

Grammar Learning Strategy Inventory (GLSI): *Another look*

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Abstract

Despite all the progress that has been made in research on language learning strategies since the publication of Rubin's (1975) seminal paper on good language learners, there are areas that have been neglected by strategy experts. Perhaps the most blatant manifestation of this neglect is the paucity of research into grammar learning strategies (GLS). The main premise of this paper is that for such research to gain momentum, it is necessary to create valid and reliable data collection instruments that would enable tapping the use of different types of GLS. In line with this reasoning, the article reports a study that aimed to determine the psychometric properties of the *Grammar Learning Strategy Inventory* (GLSI), a tool constructed by Pawlak (2009b, 2013) on the basis of his classification of strategies for learning grammar in a second or foreign language. Exploratory factor analysis was also employed with the purpose of uncovering the underlying structure of strategic learning of grammar. The analysis provided evidence for largely satisfactory validity and reliability of the GLSI, indicating at the same time there is room for improvement, with concrete changes being possible after the instrument has been tested with a much larger sample.

Keywords: grammar teaching; grammar learning strategies; Grammar Learning Strategies Inventory; validity; reliability; exploratory factor analysis

1. Introduction

Research on language learning strategies (LLS) has witnessed major advances over the last several decades, both with respect to the conceptualization of the construct, the main foci of empirical investigations and the methodology used (see e.g., Amerstorfer & Oxford, 2018; Cohen, 2012, 2014; Cohen & Griffiths, 2015; Cohen & Macaro, 2007; Grenfell & Harris, 2017; Griffiths, 2013, 2018; Griffiths & Oxford, 2014; Oxford, 2011, 2017; Oxford & Amerstorfer, 2018; Pawlak, 2011a). In fact, the field could even be said to have reinvented itself to some extent and LLS researchers have successfully countered the claims that the concept of *strategies* as such should be abandoned altogether and replaced with the more inclusive notion of *self-regulation* (Dörnyei, 2005; Dörnyei & Skehan, 2003). In the light of these developments, it must surely come as a surprise that some important areas of strategy use have barely been recognized by specialists as worthy of empirical investigation, let alone having been an object of thorough examination.

One such domain are strategies that second or foreign learners (L2) draw on when learning and using grammar structures in the target language (TL), or *grammar learning strategies* (GLS). The insufficiency of empirical investigations of GLS has been highlighted in major overviews of LLS. Anderson (2005), for example, comments: "What is generally lacking in the research are studies that specifically target the identification of learning strategies that L2 learners use to learn grammar and to understand the elements of grammar." Oxford, Lee and Park (2007, p. 117) called GLS the "Second Cinderella" of LLS research, attributing this lack of focus to the predominance of the communicative approach when the study of strategies entered its heyday. In her most recent monograph, Oxford (2017) points out that "grammar learning strategies have garnered the least interest and concern of any area of L2 learning strategies" (p. 246). Pawlak (2009a), in turn, comments that specialists have yet to "identity, describe and account for all the various strategic behaviors that learners fall back on when studying target language grammar, not to mention appraise their effectiveness, determine the effects of training or describe the factors impacting their use" (p. 45).

For these crucial goals to be achieved, however, it is necessary to develop tools that would yield valid and reliable data on the employment of strategies for learning TL grammar. The aim of the present paper is to present one such instrument, the *Grammar Learning Strategy Inventory* (GLSI), describe the rationale behind its development, investigate its psychometric properties, and attempt to identify the factors underlying the different types of GLS that the tool comprises. First, the concept of GLS will be defined and the utility of such strategic devices will be considered, the available research will be succinctly over-viewed, and the ways of examining the use of strategies for learning grammar

will be evaluated. This will be followed by the presentation of a classification of GLS created by Pawlak (2009b, 2013) which served as a point of reference for the development of the GLSI. The remainder of the paper will be devoted to the description of a study which was conducted with the aim of validating the tool with a group of Polish university students majoring in English. In the concluding section, the strengths and weaknesses of the GLSI will be considered and further steps in the process of its validation will be outlined.

2. Grammar learning strategies: The concept, utility, previous research and assessment

The aim of this section is to provide a definition of grammar learning strategies, shed light on how such strategic devices can assist the process of mastering TL grammar, synthesize the available studies in this area, and take a critical look at the tools they have employed to measure GLS use. However, two important caveats are in order at this juncture: first, due to space limitations and the aims of the paper, the emphasis will be placed on highlighting the main directions of previous research rather than detailing the findings of specific studies; second, owing to the same rationale, the discussion of measurement issues will be confined to quantitative studies in which inventories of some kind were administered to tap into the application of GLS.

One of the first attempts to define grammar learning strategies was provided by Oxford et al. (2007), who, basing on the classical definition of LLS proposed by Oxford (1990), characterized 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.” More recently, extrapolating from her new, extensive, and all-inclusive definition of language learning strategies, Oxford (2017) described L2 grammar learning strategies as “teachable, dynamic thoughts and behaviors that learners consciously select and employ in specific contexts to improve their self-regulated, autonomous L2 grammar development for effective task performance and long-term efficiency” (p. 244). This definition is extremely informative in highlighting all the key features of GLS and therefore undoubtedly has the potential of guiding future research endeavors in this area. However, given the focus of the present paper and the rationale that underlay the construction of the GLSI, following Cohen and Pinilla-Herrera (2010), GLS are understood here as “deliberate thoughts and actions that students consciously [employ] for learning and getting better control over the use of grammar structures” (p. 64). Apart from, like most other definitions of strategies, stressing elements of choice and awareness (although there are clearly different levels thereof), this definition brings to the fore the fact that the learning of L2 grammar involves not only getting to know and remembering relevant rules,

but also developing the ability to successfully employ them in different contexts in such a way that their use is accurate, meaningful and appropriate (cf. Larsen-Freeman, 2003).

In other words, adept application of GLS can be expected to aid learners in attaining the dual goal of developing both *explicit* and *implicit knowledge* of TL grammar structures (Ellis, 2005, 2009). The former is conscious, declarative, relies on controlled processing and therefore involves planning difficulty, with the consequence that it can only be successfully accessed when learners have ample time to reflect on their language use and draw on pertinent rules, as is the case with the performance of controlled grammar exercises (e.g., translation, paraphrasing, etc.). The latter is subconscious, procedural, involves automatic processing and enables fluent performance, thus allowing effective meaning and message conveyance in real-operating conditions, such that hold in any spontaneous interaction. Even if we were to assume, following DeKeyser (e.g., 2007, 2010, 2015, 2017), that, due to typically scant exposure and age-related constraints, implicit knowledge may be beyond the reach of most foreign language learners, a sufficient amount of appropriate, communicative practice can lead to the automatization of explicit knowledge to such an extent that it will become functionally indistinguishable from implicit knowledge. Thus, it can provide a basis for effortless, rapid and accurate TL performance.

