

Research Issue

On Questionnaire Use in Language Learning Strategies Research

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Changing Definitions of Language Learning Strategies

Language learning (learner) strategy research was born in 1975 (Rubin, 1975; Stern, 1975) and peaked in the 1990s (Cohen, 1998, 2011; Macaro, 2001; O'Malley & Chamot, 1990; Oxford, 1990, 2017). Thus, a large number of research endeavors had been undertaken in this field by the time it marked its 40th anniversary in 2015 (Cohen & Griffiths, 2015) and, as such, strategy research has been firmly established as a field in applied linguistics (Cohen & Macaro, 2007; Oxford, 2011). Beginning with studies on the "Good Language Learner" (GLL), strategy research expanded its scope and shifted perspectives with the realization that GLL profiling was too prescriptive to reflect individual differences and that "there are a variety of ways for language learners to succeed" (Cohen & Weaver, 2005, p. 39). Language learning strategies (hereafter LLS) have been recognized as one area of second language acquisition (SLA) research (e.g., Loewen & Reinders, 2011). This is because LLS research, which focuses on learners rather than on mechanisms of language acquisition, is deemed promising in its potential to fill the gap in terms of "how learners actually learn," which has not been fully elucidated in instructed SLA research (Dörnyei, 2005).

Definitions of LLS have transformed as the research field has advanced (e.g., Grenfell & Macaro, 2007; Oxford, 2017). An early definition most widely cited is by Oxford (1990): "learning strategies are specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferable to new situations" (p. 8). Based on a cognitive framework, O'Malley and Chamot (1990) proposed the following alternative definition: "the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information" (p. 1). After extensive LLS research throughout the 1990s, a number of researchers began to call for the need to investigate specific strategies as applied to specific tasks (e.g., Cohen & Macaro, 2007; Gu, 2003b; Macaro, 2001). These calls for task-specific strategies originated in the concern that the term "language learning strategies" was too broad a concept (Tseng, Dörnyei, & Schmitt, 2006). In response, as Gu (2003b) has suggested, the updated definition involved the need to examine learning strategies in terms of how learners' individual differences (person factors), the task, and the learning context are interrelated. Reporting individual differences and their effects on strategy use, Ehrman, Leaver, and Oxford (2003, p. 315) summarized as follows:

A given learning strategy is neither good nor bad; it is essentially neutral until it is considered in context. A strategy is useful under these conditions: (a) the strategy relates well to the L2 task at hand,

- (b) the strategy fits the particular student’s learning style preferences to one degree or another, and (c) the student employs the strategy effectively and links it with other relevant strategies.

Over the years, definitions of LLS have been described as “elusive” or “fuzzy” (Griffiths & Oxford, 2014) and thus have been the target of criticism. This criticism led Dörnyei (2005, p. 163) to doubt the very existence of LLS as a psychological construct and as a workaround for this purported theoretical fuzziness, Dörnyei and his colleagues (Dörnyei, 2005; Tseng, Dörnyei, & Schmitt, 2006) imported the concept of “self-regulation” from the field of educational psychology. Self-regulation is a process in which people organize and manage their own learning, including control over their thoughts, emotions, behaviors, and the learning environment (Kormos & Csizér, 2014). Dörnyei’s claim that self-regulation could be applied to the SLA context was of course not without its counter-arguments (Gao, 2007; Ranalli, 2012; Rose, 2012), but self-regulation, a broader notion that encompasses LLS, has nonetheless infiltrated LLS literature (e.g., Nguyen & Gu, 2013; Tseng & Schmitt, 2008; Ziegler, 2014).

Coincident with the inclusion of self-regulation as a concept in LLS research, strategy researchers have elaborately redefined LLS (e.g., Macaro, 2006; Gu, 2012), with Griffiths (2008), for example, defining LLS as “activities consciously chosen by learners for the purpose of regulating their own language learning” (p. 87). However, the most recent and inclusive definition by Oxford (2011) is as follows: “L2 learning strategies are complex, dynamic thoughts and actions, selected and used by learners with some degree of consciousness in specific contexts in order to regulate multiple aspects of themselves (such as cognitive, emotional, and social) for the purpose of (a) accomplishing language tasks; (b) improving language performance or use; and/or (c) enhancing long-term proficiency” (p. 48). As can be observed, the concept of self-regulation has been increasingly adopted in these refined definitions.

