Introduction

Vocabulary learning is a daunting task. There is a massive number of single words and multiword units to be learned in any language. This is especially true for English vocabulary that is growing by the day. The latest Oxford English Dictionary contains more than 600,000 words (Oxford English Dictionary, 2017). Most people know a fraction of these words only. Goulden, Nation, and Read (1990) estimated that “the average educated native speaker has a vocabulary of around 17,000 base words” (p. 376). Native-speaker children are exposed to vocabulary in use and “pick up” most useful words as they grow up. For learners of English as a second (ESL) or foreign language (EFL), however, deciding which words are most needed, where to access these words, and how to treat the learning of each of these words are very much strategic tasks. Although not specifically addressing vocabulary learning strategies (VLS) in the learning of any specific language, this article will use EFL/ESL vocabulary learning examples.

Strategic vocabulary learning is an intentional, dynamic and iterative process for the effective, efficient, and even enjoyable learning of vocabulary. It is normally triggered by a difficult or new vocabulary learning task. We first notice an item and then focus our attention on it. Next, we do a quick analysis of the learning task, of ourselves as learners and of the learning environment, and move on to form an attack plan. The plan is then executed, and we monitor its effectiveness along the way and evaluate its success in achieving the learning goal. Very often this evaluation will necessitate a re-analysis of the task and reconfiguration of strategies, turning it into a spiraling and complex problem-solving process.

To be specific, learners of vocabulary are faced with an array of questions. Strategic decisions in answering these questions will lead to various degrees of success in learning. Some of these questions include, among others:

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<td>• Which words do I need to learn?</td>
<td>Picking and choosing</td>
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Strategic learning will help direct the learner to the most needed and crucially important vocabulary, as opposed to focusing on any words the student encounters, or studying words in alphabetical order in dictionaries and some vocabulary lists. It will also help the learner decide when and where to find and engage the needed vocabulary. Strategic vocabulary learning also means that the learner distinguishes among different types of vocabulary and allocates appropriate strategies for each type. Strategic learners monitor the degree of usefulness of the strategies they choose to use and flexibly change and coordinate the use of clusters of strategies until the task is completed to their satisfaction.

Every time a new, important, or difficult task is identified, strategic learners go through the choice, use, and evaluation of strategic learning cycles. In other words, the nature of the learning task is crucially important in determining what strategies are the most appropriate and most effective. In addition, what strategies are triggered is also dependent on who the learner is and what strategy repertoire is available. The need and effectiveness of a strategy are also influenced by contextual affordances and constraints.

Critical Issues and Topics

Strategies for Vocabulary Learning Tasks

The learning, teaching, assessment, and research of any topic are as good as our understanding of the construct in question. In other words, our conceptions of the target construct and the task involved in learning, teaching, assessing, and in researching the construct are crucially important. They determine what we pay attention to, how we do it, and also what we get at the end. As the saying goes, we reap what we sow. What is it that we sow in the learning of vocabulary then?

Vocabulary as a learning target and/or learning outcome can be seen in different ways; and each perspective of the vocabulary learning task will demand the use of different strategies. For example, if learners realize that some words are more frequently used than others, they would direct their strategic attention to the most frequent words, and those that fall within the appropriate frequency bands at their own proficiency level. When learners become aware that vocabulary knowledge can be viewed from different dimensions such as breadth, depth, automaticity, and appropriateness, they would understand the need for different strategies to tackle each dimension. Likewise, if learners aim for the receptive rather than productive knowledge of a word, they should know that these two types of vocabulary knowledge are best learned in different ways.
Strategies for Vocabulary Breadth, Depth, Automaticity, and Appropriateness

For learners, teachers, and researchers alike, vocabulary was traditionally understood as how many words one knows (size or breadth). We realized later that for each word we know, there are different shades and richness of meaning and various degrees of relatedness to other words (depth) (Richards, 1976). Only starting from the mid-1990s did researchers begin to see the importance of a “third dimension” (Meara, 1996) of vocabulary knowledge, i.e., automaticity of use. In addition, I would single out a fourth dimension of vocabulary knowledge as needing attention, appropriateness in use, because real competency in vocabulary would entail not only knowing enough items with a rich knowledge of them, and being able to use these items automatically when needed, but it also entails the ability to know when to use what with whom in what context. If the first two dimensions (size and depth) describe vocabulary as “knowledge”, the next two dimensions (automaticity and appropriateness) describe vocabulary as “skill” and “use”.

