than those with a FD cognitive style. Rassaei (2015) discusses this difference and justifies it based on the characteristics of each cognitive style. As mentioned above, FI learners are analytical and capable of noticing structures, hence, they are able to identify the corrected forms in the recasts provided, which allows them to modify their output. On the other hand, FD cognitive styles might see instances of corrective feedback as communicative confirmations from the teacher rather than error corrections and, as a result, they might fail to correct their

output. The claim is that, as FD individuals are more social and focus on communication and understanding messages, they might benefit from a communicative approach with explicit GI and corrective feedback. FI students, on the contrary, are achievement-oriented and focus on structure accuracy in language classrooms so implicit GI would be beneficial for them. From this study, it was concluded that the success of GI in L2 acquisition depends on the learners' FI and FD cognitive styles and that adapting corrective feedback strategies to learners' IDs could help create a teaching mode that is more beneficial for everyone.

3.2 *Learning strategies*

It could be asserted that, whether learners are able to learn the target language grammar on their own or not, depends on the reliance they have on grammar learning strategies (GLS), which involves a higher autonomy on their part. Brown (1987) defined GLS as deliberate methods and actions that are consciously used to help the individual in the processing of information during learning. Oxford, Rang Lee and Park (2007, p. 117) describe GLS as "(…) actions and thoughts that learners consciously employ to make language learning and/or language use easier, more effective, more efficient, and more enjoyable". Many discuss that the use of these strategic devices is imperative to attain explicit and implicit knowledge of grammar and can aid students to understand the rules of the target language.

Pawlak (2009) conducted a study that intended to find out the relationship between the use of GLS and L2 grammar attainment, operationalized as the degree of success in grammar classes and a comprehensive end-of-the-year examination covering all aspects of target language proficiency. The participants were 142 Polish EFL learners, 67 of whom were in the first year of their BA program, 38 in the second and 37 in the third year. All participants had roughly the same exposure to the target language outside of the classroom. The participants' end-of-semester grades in their grammar courses and the end-of-the-year examination were the two measurements considered to divide students into two groups: upper and lower level.

The data was gathered by the means of two questionnaires. In the first one, students were questioned about topics such as the courses they were enrolled in, their English marks, or the procedure they follow when learning grammar. After that, they were given a second questionnaire to obtain data on the frequency of use of three different GLS related to *implicit learning with focus on form, explicit deductive learning, and explicit inductive learning*. Students were asked to respond to the questionnaire by indicating which statement they related to more in a scale from one to five. Finally, students' scores on the grammar course were recovered and contrasted with their GLS use. Results showed that there was no relationship between strategy use and level of achievement in the grammar course but it seemed that those participants who scored higher, presented a more frequent use of GLS, especially related to explicit deductive learning. Pawlak (2009) concluded that GLS related to explicit deductive learning might have given better results because of the teaching and assessment methods followed in these courses, which focused on the accurate usage of rules. He argued that GLS can foster acquisition but this is a variable that depends on matching the type of GLS used and the nature of the instructional approach adopted. He also argued that the lack of correlation could be related to a weak data collection technique.

More recently, Pawlak and Csizér (2022) carried out a comparative study and reported that GLS could be helpful in the processing of corrective feedback. The study provides further information on the reported use of different types of GLS with the help of an instrument specifically developed with this goal in mind and it is the first to offer insights into the use of GLS in two different educational settings, namely, Hungary and Poland. The authors related such use to attainment, operationalized in terms of self-evaluation of overall target-level ability. Data was gathered with a more appropriate data collection instrument, the *Grammar Learning Strategy Inventory (GLSI)*, developed by Pawlak (2013). This instrument presents 70 five-point Likert-scale statements that intend to gather information on different GLS categories. The Hungarian sample consisted of 205 participants, 159 females and 46 males, enrolled in BA and MA programs in English and with a B2 proficiency level according to the *Common European Framework of Reference* (CEFR). With respect to the Polish students, the sample comprised 173

participants, 114 females and 59 males, also enrolled in BA and MA programs in English and also with a B2 proficiency level. The participants were administered the questionnaire on their usage of GLS and they were asked to answer showing the degree to which they related to statements in a scale form 1 to 5. We find in (2) examples of assertions about GLS categories (Pawlak & Csizér, 2022, pp. 8-9):