Figure 1 shows a simplified model of LLS and its related constructs as discussed in the past decade (see also Oxford, 2017 for a more comprehensive model), ever since Dörnyei (2005) introduced self-regulation and suggested using it as a replacement for the then research scope of LLS. The controversy surrounding the definition of LLS stems from its very nature, described by Dörnyei and Ryan (2015) as follows: “the usefulness of specific learning strategies is not absolute but depends on how they suit the individual agent who employs them: A certain learning technique/procedure can be ‘strategic’ for one learner and ‘non-strategic’ for another” (p. 164). In other words, the tenet of LLS holds that the strategies used by each learner can and will differ from person to person: in other words, “Many learners, many strategies” (as in the proverb, “Many men, many minds”). This casts doubt on the legitimacy of frequency-based LLS questionnaires, which are constructed on the premise that the more frequently respondents use certain strategies, the more successful they are as language learners, a notion that has been echoed in the LLS literature. For instance, Macaro (2006) argues that frequency of strategy use is not indicative of successful learning while orchestration of strategies is. Thus, Dörnyei (2005) sought to shift the focus from LLS as an ever-changing state, or the “raw material of learner agency” (Ranalli, 2012, p. 373), to self-regulatory capacity as an underlying, stable trait.

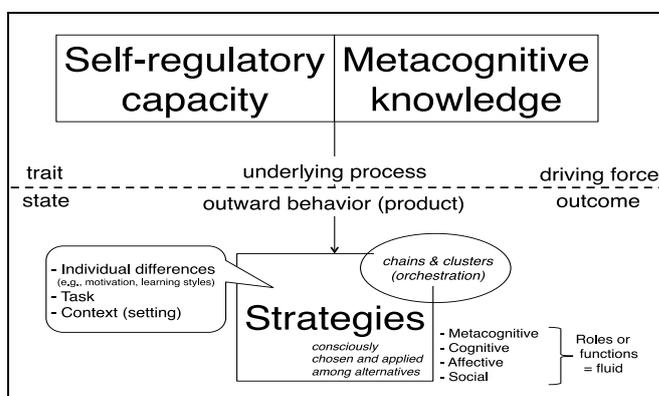


Figure 1. Constructs and characteristics of language learning strategies.

However, as Gao (2007) pointed out, the concept of self-regulation has a great deal in common with metacognition. Metacognition can be further divided into metacognitive knowledge and metacognitive strategies (Wenden, 1998), “with metacognitive knowledge representing the trait of learners’ metacognition and their deployment of metacognitive strategies in particular settings representing its state” (Gao, 2007, p. 617). In Figure 1, I therefore included metacognitive knowledge (above) and metacognitive strategies (below) as constructs of LLS. Dörnyei and Ryan (2015), when referring to the work of Wenden (2001), inadvertently acknowledged, with reference to learner beliefs, that metacognitive knowledge is linked “to the ability to self-regulate one’s learning” (p. 187). Thus, the underlying trait or process of self-regulatory capacity is, in effect, very similar to metacognitive knowledge.

While self-regulatory capacity or metacognitive knowledge examines “the initial driving forces” (Rose, 2012, p. 95) or underlying processes (traits) of learning, strategies comprise the outcome or outward strategic behavior (Gao, 2007), measuring both “the beginning and end product of the same event” (Rose, 2012, p. 95). Learners consciously select and orchestrate strategies from their repertoires, depending on their individual difference factors, the task, and context. Orchestration of strategies is also known as strategy chains (using strategies in a sequence) and strategy clusters (using strategies simultaneously) (Cohen & Weaver, 2005).

The taxonomies of LLS can be divided by function into metacognitive strategies, cognitive strategies, affective strategies, and social strategies (Dörnyei, 2005). It should be noted, however, that Oxford (1990, 2017) and Cohen (1998, 2011) have over the years emphasized that strategies take on roles or functions according to the situation. Consequently, it is a misnomer to refer to a strategy as exclusively metacognitive, when in reality its function can shift from moment to moment. In other words, at one moment the function is metacognitive, but then it is cognitive, but then it may shift back to metacognitive, then to social, and especially involve affective moments as well. Thus, roles or functions of strategies are “fluid” (Oxford, 2017).

