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REVIEW OF RECENT SCHOLARSHIP

Tangible insights on the strategizing of language learners and users

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Abstract

This article presents reflections from 12 experts on LANGUAGE LEARNERS STRATEGY (LLS) research. They were asked to offer their reflections in one of their domains of expertise, linking research into LLS with successful language learning and use practices. In essence, they were called upon to provide a review of recent scholarship by identifying areas where results of research had already led to the enhancement of learner strategy use, as well as to describe ongoing and future research efforts intended to enhance the strategy domain. The LLS areas dealt with include theory building, the dynamics of delivering STRATEGY INSTRUCTION (SI), meta-analyses of SI, learner diversity, SI for young language learners, SI for fine-tuning the comprehension and production of academic-level, grammar strategies at the macro and micro levels, lessons learned from many years of LLS research in Greece, the past and future roles of technology aimed at enhancing language learning, and applications of LLS in content instruction. This review is intended to provide the field with an updated statement as to where we have been, where we are now, and where we need to go. Ideally, it will provide ideas for future studies.

Introduction

This article presents statements from scholars on a variety of topics relating to LLS research.[1] These experts were asked to provide their meta-reflections about studies in some LLS areas, with the mandate being to identify areas where the results of research have already led to the enhancement of learners' strategy use. In addition, the request was to describe ongoing and future research efforts intended to enhance learners' strategy repertoire.[2]

   Andrew D. Cohen starts with an introductory piece inviting scholars to take a fresh look at how LLS actually works. The intention is to promote primarily micro-level research that, for instance, involves collecting data on the functions that strategies actually assume from moment to moment in the completion of language tasks. The rationale for following that reflection with the one by **Peter Yongqi Gu** is that his constitutes a request to LLS scholars that they engage in theory building. **Martha Nyikos** then considers the dynamics of SI, whereby language teachers can enhance their learners' awareness of the strategies that they employ in language learning and use. Nyikos describes her own journey from language learner to language teacher and SI researcher, to longtime instructor in SI.

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She challenges researchers to focus on teacher education and to prioritize oracy. As she points out in her reflection, she enacted her convictions by offering a summer institute on SI at the University of Minnesota for almost two decades.

Luke Plonsky reflects on the series of meta-analyses of SI that he and colleagues have conducted and reports that explicit SI has been seen to improve learners' language achievement. These meta-analyses have also served to direct the attention of LLS researchers to future areas for study, such as the "single versus multiple strategy" issue: While isolating and teaching a single strategy makes for more interpretable research findings – especially for the purposes of meta-analyses – isolated use of individual strategies does not tend to reflect the reality of how we actually use strategies (see, for example, Cohen & Wang, 2019). Consequently, there is a need to come up with better measures for effectively describing the complexity inherent in learners' use of strategies in combination, whether in sequences, in pairs, or in clusters.

Vee Harris reminds us how crucial it is to give attention in our research designs to issues of learner diversity. Critics of the LLS field have noted that the bulk of LLS studies have been based exclusively on the study of English, as well as the fact that numerous LLS studies are conducted with university students because they are readily available to university-based researchers. In contrast to the focus on college-age students, **Pamela Gunning**'s reflection deals specifically with SI for young language learners, a focus of hers for many years. She draws on her experience to provide insights at both the theoretical and practical levels.

Meanwhile, both **Isobel Kai-Hui Wang** and **Mirosław Pawlak** focus exclusively on one skill area in their reflections – Wang on vocabulary and Pawlak on grammar. Wang reflects on the issue of how best to describe strategizing at the microlevel with regard to the fine-tuned comprehension and production of academic vocabulary. Pawlak deals with an often-overlooked LLS area, namely, that of strategizing about grammar, and reflects on ways to combine macro- and micro-level perspectives in studying learners' grammatical performance.

Zoe Gavriilidou and **Lydia Mitits** provide an overview of the extensive LLS work that they and their colleagues have been doing in Greece over many years, and describe their most recent work on developing new programs for stimulating the study of Greek as a HERITAGE LANGUAGE (HL) in the USA. They also mention their plans for the future. They note that while the LLS research efforts have often been at the macro level, current efforts are being made to include more micro-level work.

Julie M. Sykes has focused her attention primarily on applications of technology aimed at enhancing language development. With regard to LLS, she has been incorporating strategic approaches to performance in virtual reality environments where the appropriate use of language can be critical, especially when it comes to pragmatics. In her reflection, she reports on research that has been done and is being done, as well as the many future opportunities afforded by virtual and augmented reality, wearable devices, and data analytics.

Finally, **Xuesong (Andy) Gao** deals with the fact that whereas much SECOND-LANGUAGE (L2) learning invariably goes on in the content subjects, content teachers do not tend to see themselves in the role of SI providers. This reflection serves as a call to action to encourage content teachers to embrace CONTENT AND LANGUAGE INTEGRATED LEARNING (CLIL). CLIL represents efforts to integrate SI into content instruction. In the best case scenario, content teachers and their language instructor colleagues jointly identify a repertoire of language strategies that would enhance their students' achievements both in terms of language performance and performance of the content subjects.

What clothing is the Empress actually wearing?

Andrew D. Cohen

This meta-reflection on the characteristics of LLS research typically presented at applied linguistics conferences and appearing in the popular applied linguistics journals is intended to be provocative. On the basis of having reviewed many journal submissions dealing with LLS and having experienced difficulty when attempting to get work on LLS accepted as a conference presentation or as a journal

publication, this author would suggest that there is a Holy Grail aura associated with LLS, such that the research at times seems to be stuck in a repeater loop. In other words, LLS researchers around the world are still replicating studies from several decades ago without necessarily considering whether one or more of the instruments used in those studies have become out of date.

There are, for instance, countless questionnaire-based studies that provide macro-level results regarding the range of strategies used and their relative frequency, as well as studies aimed at determining learners' perceptions as to the usefulness of strategy studies altogether. Such findings prompt the following question: "To what extent do these macro-level results provide language teachers what they need to support learners in enhancing their strategy use?" A possible explanation for somewhat inconclusive macro-level research findings is that the so-called strategies are sometimes more skill-like than strategy-like – for example, "looking up a word in a dictionary" and "guessing a word from context." Strategy descriptions tend to be at a level of generality that makes them fuzzy and therefore not readily operationalizable.