By far, the lion’s share of attention on VLS has been on the expansion of vocabulary size. The widespread availability of vocabulary size tests, e.g., the Vocabulary Levels Test (VLT) (Nation, 1990; Schmitt, Schmitt, & Clapham, 2001; Webb, Sasao, & Ballance, 2017), Vocabulary Size Test (VST) (Coxhead, Nation, & Sim, 2015; Nation & Beglar, 2007), and the Yes/No Test (Meara & Buxton, 1987) has made it practical to observe the effects of VLS on vocabulary size (e.g., Gu & Johnson, 1996; Kojic-Sabo & Lightbown, 1999). Most studies on this research question take either a survey approach or an experimental approach. Survey studies normally make use of a questionnaire that covers a range of VLS and relate these strategies to a vocabulary size measure. With only very few strategies (e.g., visual repetition) that are negatively related to vocabulary size, most other strategies from initial handling of new words (e.g., guessing, dictionary use) to reinforcement (rehearsal, encoding) and productive use (activation) have been found to correlate positively to vocabulary size. The highest correlations in Gu and Johnson were 0.35 (self-initiation) and 0.31 (activation); while Kojic-Sabo and Lightbown obtained higher correlations (0.36 for review, 0.47 for dictionary use, and 0.61 for independence). In general, like in most other studies on language learning strategies, quantitative patterns reveal that the larger repertoire of strategies learners use, and the more often these strategies are used, the larger the vocabulary size.

In order to obtain a cause and effect relationship between VLS and vocabulary size, a number of studies have been conducted to train learners with a combination of vocabulary strategies. Mizumoto and Takeuchi (2009) examined the effectiveness of strategy instruction among a group of EFL learners at a Japanese university. A range of metacognitive and cognitive strategies for vocabulary learning were taught explicitly for a period of ten weeks. Their results showed that “strategy training was effective for both changing the repertoire of strategies used and improving their frequency of use” (p. 425). The study also showed that initial low strategy users benefited the most from the training, and that the learners were picking and choosing rather than taking in all strategies being trained. Some studies focused on the instruction of metacognitive strategies (Rasekh & Ranjbary, 2003), and some on specific cognitive strategies such as memory strategies (Atay & Ozbulgan, 2007) and guessing in context (Craigo, Ehri, & Hart, 2017). All strategy instruction studies showed effectiveness in improving the retention of vocabulary and in increasing the vocabulary size of the learners involved.

Strategies aiming directly at the learning of vocabulary depth have been studied. However, compared to those for vocabulary size, research on vocabulary depth strategies has
barely scratched the surface. This is partly due to the relatively late interest in depth and partly due to the difficulty in measuring vocabulary depth precisely. For example, a widely used test of vocabulary depth is the Word Associates Test (WAT) (Read, 1993); and it doesn’t cover many areas of depth (Read, 2000). Another known test that covers depth is the Vocabulary Knowledge Scale (Paribakht & Wesche, 1993; Wesche & Paribakht, 1996). But as a research tool, it lacks the focus and precision needed for research purposes (Bruton, 2009). Despite these difficulties, research and pedagogical efforts have been directly aimed at learning strategies for vocabulary depth in recent years. Zhang and Lu (2015) used Schmitt’s (1997) questionnaire to elicit VLS, and asked the participants to complete two vocabulary breadth tests, i.e., Schmitt et al.’s (2001) version of the VLT for meaning recognition and a meaning recall test based on the same words in the VLT, plus Read’s (2000) WAT as a depth test. Structural Equation Modeling indicated that strategies for learning the form of words and association strategies benefited both vocabulary breadth and depth. However, word list strategies negatively predicted both breadth and depth measures. Ranalli (2013a, 2013b) designed an innovative strategy instruction package for personalized training of dictionary strategies online. The online platform also included just-in-time information for “Deep Vocabulary Knowledge”. Error identification and error correction tasks were performed as pretest and posttests. The results indicated that the online strategy instruction package was effective in improving both dictionary strategies and error identification and correction.

Practically no research can be found investigating how learners aim at improving the automaticity and appropriateness of their vocabulary. While the “skill” and “use” dimensions of vocabulary might not surface in the learner’s awareness to warrant deliberate strategic learning, at least not as often as the breadth and depth “knowledge” dimensions, the lack of research on the strategic learning of these dimensions reveals researchers’ lack of awareness as well.