To relate this crucial distinction to GLS use, when the learner analyzes relevant diagrams and tables illustrating the use of a given structure and later does a number of controlled exercises involving this structure, thereby engaging in the cognitive strategies of analyzing and practicing, such strategic learning is likely to contribute primarily to the growth of explicit knowledge. By contrast, when the learner deliberately attempts to use the structure in question in oral language production or attends to it in the speech of proficient TL users, this may lead to the development of implicit knowledge or at least to the gradual automatization of explicit knowledge. While such cognitive strategies can be assumed to play a key role in learning grammar, obviously learners will also draw on strategic devices that are not directly involved in the development of L2 knowledge, but may still enhance this process indirectly, a situation that is acknowledged in Oxford's (1990) initial division of LLS into direct and indirect. For example, they will likely plan, monitor or evaluate their learning of grammar, thereby employing metacognitive strategies, cooperate with peers to better understand when a TL feature is used, thus drawing on a social strategy, or attempt to encourage themselves to persevere in the face of disastrous performance on a grammar test, thus resorting to an affective strategy. As indicated by specialists, there will also be situations in which a given strategy will simultaneously perform several functions or it may change its character over time (cf. Cohen,

2014; Cohen & Wang, 2018; Oxford, 2017). Much less obvious is the role of compensation strategies as it is not easily discernable how they enhance grammar learning, which is the reason why they are excluded from the classification of GLS presented below as well as the GLSI. At any rate, attempts to classify strategies for learning grammar or design instruments tapping their use should be informed by such considerations.

Even cursory examination of the available research into GLS allows three observations: (1) a paucity of such empirical investigations, (2) very limited scope of the studies conducted so far, and (3) fragmented, inconclusive and often contradictory findings. What is perhaps unsurprising and resembles the dominant trends in early research on LLS, most efforts have been directed at the identification and description of the strategies that learners use for learning grammar. Initially, this happened within studies that set as their aim depicting the profiles of good language learners or determining the overall repertoires of LLS deployed in a variety of contexts. In such research, GLS were just one type of strategic devices under investigation and were often incorporated into more inclusive categories of memory or cognitive strategies. Insights concerning GLS use derived from the studies carried out by, among others, Rubin (1975), Naiman, Fröhlich, Stern and Todesco (1978), O'Malley, Chamot, Stewner-Manzanares, Küpper and Russo (1985), Drożdżał-Szelest (1997) or Griffiths (2003a), demonstrated that, on the whole, strategies for dealing with grammar, especially of the cognitive type, play an important role in L2 learning. When it comes to research projects that specifically focused on the employment of GLS, most of which have been undertaken in Poland (e.g., Gürata, 2005; Kemp, 2007; Mystkowska-Wiertelak, 2008; Pawlak, 2008, 2012; Sariçoban, 2005), they come in all shapes and sizes, being guided by diverse motivations, utilizing different data collection tools, and relying on quantitative and qualitative approaches, or combinations of both. Even though the findings have been inconsistent, one clear trend is the predominance of cognitive strategies, with other GLS types being relegated to the back seat. Another consistent observation is a certain degree of correspondence between the way in which grammar is taught and evaluated, and the manner in which learners go about studying it. Very little is known about the impact of mediating factors on GLS, with the handful of available studies looking into such factors as attainment, gender and age (Gürata, 2005; Mystkowska-Wiertelak, 2008; Pawlak, 2009a, 2011b, Tilfarlioğlu, 2005). Since different tools were used in these studies, the key constructs were operationalized in different ways, and diverse statistical procedures were used, it is unsurprising that their results are mixed and inconsistent. Empirical evidence is even more tenuous when it comes to the effectiveness of instruction in GLS. Still, the studies by Morales and Smith (2008), and Trendak (2012) showed that such training

may have a positive contribution to the acquisition of the targeted forms, with some groups of GLS being more efficacious in this respect than others.

The main problem of research into GLS conducted to date, apart from its limited volume and focus, is the way in which the strategies for L2 learning grammar have been categorized and been assessed. Most studies that have included a quantitative component have adopted for this purpose one of the leading classifications of strategies, such as those proposed by Oxford (1990) or O'Malley and Chamot (1990). The requisite data have been collected with the help of slightly modified versions of instruments employed in general research LSS, most notably Oxford's (1990) *Strategy Inventory for Language Learning* (SILL, Oxford, 1990). As Pawlak (2013) pointed out, "although this approach is to some extent warranted . . . , it is obvious that adopting as a point of reference a general categorization of LLS is not free from shortcomings as some of the techniques may be difficult to extrapolate to the learning of grammar structures while some strategic devices specifically employed for this purpose may simply be left out" (p. 198). To be more specific, it is hard to see how such SILL statements as, for example, "I use flashcards to remember new words," "I start conversations in English," or "I first skim an English passage (read over the passage quickly), then back and read carefully," can be modified to be related to grammar learning. They could obviously be eliminated or replaced, as has been the case in some studies, but then the tool is no longer the SILL.¹ In addition, not having been specifically designed with the task of tapping GLS in mind, the SILL cannot possibly do justice to the distinctiveness of learning this TL subsystem, such as the role of deduction and induction, controlled and communicative practice, or corrective feedback,

¹ According to Oxford, such modifications would be perfectly acceptable; in fact, in presentations and publications, she has repeatedly exhorted researchers to tailor the SILL's strategies to their own contexts, cultures, and targeted skill areas for the sake of ecological and validity (personal communication, June 12, 2018). In any case, it is important to *recalculate the psychometric properties* of the SILL (or any instrument) for studies beyond the original one, because it makes no sense simply assume that the SILL operates precisely the same way in all contexts, cultures, and targeted skill areas and with different samples (Oxford, personal communication, June 12, 2018). Not doing proper validity and reliability checks for each study undermines a key tenet of assessment: an assessment tool, such as the SILL, should measure what it is purported to measure *in the situation in which it is to be used*; assumptions about relevance of earlier-reported reliability and validity should not be made. Merely borrowing and reporting the psychometric properties of the SILL from an early study (e.g., Oxford & Burry-Stock, 1995) for use in a very different SILL-related study (or not even reporting psychometric properties of the SILL at all) is logically unsupportable and statistically unsound. Doing the needed reliability and validity checks within any new studies is especially necessary if the effectiveness of strategy instruction or any other type of important decision-making is to be based on SILL findings (Oxford, personal communication, June 12, 2018).

to give but a few examples. Oxford, the SILL's creator, never encouraged employing the SILL to assess grammar strategy use, at least without drastic adjustments (personal communication, June 12 2018). Following such major adjustments, the instrument could probably yield valuable information about indirect strategies (i.e. metacognitive, social and affective), but these devices cannot possibly be considered as constituting the core of strategic learning of L2 grammar. However, it should be stressed yet again that the SILL was not designed to serve as an assessment tool for strategic learning of L2 grammar.

One notable exception to some researchers' propensity to draw on general classifications of LLS and the related tools is the study conducted by Pawlak (2012), who constructed a tool drawing on the descriptive scheme for GLS proposed by Oxford et al. (2007). However, the scheme, which is briefly described below, was *not* intended to constitute a comprehensive taxonomy or explanatory theory and was never validated for those purposes (Oxford, personal communication, June 12, 2018). In light of the scheme's limitations, there was a need to create a more inclusive classification of GLS and to design a data collection tool on its basis. An attempt to achieve this goal, made by Pawlak (2009b, 2013), is described in the following section.