Another question worthy of asking is why LLS studies continue to include in their instrumentation questionnaires that have been abandoned years ago by those who constructed them. In the case of the STRATEGY INVENTORY FOR LANGUAGE LEARNING (SILL) (Oxford, 1990), the measure was replaced by task-based strategy measures and narratives two decades ago. Is it like a star that has died but continues to shine its light for several thousand more years?

Just as there are limitations in other types of research studies, there are decided limitations associated with questionnaire-based LLS studies. For example, when learners are asked to indicate what they generally do in strategizing (referred to as SELF-REPORT in the VERBAL REPORT (VR) literature; see Cohen, 2013), their responses may be based more on beliefs than on actual task performance. In addition, macro-level questionnaire responses by their very nature are devoid of the level of detail contained in micro-level strategy data, which have the potential of providing key insights into language learner performance. Of particular interest would be descriptions of strategy use in challenging areas such as the performance of pragmatics.

Part of what makes the gathering of questionnaire responses problematic is that learners are likely to be unaware of just how complex their strategy use actually is. For one thing, as mentioned above, the report of findings often focuses on the use of lone strategies, belying the reality that strategies are mostly used in combination. The bottom line is that after decades of LLS research with tables giving reported percentages of metacognitive, cognitive, social, and affective strategy use, language educators and classroom teachers may not yet have a viable understanding of how strategy use actually contributes to success or failure in real-world language learning and performance.

Consequently, it would appear that we need to move towards more dynamic conceptualizations. For instance, classifications of LLS have traditionally been based on the assumption that a given strategy has just one function. Despite efforts to popularize the view that LLSs are actually multifunctional in nature, the perception of unifunctionality prevails worldwide. Until recently, there has been little research to validate empirically that strategies are more than monofunctional in nature (see Cohen & Wang, 2018). Figure 1 provides a visual illustrating how a single language learner strategy, such as DETERMINING THE MEANING OF A WORD IN A GIVEN CONTEXT, could assume four different functions on a fluctuating basis from moment to moment.

VR techniques are being used increasingly in research at the micro level to better understand why learners are using strategies in certain ways. Still, many researchers refrain from coaching learners in what to attend to in their verbal protocols – owing to a misguided perception that it is best not to influence the nature of the VR data. It would appear that more attention needs to be given to productive ways to use VR techniques.

A conclusion to draw from this reflection is that the time has come to look beyond the Holy Grail of LLS. There need to be more hybrid studies involving the collection of both macro-level and micro-level strategy data. The intent would be to increase the potential of generating research outcomes that could be more readily incorporated into specific LLS guidelines for learners.
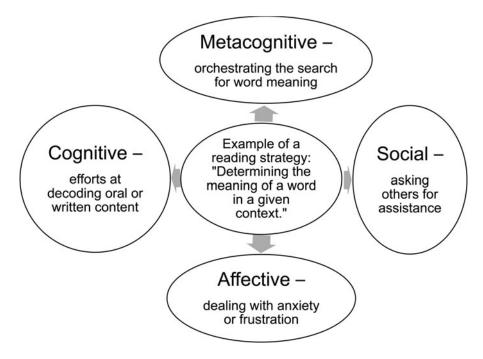
Figure 1. Fluctuation in the functions of any given strategy in the performance of a given task

Theory building in LLS research

Peter Yongqi Gu

"A theory is a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena" (Kerlinger & Lee, 2000, p. 11). Theory building can take different approaches (Torraco, 2002). Swanson and Chermack (2013) prefer a top-down approach. Borsboom et al. (2021) support a bottom-up approach. Theories can be evaluated in terms of their explanatory power, falsifiability, generalizability, and practical usefulness.

Theories at different levels are constructed for descriptive, explanatory, predictive, interpretive, or emancipatory purposes. MACRO-LEVEL THEORIES can differ from each other comprehensively at the paradigm level. They are concerned with questions like whether LLSs exist as independent facts and therefore objective, observable, and discoverable, or whether they are intangible mental constructions, socially and experientially based, dependent on the individual persons or groups using the strategies, and therefore co-constructed in situated contexts. MICRO-LEVEL THEORIES focus on explaining how individual learners, tasks, or learning situations function to get the learning task completed.

Forty years ago when the field started to explore the naturally occurring strategies language learners used, it was perfectly legitimate to argue for a grounded approach aimed at uncovering any and all strategies that could improve the plight of struggling learners. Decades of exploratory and descriptive research have produced many insights into learners' intentional manipulation of the learning process for better learning results. Nonetheless, scholars have yet to generate theoretical models that can effectively predict the role of LLS in enhancing language achievement, empowering learners, and guiding further research.

In fact, theory building remains almost non-existent with regard to LLS, apart from two major attempts at theorizing about LLS. O'Malley and Chamot (1990) conceptualized LLS as cognitive skills and used Anderson's (1982) cognitive theory of skill learning to explain their representation and acquisition. While this model explained strategic processing and learning as serial processing, it did

not account for the parallel processing nature of real-world strategic learning behaviours, not to mention the lack of a human agency component as a crucial starting point.

The latest theorizing is found in the STRATEGIC SELF-REGULATION (S²R) model (Oxford, 2017). Oxford took Zimmerman's (2008) theory of SELF-REGULATED LEARNING (SRL) and combined it with Vygotsky's (1978) sociocultural theory in order to unite "sociocultural and psychological aspects of SRL" (Oxford, 2017, p. 74). While the S²R model does an admirable job in uniting two grand theories of learning, the distance of the theory from the language learning ground means that it is only a rough guide to how exactly strategic language learning happens and to the empirical research questions that should be examined.

In the tripartite of theory, research, and practice, the best that can be claimed so far is that exploratory research has contributed somewhat to our understanding of LLS, producing findings of some immediate and potential usefulness to learners. When a more mature neighbouring field such as psychology is talking about a "theory crisis" (Eronen & Bringmann, 2021), it is time for LLS scholars to engage more actively in theory building. After all, as Lewin (1943) would say, "There's nothing as practical as a good theory" (p. 118).