**Frequency Bands and Learning Strategies**

Not all words are equally used. In fact, some words are used so often that they appear in virtually all texts and contexts; while some other words are rarely encountered, if at all. Nation (2001) distinguished four types of vocabulary: high-frequency vocabulary, academic vocabulary, technical vocabulary, and low-frequency vocabulary (see also chapters by Liu and Lei, Coxhead, Vilkaite-Lozdienė and Schmitt in this volume). The first 2,000 most frequent word families account for about 85% of any text. Clearly these words are the most important words to be learned as early as possible, using whatever strategic resources. The most frequent words represent the core meaning system in any language, without which a functional working language, no matter how rudimentary, will be impossible to establish. Direct, intentional learning of form-meaning pairs making use of word cards or smartphone apps should be very efficient in the initial learning of these words. The nature of the high frequency category normally ensures multiple, context-based further encounters in natural language acquisition contexts. However, in input-poor environments where the classroom and the textbook constitute the major forms of input, deliberately looking for and adding opportunities to encounter these words would also be needed for the incidental acquisition of depth, automaticity, and contextual appropriateness.

Academic words are words often used across a range of academic disciplines. Coxhead’s (2000) Academic Word List (AWL) contains only 570 of these words; and yet this small group of words constitutes about 8% to 10% of academic texts. Learners aiming to study beyond the secondary school level will find this list strategically useful. Like the high
frequency list, it is highly cost-effective to allocate attentional resources to the learning of academic vocabulary. Again, direct and list learning would be a useful strategy for initial learning, followed by both deliberate and more natural exposures to these words in academic reading and listening exercises.

Technical vocabulary refers to the words closely related to a specific technical topic area such as chemistry, mathematics, engineering, or education. There are about 2,000 words in this category under each of these areas. These words cover up to 30% of technical texts depending on different subjects. They are a must for students of a particular field, and can be ignored by other language learners. Learners of technical words are normally learning the subject matter at the same time, and therefore are already functional users of the language. As such, direct list learning would be enough to quickly add the new words (mostly nouns and verbs) to their existing system to form the conceptual disciplinary background for further learning.

The low-frequency group, which broadly includes all remaining words, make up only about 5% of academic texts. If we remove mid-frequency vocabulary (the 4th to 9th 1,000 frequency bands) (Schmitt & Schmitt, 2014), the low-frequency group’s coverage of texts would be so low that they become dispensable. Learners would not be making the best use of their time if considerable attention is paid to learn low-frequency words. The overwhelming majority of these words, if encountered in text, would be easily guessable through vocabulary guessing strategies (Gu, 2015). The most appropriate strategies for learning these words would be incidental learning, i.e., deliberately leaving the acquisition of these words to potential natural encounters, with the hope of picking them up with or without even the conscious awareness of the learner when enough repetitions occur.

It should be noted that no empirical research can be found as to what strategies learners naturally use for the learning of each type of vocabulary illustrated in this section. This lack of research again reflects the VLS researchers’ lack of awareness of the importance of analyzing learning goals. Of course, a simple awareness of the statistical distribution of vocabulary by learners and teachers should not only trigger differentiated strategic treatment of vocabulary learning, but also empower learners to selectively allocate their learning resources for the most relevant kinds of vocabulary they need.

Strategies for Receptive and Productive Vocabulary

Vocabulary knowledge can be seen as either receptive (passive) or productive (active). Receptive knowledge represents the ability to recognize the form, meaning, and use of a vocabulary item, whereas productive knowledge enables the learner to use the item in the right form, meaning, and use (Nation, 2001). In natural language acquisition situations, most words are learned receptively through extensive exposure. Only a small proportion of words become productive. In other words, most scholars believe that there is a continuum and progression from receptive to productive vocabulary, and that the receptive vocabulary of any learner would be much larger than his or her productive vocabulary (Laufer & Paribakht, 1998). For example, the productive/receptive ratio for a group of 10th grader Israeli high school students was 89%, and that for the 11th graders was 73% (Laufer, 1998). Webb (2008) examined the vocabulary of a group of Japanese university EFL learners and played with two types of scoring methods (sensitive vs. strict). The ratio for the sensitive scoring method was 93% and that for strict scoring was 77%. The gap between productive and receptive vocabulary is relatively small at high-frequency levels, but becomes increasingly wider as the frequency level decreases (Laufer & Paribakht, 1998; Zhong & Hirsh, 2009).
Empirical research on receptive and productive vocabulary has mainly focused on vocabulary tests. Due to the possibility of a relatively finite vocabulary in English for sampling purposes, receptive vocabulary tests that require recognition and recall are relatively easy to design. The same cannot be said of productive vocabulary, although a number of fruitful attempts at measuring productive vocabulary have been explored. One such attempt is the lexical frequency profile (Laufer & Nation, 1995); another is Lex30 (Meara & Fitzpatrick, 2000).