3. The development of a classification of GLS and a data collection tool

When initially embarking on the task of imposing order on the field of grammar learning strategies, the present author was aware of two previous attempts do so, neither of which, however, resulted in the emergence of a comprehensive taxonomy of GLS. One of them, described in Cohen and Pinilla-Herrera (2010), involved designing a website which was intended to aid learning Spanish grammar. The website was created on the basis of the data collected from students and teachers concerning the most challenging grammatical features. It included a number of awareness-raising activities as well as examples of concrete strategies that could enhance the learning process, both in general and with respect to specific structures. While the utility of the website can hardly be denied and it can indeed point to the ways in which research on GLS can eventually be applied to foreign language pedagogy, it is confined to one L2 and its utility beyond learning Spanish is thus limited.

A more general approach was embraced by Oxford et al. (2007), who, building on research on form-focused instruction (e.g., Doughty & Williams, 1998; Ellis, 2002), related GLS to modes of grammar teaching, offering a number of representative examples. More specifically, they drew a distinction between *implicit learning*, which may involve an exclusive *focus on meaning* and an occasional *focus on form*, and *explicit learning*, which can be *deductive* and *inductive*

in character. Since implicit learning which is entirely meaning-oriented is unlikely to involve the employment of GLS, Oxford et al. (2007) do not discuss the use of GLS in this case, although, as they emphasize, “at heart learning depends on the student” (p. 119), and, therefore, even watching television in the TL can be done with the purpose of enhancing grammatical accuracy. Thus, their framework focuses on three groups of GLS which can be allied with the remaining three types of L2 learning. These categories are as follows (Oxford et al., 2007, pp. 127-129):

- 1) *strategies for implicit learning which includes a focus on form* (e.g., paying attention to how more proficient people say things and imitating, noticing or remembering structures that are emphasized orally, through pitch, loudness or repetition, or keeping a notebook of new structures that seem very important or frequent);
- 2) *strategies for explicit inductive learning* (e.g., participating in rule-discovery discussions in class, creating hypotheses about how the TL operates and then verifying them, or checking with others who are more proficient to make sure that one’s interpretation of a rule is correct);
- 3) *strategies for explicit deductive learning* (e.g., previewing a lesson to identify key structures to be covered, attending to rules that the teacher or the book provides, making up sentences using the rule).

Although this scheme held considerable promise and provided a point of departure for the study conducted by Pawlak (2012), it did not represent a complete classification. Moreover, it suffered from some weaknesses, tied, for example, to inadequate focus of the learner’s point of view, the omission of different types of practice which can be viewed an integral component of grammar learning in most foreign language contexts, and the failure to include groups of strategies featuring prominently in major classifications of LLS (cf. Pawlak, 2012, 2013). However, it should be emphasized yet again that at most, the scheme was planned as a basis for international, collaborative, theoretical discussions, which could help in the eventual revision of the scheme and, after more collaboration, creation of a draft grammar strategy assessment instrument that would need extensive testing. However, no international, cooperative, conceptual discussions of the scheme has occurred in the dozen years since its publication (Oxford, personal communication, June 12, 2018).

It was the lack of a classification of GLS that would be comprehensive and give justice to the actions and thoughts that learners actually engage in when trying to master TL grammar that prompted Pawlak (2009b, 2013) to develop his own categorization. This effort was guided by four overriding principles, namely: (1) the classification should be general and thus applicable to any TL

rather than language-specific, (2) it should draw upon existing taxonomies of LLS, (3) it should build on existing, comprehensive divisions of methodological options in teaching TL grammar, and (4) it should be informed by the findings of existing research on GLS and attempts to categorize such strategies, such as the one by Oxford et al. (2007). Accordingly, Pawlak's (2009b) classification draws on the four-way taxonomy of LLS into *metacognitive*, *cognitive*, *affective* and *social*, put forward by Cohen and Dörnyei (2003). It integrates the competing classifications developed by Oxford (1990), and O'Malley and Chamot (1990), by including memory strategies in the category of cognitive strategies, retaining the division into affective and social strategies, and scrapping compensations strategies as devices not directly involved in the process of language learning. The second crucial point of reference was the division of techniques and procedures in form-focused instruction initially introduced by Ellis (1997) and later modified by Pawlak (2006; see also Pawlak, 2014). It rests on a distinction between *learner performance options*, which require learners to use the targeted TL feature, and *feedback options*, which involve reliance on corrective techniques in case errors in the use of that feature occur. Learner-performance options are further subdivided into *focused-communication tasks*, where the use of the targeted TL form is necessary or helpful in the attainment of a communicative goal, and *featured-focused activities*, in which learners' attention is deliberately directed at a specific grammatical structure. *Feature-focused activities*, in turn, which "constitute the mainstay of foreign language pedagogy in the majority of educational settings" (Pawlak, 2014, p. 30), include *consciousness-raising tasks*, drawing on *deduction* (i.e. rule provision) or *induction* (i.e. rule discovery), or *different types of language practice*. The latter can be *input-based* (e.g., through visually highlighting a given form in written texts) or *output-oriented*, which can be more *communicative*, as in *text-creation activities* (e.g., telling a story using the past progressive), or more *controlled*, as in *text-manipulation activities* (e.g., filling in gaps). As for *corrective feedback* (CF), it can be more *explicit* (as in provision of metalinguistic information) or more *implicit* (e.g., a recast that provides the correct form but preserves the original meaning), but also *output-prompting* (e.g. as in a clarification request) or *input-providing* (e.g., as in a recast). In designing the classification, insights gleaned from the research projects on GLS outlined in section 2 were taken into account, and some of the examples of GLS provided in the descriptive scheme by Oxford et al. (2007) were included.

In effect, a classification of grammar learning strategies was proposed that comprises four main groups of strategies, with cognitive GLS, which lie at the core of L2 learning grammar, being further divided into finer categories. The classification is diagrammatically presented in Figure 1 and its components are described

in more detail below (cf. Pawlak, 2009b, 2013; the letters and numbers at the end of each category or subcategory correspond to the sections in the GLSI):