Strategic language teacher education: Insights from auto-ethnographic meta-reflection
Martha Nyikos

The meta-reflection offered here encompasses a confluence of personal factors. My varied language learning experiences have formulated my research positionality in five areas. They provide the basis of my strong advocacy for infusing LLS into my World Language teacher education courses and HL learner seminars. My research and teaching are informed by my background as a HL learner, a study-abroad immersion learner, a classroom foreign language learner, a classroom teacher, and finally, a teacher educator.

Profoundly shaped by my first language, I grew up in the USA speaking exclusively Hungarian to only seven family members in total linguistic isolation from a speech community. Later, learning two additional foreign languages in classroom settings, the limitations I experienced became push factors for shaping my own strategies. Melding my bilingual identity and first study abroad experience in Austria became the true incubators for my meta-awareness and generative oracy strategies. As a lone 17-year-old, speaking almost no German, I had to navigate daily life, while developing strategies to piece together the intricacies of my third language. As a German and English as a second language (ESL) teacher, these emic lessons were pivotal in shaping my convictions regarding modeling, eliciting, and practicing LLS with my students and pre-service teachers.

For almost 20 years, I taught an intensive strategies-based-instruction[3] (SSBI) Summer Institute for teachers at the University of Minnesota. The SILL (see Oxford & Nyikos, 1989) engendered thoughtful conversations among participants about strategy use. Teachers' accounts of their efforts to provide SI in the classroom revealed their need to make the difficult conceptual pivot to understanding that teaching strategies are not synonymous with learning strategies. This dissonant conceptualization is a persistent challenge that researchers need to address.

Whether LLS is infused into daily classroom practice depends upon teachers and teacher educators. Given the socio-emotional roller coaster that learners have been on owing to the pandemic and related factors, teachers may feel reluctant to compel students to engage in oral language or to provide corrective feedback for fear of making students uncomfortable (Nyikos, 2021). Whereas students report that they want to speak, they preferred that it be in a safe, supportive environment. Teachers' support could entail coaching learners in the strategic use of speaking strategies; otherwise, the consequence is quiet learners. To counter this, I developed MARTHA'S MAXIM for language teachers: *If you don't elicit, you are complicit in the silence of your students.* The collective challenge is to develop LLS that gives language back its first identity as a spoken language in target-language (TL) classrooms.

This challenge also applies to effective strategies for HL students. With many indigenous languages dying out and HL speakers losing their languages, how can LLS research be directed so that it supports intergenerational transmission of marginalized languages? How can classroom teachers enable HL speakers to become self-directed learners?

Owing to time constraints, many teachers utilize only a few isolated strategies. To encourage teachers to give students opportunities to develop strategies, I share MARTHA'S METACOGNITIVE MOMENT, which pairs individual metacognitive reflection followed by a collaborative student pair-share. These collaboratives form the liminal space where strategies can be incubated in a valid and contextually specific way. Students build their agency and self-efficacy, shaping these strategies with teacher guidance into task-appropriate clusters.

To investigate the long-term impact of strategy instruction, Cohen et al. (2021) asked teachers who took part in intensive SSBI courses what they found most impactful. They overwhelmingly cited the level of engagement in a variety of strategy activities that allowed them to experience the same types of learning and metacognitive reflection that they later employed in SI with their own students. Teachers reported that they had realizations about their own styles and strategies as language learners from participating experientially in group activities and writing reflective dialogue journals. Moreover, their students cited the benefits of their own risk-taking in post-task reflections, which teachers adopted from SSBI activities.

This author contends that one of the most powerful strategies for language teachers is to put ourselves into the learners' shoes, so that we experience the same struggles, frustrations, and victories that they do. As both teachers and researchers, reinvigorating our own LLS use elevates our efficacy in guiding students. Finally, given that a common theme across meta-reflections in this article is the highly individualized nature of LLS, there would appear to be a need for granularity in approaches to LLS research. The intent would be to ensure that research findings can be of direct benefit to developing teachers looking for ideas about how to teach SI.

Reflections on strategy instruction: Substantive and methodological concerns

Luke Plonsky

What we know

There is a rich, active, and diverse body of research on SI in an L2. Perhaps more importantly, the empirical work in this domain provides compelling evidence of the effectiveness of SI interventions. In addition to hundreds of primary studies, several META-ANALYSES now attest unequivocally to this effect.

As someone with longstanding interests in both SI and meta-analysis, this author has tried to both keep up with and contribute to such efforts. A simple summary of the overall ("grand mean") effects of those meta-analyses is presented in Table 1. It can be seen that SI is indeed effective across all the major target domains that have been examined at the meta-analytic level. The effects are substantial and, in fact, comparable to what is found in meta-analyses of the effects of L2 instruction (for an overview, see Plonsky, 2017). Put differently, the L2 performance of learners who receive SI is noticeably better than that of learners who do not (shown in Table 1 to typically be in the range of $d = .6$–$.9$). This is a major finding for the field and one that appears to generalize across skill areas.

The evidence found at the meta-analytic level also carries a weighty implication for practical realms such as teaching methodology, language policy, curriculum development, and teacher development. Moreover, even further benefit can be found from examining the results of the moderator analyses in the studies in Table 1, which offer more context-specific indications of the effectiveness of SI (e.g., at different proficiency levels, in different contexts, and with different intervention features).

What we do not know

The accumulated findings on the effectiveness of SI seem quite robust, and in some ways they are. However, one pitfall of meta-analysis is a mirage of completeness when many questions remain un- or UNDER-answered. For example, evidence of SI is still much needed in the following L2 domains: writing, pragmatics, speaking, language learning while in study abroad, test performance, and the learning and use of strategies for technology-mediated communication. There is also a need for more studies that ascertain the relative instructional impact on the learners' performance of individual strategies compared with that of various strategy combinations. Finally, researchers might consider

Table 1. Summary of meta-analytic results of SI research

Domain of SI	Overall effect size (*d*)	Number of studies (*K*)
All skill areas		
Ardasheva et al. (2017)	.78	43
Elahi Shirvan (2014)	.95	26
Plonsky (2019)	.66	112
Listening		
Dalman and Plonsky (2022)	.69	45
Reading		
Chaury (2015)	.60	10
Maeng (2014)	.58	45
Taylor et al. (2006)	.54	21
Yapp et al. (2021)	.90	46
Web-based SI		
Chang and Lin (2013)	.67	31

examining indirect effects of SI on L2 performance. For example, it might be the case that the effect of SI on speaking performance is mediated by a decrease in anxiety or an increase in willingness to communicate.