Researchers have also explored the learning of receptive and productive vocabulary in recent years. Waring (1997) explored the learning of receptive vs. productive vocabulary by a group of Japanese learners of English, and concluded that receptive learning is easier than productive learning, in that productive learning takes more time and is retained less well than receptive learning. Waring also found that words learned receptively can become productive or vice versa. Likewise, Webb (2005) also found that both reading (receptive) and writing (productive) tasks led to multiple aspects of vocabulary knowledge, although, when time on task was not controlled, productive tasks were more effective than receptive tasks for all aspects of vocabulary knowledge measured.

Most studies on VLS have focused on receptive vocabulary. An explicit distinction is rarely made between strategies for receptive or productive vocabulary, and the overwhelming dependent variables in these studies are typically receptive vocabulary size measures. Two studies did look at the strategies related to both receptive and productive vocabulary. Fan (2000) examined the gap between the receptive and productive vocabulary knowledge among a group of first-year students at a university in Hong Kong. She also used a questionnaire to elicit VLS from these learners. Notably, Fan defined passive vocabulary in her study as the ability to recognize an item when presented, and active vocabulary as the ability to recall the target word when presented with some sort of stimuli. In this sense, the active vocabulary test in this study is similar to the “controlled production vocabulary levels test” (Laufer & Nation, 1999). Fan found that the ratio between active and passive vocabulary among different groups of students ranged from 81.3% to 53%, with an average ratio of 69.2%. Interestingly, the seven strategies found significantly correlated with the active vocabulary scores in this study were not actually aimed at the development of productive vocabulary. Gu (2010) studied the productive vocabulary of a group of Chinese ESL learners preparing for university study in Singapore, and correlated the strategies elicited in a questionnaire with measures of the lexical frequency profile in a composition. An interesting finding was the negative correlations between VLS and the proportion of the first 1,000 most frequent words found in the compositions. In other words, if the students used VLS more often, they would have used less of the first 1,000 words and more sophisticated words beyond the first 1,000 level. Beyond the 1,000-band level, the picture was much more complex.

It should be noted that despite recent interest in helping learners bridge the gap between receptive and productive vocabulary (Lee & Muncie, 2006; Yamamoto, 2011), VLS researchers have so far not paid explicit attention to the strategies for learning productive vocabulary. The most often seen taxonomies of VLS have either ignored these strategies (Schmitt, 1997) or paid cursory attention to them (Gu, 2013b). Given the importance of productive vocabulary and our knowledge of the divergent routes for the development of receptive and productive vocabularies, future research should examine how learners deal with the learning of productive vocabulary.

The way a learner perceives the vocabulary learning task not only influences what strategies will be chosen, but also whether strategic learning of vocabulary will become useful.
at all. For example, if a learner tries to increase her vocabulary size (breadth), there is a high probability that she will see the vocabulary learning task as mainly a memory task. Accordingly, her attention would probably be allocated to the addition of form-meaning pairs without due consideration for the depth of knowledge, the automaticity of use, and the appropriateness of using each word. As a consequence, the learner may be able to increase her vocabulary size successfully, but this does not mean that her language proficiency would be improved proportionally. This was borne out in Gu and Johnson (1996) where the strategies that were significantly correlated with vocabulary size did not always correlate highly with a general proficiency measure. In extreme situations, the fixated aim of “size” may even prevent the learner from succeeding in developing a functional level of competence that can be described as vocabulary in use.

Strategic Self-Regulation in Vocabulary Learning

Strategic learning of vocabulary is, by nature, a matter of human agency, and not just a matter of the learning task demanding different strategies. Learners themselves bring with them cultural and educational backgrounds that perceive certain types of strategies more favorably than others. Learners also differ along an array of individual difference factors such as motivation, personality, aptitude, and preferred learning styles. In other words, which strategies are used and how useful they become are very much not just a function of what tasks are being attended to and what strategies are needed, but also what strategies are available, preferred, and whether a learner proactively engages in the whole process at all (Gu, 2003b).

Learner factors in strategic vocabulary learning has always been a central concern. Over the years, empirical research has explored quantitative grouping of learners into types by examining their use of VLS (Ahmed, 1989; Gu & Johnson, 1996). There are also many insightful qualitative accounts of how cultural and individual difference factors combine to influence the choice, use, and effectiveness of VLS (Gu, 2003a; Parry, 1997; Sanaoui, 1995).