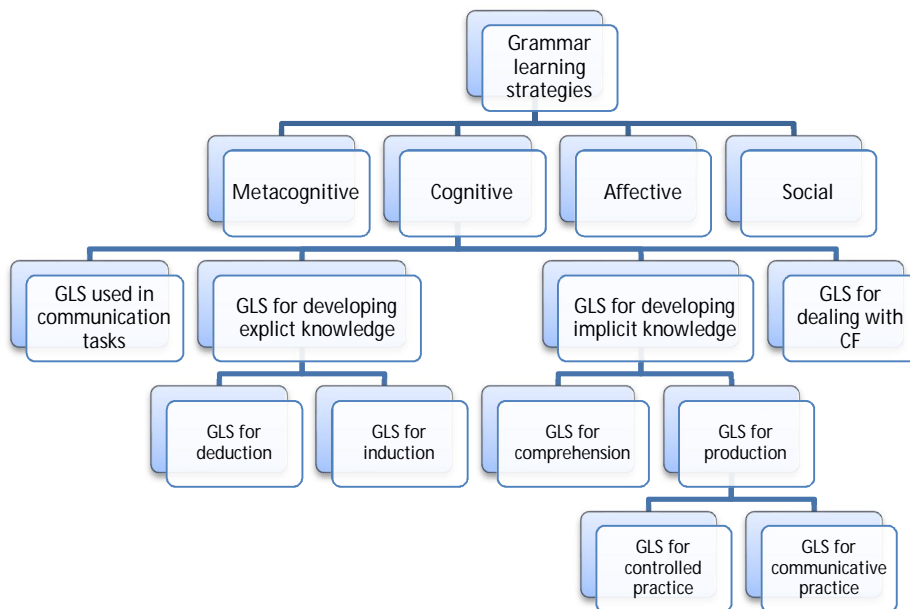


Figure 1 Proposed classification of grammar learning strategies

- 1) *metacognitive strategies*, which are employed to supervise and manage the learning of L2 grammar through the processes of planning, organizing, monitoring and self-evaluating; this category includes such GLS as paying attention to grammar structures when reading or listening, looking for opportunities to practice grammar structures in different ways, or scheduling grammar reviews in advance (A);
- 2) *cognitive strategies*, which are directly involved in the process of TL learning grammar and include the following subcategories (B):
 - a) *GLS used to assist the production and comprehension of grammar in communication tasks*, such as trying to use specific grammar structures in spontaneous oral production or making comparisons between one's speech and writing and language production of more proficient TL users (B1);
 - b) *GLS used to develop explicit knowledge of grammar*, which can be subdivided into two groups (B2):
 - *GLS employed for deductive learning*, such as trying to understand every grammar rule;

- *GLS employed for inductive learning*, such as discovering rules by analyzing examples;
- c) *GLS used to develop implicit knowledge of grammar*, which can be subdivided into two groups (B3):
- *GLS employed for comprehending grammar* (i.e., understanding form-meaning mappings), such as listening to and reading texts containing many instances of a particular grammar structure;
 - *GLS employed for producing grammar*, both in *controlled practice*, such as applying new rules to create sentences, and in *communicative practice*, such as using these rules in meaningful contexts;
- d) *GLS used to deal with corrective feedback on errors in the production of grammar*, such as listening carefully for the feedback provided by the teacher on the use of grammar features, trying to notice and self-correct errors when practicing grammar, or trying to engage in negotiating grammar forms with the teacher (B4);
- 3) *affective strategies*, which serve the purpose of self-regulating emotions and motivations when learning TL grammar; examples of such GLS include making an effort to relax in the face of problems with understanding or using grammar, encouraging oneself to practice grammar points that pose a learning challenge, or keeping a diary where regular comments on the process of learning grammar are made (C);
- 4) *social strategies*, which involve cooperation or interaction with the teacher, proficient TL users or other students, aimed at enhancing the process of learning grammar; the category includes such GLS as trying to help others who experience difficulties in learning or using grammar structures, practicing grammar structures with peers, or asking the teacher for assistance in understanding a point of grammar (D).

Obviously, as noted above when discussing the utility of GLS, although the categories only provide guidance as to the predominant functions of various strategic devices, with some of them possibly having the potential to perform several functions which can change from one learning task to the next. This said, it is also clear that such distinct categories are needed to avoid chaos in the description of GLS use and they are indispensable for measurement purposes.

The classification described above provided a basis for constructing a data collection tool for tapping into reported use of strategies for learning grammar, namely, the *Grammar Learning Strategy Inventory*, or the GLSI. The core of the instrument is constituted by 70 5-point Likert-scale statements representing different GLS, subdivided into the four main categories included in the classification (A, B, C, and D) as

well as the four subcategories representing the broad types of cognitive GLS (B1, B2, B3, and B4). The respondents are requested to indicate the extent to which a particular item reflects their strategic learning on a scale of on 1 to 5, where 1 indicates *it does not apply to me at all* and 5 stands for *it perfectly describes my actions and thoughts*. The GLSI can be found in its entirety in the Appendix but a few important comments are necessary with respect to this version. First, the instrument is intended for university students majoring in English or other foreign languages and, due to the nature of the items it includes, it would not be suitable for use with students majoring in other disciplines or with learners at other educational levels. Second, since the tool can still be seen as very much work in progress, the copies administered to learners also include additional spaces for comments on items in all the categories in the hope of detecting problems in the wording, clarity or accessibility. In addition, the respondents are requested to answer in their L1 or in the TL four open-ended questions to reveal other potentially useful GLS that may not have been included in the instrument (i.e., “Can you think of any other ways of learning English grammar that are not mentioned in the statements?,” “What is your favorite way of learning English grammar?,” “What do you do to make sure you can use the structures you learn in communication?,” and “What problems do you experience when learning English grammar and how do you resolve them?”). For reasons of space and given the aims of the study reported below, these elements are not reproduced in the version included in the Appendix. Third, depending on the purposes of a given investigation, a variety of questions can be added, regarding, for example, demographic data, self-assessment or examination results, but such items are omitted here as well. Fourth, although the names of specific groups and subgroups of GLS are provided in the tool for the sake of convenience, they are absent from the versions that participants are requested to fill out to avoid confusion.

As is the case with the SILL, the analysis of the data consists in tabulating the means for the specific items, categories and subcategories and the entire instruments, and then, depending on the needs, employing various procedures of inferential statistics (e.g., to establish correlations with selected variables, such as experience in learning the TL).² The interpretation of the frequency of GLS use follows the guidelines introduced by Oxford (1990), with the mean bands of: 5.0-3.5, 3.4-2.5, and 2.4-1.0, representing high, medium and low use, respectively. Although the GLSI was successfully tested in a pilot study conducted by Pawlak (2009b), which generated evidence for satisfactory internal

² The use of means and standard deviations for Likert-scale items has been criticized by some specialists, as the results can be seen as representing ordinal data (e.g., Griffiths, 2018). However, Mizumoto and Takeuchi (2018) argue that under specific conditions the use of means is acceptable for ordinal data.

consistency reliability (the value of Cronbach alpha of 0.82), and has also been employed in other research projects (e.g., Pawlak, 2011b), there was a clear need to examine its validity, reliability, utility and potential underlying structure in more detail. This was the aim of the study reported in the following section.

4. The study

4.1. Aims

As mentioned above, the study was motivated by the need to develop an instrument for tapping into the use of grammar learning strategies that would be geared to the complexity and specificity of this TL subsystem. Thus, its aim was to test the validity and reliability of the *Grammar Learning Strategy Inventory* (GLSI) and to determine whether it is possible to identify more general factors underlying reported use of grammar learning strategies. What should be stressed once again, the tool is intended for university students majoring in English and it is therefore in this particular context that its utility was appraised.