(2) a. Metacognitive: 'I try to find more effective ways of learning grammar'
b. Affective: 'I talk to other people about how I feel when learning grammar'
c. Social: 'I practice grammar structures with other students'
d. FonF: 'I try to use specific grammar structures in communication'
e. Deduction: 'I try to understand every grammar rule'
f. Induction: 'I try to discover grammar rules by analyzing examples'
g. Communicative: 'I try to use grammar rules [...] in a meaningful context
h. Controlled: 'I do many exercises to practice grammar
i. Corrective feedback: 'I pay attention to teacher correction when I do grammar exercises and try to repeat the correct version'

The findings showed that GLS and scales proved to be reliable. The Hungarian participants seemed to make more frequent use of corrective feedback GLS to help process the feedback regarding grammar errors when a FonF approach was adopted. On the other hand, Polish learners had a heavier reliance on metacognitive GLS, also as a response to corrective feedback. No other relevant differences were reported regarding frequency of use and the authors concluded that categories of GLS were mostly a consequence of the corrective feedback provided. It was also found that the reported use of GLS was related to self-perceived learners' proficiency. Pawlak and Csizér (2022) concluded that drawing attention to form can help learners' explicit knowledge be automatized faster as this may incentivize GLS usage, which in turn facilitates L2 acquisition as learners will create instances in which they can benefit from corrective feedback and negotiation of form. In other words, self-evaluating the learning process can foster L2 grammar acquisition, with metacognitive GLS having the most positive results.

3.3. *Proficiency*

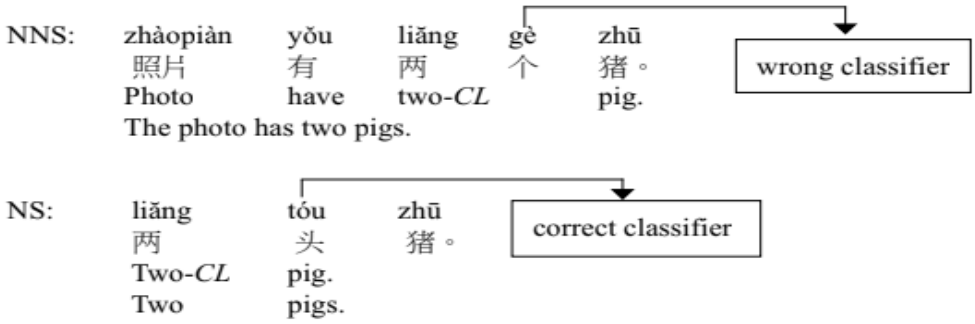
Language proficiency refers to someone's ability to speak a language and includes the command of the different language skills A reasonable expectation is that language proficiency in the target language might determine the type of content one is capable of processing. Therefore, adapting the contents and form of instruction to the learners' proficiency levels when designing a classroom syllabus is relevant to facilitate their acquisition process.

Li (2014) conducted a study to find out whether learner proficiency determines the type of corrective feedback (implicit or recasts and explicit) that will be beneficial for the L2 acquisition of Chinese *perfective le* and *classifiers*. In particular, the author considered whether recasts and metalinguistic correction had any differential effects on L2 Chinese learners of different proficiency levels in the learning of different linguistic targets. The participants (n= 78) were students that were learning Chinese as a foreign language at two universities in the United States of America (USA). All of the participants had English as their native language, except three who were native speakers of Korean. Students were divided into three groups depending on their proficiency level: beginner, intermediate and advanced. Each group would receive treatment sessions in which they were provided with either implicit or explicit feedback or none.