Ahmed (1989) used a think-aloud task supported by observations and interviews to elicit the VLS among 300 Sudanese learners of English. Cluster analysis of these strategies revealed three types of good learners and two types of underachieving learners. The good learners used more strategies more often; and were found to be clearly aware of what they could learn about new words. They chose when to ask teachers and peers for help and when to use the dictionary as a source of information. They knew the importance of learning words in context and were conscious of the relationship between new words and known words. The underachieving groups were not aware of what they could learn about new words; and did not show interest in learning new words in context. One group was characterized by a limited number of strategies. They overlooked or ignored unknown words, did not use the dictionary and did not use the L2 at all. The other group of underachievers used very few practice strategies, although some of them did take notes about the new word meanings.

Gu and Johnson’s (1996) cluster analysis also revealed five types of learners based on the VLS these learners used. One small group of highly successful learners used context-based strategies almost exclusively and were labeled “readers”. Another group of very successful learners actively used most of the strategies more often than others and were labeled “active strategy users”. A mirror image of the active strategy users was a group of learners who used only the visual repetition strategy up to a medium level; and used all other strategies much less than other learners. This group was labeled “passive strategy users”. This was a group who were probably not interested in learning, exerted minimum effort, and had much lower results in both vocabulary size and general English proficiency. Two other groups
only differed between themselves in terms of the amount of effort they spent on encoding strategies. They were both medium-level strategy users and achieved medium-level learning results. It is interesting to note that the five groups of learners had been indistinguishable in terms of their English proficiency level at university entry. The dramatic differences in vocabulary size and general proficiency a year later when the study took place could well have been due to the different configurations of their VLS.

The importance of learner factors in strategic vocabulary learning is well documented in a number of case studies. For example, the two types of good learners and their strategic learning efforts in Gu and Johnson (1996) were illustrated in detail in Gu (2003a) in terms learning style differences. Earlier, Gu (1994) also showed striking contrasts between the strategic learning efforts of a successful learner and an unsuccessful learner in learning vocabulary.

It is interesting to note that most case studies have discovered different approaches or styles in vocabulary learning, e.g., holistic vs. analytic (Parry, 1991, 1997), structured vs. unstructured (Sanaoui, 1995), or fine-brush vs. free-hand (Gu, 2003a). These case studies were not able to conclude if any approach was better than any other approach. Sanaoui (1995) indicated that the structured approach was more effective than the unstructured approach. Parry (1997) advocated for flexibility because “both approaches are necessary but that neither is appropriate at all times” (p. 67).

Another way of examining learner-related factors in strategic learning is looking at the learner’s self-regulation of motivation. Rather than focusing on the “skill” of self-regulated learning of vocabulary, this line of research has focused on the “will” side of self-regulation in vocabulary learning. Based on Kuhl’s (1987) motivation theory of “action control”, Tseng, Dörnyei, and Schmitt (2006) developed a “Self-Regulating Capacity in Vocabulary Learning” scale which included five “volition control strategies”: commitment, metacognitive, satiation, emotion, and environment control. Essentially “volition control strategies” are meta-level strategies for controlling cognition (metacognitive), motivation, and emotion in making sure that desirable goals are achieved after the goals are set (Corno & Kanfer, 1993). They can, therefore, be seen as a type of learning strategies for the management of cognitive, motivational, and emotional tasks in vocabulary learning.

Learning Context and Vocabulary Learning Strategies

Learning vocabulary in different places and environments naturally means different affordances and constraints in terms of input frequency, modality, authenticity and output demands and opportunities, among other things. When faced with new or difficult learning tasks presented by varied contexts of learning, learners normally need to adjust their learning strategies in order to maximize opportunities and increase efficiency of the learning process. Commonly observed learning context differences include English as a Foreign Language (EFL) and English as a Second Language (ESL), L1 learning vs. the learning of English Language Learners (ELL) or the learning of English as an Additional Language (EAL). With rapid globalization, migration, and international moves and transitions being a common phenomenon of today’s world, language learning strategies for study abroad and immersion or CLIL (Content and Language Integrated Learning) programs warrant serious attention. Likewise, vocabulary strategies for learning inside vs. outside classrooms, especially online learning environments, need to be studied as well.