4.2. Participants

The participants were 106 (76 females and 30 males) university students majoring in English as a foreign language, enrolled in year 1, 2 and 3 of a three-year BA program in two regional universities in Poland. Their average experience in learning English amounted to 10.5 years, with the maximum of 18 and the minimum of 3, and the value of standard deviation (*SD*) amounting to 2.84. In terms of the *Common European Framework of Reference for Languages*, their proficiency level fell in between B2 and C1, although there was much individual variation in this respect. They self-evaluated their knowledge of English as 4.0 (*SD* = 0.49) on the scale of 1 (lowest) to 6 (highest), which was quite optimistic given the true TL ability that some of them manifested. Their mean end-of-the-year or semester grade in a grammar class stood at 3.72 (*SD* = 0.62) on the scale of 2 (lowest) to 5 (highest), typically used for evaluation purposes in Polish universities. A crucial caveat here, however, is that the classes were taught by different teachers, the syllabi differed and so did the requirements, which considerably lowers the reliability of this measure of attainment. The students were quite convinced of the importance of grammar in learning English, as evident in the mean of 3.92 on the scale of 1 (lowest) to 5 (highest), but there was the most variation in this case (*SD* = 0.77).

Based on their responses to an open-ended question accompanying in the GLSI, the participants varied enormously when it comes to their contact with the TL outside the classroom. While some students stated that they had no out-of-

school access to the TL, which is somewhat hard to believe, and there were those who reported frequent opportunities for interactions with native-speakers or other proficient users of English, for the majority access to the TL boiled down to using the media, reading, surfing the Internet or taking part in e-mail exchanges. When it comes to the BA program that the participants attended, it included an intensive course in English, which was divided into a number of components (e.g., grammar, speaking, writing, integrated skills) that differed across the three years. Depending on the year, the students were also required to attend numerous content classes in linguistics, literature, foreign language pedagogy, or cultural studies, with English being the default language of instruction in most of them. The final requirement for graduating from the program was writing a BA thesis in the last year, which clearly required a high level of grammatical ability.

4.3. Data collection and analytic procedures

The GLSI was administered in two ways: either in pen-an-paper version, which typically happened in class, or electronically, in which case the participants would return the completed copies through e-mail. The instructions and the Likert-scale statements were worded in English, as in the version included in the Appendix, but students could also use Polish or the TL when providing additional comments or responding to open-ended questions, data that are not taken into consideration in the analyses conducted for the purposes of the present study. As a token of gratitude for their assistance, the students were given an additional credit in their foreign language methodology or foreign language pedagogy courses, which resulted in their enthusiastic participation and efforts to make sure that their questionnaires were in fact returned.

The data obtained in these ways were subjected to a number of analyses that were aimed at ensuring that the GLSI represents as valid and reliable tool which can be employed in gathering data on GLS use but also to find out whether the statements it includes can be grouped differently, thus offering insights into sets of factors underpinning the strategic learning of TL grammar. These analytical procedures are described in detail in the following subsections.

4.3.1. Validity

An attempt was undertaken to establish three types of validity for the instrument, that is construct validity, content validity and face validity. The procedures applied in each case are provided below:

- 1) *construct validity* was determined by ensuring that the statements the GLSI includes are solidly grounded in current theory and research concerning

grammar instruction as well as empirical investigations concerning LLS; while the former was mainly achieved through the review of relevant literature, the latter involved tabulating correlations between the GLSI and the SILL (Oxford, 1990), which may have been criticized on a number of counts, also by its creator (Oxford, 2017), but it has been utilized in hundreds of research projects (Murray, 2010; Oxford & Nyikos, 1989; Solak & Cakir, 2015); additionally, the use of this tool was deemed appropriate in view of the fact that the GLSI was to some extent modeled on it; the SILL comprises the following groups of LLS: memory (A), cognitive (B), compensation (C), metacognitive (D), affective (F) and social (E) (letters A-E correspond to the parts of the SILL referred to in the analysis); since the two tools include different categories, the main focus was on the correlations between the overall scores (means) for the GLSI and the SILL, metacognitive, social and affective strategies in both instruments, as well as the different groups of cognitive strategies in the GLSI (B1-B4), and memory and affective LLS in the SILL; the data were normally distributed and thus Pearson's correlation coefficients were calculated;

- 2) *content validity* was established by a panel of five qualified judges, experts in the domains of language learning strategies and grammar instruction, who were requested to indicate on a scale of 1 (complete disagreement) to 5 (complete agreement) whether the different categories of the GLSI represented strategic learning with respect to grammar learning; since the data were not normally distributed, Kendall's *W* was calculated to indicate the level of agreement between the judges;
- 3) *face validity* was assessed by asking 15 students, all of whom were English majors and did not later provide data for the analysis, to decide if, in their opinion, the items included in the categories and subcategories of the GLSI were illustrative of the actions and thoughts that they engaged in when learning TL grammar; the same scale and statistical procedures (i.e., Kendall's coefficient) were used in this case as with the expert judges.

4.3.2. Reliability

The reliability of the GLSI was assessed in three separate ways. First, in order to determine internal consistency reliability of the tool, the values of Cronbach alpha were calculated for the four main scales (A-B), and the subscales (B1-B4), as well as the entire tool. Second, the correlations between the different categories and subcategories of the GLSI were computed, although critical here were those between different groups of cognitive strategies (B1) as, in contrast to the remaining groups, they represented the actions and thoughts directly involved in

learning TL grammar. The data were normally distributed, which allowed the use of Pearson's r also in this case. Third, the coefficients of difficulty (p), or percentages of students choosing the highest value on the Likert-scale (5), were determined for all the items included in the GLSI.

4.3.3. Underlying structure of the GLSI

In order to uncover the potential factors underlying the use of GLS going beyond the categories in the instrument, an attempt was made to conduct exploratory factor analysis (EFA), drawing upon principal component analysis and the Varimax rotation method. The Bartlett's test and Kaiser-Meyer-Olkin (KMO) test were run prior to EFA with the purpose of determining whether the data collected by means of the GLSI were suitable for factor analysis.

4.4. Results and discussion

As regards the construct validity of the GLSI, which was determined by calculating Pearson's correlations with the SILL, the results are provided in Table 1. What is striking is that the vast majority of the correlations are not only positive and statistically significant at the .05 level but they are also at least medium in strength (.30 or higher), accounting for at least 9% of the variance. Of particular interest here is the fact that the GLSI and the SILL in their entirety were highly positively correlated ($r = .80$), explaining 64% of the variance in each other, which strongly indicates that they measure a similar construct, that is the application of language learning strategies. We can also see moderate correlations of .56, .57 and .46 between the metacognitive, affective and social strategies in the GLSI (GLSI_A, GLSI_C and GLS_D) and the SILL (SILL_Met, SILL_A and SILL_S). What is more, even the category of compensation strategies in the SILL correlates positively at weak to medium levels, with all the groups of GLS, which again speaks to the fact that the GLSI is a good measure of strategic learning.

The most interesting, however, are the relationships between cognitive GLS (i.e., GLSI_B, B1-B4), directly involved in grammar learning, and the groups of memory and cognitive strategies in the SILL (i.e., SILL_M and SILL_C). The correlations fall somewhere in the medium range in the case of the entire cognitive GLS category ($r = .43$ in the case of memory and $r = .47$ for cognitive strategies in the SILL), and the same can overall be said about the cognitive strategies in the SILL (SILL_C) and the specific subtypes of cognitive GLS (i.e., GLSI_B1-B4, $r = .32$ - $.41$). The situation is more complex in the case of memory strategies in the SILL (SILL_M). This is because, although they correlate moderately with GLS for the development of explicit knowledge (GLSI_B2, $r = .58$) and moderately with

those employed in the development of implicit knowledge (GLSI_B3, $r = .33$), the correlations are very weak in the case of GLS for learning grammar in communication-based tasks (GLSI_B1, $r = .12$) or even negative, almost non-existent and statistically insignificant in the case of strategies used to deal with CF (GLSI_B4, $r = -.04$). The last two results, however, should not be overly surprising because it is difficult to see much in common between efforts to remember something and attending to form during message conveyance. Besides, the SILL could not have even given justice to this type of grammar instruction (learning) since the concept of focus on form was recognized around the time of its construction (cf. the seminal paper by Long, 1991). In light of these results and the efforts to anchor the GLSI in current theory and research, the instrument can be said to possess a satisfactory level of construct validity.