Dörnyei’s proposal (2005) that LLS simply does not exist as a psychological construct provoked many arguments and discussions in the LLS field, as a result of which the conceptual lens of LLS is now much clearer than previously, as summarized in Figure 1. While it was once necessary to pose the question “Do Learning Strategies Exist?” (Dörnyei, 2005, p. 163), Dörnyei and Ryan (2015) have dropped the question and simply state, “the current era reestablishes the importance of also studying the actual manifestations of strategic intent, that is, the learning strategies proper” (p. 168). Because the primary interest of LLS researchers and practitioners (and learners alike) is specific learning behaviors, they are unlikely to shift their focus from strategies to self-regulatory capacity (Ranalli, 2012). Still, a consensus on what exactly these strategies comprise has yet to be reached (Cohen & Macaro, 2007; Dörnyei & Ryan, 2015) because strategies are highly contextualized products that differ from person to person. Strategies are thus, by their very nature, theoretically multidimensional constructs (Griffiths & Oxford, 2014). As such, Cohen and Macaro (2007) argue that “In the absence of a consensus, researchers should state clearly the theoretical framework on which they are basing their research” (p. 283).

On the one hand, self-regulatory capacity and metacognitive knowledge (Figure 1) can be measured with a reliable and valid questionnaire because the underlying trait is cumulative and psychometrically justifiable (i.e., the more, the better). On the other hand, however, strategies (Figure 1), with their ever-changing, contextually situated, personalized natures, can be better depicted with such qualitative research methods as narrative inquiry, phenomenology, grounded theory, ethnography, and case study (see Oxford, 2017, for details). Considering the sheer diversity of learner agency and contextual factors, which are the sources of strategic behaviors, it is no wonder that strategy researchers have shifted their choice of strategy assessment from quantitative to more qualitative, or a mixture of both. In the LLS literature, intriguing findings have often been reported by examining strategy use through interactions with the individual factors in a particular sociocultural context (Gao, 2010; Gu, 2003a). In fact, this seems to be the direction in which strategy researchers are now heading (Dörnyei & Ryan, 2015), as suggested in the roadmap of the twenty-first century landscape of LLS research (Griffiths & Oxford, 2014).

That being the case, should using questionnaires to assess the strategies appropriate in LLS research

and practice be abandoned altogether? The answer is: it depends on the purpose for which they are being used. Although, as shown in Figure 1 above, strategy use is not a static trait but a complex, dynamic state, the essence of which cannot possibly be captured by a questionnaire alone, questionnaires may still prove informative for observing the overall picture of learners' strategy use in a particular context (e.g., Gu, 2005) for research and pedagogical purposes. Questionnaires can also be used to complement a qualitative inquiry (e.g., Takeuchi, Griffiths, & Coyle, 2007). In strategy instruction, an initial repertoire of strategies may be investigated with a questionnaire in order to establish the baseline for comparison after instruction (e.g., Mizumoto & Takeuchi, 2009). In another case, a list of canonical strategies for specific tasks and language skills in the form of a questionnaire (e.g., Cohen, Oxford, & Chi, 2002) may be administered to students to raise their awareness of strategies.

Questionnaire Use in Strategy Research

It is noteworthy that despite the general view that scholarly interest in LLS, which was once referred to as the "Robin Hood in SLA" (Gu, 1996), has been "waning" (Dörnyei & Ryan, 2015) or "at an all-time low" (Gu, 2012) in recent years, an applied linguistics database search by Mizumoto and Takeuchi (in press) shows that, on the contrary, the number of publications examining LLS has been on the rise. LLS research is obviously alive and kicking, as their databases included articles not only in applied linguistics but also in other fields such as educational psychology.

In parallel with this increase in LLS publications, questionnaire use in strategy research is also on the increase (Mizumoto & Takeuchi, in press). This indicates that the development of the LLS research field has long been built on the use of questionnaires. Although mixed methods research, which combines quantitative and qualitative approaches, has been increasingly employed in recent years (Oxford, 2011), as Griffiths and Oxford (2014) put it, "Over the years, probably the most common method used in strategy research has been the Likert-scale type questionnaire" (p. 4). Part of the reason why questionnaire use is so prevalent in LLS research is due to the user-friendliness of the *Strategy Inventory for Language Learning* (SILL) (Oxford 1990), which has undoubtedly pushed forward the field of LLS research. At the same time, over-dependence on questionnaires has been problematized in LLS research because a questionnaire is just one of the possible alternatives in data collection methods, considering the nature of LLS (Gao, 2004).