When learners move from one learning context to another, the sudden change of input or output affordances may provide enough of an impetus to prompt the adoption of new
VLS. One typical scenario is the study abroad context, mostly a move from an EFL to an ESL learning environment. Gao (2003) interviewed 13 Chinese EFL learners’ uses of VLS after they moved from mainland China to Britain. Three major changes in strategies were reported: (1) The participants became more selective in choosing which words to focus on. In particular, attention was paid mostly to words that were related to academic and social needs. (2) Dictionaries (which had been the primary source of meaning when they were in China) became a last resort that was used only for the discovery of meaning. Contextual guessing and occasionally asking for clarification became the primary strategies for meaning-making. (3) Consolidation of newly learned words which had been done mainly through rote repetitions before their arrival in the UK were now being done mainly through authentic language use in reading and writing. Out of the ten factors identified in the interviews as having influenced the changes in VLS, four factors were grouped under “learner factors” and the other six “contextual factors”. The learner factors included changes in motivation and in beliefs about vocabulary learning, and improvement of language proficiency. For a couple of learners with prior experience of language use, they simply continued and reinforced what they used to do after they arrived in the UK. In a sense, even these “learner factors” were closely related to contextual factors. Understandably, the contextual factors included mostly affordances and needs such as input and output opportunities, academic needs, priorities, culture, and the use of technology.

The out-of-class language needs and task demands in a study abroad context were examined in Briggs’ (2015) study of 241 adult English language learners residing in the UK. Twenty-eight statements were included in a questionnaire asking about out-of-class language contact. Exploratory factor analysis identified three major types of out-of-class language activities: (1) “interactive” activities included listening to and speaking English; (2) “literate” activities involved reading and writing; and (3) “narrative” activities mainly focused on comprehending or producing the narration of experiences. Notably, only a long stay group (16–20 weeks) achieved an overall gain in vocabulary size with a large effect size.

Wang (2015) went further and described how exactly two Chinese learners of English at foundation programs in the UK selected strategies to learn vocabulary and how they combined strategies into sequences or clusters to tackle vocabulary learning tasks. Some of these tasks and strategies might be appropriate for an in-class context; and some of them were more relevant to out-of-class contexts, such as learning at home to check out the details of word meanings in a dictionary after a class encounter, or talking to a shop assistant to find out if the guessed meaning of “cleansing lotion” was correct. This way, the learning of each vocabulary item was shown to be contextualized and situated. The dynamic process of vocabulary learning was seen in motion as the strategies were selected, combined, used, and evaluated.

Another contextual dimension for vocabulary learning is the difference between first language (L1) and second language (L2). Most research so far on VLS has focused on L2 contexts, partly due to the difficult nature of L2 vocabulary learning, and partly due to the common perception that L1 vocabulary develops easily. Task demands and learning context differences constitute the major differences between vocabulary learning in L1 and L2. Learning the vocabulary of a foreign language especially at an early stage is very much part of establishing the foreign language system as a working linguistic system. In L1 vocabulary learning contexts, on the other hand, children’s vocabulary development is heavily dependent on the functioning language system that has already been established to a certain extent. It is also dependent on the widespread ease of exposure and to language use opportunities. Under such circumstances, the most natural strategies for vocabulary learning would focus
on mapping new or existing concepts to new word forms. As such, strategies for incidental vocabulary learning that make full use of the existing linguistic functions become not only possible but also desired. Strategies for intentional learning, when needed, can afford to focus on mapping meaning to form. With multiple exposure opportunities, contextual nuances and depth of meaning will be gradually added.

There might be a Matthew effect for incidental acquisition of vocabulary, i.e., higher proficiency level students with a higher level of reading/listening ability acquire more vocabulary through reading and listening than their lower level counterparts (Penno, Wilkinson, & Moore, 2002). This means that those who need strategic incidental learning most may not be equipped with the right skills to do it. Contextual guessing and word learning has been a long-standing research issue (e.g., Ames, 1966; McKeown, 1985), although strategic vocabulary learning in general has remained in the side lines of L1 vocabulary research.

The issue of Matthew effect demands more attention in L1 vocabulary learning in view of the enormous “vocabulary gap” found in early childhood development and the “achievement gap” in later schooling between children of different socioeconomic status groups (Hart & Risley, 2003). In addition to the quantity and quality of exposure to words, there has to be other intervention efforts including “purposeful, strategic conversations” with children (Wasik & Hindman, 2015; Wasik & Iannone-Campbell, 2012), strategic selection of vocabulary (Biemiller, 2005), and the instruction of VLS (Carlo, August, & Snow, 2005).

A related and equally pressing issue is the vocabulary and achievement gap between local children and a substantial number of immigrant children in schools (August, Carlo, Dressler, & Snow, 2005). Surprisingly, besides efforts on contextual guessing and other vocabulary intervention programs (Kelley, Lesaux, Kieffer, & Faller, 2010; Stahl & Fairbanks, 1986), empirical research on the strategic learning of vocabulary by ELLs or even L1 children remains nonexistent, or at best sporadic (Gu, 2013a).