Students had four sessions in four days. In the first session, they were administered a background questionnaire. In the second and third sessions the students worked on randomized tasks on the linguistic targets. In the *classifier* sessions, they had to complete 15 picture descriptions and describe them using the appropriate classifier+noun combination. In the *Spot the difference* task the native speaker and the learner had a picture with different objects and they each had to determine the differences. The *Le perfective* sessions consisted of a video narrative and an oral interview task. Subsequently, students watched a video and summarized its contents orally by following obligatory contexts given to them in English. The oral interview consisted of 16 questions that looked to elicit le perfective production. The questions were asked in English to let students determine the correct use of the linguistic target.

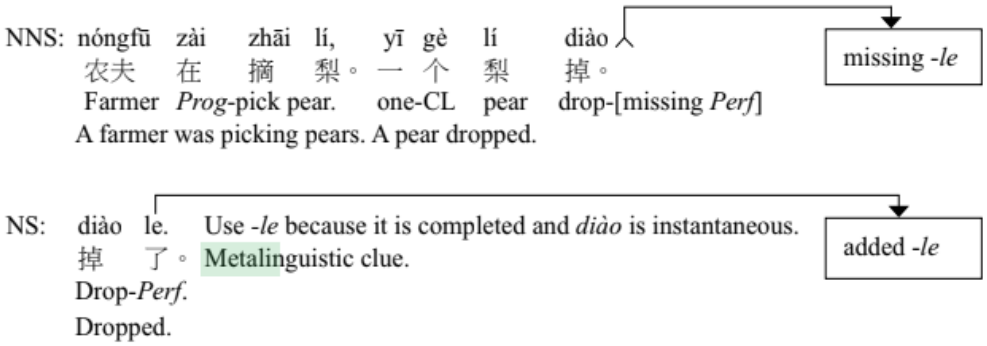
As the participants produced errors on the target structures, they were given different feedback: implicit (recast) as in (3) or explicit (metalinguistic) as in (4).

(3)



(Li, 2014, p. 380)

(4)



(Li, 2014, p. 380)

Only the target structures were corrected. *Untimed grammaticality judgement tasks* (GJT) and *elicited imitation* (EI) tests were carried out before during, and after the study. This allowed the researcher to differentiate the final knowledge and the effect each feedback type had on the evolution of competence after the treatment was completed. In the GJT students were given sentences that they had to identify as grammatical or ungrammatical and correct the mistakes they perceived in the latter. In the EI a recording was played that presented general daily life statements that had target items. The students were asked to mark them as true or false and repeat them in Chinese.

The GJT and EI scores for *perfective le* and *classifiers* showed that the low proficiency group that received metalinguistic feedback outperformed the recast group in both post-tests while the recast group did not show any improvement. In fact, the positive effect recasts had on low-proficiency learners was not sustained in post-test 2 either. In the case of high proficiency learners, the results of both GJT and EI showed that they benefited from both types of corrective feedback alike. However, there was a contrast that showed that the effects of recasts increased over time as high proficiency students performed considerably better in the delayed posttest than in the immediate posttest. This was not the case for their EI scores. Overall both proficiency treatment groups outperformed control groups and benefited from both metalinguistic correction and recast in varying degrees.

Li (2014) argued that recasts might be more effective for higher proficiency learners as they can notice and process features that are above their proficiency with the help of cognitive resources that lower learners might lack. Low proficiency learners benefit more from explicit feedback as it helps them notice semantically opaque structures like the *le perfective* that otherwise might go unnoticed at a lower level. In contrast, classifiers are more salient and might require less direct instruction. Li (2014) concluded that explicit feedback is more beneficial than implicit feedback only when learners' proficiency and the nature of the linguistic targets are taken into account.

3.4. Intelligence

The degree to which a person is able to perform adequately is what is referred to as intelligence. Ellis (2008, p. 649) defines the construct as follows: “Intelligence is the general set of cognitive abilities involved in performing a wide range of learning tasks”. Genesee (1976, p. 268) defined intelligence as an ability “defined in terms of performance on a standardized, group test of intelligence”. Genesee (1976) assessed the rate of language acquisition in the context of immersion programs for students with different intelligence quotients (IQ). Participants from both French immersion programs and regular English programs were selected, all Anglophone students from different schools

in grades 4, 7, and 11 (aged 9-17) with French as their L2. Each grade group was further divided into three groups: above average, average, and below average.