Table 1 Correlations between the GLSI and the SILL as well as specific categories (Pearson's r , $N = 106$)

	SILL_M	SILL_C	SILL_Com	SILL_Met	SILL_A	SILL_S	SILL_All
GLSI_A	.26*	.30*	.25*	.56*	.25*	.33*	.48*
GLSI_B	.43*	.47*	.40*	.57*	.42*	.57*	.69*
GLSI_B1	.12	.41*	.27*	.52*	.25*	.48*	.50*
GLSI_B2	.58*	.33*	.33*	.39*	.36*	.45*	.58*
GLSI_B3	.33*	.40*	.32*	.45*	.35*	.46*	.56*
GLSI_B4	-.04	.32*	.29*	.45*	.26*	.31*	.38*
GLSI_C	.27*	.19*	.24*	.26*	.57*	.31*	.41*
GLSI_D	.06	.36*	.19	.38*	.28*	.46*	.42*
GLSI_All	.42*	.48*	.41*	.62*	.48*	.59*	.72*

Note. Values of Pearson's r . An asterisk indicates statistically significant correlations at $p = .05$. GLSI_A, GLS_B, etc. indicate categories and subcategories in the instrument discussed in section 3; SILL_A, SILL_B, etc. refer to groups of LLS mentioned in section 4.3.1. GLSI_All and SILL_All indicate the overall results for both tools

Even more promising are the outcomes of procedures employed to assess the content and face validity of the tool. In the case of the former, the analysis demonstrated that the values of Kendall's coefficient of concordance between the ratings given by expert judges ranged between .81 and .91 for the whole GLSI and its specific categories, which justifies the assumption that the instrument is valid. The same can be said about face validity since there was also a high level of agreement in the students' responses, with the values of Kendall's W ranging from .78 to .88.

When it comes to the internal consistency reliability of the instrument, the Cronbach alpha values for the entire GLSI and for the scales and subscales it comprises are provided in Table 2. In general, the results can be considered as satisfactory for the entire tool (.89) as well as in the case of most of the scales and subscales, with three exceptions. One of them of them are GLS for the development of implicit knowledge of grammar, although here Cronbach alpha exceeds

the 0.6 threshold (Dörnyei, 2007). The situation is more disconcerting in the case of affective and social GLS, since in both cases the values fail to meet this criterion. What should be noted, however, is that the coefficients are not drastically low and could have been higher had a greater number of participants been included in the study. Additionally, the mean for the affective category of GLS was low, which may have contributed to the unsatisfactory Cronbach alpha value. On the whole then, the GLSI can be considered as internally consistent, although improvement in some of the scales could surely be made.

Table 2 Means, standard deviations and Cronbach alpha values ($N = 106$) for the scales and subscales included in the GLSI

Scale or subscale	$M (SD)$	Cronbach alpha value
GLSI_A – metacognitive GLS	3.49 (0.50)	.69
GLSI_B – cognitive GLS	3.62 (0.39)	.85
GSLI_B1 – cognitive GLS used in communication tasks	3.73 (0.52)	.78
GSLI_B2 – cognitive GLS for developing explicit knowledge	3.29 (0.38)	.71
GSLI_B3 – cognitive GLS for developing implicit knowledge	3.43 (0.60)	.62
GSLI_B4 – cognitive GLS for dealing with CF	4.00 (0.55)	.78
GLSI_C – affective GLS	2.97 (0.54)	.56
GLSI_D – social GLS	3.69 (0.61)	.54
GLSI_All	3.44 (0.51)	.89

Note. GLSI_A, GLSI_B, etc. indicate categories and subcategories in the instrument discussed in section 3; GLSI_All stands for the entire instrument

Table 3 Correlations between the categories included in the GLSI (Pearson's r , $N = 106$)

	GLSI_A	GLSI_B	GLSI_B1	GLSI_B2	GLSI_B3	GLSI_B4	GLSI_C	GLSI_D	GLSI_All
GLSI_A		.62*	.49*	.46*	.53*	.43*	.15	.25*	.69*
GLSI_B			.74*	.84*	.81*	.58*	.37*	.43*	.98*
GLSI_B1				.39*	.45*	.64*	.14	.45*	.73*
GLSI_B2					.57*	.20*	.39*	.30*	.81*
GLSI_B3						.35*	.27*	.25*	.77*
GLSI_B4							.24*	.38*	.60*
GLSI_C								.19*	.49*
GLSI_D									.52*
GLSI_All									

Note. Values of Pearson's r . An asterisk indicates statistically significant correlations at $p = .05$. GLSI_A, GLSI_B, etc. indicate categories and subcategories in the instrument discussed in section 3; GLSI_All stands for the entire instrument

Also largely satisfactory are the results of the correlational analysis between the different scales and subscales included in the GLSI, which are presented in Table 3. Importantly, positive, in most cases strong relationships were detected between all the categories of GLS and the entire instrument. This is most evident

in the case of all cognitive strategies (GLSI_B) that correlate with the entire GLSI at the .98 level, an outcome that is remarkable but also predictable to some extent as 50 out of 70 (71.4%) items in the tool represent cognitive GLS. Of particular significance, however, are the relationships between different types of cognitive strategies in the GLSI (GLSI_B1-B4). An immediate observation is that all the subscales correlate highly with the category of cognitive strategies to which they belong, with the correlation coefficients ranging from .58 in the case of GLS for dealing with CF (GLSI_B4) to .84 in the case of GLS employed in the development of explicit knowledge of grammar (GLSI_B2). Things look somewhat less promising when we examine the relationships between the subscales, but even here the correlations are at least moderate in the majority of cases. Two things deserve special attention in this regard. First, an uphill correlation ($r = .64$) was detected between the GLS employed in communication tasks (GLSI_B1) and those applied in dealing with feedback (GLSI_B4). This should not be surprising as, for the most part, the conditions in which GLS are applied in both cases are rather similar and entail some form of message conveyance. Second, the lowest correlation ($r = .20$) was observed between GLS for developing explicit knowledge (GLSI_B2) and those for tackling CF on grammar errors. Again, such an outcome could have been expected in light of the fact that understanding rules, be it through deduction or induction, does not involve much TL production, thus providing few opportunities for processing feedback.