Just as language tests and their constructs reflect the current views and theories of second or foreign language learning and SLA, the refined definitions of LLS in the post-SILL era are reflected in the constructs of LLS questionnaires, with much emphasis placed on specific skill areas, situations, and contexts or metacognitive aspects (e.g., Vandergrift, Goh, Mareschal, & Tafaghodtari, 2006). Research reporting the development of an LLS questionnaire has now been expanded to include the notion of self-regulation (Tseng, Dörnyei, & Schmitt, 2006).

In Likert scales, respondents are asked to mark their attitudes toward certain issues (i.e., strategy use) that are expressed in the given items. While several variations on Likert scales exist, the assumption is that the options expressed along a continuum from least to most (in a Likert scale, for example, "strongly disagree" to "strongly agree") indicate the intensity or tendency of the respondents' characteristics that are being measured.

There are two types of measurement scales when we develop or use a "questionnaire": (a) single-item scales and (b) multi-item scales. With a single-item scale, only one item supposedly taps into the target construct. On the other hand, a multi-item scale measures each construct on the basis of more than two items. The scale score, which can be gained from averaging (or adding up) item scores for similar questions, represents an underlying trait in the same category or subscale. Because a multi-item scale is designed to be a psychometric instrument, a reliability coefficient such as Cronbach's alpha is calculated for each subscale. If a single-item scale is used to measure one construct, a learner's response to a specific item may be unreliable due to measurement error. As measurement error (e.g., resulting from mood,

fatigue, or wording of the items) is inevitable in any measurement instrument, for more accurate measurement, a psychometric “scale” consisting of more than three items is required, rather than just one (Mizumoto, Chujo, & Yokota, 2015). However, in a questionnaire study, researchers and practitioners often fail to deal with measurement error. As Dörnyei and Taguchi (2010, p. 23) argue, “the notion of multi-item scales is the central component in scientific questionnaire design, yet this concept is surprisingly little known in the L2 profession.” They also note that “because of the fallibility of single items, there is a general consensus among survey specialists that more than one item is needed to address each identified content area” (p. 25). Furthermore, it has been demonstrated that “multi-item scales clearly outperform single items in terms of predictive validity” (Diamantopoulos, Sarstedt, Fuchs, Wilczynski, & Kaiser, 2012).

Despite its superiority as a measurement instrument, a multi-item scale (questionnaire) can be problematic when it is used to measure a strategic “behavior,” because frequency of strategy use alone is not a sign of successful learning (i.e., how often), but is rather an orchestration of a contextualized and personalized set of strategies (i.e., how well). Note that this is why verbal report is valuable in looking into the actual use of strategies, especially introspective verbal report. For this reason, Dörnyei (2005, p. 183) suggests using Cohen, Oxford, and Chi’s (2002) *Language Strategy Use Survey* for pedagogical and practical purposes. *Language Strategy Use Survey* is a single-item scale invented as a classroom tool with no intention of summing items under each subscale (category) and no functions such as metacognitive, cognitive, affective, or social strategies are assigned. As a result, it provides a list of strategic behaviors under the six categories of listening, speaking, reading, writing, vocabulary learning, and translation skills, with each item measuring only one specific behavior.

Considering the above, is it then inappropriate and impossible to create a questionnaire on strategy use using multi-item scales? The answer is no. The key to so doing relates to the scope and range of the construct to be measured with a subscale in the questionnaire. For example, Gu and Johnson (1996) created the *Vocabulary Learning Questionnaire*, composed of multi-item scales, on the use of vocabulary learning strategies. The items below are included in the subscale of “Using Word-Structure,” which comprises three items to be averaged as an indicator of word structure use in vocabulary learning.

- (1) I analyze words in terms of prefixes, stems, and suffixes.
- (2) I deliberately study word-formation rules in order to remember more words.
- (3) I memorize the commonly used stems and prefixes.