Future Directions

Strategies for vocabulary learning are in widespread demand. Empirical studies on the topic abound. Nevertheless, a quick examination of research efforts reveals a surprisingly narrow focus. Most studies tend to view VLS as stable gimmicks that can be discovered and tallied, through a quick tool such as a questionnaire. Vocabulary is mostly seen as a collection of words in isolation; and frequently, vocabulary learning is measured by some sort of a vocabulary size measure that captures only the receptive recognition of form-meaning pairs.

Future research on VLS should go further than replications of strategy tally studies or reinventing the wheel by designing more questionnaires that capture the same construct (Gu, 2018b). One point to start at is the need to develop a much more sophisticated understanding of vocabulary. For example, seeing vocabulary as contextualized and dynamic competence that is situated in authentic language use requires strikingly different strategic treatment from seeing vocabulary as the recognition of form-meaning pairs, and learning as being able to recognize the same pairs in a week or two. Much more should also be done from a learner perspective to fully appreciate the skill, will, and co-construction of strategies and self- and co-regulation of vocabulary learning. Future research can also explicate the complex and dynamic nature of strategic learning. If we view VLS as moving pictures rather than static single shots, empirical studies should demand very different research methods which in turn should produce hitherto unseen insights. In addition, there should be more
contextually responsive research. Wherever a spotlight is shone upon a socio-educational issue that involves vocabulary learning as a major problem, VLS researchers should be seen there taking up the challenge. For example, further VLS studies of L1 acquisition, ELL achievement, immersion, CLIL, or EMI (English as a medium of instruction) programs are warranted. Most importantly, VLS researchers should take practical usefulness as the target of their ultimate research objective, and make sure that their findings are understandable and useful for those who need their help.

In 2003, I summarized vocabulary acquisition research into ten points and presented my hopes for future research (Gu, 2003b, pp. 17–18). Although a lot has happened since then in vocabulary studies and in language learning strategies research, an overwhelming number of these observations remains the same today. In the following section, I will briefly highlight three foci that I see as absolutely necessary and urgent for future research on strategic vocabulary learning. These are vocabulary, strategic learning, and usefulness of research findings.

Focusing on Vocabulary

Task analysis is a defining feature of strategic behavior. It is a crucial first step of strategic learning. In addition to generic strategies for vocabulary learning, future research should aim to investigate the strategies required for learning different types of multiword units, and different types and components of knowledge of single words.

Applied linguists have long realized the importance of multiword units. The first of Rod Ellis’s (2005) ten “principles of instructed language learning” highlights the need “to ensure that learners develop both a rich repertoire of formulaic expressions and a rule-based competence” (p. 210). Vocabulary experts’ attention to multiword units has also lasted for at least two decades (Schmitt, 2004). It is surprising to see that research on VLS has not caught up with the development of the vocabulary construct.

Early research on VLS did point to the importance of multiword units. For example, the two good learners in Gu (2003a) both “consciously emphasized multiword units such as phrasal verbs and idiomatic expressions” (p. 96). Ding’s (2007) successful learners also deliberately recited texts to learn collocations and sequences. Nevertheless, rarely has effort been directed to explicitly studying the strategic learning of multiword units. Studies on the teaching of multiword units are beginning to emerge. Eyckmans, Boers, and Lindstromberg (2016) compared two often suggested instruction strategies for the learning of lexical phrases, i.e., (1) contrastive analysis between L1 and L2 to check if the target L2 lexical phrase shares a similar lexical composition with its L1 counterpart; and (2) analysis of the lexical makeup of L2 phrases to draw learners’ attention to phonological patterns such as alliteration or assonance. Their findings suggested that the first strategy did not work; while the second strategy of attending to alliteration was found to be useful for retention. More effort along these lines with an explicit focus on the strategies used for learning lexical chunks is urgently needed.

Continued research is also needed on the strategic learning of single words, although more effort should be directed to the learning of productive vocabulary, and on the strategic learning of the depth, automaticity and appropriateness dimensions of vocabulary knowledge. In addition, English for Specific Purposes (ESP) and English for Academic Purposes (EAP) have become more and more important. It will be very useful to examine the strategies best suited for the learning of discipline-specific “technical vocabulary” and discipline-general “academic vocabulary”.

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**Focusing on Strategic Learning in Action**

Strategies are verbs, not nouns. When we talk about learning strategies, what we are actually referring to are strategic actions. In fact, an ideal strategy involves at least the following procedures (Gu, 2012, pp. 336–337):

- Attending selectively to learning problems and tasks
- Analyzing the task at hand, analyzing the self as learner, and analyzing the learning context
- Making decisions and choices
- Executing plans
- Monitoring progress and modifying plans
- Evaluating results
- Coordinating an orchestrating strategic behavior

Furthermore, this process happens in spiraling cycles and can be modified based on the learner’s on-the-spot judgment of its effectiveness in solving the learning problem or completing the learning task, contingent upon contextual demands at the same time.