The last measure of reliability used in the present study involved tabulating the difficulty coefficients for all the statements included in the GLSI. While the p values are mostly satisfactory, there are cases in which they exceed 0.8, which might indicate that the participants believe that a higher score is for some reasons desirable. The statements are the following:

- "I know my strengths and weaknesses when it comes to grammar" (GLSI_A5, $p = .83$);
- "I pay attention to grammar structures in my own speaking and writing" (GLSI_A_8, $p = .81$);
- "I pay attention to rules provided by the teacher or coursebook" (GLSI_B2_19, $p = .81$);
- "I try to understand every grammar rule" (GLSI_B2_20, $p = .82$);
- "I listen carefully for any feedback the teacher gives me about the structures I use" (GLSI_B4_53, $p = .82$);
- "I pay attention to teacher correction when I do grammar exercises and try to repeat the correct version" (GLSI_B4_54, $p = .87$);
- "I try to notice and self-correct my mistakes when practicing grammar" (GLSI_B4_55, $p = .86$);

- "I try to notice how the correct version differs from my own and improve what I said" (GLSI_B4_58, $p = .81$);
- "I like to be corrected when I make mistakes using grammar structures" (GLSI_D_68, $p = .81$);
- "I try to help others when they have problems with understanding or using grammar" (GLSI_B4_70, $p = .80$).

Taking a careful look at these items, however, it is possible to speculate that the high levels of agreement among the participants may not stem from a desire to put themselves in a favorable light, but, rather, may be reflective of the exigencies of the context in which they are expected to function. After all, the specificity of the program dictated that high levels of grammatical accuracy are required for successful performance on end-of-the-year examinations and, perhaps even more importantly, the mastery of TL grammar is needed for successful completion of a diploma theses.

When it comes to underlying factors determining the employment of the GLS included in the instrument and potentially cutting across the scales and subscales based on the classification proposed above, the study failed to achieve its goal. The major concern was that undertaking EFA in the first place proved to be highly problematic because, while the results of the Bartlett's test of sphericity ($T = 4151.64$, $p < .001$) showed that the data collected by means of the GLSI were amenable to factor analysis, the value of the KMO test (.0474) indicated that they are not suited to analysis of this kind. In view of such conflicting results of these two measures, an attempt to run EFA was made anyway. What emerged was a potential three-factor solution, which, first, was not easy to interpret due to evident overlaps between the factors and sometimes contradictory nature of the GLS they included, and, second, unacceptably MSA values for as many as 34 items that would have needed to be eliminated, thus inevitably compromising the integrity of the tool. For these reasons, the three-factor solution was rejected and a decision was made that EFA should be conducted with a considerably larger sample of participants in order to determine whether it is at all possible to tease out latent factors underlying the use of GLS. In fact, this does not always have to be the case, one good example being the *English Language Learning Strategy Inventory* (ELLSI) developed by Griffiths (2003b).

5. Conclusion

The results of the analyses presented in the previous sections seem to indicate that the GLSI is to a large extent a valid and reliable tool for collecting data on the use of strategies for learning and gaining greater control over TL grammar. For one thing, it possesses high construct validity, which was achieved by relating to items to cutting-edge research in grammar instruction and LLS, and was

confirmed by in most cases statistically significant, mostly moderate, positive correlations between the GLSI and Oxford's (1990) SILL, both overall and with respect to the categories and subcategories the two tools include. The instrument is also characterized by high content and face validity, as verified with the help of the judgments made by experts and students for whom the tool is intended. Secondly, the reliability of the GLSI can also be regarded as largely satisfactory given the acceptable values of Cronbach alpha in most cases and at least moderate, statistically significant correlations between most of the scales and subscales it comprises. What does constitute a cause for concern and should be addressed in future modifications of the tool is less than satisfactory internal consistency of the scales consisting of affective (GLSI_C) and social (GLSI_D) strategies, as well as the very high difficulty coefficients for as many as 10 statements. In addition, in light of the unsuccessful factor analysis, a question remains as to whether more general factors can be identified that would go beyond the divisions into categories and subcategories of GLS on which the construction of the instrument rested.

Despite these overall positive findings concerning the validity and reliability of the GLSI, it should be kept in mind that the tool still represents work in progress and the version included in the Appendix should by no means be considered as complete or final. First, on closer inspection of the statements, it becomes clear that there is close correspondence between several items in some of the scales, such as GLS for communication tasks (GLSI_B1), those for the development of implicit grammar knowledge (GLSI_B3), and those for dealing with corrective feedback (GLSI_B4). This may blur the intended differences between different categories from the point of view of the respondents, which could have been one of the reasons for unsuccessful EFA. Second, a question arises as to whether the GLSI should not comprise as well compensation strategies which at first blush may have little to do with successful L2 grammar learning but were at times mentioned in responses to the open-ended questions excluded from analysis in this study. After all, using one structure in place of another that the learner is unsure of may in some circumstances constitute a form of practice or complement other strategic devices, such as affective or social GLS. Third, the utility of the tool is constrained by the fact that it was designed for university students majoring in foreign languages, people who are cognitively mature and possess, at least in theory, an a high degree of awareness of language, its learning and teaching. Clearly, many of the items would need to be rephrased or even discarded if the GLSI were to be used with other groups of respondents, such as junior and senior high school students. Fourth, from the very outset, the tool was meant to be general rather than language-specific so that it could be employed with a variety of foreign languages. However, the grammatical systems of

languages vary widely (e.g., the existence and functions of articles, the role of inflection), which may necessitate the employment of GLS suited to the grammar of a particular TL. Therefore, it might make sense to treat different versions of the GLSI as a core of strategic learning but complement them with scales dedicated to different L2 language systems. Fifth, the present author is fully aware of the fact that the use of tools such as the GLSI represents a macro-perspective in the study of GLS, which needs to be complemented by a micro-perspective that would provide insights into the situated, context-sensitive but also variable nature of such strategic devices (cf. Pawlak, 2013; see the conclusion to the special issue).

While these concerns are without doubt salutary and future research on GLS should heed them, there is certainly no reason to discard the GLSI and instead efforts should be made to ensure that it constitutes an even more valid and reliable instrument for collecting data on the use of GLS. With this goal in mind, the next logical step appears to be conducting similar analyses to those reported in this paper with a much more sizable sample as their outcomes can provide grounds for more or less extensive adjustments and the use of EFA might in this case enable identification of factors underpinning the employment of GLS. Such efforts are without doubt warranted since, as Fotos (1998) so aptly commented twenty years ago with respect to foreign language contexts, "grammar teaching has never left the classroom" (p. 301). If this is the case, it is the duty of researchers to identify ways in which the learning of grammar can be best supported. Few would disagree that adept use of grammar learning strategies is a powerful crutch aiding the process of understanding and getting greater control over grammar structures in an additional language.

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APPENDIX

Grammar Learning Strategy Inventory (GLSI)

The questionnaire aims to obtain information about the ways in which you go about learning English grammar. Your responses will only be used for research purposes, so please be candid in your answers. Feel free to use English or Polish when answering open-ended questions.

Below you will find statements about learning English grammar. Please read each statement and circle the response on a scale of 1 to 5, where 1 indicates It does not apply to me at all and 5 It perfectly describes my actions and thoughts. Feel free to add your own comments on the statements in any of the categories (A-D) in the spaces provided.

Answer in terms of how well the statement describes you. Do not answer what you think you should do, or what other people do. There are no right or wrong answers in these statements. If you have any questions, please feel free to ask the teacher.