Obviously, summing or averaging the responses to these items as a means of investigating the use of word structure in vocabulary learning makes sense because the scope and range to be measured with these items are very limited, and the task is straightforward (i.e., remembering vocabulary). In this case, the multi-item scale is thus tenable and cumulative. In contrast, if the construct to be measured with these items were “cognitive strategies,” that would be too wide a concept to cover, and could not possibly be assessed using these three items that are so limited in range and scope. As a result, summing or averaging the responses of these items in this specific subscale does not reflect the use of strategy as a cumulative scale (see Dörnyei & Ryan, 2015, p. 158, for a detailed discussion). It should be noted that the strategy “Using Word-Structure” in Gu and Johnson’s (1996) study falls under the category of “encoding strategies,” which is further placed under a higher dimension of “cognitive strategies.” By using a hierarchical structure in their questionnaire (i.e., dimensions, categories, and strategies), which includes 91 items in total, Gu and Johnson successfully operationalized the constructs of vocabulary learning strategies with multi-scale items by focusing on a certain aspect in a target skill area.

Another workaround for using a multi-scale questionnaire to measure strategic behaviors is to shift the focus of the descriptors from frequency (i.e., how often) to mastery (i.e., how well). Tseng and Schmitt (2008) invented this method in developing a questionnaire that measured mastery of vocabulary learning strategies, as part of a model for motivated vocabulary learning. They referred to a list of vocabulary learning strategies in two previous studies (Gu & Johnson, 1996; Schmitt, 1997), and extracted six

strategies (linking, comprehending, highlighting, imaging, social, and hands-on) through exploratory factor analysis. These six subscales are multi-item scales, each of which functions as an indicator for a higher-order factor of Mastery of Vocabulary Learning Tactics. Aware of the problems associated with using a frequency-based scale in measuring strategic behaviors (Tseng & Schmitt, 2008, p. 365), they used a 5-point Likert scale with scale descriptors ranging from 1: “never used” indicating no mastery at all to 5: “yes, and with lots of mastery.” By focusing on the quality dimension of strategy use with much emphasis placed on mastery rather than frequency of strategy use, Tseng and Schmitt (2008) ingeniously demonstrated that it remains possible to construct a questionnaire on strategic behaviors for a specific task using multi-item scales. On a related note, in addition to their role as a more precise measurement tool, multi-item scales may be able to benefit learners in strategy instruction by showing more exemplary strategies to learners (i.e., multi-item scales always have several items to measure one construct).

Conclusion

The brief overview of the history of LLS research suggested the importance of distinguishing trait aspects of strategies from state aspects of it. So-called strategies, with their ever-changing, contextually situated, personalized natures, are state-like, and qualitative approaches such as narrative inquiry and case study are suitable for examining them. Self-regulatory capacity or metacognitive knowledge, on the other hand, is considered to be trait-like, and thus questionnaires can more likely be used for investigating it.

Although these distinctions are important, questionnaires can still be used for measuring state-like specific behaviors (e.g., Gu & Johnson, 1996; Tseng & Schmitt, 2008). It is envisioned that the two types of questionnaire, that is, single-item and multi-item scales, will continue to be used in LLS research and practice for different purposes: (a) single-item scales for more pedagogical uses, as a classroom tool, such as for awareness-raising in strategy instruction, and (b) multi-item scales with more measurement rigor in considering measurement error for use as a research instrument. Researchers and practitioners alike should be aware of these differences when utilizing questionnaires because they will likely continue to be used as strategy assessment tools that are highly accessible and appealing to people interested in the ingenious and situated strategic behaviors that reflect individual differences at the dawn of the new era of LLS research and practice. Also, it should be kept in mind that whether it is a single item or a multi-item questionnaire, the measure is only as good as the individual items that are included in it.

Quantitative methods in L2 research have recently been at the center of a statistical reform movement (Plonsky, 2015), in which appropriate statistical analyses and better reporting practices are encouraged in order to improve the overall quality of research papers in the field, especially to promote replication and reproducibility (see Larson-Hall & Plonsky, 2015; Norris, Plonsky, Ross, & Schoonen, 2015, for recommended reporting practices). LLS researchers should follow suit because the conventional analyses are here to stay and, as one of the established research fields in applied linguistics, LLS must also seek methodological rigor (See Mizumoto & Takeuchi, in press, for different types of statistical analyses used in questionnaire studies of LLS).

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