What we can do better

In addition to expanding the substance of SI research (i.e., the WHAT), this line of inquiry would also benefit from several improvements to its methods (i.e., the HOW). As in much of applied linguistics, studies are needed (a) with a more diverse range of learner populations (e.g., low literacy), (b) that include delayed posttests to assess the durability of treatment effects, highly valuable information for informing the practicality of such interventions, (c) to build the validity argument behind instruments assessing strategy use, and (d) that replicate and build directly on previous findings. In terms of dissemination – a pivotal part of the HOW – it would appear that language educators need to take a more active role in outreach. Practitioners and other stakeholders should not be expected to locate, read, and implement the results of empirical research on their own. LLS experts need to meet them where they are at, literally and figuratively, whether at conferences or workshops, or through web-based channels such as videos on YouTube and TikTok, or through serial demonstrations on Twitter (i.e., "Tweetorials").

Reflections on widening perspectives to cater for the diversity in students' backgrounds
Vee Harris

This reflection focuses on three areas that might benefit from further research, suggesting possible implications for SI to be derived from such research. The first area entails looking beyond the strategies used to learn English by considering languages with an unfamiliar script and those involving tones. For example, what strategies do learners of Mandarin Chinese use to memorize a given character such as 草 "*grass*"? A study of the memorization strategies used by London adolescent students to learn Mandarin Chinese as a new language suggested that the learners not only used so-called "generic" strategies found in the existing literature, but also used language-specific strategies like: "I look for the shapes of the alphabet" (Grenfell & Harris, 2017). As a result, a list of these strategies was included in a national Curriculum Guide for Mandarin Chinese so that teachers could model them for their students during SI in England. Teachers of languages like Urdu, Arabic, and Panjabi might appreciate similar studies.

The second area of focus involves widening the research perspective beyond individual learning styles to explore the social contexts in which the languages are learned in the first place. With regard to learner diversity, in what ways might being a bilingual or monolingual, being of a certain gender, or from a certain social stratum affect the strategies that learners acquire? Whereas Norton (2000) showed how the social context impeded immigrants to Canada from deploying their strategies, there are indications from research that social contexts can foster strategy development in childhood. For example, in a study of bilingual learners of French as a new language in London, the learners reported that hearing Panjabi, Turkish, or Polish spoken around them helped them acquire valuable listening strategies such as guessing from context (Grenfell & Harris, 2017).

Not only are such studies interesting in themselves, but they also have implications for SI. By incorporating STRATEGIC CONTENT LEARNING (Butler, 2002), students can make the most of the diversity they each bring to the classroom by collaborating at each stage of SI. In the Practice stage of SI focusing on listening, for example, a monolingual student who readily panics may benefit from being paired with a bilingual student who can tolerate uncertainty. Chamot and Harris (2019) outline similar possible pairings to take account of gender and social class differences. However, students may need SI in how to collaborate with other learners to make the most of "working together with one or more peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance" (O'Malley & Chamot, 1990, p. 120).

It is important to determine the extent to which strategies incorporating diversity are "generic" to any curricular area or vary according to the language and specific curricular area. Studies to explore this research question and whether mixing the composition of groups impacts favourably on learning and strategy use might be valuable.

The final focus of this reflection is on widening the choice of activities offered in SI. Curiously, there have been few studies into differentiation within SI. Leaving aside the vexed question of what makes something easy or hard – a question that itself is under-researched (Harris, 1995), there is the issue involving the extent to which students have agency throughout the various stages of SI. For instance, to what extent do learners choose between activities that support them if they are struggling as opposed to activities that challenge them if they are making good progress? The "struggle" may either be with the language itself or with using the strategies or both. Differentiation may be by text, task, or strategy.[4] For example, in SI focusing on speaking, while all students may be given the SAME task (e.g., to discuss their home or hobbies), they may select DIFFERENT strategies to complete it. Students who are struggling may prefer the "core" strategies of using mime, word coinage, and gesture. Other students may enjoy the challenge of using circumlocution.

Conversely, in the practice stage of SI focusing on reading, while all students may use the SAME strategies aimed at searching for cognates and for inferring meaning, both easier and more challenging TEXTS can be provided. In this way, struggling students would have the opportunity to simply infer the meaning of unfamiliar words from the context in a relatively simple text, whereas students who prefer a challenge could infer implied meanings within a more complex text.

In the interest of catering to learner diversity in an increasingly multicultural world, it would appear to be a propitious moment for LLS researchers to investigate similarities and differences in the strategy repertoire of learners given the languages that they are learning and performing in, as well as the strategies that learners bring to the classroom as a product of their diverse backgrounds. Once this information is collected, then LLS experts would be able to develop instructional materials aimed at accommodating whatever diversity of needs is revealed in the data collected.

Language learning strategies for young language learners receiving strategy instruction
Pamela Gunning

In this reflection, I will discuss an under-researched LLS area, SI for YOUNG LANGUAGE LEARNERS (YLLs). When the author became interested in LLS in the early 1990s, almost all research in the field dealt with adults, adolescents, or children in FIRST-LANGUAGE (L1) or bilingual settings. The approaches to research

and the available instrumentation were not transferrable to the context of French Quebec, Canada – where most school-age children had little exposure to L2 English outside the classroom, and were receiving only 1–2 hours per week of ESL instruction in class.