All groups were administered four tests to measure their language use in a formal academic context: a reading test, a test to assess the learners' skills in vocabulary, spelling, grammar and reading comprehension, a French usage test and, finally, a mathematical skills test. Students' interpersonal French communication skills were also studied via a French listening comprehension test with multiple-choice questions and two speaking tasks. The first task consisted of individual interviews in which the participants had to describe a cartoon. Subsequently, their fluency was tested by means of a short exchange between the researcher and the student on the cartoon or on school experiences.

The findings showed that above-average students in immersion programs performed better than average students in the tests that evaluated the academic use of language. In contrast, it was found that average students outperformed above-average students in communicative tasks. These results show that students with above-average cognitive abilities might be able to achieve higher academic success in both immersive and common courses. Nevertheless, all students could benefit from L2 exposure and immersion programs equally as exposure to appropriate input can foster interpersonal L2 communication skills of low and high intellectual-ability students alike. From these facts Genesee (1976, p. 37) concludes that “higher intelligent learners are better learners of English as a foreign language. However, the better foreign language learners' performance cannot be solely attributed to their higher intelligence” (Genesee, 1976, p. 37)

To further investigate the relationship between IQ and the successful acquisition of formal academic skills, Ghonchepour and Moghaddam (2017) explored whether there could be a relationship between intelligence and EFL grammar and reading comprehension attainment. The participants in the study were 60 Persian males and females (aged 15-19). Students were divided into three groups based on their enrollment in outside-of-school EFL classes: those who had never enrolled in extra EFL classes, those who had but did not continue, and those who were taking classes while the study

was conducted. Two intelligence tests and two EFL achievement tests were administered to all 60 participants to gather the data for the study. The first intelligence test consisted of an oral verbal intelligence test (OVIT). The questions and four possible answers were read aloud and learners had to choose the correct option on the answer sheet. For the second intelligence test, researchers also provided an oral explanation. The Non-Verbal Test BD aimed to examine participants' performance in tasks like ciphers, similarities, analogies, and series. The final data-gathering tool was the EFL test which measured the participants' comprehension and grammatical skills.

In order to test their comprehension, the learners had to complete several tasks such as reading stories to then answer questions, multiple choice activities, or giving directions to locate a place. EFL proficiency tests were carried out with 20 multiple-choice questions on grammar items. The correlation between the participants' coefficient and their test results showed that students with higher IQ scored higher on grammar and reading tests. Hence, the researchers concluded that intelligence had a significant but weak relationship with L2 acquisition because it could be affected by many other variables such as proficiency or anxiety or even context as Geneese (1976) has concluded.

3.5. *Anxiety*

Krashen (1985) proposed the *Affective Filter hypothesis*, which states that an individual's emotions can directly assist or interfere with the learning of a new language. Language anxiety is one of those affective variables and it refers to feelings of apprehension experienced when interacting in an L2. (MacIntyre & Gardner, 1994). Language anxiety is an important ID as it can prevent comprehensible input from being processed (Krashen, 1985). MacIntyre (1999, p. 5) defined language anxiety as follows:

> the apprehension experienced when a situation requires the use of a second language with which the individual is not fully proficient . . . the propensity for an individual to react in a nervous manner when speaking, listening, reading, or writing in the second language.

In her quasi-experimental study, Sheen (2008) intended to find out whether anxiety could actually be detrimental to the learners' capability to attend to form in a communicative exchange or not. Specifically, she assessed the efficiency of implicit corrective feedback (recasts) during the acquisition of target structures and its relationship with language anxiety. The participants, aged 21-55, were immigrants and international students with many different L1s enrolled in an English as a second language (ESL) university program in the USA. They were divided into two low-anxiety groups and two high-anxiety groups based on their responses to a language anxiety questionnaire. One group of each pair would receive the recast treatment while the other group would not receive any type of corrective feedback. Figure 1 illustrates the procedure of the study:

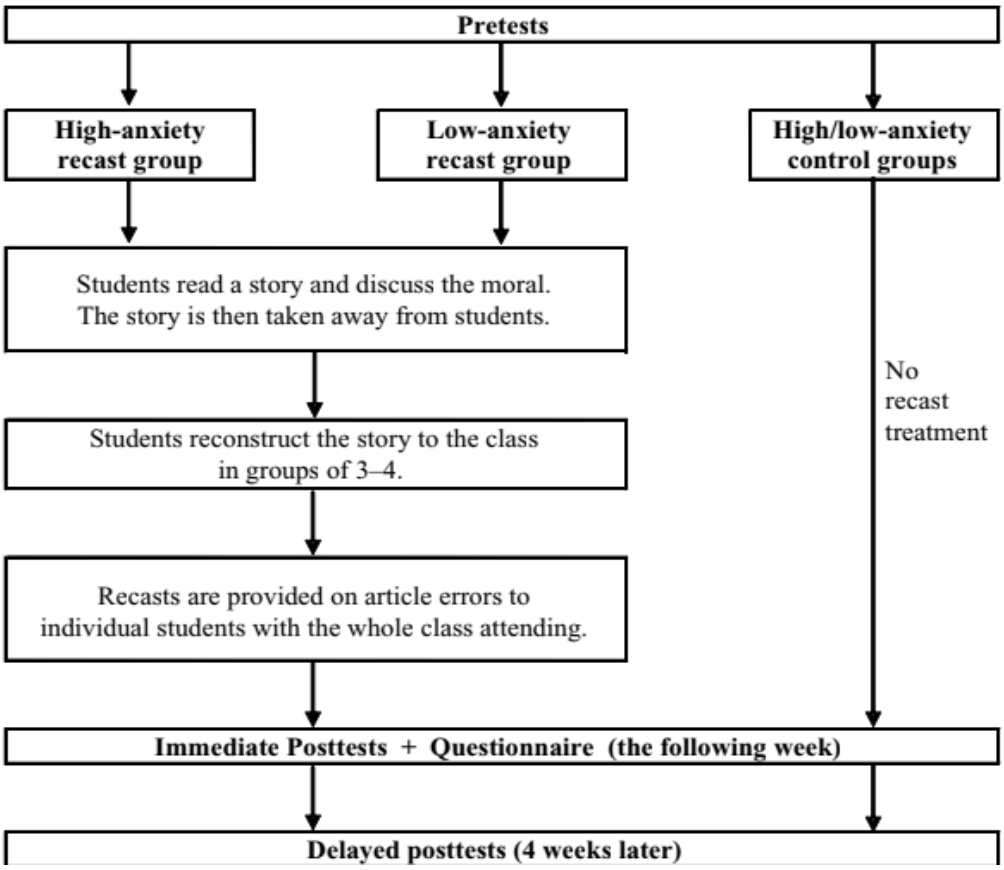


Figure 1. Procedure followed in Sheen (2008) – taken from Sheen (2008, p. 348)

The treatment sessions consisted of two classes over two weeks via two different narrative tasks. First, students had to produce a 30-minute narration from a simplified test. They were expected to produce the target structures, namely, the definite article *the* and the indefinite article *a*. In each treatment session, corrective feedback was provided when the production of those target structures was wrong. Teachers would then create an opportunity for learners to repeat or respond to the correction. The students' uptake could have resulted in the production of a repaired target structure, non-target-like modified output, or non-repaired output. After the treatment sessions, the learners' final knowledge of the target structures was measured to judge their acquisition after corrective feedback provision. Assessment was carried out via the completion of three tests. First, a speeded dictation test would make students recover their implicit knowledge of the target structures by presenting them with 15 items that should be completed with adequate indefinite and definite articles as in (5):

(5) Do you know the pilot who flies this airplane?
I saw a movie last night. The movie made me sad.
John's uncle was killed in a plane crash in New York.
(Sheen, 2008, p. 873)

Secondly, a writing test where the students had to narrate a sequence of pictures employing word prompts that pushed the production of target-like constructions. Finally, an error correction test was administered where the students had to correct 17 items with two sentences each, some of which contained an instance of incorrect article usage, as exemplified in (6):