This conception of learning strategies demands a much more situated and dynamic examination of VLS than the strategy tally approach that has been dominant. For example, when counting the presence or absence of a strategy, any of the above steps involved could go astray. Research tasks that help elicit and observe strategic learning in action will need to be explored. Some new research tools that document the complex and dynamic nature of strategy execution and growth are beginning to emerge (e.g., Dong, 2016). More effort could be directed towards uncovering the dynamics of each stage of a strategic event and determining how different configurations and coordination of the stages could influence the effectiveness of the strategy.

A related direction for future research is the study of multiple strategies in sync. This would involve looking at the simultaneous use of strategy clusters or strings. For example, metacognitive strategies can be deployed before (planning), during (monitoring), and after (evaluating) the completion of a learning task when a number of cognitive strategies can be used. This entails another complex and dynamic view of strategy choice and use, in which multiple strategies are being used consecutively, synchronously, or in a combined fashion and coordinated in sync. Wang (2015) showed how VLS were combined and coordinated for successful learning and how these changed over time before and after the learners’ arrival in the UK. Cohen and Wang (2018) illustrated how the multiple functions of a single strategy could shift from moment to moment and how learners combined multiple strategies for a vocabulary learning task. Much more effort along similar lines should be invested before we could reach another level of understanding for the choice, use, coordination, and effectiveness of multiple strategies in use.

**Focusing on Usefulness**

For learners and teachers in language classrooms, VLS must be among the hottest perennial topics. Language learning strategies as a field of research also started with the practical aim of helping learners become more effective and efficient in their language learning. Nevertheless, it is frustrating to see that very few research findings on VLS find their way into the language classroom (Gu, 2018a). Part of the disconnect between research and practice must be blamed on the research community for not being consciously aware of our consuming audience,
and therefore not making enough effort in communicating research findings to the learners and teachers in need. Despite the narrow focus of research, I have discussed in this chapter, decades of research on VLS have produced many insights into strategic vocabulary learning that deserve the cross-over from journal articles to the language classroom.

The research-to-practice pathway is, of course, a proverbial problem for educational research in general (Levin, 2004), and for the social sciences as well (Wittrock, 1991). Schneider (2014) analyzed the characteristics of “boundary-crossing scholarship” (p. 34) and summarized them into four simple characteristics: research ideas need to be visible, believable, practical, and sharable before they can “make the long leap from the ivory tower to the schoolhouse” (p. 31). Put against these criteria, it is not too hard to make VLS research findings believable. However, we do need extra effort to make our research practically useful and sharable, and to go beyond academia to reach out to learners and teachers in order to make our findings visible as well. Specifically, I believe action research that involves teachers adopting innovative ways of incorporating VLS training into their classrooms is warranted. As part of the innovation, formative assessment of VLS should be a link between language diagnosis and differentiated instruction that would help learners improve their use of VLS (Gu, 2017).

If we count Ahmed (1989) and his PhD study a year earlier as the first study exclusively focusing on VLS in second language acquisition, the topic has been explored for exactly three decades. During these last three decades, we have accomplished the task of exploring which naturally occurring VLS second language learners normally use, and determining how these strategies are related to the development of vocabulary size and general language proficiency. We have also discovered that the choice, use, and effectiveness of VLS are mediated by task, learner, and contextual factors, and that the configurations of factors and relationships are complex, dynamic, and situated. It is now high time to do less surface-level explorations and more in-depth examinations. It is also time to look beyond our own empirical studies and extend our practical help to the learners and teachers in classrooms who need to learn from our insights.

Further Reading


This is a comprehensive review of research on vocabulary learning strategies. The review is based on a tetrahedral model of language learning strategies that sees VLS being influenced by learners, tasks, and learning contexts.


This is another review of VLS research. It appears in an influential volume that reviews 30 years of research on various aspects of language learning strategies.

Related Topics

The different aspects of vocabulary knowledge, factors affecting the learning of single-word items, factors affecting the learning of multiword items, incidental vocabulary learning, deliberate vocabulary learning, approaches to learning vocabulary inside the classroom, learning words through flash cards and word cards, resources for learning single-word items, resources for learning multiword items
References


Strategies for Learning Vocabulary


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Strategies for Learning Vocabulary