The focus will be on three areas: (1) research methodology and instrumentation appropriate for this age group, (2) the language used for YLLs at the beginner level, and (3) teachers' scaffolding of SI and reluctance to gradually reduce support. With regard to the first research area, Oxford's SILL (Oxford, 1990) served as the basis for the construction of the CHILDREN's SILL (Gunning, 1997), which provided a macro-level snapshot of strategies of children from several schools in Quebec. However, a single general questionnaire did not capture the essence of the detailed micro-level information needed for SI planning, so an additional measure was employed to complement the results. Since the development of an SI program for these YLLs required input from them regarding the LLSs that they were using, interviews were conducted with a small number of students, using questions adapted for children from Naiman et al. (1978). The interview data revealed that high-proficiency learners reported choosing their own strategies and selected age-appropriate ones consistent with the tasks in which they were engaged, whereas mid- and low-level learners tended to use strategies suggested by their parents or grandparents and not necessarily effective for the given tasks. The interviews with YLLs also provided information regarding the role of language anxiety in their language learning. The findings from this study and from ensuing classroom-based ones revealed that the complexity of SI research with YLLs required several sources of evidence, depending on the purpose and the context of the assessment, to draw overall inferences. As a result, a mixed methods approach (Tashakkori & Teddlie, 2009) involving various tools such as task-based questionnaires, video-recordings, interviews, think-alouds, observations and field notes, in the context of classroom-based assessment, was adopted in subsequent research (Gunning, 2011; Gunning & Oxford, 2014; Gunning & Turner, 2018).

A second area of concern with regard to SI for YLLs was that of the language of instruction. The literature on SI would suggest that since beginners do not have the vocabulary to understand strategy explanations, the instruction should be in the L1 – which in this case meant French. As this is not practical for the Quebec Francophone context, techniques to explain strategies in English had to be developed, using graphics and mascots for modelling the strategies. To increase comprehensibility, a gradual SI approach was employed using the PROBLEM-SOLVING STRATEGY INTERVENTION (PSSI) model (Gunning & Oxford, 2014) consisting of three phases: (1) the development of strategy awareness (declarative knowledge), (2) the matching of strategy to task (procedural and conditional knowledge), scaffolded by the teacher, and (3) the selection of strategies consistent with learners' goals. All three phases included reflection, strategy sharing, and feedback loops, which helped the students learn to choose their own strategies independently.

In consort with this focus on the L2, there emerged a concomitant interest in investigating the role of the L1 in SI with the same YLLs. Hence, a curriculum analysis took place of the Quebec elementary French L1 and ESL programs, of which SI was an integral part (Gunning et al., 2016). This investigation revealed both similar and different reading strategies. For instance, with regard to inferencing, the ESL program focused on the word level whereas the French L1 program focused on the text level and the implied meaning of the text. These findings led to efforts to determine the extent to which L1 and L2 teacher could collaborate in teaching reading strategies in two intensive-English classes, in which the students had the same ESL and French L1 teachers. Year 1 of the two-year study showed that without teacher collaboration, cross-linguistic strategy transfer did not occur. For year 2, a framework for teacher collaboration to plan their SI was set up. It was found that the use of similar terminology and teaching approaches provided the students an opportunity to hear strategy explanations first in ESL and then in French L1, which deepened their understanding of them.

Subsequently, an SI framework was developed (Gunning et al., 2016), reflecting the successful pedagogical practices observed in these classes. The first three steps of the framework, awareness-raising, modelling, and guided practice, are scaffolded by the teacher. The practice step has three components (guided practice, independent practice, and progression and variation in practice activities), of which only guided practice requires teacher guidance. For the steps of independent practice, progression and

variation in practice activities, and reflection and strategy sharing, it is essential that teacher support be reduced so that student agency can develop.

The third area of concern noted above has presented itself with regard to teacher scaffolding, and the need for teachers to gradually reduce it. Efforts to replicate this approach revealed that many ESL elementary teachers were reluctant to relinquish their support, and that they omitted independent practice, and reflection, and strategy sharing. Integrating these steps was particularly challenging for the teachers, who blamed time constraints.

After nearly three decades of classroom-based research in strategy use and SI with YLLs, it has been seen clearly that LLS research and teaching resources need to be age- and context-appropriate. With regard to language of instruction, the results of L1–L2 teacher collaboration research showed that hearing the explanation of strategies in two languages deepened students' understanding. However, when this option is not realistic, a more gradual approach is appropriate. Finally, the most challenging aspect of SI with YLLs is helping teachers to reduce support by having their students engage in independent practice, reflection, and strategy sharing, and providing feedback – key steps that lead to independent strategy choice. If SI is constantly scaffolded by the teacher, development of agency and independent strategy use will be stymied. Future empirical research is needed to examine this.

Insights from research about vocabulary strategy instruction
Isobel Kai-Hui Wang

This reflection focuses on insights obtained from micro-level research on how language learners engage in VOCABULARY STRATEGY INSTRUCTION (VSI) and ends by suggesting practical steps that can be taken to enhance the impact of VSI on the learners. Studies have tended to examine the effect of VSI on vocabulary development within an experimental setting wherein one group is given the strategy enhancement treatment and the other not, using a pre-/post-test design. While such studies provide a more macro-level picture as to the cause-effect relationship between VSI intervention and learning outcomes, such research does not usually provide insights into how learners actually deal with the VSI. For example, to what extent and in what ways do learners incorporate insights from VSI in their strategy repertoire because of their engagement in specific tasks?

The measurement of vocabulary development can also be problematic. While non-task-based tests of, say, breadth and depth of vocabulary are a popular means for measuring the learning outcomes from interventions, the results from such inquiries may have little to offer learners when the interest is in the impact of VSI on comprehension and production of vocabulary use in real-life situations. For example, to what extent does feedback from such tests provide insights for language educators that they can pass on to the learners?

Recent efforts have been made to conduct close-order investigations of how learners process VSI outside the classroom (see Wang & Cohen, 2021, 2022). Such studies have underscored the value of utilizing both introspective and retrospective verbal report techniques for describing moments when learners gain insights regarding the relative success at their efforts to be strategic in fine-tuning their comprehension of academic vocabulary. The descriptions of especially challenging moments could provide material for VSI with regard to remedial actions that learners could take when efforts at strategy use appear ineffectual.