Part A – metacognitive GLS

1.	I preview the grammar structures to be covered in a lesson.	1	2	3	4	5
2.	I pay attention to grammar structures when reading and listening.	1	2	3	4	5
3.	I look for opportunities to practice grammar structures in many different ways.	1	2	3	4	5
4.	I try to find more effective ways of learning grammar.	1	2	3	4	5
5.	I know my strengths and weaknesses when it comes to grammar.	1	2	3	4	5
6.	I have specific goals and objectives in learning grammar.	1	2	3	4	5
7.	I schedule grammar reviews in advance.	1	2	3	4	5
8.	I pay attention to grammar structures in my own speaking and writing.	1	2	3	4	5

Part B – cognitive strategies

Part B1 – GLS used to assist the production and comprehension of grammar in communication tasks

9.	I try to use specific grammar structures in communication (e.g. telling a story).	1	2	3	4	5
10.	I read for pleasure and watch television to improve my knowledge of grammar.	1	2	3	4	5
11.	I notice (or remember) structures that cause me problems with meaning or communication.	1	2	3	4	5
12.	I notice (or remember) structures that are repeated often in the text.	1	2	3	4	5
13.	I notice (or remember) structures that are highlighted in a text by italics, bold-face, underlining, etc..	1	2	3	4	5
14.	I notice (or remember) structures that are emphasized orally through pitch, repetition, etc.	1	2	3	4	5
15.	I notice structures that are repeated extremely frequently in a short period of time (e.g. the past tense in a series of stories over the course of a few lessons).	1	2	3	4	5
16.	I pay attention to how more proficient people say things and then imitate.	1	2	3	4	5
17.	I compare my speech and writing with that of more proficient people to see how I can improve.	1	2	3	4	5
18.	I use Google or other search engines to see how a specific grammar structure is used in meaningful contexts.	1	2	3	4	5

Part B2 – GLS used to develop explicit knowledge of grammar

19.	I pay attention to rules provided by the teacher or coursebook.	1	2	3	4	5
20.	I try to understand every grammar rule.	1	2	3	4	5
21.	I memorize rules about frequently used linguistic forms/structures (e.g. formation and use of the passive).	1	2	3	4	5
22.	I memorize rules about how structures change their form (e.g. form an adjective to an adverb).	1	2	3	4	5
23.	I mark new grammar structures graphically (e.g. colors, underlining).	1	2	3	4	5
24.	I paraphrase the rules I am given because I understand them better in my own words.	1	2	3	4	5
25.	I make charts, diagrams or drawings to illustrate grammar rules.	1	2	3	4	5
26.	I remember grammar information by location on a page in a book.	1	2	3	4	5
27.	I use rhymes or songs to remember new grammar rules.	1	2	3	4	5
28.	I physically act out new grammar structures.	1	2	3	4	5
29.	I use a notebook/note cards for new rules and examples.	1	2	3	4	5
30.	I group grammar structures to remember them better (verbs followed by gerund and infinitive).	1	2	3	4	5
31.	I review grammar lessons to remember the rules better.	1	2	3	4	5
32.	I use grammar reference books, grammar sections of coursebooks or grammatical information in dictionaries.	1	2	3	4	5
33.	I use my mother tongue or other languages I know to understand and remember grammar rules.	1	2	3	4	5
34.	I try to discover grammar rules by analyzing examples.	1	2	3	4	5
35.	I create my own hypotheses about how structures work and check these hypotheses.	1	2	3	4	5
36.	I use electronic resources (e.g. English websites, corpora) to figure out rules.	1	2	3	4	5
37.	I work with others to reconstruct texts read by the teacher which contain many examples of a particular structure.	1	2	3	4	5
38.	I analyze diagrams, graphs and tables to understand grammar.	1	2	3	4	5
39.	I work with others to discover grammar rules.	1	2	3	4	5
40.	I notice when the teacher leads me into overgeneralization error (e.g. saying <i>breaked</i>) and then I think about what went wrong.	1	2	3	4	5
41.	I memorize whole phrases containing specific language forms.	1	2	3	4	5
42.	When I do not know the part of speech, I consider such clues as form, meaning and context.	1	2	3	4	5

Part B3 – GLS used to develop implicit knowledge of grammar

43.	I repeat the rules and examples to myself or rewrite them many times.	1	2	3	4	5
44.	I do many exercises to practice grammar (e.g. paraphrasing, translation, multiple-choice).	1	2	3	4	5
45.	I try to apply new rules carefully and accurately in specific sentences (e.g. to complete a gap).	1	2	3	4	5
46.	I use newly learnt rules to create new sentences (to write about my plans).	1	2	3	4	5
47.	I try to use grammar rules as soon as possible in a meaningful context (e.g. use them in my speech and writing).	1	2	3	4	5
48.	I try to use whole phrases containing specific structures in my speech.	1	2	3	4	5
49.	I notice (or remember) a structure which, when I encounter it, causes me to do something, like check a box, choose a drawing or underline a structure.	1	2	3	4	5

Grammar Learning Strategy Inventory (GLSI): Another look

50.	I try to adjust the way I process spoken and written language in accordance with L2 spoken and written rules (e.g. in the case of some passive voice sentences).	1	2	3	4	5
51.	I listen to and read texts containing many examples of a grammar structure.	1	2	3	4	5
52.	I compare the way grammar is used in written and spoken language with how I use it.	1	2	3	4	5

Part B4 – GLS used to deal with corrective feedback on errors in the production of grammar

53.	I listen carefully for any feedback the teacher gives me about the structures I use.	1	2	3	4	5
54.	I pay attention to teacher correction when I do grammar exercises and try to repeat the correct version.	1	2	3	4	5
55.	I try to notice and self-correct my mistakes when practicing grammar.	1	2	3	4	5
56.	I try to negotiate grammar forms with the teacher when given a clue (e.g. a comment about the rule).	1	2	3	4	5
57.	I notice when I am corrected on grammar in spontaneous communication (e.g. when giving opinions).	1	2	3	4	5
58.	I try to notice how the correct version differs from my own and improve what I said.	1	2	3	4	5

Part C – affective GLS

59.	I try to relax when I have problems with understanding or using grammar structures.	1	2	3	4	5
60.	I encourage myself to practice grammar when I know I have problems with a structure.	1	2	3	4	5
61.	I try to use grammar structures even when I am not sure they are correct.	1	2	3	4	5
62.	I give myself a reward when I do well on a grammar test.	1	2	3	4	5
63.	I notice when I feel tense or nervous when studying or using grammar structures.	1	2	3	4	5
64.	I talk to other people about how I feel when learning grammar.	1	2	3	4	5
65.	I keep a language learning diary where I include comments about language learning.	1	2	3	4	5

Part D – social GLS

66.	I ask the teacher to repeat or explain a grammar point if I do not understand.	1	2	3	4	5
67.	I ask the teacher or more proficient learners to help me with grammar structures.	1	2	3	4	5
68.	I like to be corrected when I make mistakes using grammar structures.	1	2	3	4	5
69.	I practice grammar structures with other students.	1	2	3	4	5
70.	I try to help others when they have problems with understanding or using grammar.	1	2	3	4	5