(6) a. I saw a very interesting movie last night. I forgot the name of movie.
b. Last night I read [...] and a newspaper. I don't know where a newspaper is today.
c. My mother was fired yesterday. She will have to find new job.
(Sheen, 2008, p. 873)

The contrast between low and high anxiety groups in scores and production of modified output showed that anxiety levels did affect the effect of recasts to a certain extent: the low anxiety recast group produced a higher number of both recasts and modified output in the treatment sessions, which meant that they repaired their errors more than any other group in communicative exchanges. On the contrary, the high anxiety recast group had similar scores to those of the control groups which received no corrective feedback. Thus, it seems that high-anxiety learners did not benefit from corrective feedback as they failed to interact with it. Sheen (2008) concluded that recasts and communicative tasks were positively effective for lower-anxiety learners but not for anxious learners.

Kim and Tracy-Ventura (2011) also contributed to research on anxiety. These researchers studied if language anxiety and task complexity had an impact on the development of the simple past during task-based learner-learner interaction. The participants in their study were 128 L1 Korean EFL learners aged 18-26 (mean age= 18, 91). They had to complete four learner-learner interaction tasks of varying complexity. After all treatment tasks, the participants completed an anxiety questionnaire with a total of six items that had to range in a 6-point scale. The items were the following: “I feel nervous when I speak English in front of other people”, “I am afraid my classmates make fun of me when I speak English”, “I feel nervous when I work on an English projects with my classmates”, “I do not worry about my English ability when I speak in English”; “I feel comfortable carrying task in English with my partner” and “I lose confidence when my teacher asks me something in English.”

Data resulting from the study proved that anxiety did impact the acquisition of past tense because the low anxiety groups outperformed the high anxiety group on both post pests. Treatment sessions were not as beneficial for high-anxiety learners as for those with lower levels of anxiety. In addition, it seemed that the complexity of the task facilitated target structure acquisition regardless of anxiety levels "learners’ level of anxiety did not appear to influence their ability to benefit from complex tasks" (Kim & Tracy-Ventura, 2011, p. 300).

Kim and Tracy-Ventura (2011) concluded that low-anxiety learners can acquire structural knowledge successfully in task-based communicative contexts. In contrast, this method might not be as beneficial for grammar acquisition for high-anxiety learners, who experience superior stress levels that might diminish the amount of output they produce.

3.6. *Extraversion*

Brown (1987) considered someone as extroverted if they feel the need to receive validation from others whereas he classified introverts as people who feel whole and fulfilled without needing input from outsiders. As learners' levels of sociability and desire for interaction might shape the way in which they respond to the classroom environment, it might be necessary to consider what kind of tasks and feedback might be more beneficial for students with these two opposing personalities.

Kim and Nassaji (2018) conducted a study to evaluate whether this learner variable (i.e. extraversion versus introversion) had an effect on incidental FonF. Twenty-eight (n = 28) adults ESL learners were divided into two different groups based on their proficiency and levels of extraversion. Their scores in a four-skill language placement test were considered and as a result, an advanced group with 15 students and an intermediate with 13 were formed. The study considered two measures of extraversion: the students' self-evaluation, which was gathered by a personality trait questionnaire, and the teacher's judgment reports.

The study considered eight communicative class sessions of two hours each and the researchers analyzed instances of focus on form episodes (FFE). A FFE consists of an instance where attention to form arises in teacher-student interaction as the illustrated in (7):

(7) Teacher: He fought non-violently for what?
Student: For racism.
Teacher: Against racism.
Student: (mumbling) Against racism.
(Kim & Nassaji, 2018: 704)

Three types of posttests focusing on pronunciation, vocabulary, and grammatical errors were created to evaluate the learners' knowledge of the linguistic forms discussed in the FFE each individual participated in. In pronunciation tests, students were given a sheet of paper with phrases that were previously mispronounced and were asked to read them aloud. In the vocabulary and grammar tests, students were asked to give the meaning of words that had been explained in FFEs and correct morpho-syntactic items respectively.