Another emphasis in the literature appears to be the study of how VSI enhances the use of strategies, in particular, the frequency and range of strategies utilized, often measured by self-report questionnaires. However, when responding to such questionnaires, learners may generalize according to their beliefs about how they use strategies, rather than describing how they actually strategize in learning and using vocabulary. To remedy this problem, studies have begun to shift the focus from general patterns in strategy use at the macro level to the context-specific deployment of strategy combinations at a more micro level, with a shift from describing the function of any given strategy in a monolithic way to describing how strategies function on a moment-to-moment basis (e.g., Cohen & Wang, 2018; Wang, 2018). Ideally, such studies will help us dispel misconceptions about

how strategies work and improve our understanding of why certain learners are more successful at learning than others.

Since the likely impact resulting from the use of given strategies depends largely on the nature of their application by individual learners, a learner-centered, personalized approach to VSI would appear to be more beneficial to learners than the traditional one-size-fits-all approach. Consequently, self-access VSI would appear to be a helpful complement to classroom-based approaches. The self-access approach also provides an opportunity for micro-level analysis of learner engagement with VSI, potentially informing researchers about individual learners' unique responses to strategy instruction. In addition, such research has been found to showcase dynamic processes associated with strategizing from multidimensional (i.e., behavioral, cognitive, and affective) perspectives (Wang & Cohen, 2022). It is hoped that the micro-level details of learner engagement with VSI can be more readily translated into guidelines for personalized approaches to VSI in dealing with language tasks beyond the classroom.

Given the findings of LLS research at strategy use is inherently complex, it would seem appropriate to promote an integrative approach to VSI, taking into account individual learner characteristics (e.g., learning style preferences), the functionality of strategies (i.e., cognitive, metacognitive, affective, and social), and the orchestration of strategy use (i.e., strategy selection and combination).

Insights from research about tangible outcomes from grammar SI
Mirosław Pawlak

This reflection starts with some preliminary comments on the nature of GRAMMAR LEARNING STRATEGIES (GLS) based largely on existing empirical evidence. However, given that it is premature to identify specific outcomes from grammar SI since there is currently a paucity of research in this area, this reflection will focus for the most part on an intervention-based study soon to be conducted aiming to investigate the effects of instruction in the use of GLS. Then, potential contributions of the planned pedagogic intervention will be considered.

Following Cohen and Pinilla-Herrera (2009), this author views GLS as deliberate thoughts and actions helping students learn and gain better control over the use of grammar. This means that GLS do more than merely promote conscious understanding of rules and their accurate application in controlled situations, or explicit knowledge, in that they also aid the deployment of grammar features in spontaneous interactions, or implicit, or automatized knowledge.

Research on GLS is scarce and has mostly focused on the identification and description of such strategies, with only several studies examining the link between GLS use and attainment or attempting to demonstrate how GLS use is mediated by INDIVIDUAL DIFFERENCE (ID) factors. There is almost no research that would have sought to appraise the effects of strategies-based instruction in this area. One notable exception is the study by Trendak (2015), which, however, suffered from several limitations: it focused only on cognitive and memory strategies, involved just one grammar feature (i.e., stylistic inversion in English), the mastery of this form was gauged only in terms of explicit knowledge, and it relied on the SILL (Oxford, 1990), which simply cannot capture the specificity of learning grammar. The bulk of GLS research has adopted the macro-perspective by relying on questionnaires rather than embracing a micro-perspective such as by examining GLS use in performing grammar tasks (Pawlak, 2020). At present, the only comprehensive instrument for collecting data at the macro level from learners as to their L2 grammar strategies is the GRAMMAR LEARNING STRATEGY INVENTORY (GLSI; Pawlak, 2018).

The planned intervention-based study mentioned above is intended to tap the effects of SI, involving administration of the GLSI to English majors in Poland. The study will focus on three grammatical structures: passive voice, stylistic inversion, and modal verbs in the past tense and will involve 150 participants, divided into several experimental and one control group. The intervention will span ten weeks and will be comprised of 30-minute segments embedded in regular classes. Explicit and implicit (automatized) knowledge of the targeted features will be measured at three timepoints, with the GLSI and a survey gauging autonomy also being administered three times. The study will consider the

Table 2. Outline of the study

Spring semester		
Week	Experimental groups	Control group
1	ID questionnaires	ID questionnaire
2	Pretest: Measures of L2 knowledge, GLS use and autonomy. Post-task questionnaires.	Pretest: Measures of L2 knowledge, GLS use and autonomy. Post-task questionnaires.
3–12	GLS instruction, journals, engagement grids.	Regular instruction.
13	Immediate posttest (as above).	Immediate posttest (as above).
2 of fall semester	Delayed posttest (as above).	Delayed posttest (as above).

mediating effects of beliefs, learning styles, motivation, grit, curiosity, enjoyment, and engagement as well. The macro-perspective will be complemented with a situated approach involving a description of GLS use and student engagement obtained from post-task questionnaires, grids, and journals (see Table 2).

There are seven potentially beneficial outcomes associated with the intervention: (1) greater mastery of the targeted structures, (2) more accurate, appropriate, and meaningful use of these structures in spontaneous interactions, (3) better understanding of what learning grammar involves, (4) greater autonomy in learning grammar, (5) more effective grammar instruction for participants, (6) more effective teaching of grammar when participants become teachers, and (7) awareness as to the benefits of the individualization of grammar instruction and of SI encompassing GLS. More broadly, the study will provide takeaways that can help implement similar pedagogical interventions in other contexts (e.g., lower educational levels).

The study highlights the importance of combining the macro- and micro-perspective in research into GLS. While general patterns may be of limited relevance to practitioners, the same criticism could be leveled at situated descriptions of learner efforts at strategizing, which are at times both dense and idiosyncratic. Only by reconciling the two views can we better understand what GLS use entails, what factors impact it, and how it can be enhanced. In addition, there is the need to bridge the gap between research and pedagogy by convincing teachers that SI makes sense and by providing optimal ways of conducting it. Hence, GLS researchers are tasked with integrating the insights obtained from different types of studies and converting them into tangible classroom guidelines.

Reflections on the impact of SI on Greek language learners over the years
Zoe Gavriilidou and Lydia Mitits

Twenty years after Psaltou-Joycey and Gavriilidou introduced the field of LLS in Greece, the question is "What has been achieved?" A major boost for the study of LLS was the 2012 nationwide *Thales* project, coordinated by the Democritus University of Thrace, which generated a wave of research studies resulting in more than 30 publications (see Gavriilidou & Petrogiannis, 2016, for example), as well as a methodology for instrument adaptation and standardization (Gavriilidou & Mitits, 2016). A notable outcome was a shortened and modified version of the SILL (Oxford, 1990), which was used in a pioneering study of LLS by bilingual students with Turkish L1 and Greek L2 (Petrogiannis & Gavriilidou, 2015). In addition, a teachers' guide (Psaltou & Gavriilidou, 2015), a questionnaire for tracing teachers' strategic profiles (Psaltou-Joycey et al., 2016), and two edited volumes (Gavriilidou & Petrogiannis, 2016; Gavriilidou et al., 2017) were generated.

These numerous research studies have provided an array of macro-level results that have shed light on the complex ways in which learners in different contexts and social settings (for instance minority vs. mainstream schools in Greece) deal with LLS. In addition, international conferences and

workshops were organized in 2015 and in 2017, respectively. These gatherings brought to Greece experts involved in the study of LLS, who helped the local researchers and teachers interpret their research findings based on the new trends in the field of LLS at the time. An in-service L1/L2 language teacher development program was then designed and implemented to provide 102 teachers of Greek L2 and Turkish L1 additional LLS teaching methodology. A teacher self-evaluation questionnaire developed by the Thales team was used to profile teachers' strategy instruction (SI) (Mitits & Gavriilidou, 2022). Gender, teaching experience, and educational level appeared to be predictors of teacher promotion of LLS in the classroom. In addition, there were significant differences in the extent to which teachers reported promoting individual strategies.

By focusing exclusively on quantitative macro-level reports of strategy use through the administration of a self-report questionnaire, the Greek LLS researchers soon realized that valuable information about what really went on in the classroom was lacking. Furthermore, it seemed that that many of the teacher respondents reported biased estimates of the extent to which they engaged in SI – either because they really did not understand what SI entailed or because they wanted to "look good" in the survey (constituting a social-desirability bias), even if the survey was responded to anonymously. This was an important turning point in Greek LLS research, which led to micro-level investigation to complement the questionnaire findings, involving interviews and observations. These added methodological approaches revealed that numerous teachers lacked knowledge regarding specific LLSs and about SI overall. Consequently, the focus of SI in Greece has shifted to intervention programs that are being studied by means of collaborative action research methodologies.

These newly gained insights have also informed current work with GREEK HERITAGE LANGUAGE (GHL) learners, involving the creation of a syllabus for teaching GHL in the USA in which SI is proposed for each learning outcome (Gavriilidou & Mitsiaki, 2022). Furthermore, efforts have been made to include SI in content-subject instruction in Greek institutions of higher education as a means of promoting self-regulation. Experiential workshops are being held and educational materials are being produced at Teaching and Learning Centers within Greek universities. These activities have provided an opportunity for research focusing on the connection between SI involving LLS and the development of students' soft skills. Moreover, considering that teachers in Greek schools have not necessarily had experience in catering to students with special needs with regard to L2/FL learning, recent work has included focus on LLS for learners with dyslexia and other learning difficulties (Gavriilidou et al., 2021). Making the connection between SI on the one hand and both soft skills and learning difficulties on the other requires clarity as to the constructs involved and reliance on a well-grounded and comprehensive theory. Fortunately, Greek researchers are able to draw on the robust database already established as a result of the large-scale Thales project.

Reflections on the use of technology as a means for providing learners with strategy instruction
Julie M. Sykes

In considering the role of DIGITAL TECHNOLOGY and SI, three key areas inform this reflection: (1) the role of current digital tools for multimodal strategy practice and instruction, (2) the essentiality of LLS in a "new" digital age, and (3) the power emerging innovations have to augment and extend SI for language learners.

Multimodal strategy practice
The digital world enables the delivery of SI via websites, social media tools, and mobile applications. Drawing on digital resources, these materials contain audio and visual resources, practice activities, and peer-to-peer connections. Two examples of such resources are a website created at the University of Minnesota designed for learning Spanish grammar strategies (Cohen et al., 2011) and a YouTube Channel focusing on developing LLS through instructional videos and practice activities (https://www.youtube.com/@casls). Each utilizes multimodal, digital tools to increase access to SI that is relevant and useful for the learner.

While the use of these digital materials is not new, leveraging their benefits in combination with a robust set of emerging analytical tools is. This approach offers immense potential for a deeper understanding of SI. LLS researchers can move beyond the current tradition of using surveys about how learners perceive their use of SI materials, towards data sets that use EYE-TRACKING and BACK-END (i.e. behind-the-scenes) databases to track how learners engage with digital materials (e.g., what catches their attention, what they skip over). A further potentially valuable addition would be data about how learners apply those strategies through simulations and other tasks to measure how well they are able to apply what they have learned.

The next digital age

DIGITALLY-MEDIATED DISCOURSE is high-stakes and life-changing, and, with seemingly a new platform available weekly, it can be a challenge to stay current. It would be impossible to learn all the necessary content to engage across platforms, placing SI at the heart of success. SI develops essential skills to equip learners to traverse digital and analog worlds with ease. A strategies-based scheme designed to support this work is the INTERACTIONAL, PRAGMATIC, INTERCULTURAL COMPETENCE FRAMEWORK (IPIC) (Sykes et al., 2020), in which the combination of key content and LLS are at the heart of success. For example, when working with MEMES (i.e., contextualized images with text), the IPIC framework proposes learners develop the strategies to understand the words (i.e., knowledge), develop skills for contextualizing the picture as related to the words (i.e., analysis), make choices about when the meme is appropriate (i.e., subjectivity), and decide how others react to the meme (e.g., awareness). LLSs from each area can then be applied to other digital discourse spaces (e.g., Twitter feeds, hashtags) using the same heuristic to draw on LLSs useful for learning.

Harnessing the power of innovation

Emerging digital tools also offer the opportunity to extend what is possible in terms of SI by creating learning experiences to encourage deep thinking, learner agency, and hypothesis testing. One such innovation is the use of mixed-reality experiences (i.e., gameplay simulations that draw on digital and analog materials) for SI. Through a series of experiences, learners engage with materials to solve a critical problem. To be successful, learners must employ the strategies being learned (see Daradics et al., 2022 for additional details). In this puzzle from *Escape from Byru'moxia,* a mixed-reality experience to learn pragmatic strategies, learners must read and make inferences to decide what each group would say (see Figure 2).