Kim and Nassaji (2018) concluded that the incidence of FFEs was similar when the variable proficiency was considered. Nevertheless, extraversion and proficiency did shape the occurrence of and success in FFEs. Learners who identified themselves as extravert were more likely than introverts to participate in FFEs. Nevertheless, the lower participation of introverted learners did not affect FFEs success as achievement rates showed that introverts were more likely to produce successful uptake. In contrast, there was no relationship between extraversion levels and the effectiveness of incidental FonF in the advanced class. On the basis of these results, Kim and Nassaji (2018) argued that introverted and extroverted learners might benefit from FonF and corrective feedback equally if they have an advanced L2 level because they might use a greater number of self-monitoring strategies (see also Kayaoglu, 2013). Pedagogically this finding indicates that teachers may need to encourage introverted learners, even when they are fairly advanced, to engage in classroom interactions. Introverted learners tend to be quiet and sometimes avoid conversation; therefore, it is important for the teacher to use strategies to engage introverted students in conversation so that they can have comparable opportunities for interaction. Extroversion is thus an ID that should be taken into account alongside other differences like proficiency and participation structure.

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4. Conclusion

The main goal of this paper was to review empirical studies on the potential influence of different IDs on the L2 acquisition of formal aspects of language. The IDs reviewed were the following: cognitive styles, learning strategies, proficiency, intelligence, anxiety and extraversion. From the findings gathered in those articles, I can conclude that IDs are extremely important to consider when designing an L2 or a foreign language syllabus. Learners with different cognitive and affective variables can benefit from teaching approaches in a different way. A communicative environment can be especially favorable when dealing with FD learners and individuals with a lower IQ. These individuals might encounter acquisition difficulties in a formal academic environment. For this reason, those who lack the ability to focus on specifics and process complex information could thrive in a communicative environment that allows them to enhance their existing skills while awareness of form is also provided in an explicit way to aid their processing journey.

On the other hand, FI learners who make use of GLS are more capable of processing implicit corrective feedback than those who are not aware of the importance of these tools, and this usage can be fostered when students' attention is led to form. Nonetheless, the benefit of FonF approaches could be limited for introverted learners because they might not take on opportunities to focus on form. Additionally, anxious learners might find difficulties acquiring information as their nature might block them from processing complex structures. Nevertheless, when treating introverted-anxious learners, other variables like intelligence and proficiency should be considered as they can aid individuals to make up for their lack of class engagement. Highly intelligent individuals can self-regulate their learning by the use of cognitive abilities or GLS. This also happens with learners who have higher control of the target language so they might benefit from a form-focused approach. The type of corrective feedback provided is also a factor that interacts with IDs. FI learners who make use of GLS are more capable of processing implicit corrective feedback. However, it might be desirable to adopt an explicit approach when dealing with FD low-proficiency students and target structures that are non-salient.

As I was locating different references for this paper, I came across many studies that considered the effect of IDs on the acquisition of skills like listening or speaking. In my opinion, more research should be carried out in this field but focusing on grammar acquisition instead, as grammar is the basis of proper language knowledge. Furthermore, because of the word limits in this paper, I have not been able to explore more studies about each of the IDs reviewed. Nevertheless, I consider that more research should be carried out, this time exploring the interaction between several IDs and how they might make up for or cancel one another's effects. I am also interested in the study of how IDs can impact on different target language grammatical forms. Thus, research comparing how several IDs affect the acquisition of a single target structure could further aid the understanding of the acquisition process and could help when adapting the syllabus according to each topic and learner.

To conclude this paper, I would like to acknowledge the importance that this research has on the teaching field. I believe that a teacher's job is not only to instruct but also to make the learning process as accessible as possible. As a person who is working towards the goal of being an instructor, I now have the awareness that many aspects need to be taken into account when designing a lesson plan. Notwithstanding the fact that I was aware that not all students are equal and that the acquisition process looks different for everyone, I will now be able to judge what type of feedback or instructional approach to adopt that will suit my students' needs more precisely. We should not settle for what has broadly been proven to work. Teachers should strive to help the individual and not the whole group.

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