Throughout each experience, learners are encouraged to utilize multiple strategies to learn critical language content (examples at https://casls.uoregon.edu/classroom-resources/vault/). As new tools emerge, they can be utilized in the interest of enhancing SI through hands-on experiences and robust data collection. The opportunities afforded by virtual and augmented reality, wearable devices, and data analytics are immense. Some possibilities include the use of wearables to record learners as they apply specific LLSs to complete the listening portion of a simulation, the use of augmented reality technology to overlay specific LLSs as learners complete interactional tasks, and back-end analysis of how learners select and apply strategies in a game simulation to ensure a successful outcome.

Integrating LLS in CLIL teaching

Xuesong (Andy) Gao

LLS research has traditionally focused on learners' strategy use in language classrooms. However, these days the learning of language is called for in classrooms where content and language are integrated. One such context is when the content is taught through the medium of TARGET LANGUAGES such as English. Especially in Europe, CLIL has been promoted as an educational approach to achieve the dual goals of language and subject content learning (Coyle, 2007). Likewise, governments in East Asia (e.g., Vietnam and Taiwan) have been enthusiastically promoting CLIL teaching in recent
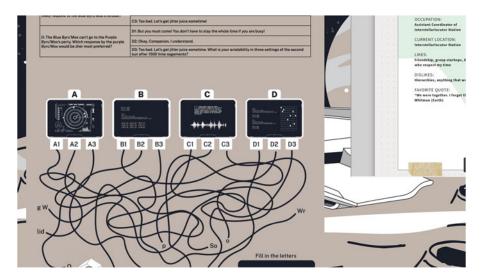
Figure 2. Example from *Escape from Byru'moxia*

years as well. In these situations, it has become imperative for LLS researchers to consider the implications that this CLIL movement has for LLS research and explore ways to integrate strategy instruction into CLIL teaching.

LLS has been conceptualized as learners' "actions chosen (either deliberately or automatically) for the purpose of learning or regulating the learning of language" (Griffiths & Cansiz, 2015, p. 476). The relevant discussion in LLS research has largely focused on the critical question of what constitute STRATEGIES in LLS. The adoption of CLIL as an educational approach invites LLS researchers to consider how strategies relate to LANGUAGE in CLIL classrooms as successful implementation of CLIL requires students to use and develop "language OF learning, FOR learning, and THROUGH learning" (Coyle, 2007, p. 552). Such conceptualization of language in CLIL classrooms not only means that students need to learn the language needed for learning subject content and participation in CLIL activities, but it also highlights the emergence of new language use when students and teachers co-construct subject content knowledge. Recent studies on young CLIL learners report that CLIL learners used more LLSs, and their strategy use contributes significantly to their language learning gains (Martínez-Adrián et al., 2019; Ruiz De Zarobe & Zenotz, 2018). These studies tend to focus on young CLIL learners' strategy use in learning and developing the "language OF learning, FOR learning" (Coyle, 2007, p. 552). In contrast, research on adolescent CLIL learners who develop subject content knowledge identified no significant difference in LLS use in comparison with non-CLIL students (Jaekel, 2020). These contradictory findings suggest that it is necessary to reconceptualize LLS in relation to CLIL learners' needs in developing language and new knowledge "THROUGH learning" (Coyle, 2007, p. 552).

CLIL teachers also need to prepare students with relevant language knowledge and skills for learning subject content and for communicating about their learning in the TL. CLIL students not only need to develop subject-specific vocabulary and grammar knowledge, but should also develop self-regulated strategy use for learning the language and subject content simultaneously within and outside the classroom. Research has noted the fact that even though language and literacy are foundational for the learning and teaching of subject content, subject teachers do not view it as their mandate to deal with language issues (Hu & Gao, 2021). For one thing, subject teachers may avoid engaging with language issues because they do not think that their background as subject teachers facilitates their serving as language teachers as well in CLIL classrooms. For this reason, it is essential for LLS researchers to identify and develop a repertoire of common strategies that can be used to promote the learning of

both subject content and language so that subject teachers feel more confident in integrating LLS input in CLIL teaching.

Unfortunately, LLS researchers have yet to engage collectively in efforts aimed at developing a set of common strategies for CLIL teaching – to be shared by language teachers and content teachers alike. Research also needs to be done to identify how CLIL teachers integrate LLS input effectively into their teaching.

Notes

[1] When language strategy experts refer to LLS, they usually are not making a distinction between LANGUAGE LEARNING and LANGUAGE USE strategies. Nonetheless, there are some advantages to using the more neutral LANGUAGE LEARNER STRATEGIES in order to underscore the fact that there may be a difference between strategies used for learning language material and those for performing in that language the material that has been learned to whatever degree. The rationale for this distinction is that much of what is "learned" through the strategy of rote learning, for example – especially in order to get good grades on some course exam – may not actually be accessible to learners when they need to perform in that language, whether it be in the receptive skills of listening or reading, or in the productive skills of speaking or writing.

[2] The inspiration for the meta-reflections came from a half-day meeting held on 18 October 2015, just after the 1st *Situating Strategy Use* conference at the Alpen-Adria Universität in Klagenfurt, Austria. At this brief meeting, LLS experts were tasked to provide a synopsis of issues relating to SI in one of their areas of expertise, leading to the first book of its kind devoted to SI both in the language classroom and beyond (Chamot & Harris, 2019). The success of that academic encounter prompted the organization of a virtual symposium for the 4th *Situating Strategy Use* conference held last November 2022 on a hybrid basis at the University of Victoria, Wellington, New Zealand. In putting together this Review of Recent Scholarship, 12 experts who had provided video-recorded input for that symposium were requested to produce a written set of reflections.

[3] Whereas SI was initially referred to as STRATEGIES-BASED INSTRUCTION (SSBI), "based" was dropped in order to include language instruction involving everything from minimal SI to a more extensive form of it.

[4] The author of this reflection is grateful to Pamela Gunning for lively discussions and in clarifying what this might mean in practice.

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