A new inventory of vocabulary learning strategy for Chinese tertiary EFL learners

Xuelian Xu*
Xi'an Jiaotong-Liverpool University, China

Wen-Cheng Hsu**
Xi'an Jiaotong-Liverpool University, China

Abstract

The past three decades have witnessed a boost of interest in vocabulary learning in EFL contexts since Meara (1980) identified it as 'a neglected aspect of language learning' (p. 221). A mushrooming amount of literature has emerged in various aspects of vocabulary and its acquisition (e.g., Carter, 1998; Coady & Huckin, 1997; Manyak, 2010; Meara, 1995, 2005; Nation, 1990, 2006; Read, 2000; Schmitt, 2000; Schmitt & McCarthy, 1997). With a movement from teaching-orientedness to learner-certeredness and learner autonomy, vocabulary learning strategies seem to have gained its legitimacy as one auxiliary approach to vocabulary learning. Despite this, there appears no satisfactory instrument particularly for assessing vocabulary learning strategy use in an EFL context, although a few researchers have tried to do so (e.g., Gu & Johnson, 1996; Schmitt, 1997). To this aim, a new inventory for vocabulary learning, the Strategies Inventory for Vocabulary Learning (SIVL) was proposed for Chinese EFL university learners. To validate the instrument, confirmatory and exploratory factor analyses were employed to assess its psychometric properties. Results showed that the hypothesized theoretical model proved to be a good representation of the sample data, and that the SIVL exhibited satisfactory psychometric features. This positive evidence indicates that the SIVL can serve as a reliable and valid research instrument for assessing Chinese EFL university learners' vocabulary learning strategy use. It is suggested that the SIVL can be a valuable resource for EFL learners and practitioners in that it can raise their awareness of strategy use and strategy training by employing this instrument, leading to more successful vocabulary teaching and learning.

Key words : Vocabulary learning, Learning strategies, Vocabulary learning strategies, Strategy classification, Strategy inventory, Factor analysis

* *Tel: (+86) 512 88161328. Email: xuelian.xu@xjtlu.edu.cn. Language Centre, Xi'an Jiaotong-Liverpool University, No. 111 Ren'ai Road, HET, SIP, Suzhou, Jiangsu Province, P R China 215123*
** *Tel: (+86) 512 88161144. Email: wencheng.hsu@xjtlu.edu.cn. Language Centre, Xi'an Jiaotong-Liverpool University, No. 111 Ren'ai Road, HET, SIP, Suzhou, Jiangsu Province, P R China 215123*

Introduction

To date, vocabulary learning strategies (VLS) have drawn increasing attention as one auxiliary approach to vocabulary learning, with a movement from teaching-orientedness to learner-centredness and learner autonomy thanks to the complexities of the processing of word knowledge and the range of factors involved in knowing, processing, storing, and applying a word (Carter, 1998), which entails varying strategies. VLS is even more important 'because of the large number of low-frequency words and because of their infrequent occurrence and narrow range, it is best to teach learners strategies for dealing with these words rather than to teach the words themselves' (Nation, 1990, p. 159). However, foreign language classrooms are always notorious for their precious classroom teaching time, and it is impossible to teach everything about a word that students must become independent word learners (Waring, 2002). The use of VLS can help students to deal with their vocabulary learning independently. Schmitt (2000) claims that, in contrast to language tasks that involve several linguistic skills, many learners do seem to use strategies for their vocabulary learning possibly due to the fact that the 'relatively discrete' nature of vocabulary learning compared to 'more integrated' language activities makes it easier to utilize strategies effectively. In addition, Nation and Newton (1997) point out that, '[t]ime may be set aside for the learning of strategies and learners' mastery of strategies may be monitored and assessed' (p. 241). VLS has thus become essential inside and outside the classroom.

Theory and practice of VLS mainly stem from language learning strategies (LLS). The earlier literature in SLA usually assumes strategies as a cognitive learning process (e.g., O'Malley & Chamot, 1990), while scholars in educational psychology regard strategies from the social cognitive point of view which stresses metacognitive, affective and social domains (e.g. Schunk, 2001; Zimmerman, 1989, 2000). In recent decades, a few in SLA attempt to look at strategies from a volitional perspective focusing on metacognitive and affective domains (e.g. Dörnyei, 2005; Tseng, Dörnyei, & Schmitt, 2006). Although different scholars claimed that they have their own theoretical underpinnings, a consideration of metacognitive, cognitive and social cognitive perspectives can offer a more holistic picture of VLS. It is under this proposition that an inventory that can tap into all the phases of vocabulary learning strategies can be produced.

Vocabulary Learning Strategy Classification

Numerous studies have sought to classify learning strategies, in the field of general language learning strategies (LLS), the most prominent typologies are still O'Malley and Chamot's (1990) and Oxford's (1990) although a good number of taxonomies of VLS have been proposed, most of which can be seen as part of a study into learners' strategy use (e.g., Gu & Johnson, 1996; Schmitt, 1997; Stoffer, 1995). Four taxonomies closely related to this study, e.g., O'Malley and Chamot's (1990), Oxford's (1990), Schmitt's (1997), and Stoffer's (1995), will be discussed:

Based on cognitive psychology, O'Malley and Chamot (1990) developed a taxonomy involving three broad types of strategies: Metacognitive Strategies, Cognitive Strategies, and Social/affective Strategies. Metacognitive Strategies are higher order executive skills, using knowledge about cognitive processes and involving an attempt to regulate language learning by way of planning, monitoring, and evaluating. Cognitive Strategies are those 'operat[ing] directly on incoming information, manipulating it in ways that enhance learning' (O'Malley & Chamot, 1990, p. 44). Social/Affective (or Socio-affective) Strategies refer to the ways in which learners choose to

interact with others or ideationally control over affect. The three types are further categorised into several subgroups respectively. Metacognitive Strategies include four subgroups, which are defined as below:

- Selective attention: Focusing on special aspects of learning tasks, as in planning to listen for key words or phrases.
- Planning: planning for the organisation of either written or spoken discourse.
- Monitoring: reviewing attention to a task, comprehension of information that should be remembered, or production while it is occurring.
- Evaluation: checking comprehension after completion of a receptive language activity, or evaluating language production after it has taken place (O'Malley & Chamot, 1990, p. 46)

Cognitive Strategies are divided into the following eight subgroups:

- Rehearsal: repeating the names of items or objects to be remembered.
- Organization: grouping and classifying words, terminology, or concepts according to their semantic or syntactic attributes.
- Inferencing: using information in text to guess meanings of new linguistic items, predict outcomes, or complete missing parts.
- Summarising: intermittently synthesising what one has heard to ensure the information has been retained.
- Deducing: applying rules to the understanding of language.
- Imagery: using visual images (either generated or actual) to understand and remember new verbal information.
- Transfer: using known linguistic information to facilitate a new learning task.
- Elaboration: linking ideas contained in new information, or integrating new ideas with known information (O'Malley & Chamot, 1990, p. 46).

Social/affective Strategies involve three subcategories:

- Cooperation: working with peers to solve a problem, pool information, check notes, or get feedback on a learning activity.
- Questioning for clarification: eliciting from a teacher or peer additional explanation, rephrasing, or examples.
- Self-talk: using mental direction of thinking to assure oneself that a learning activity will be successful or to reduce anxiety about a task (O'Malley & Chamot, 1990, p. 46).

Another influential classification of LLS is Oxford's (1990) system (Table 1), which is divided into Direct Strategies for handling the target language and Indirect Strategies for generally managing the learning of the target language. The former is composed of Memory Strategies, Cognitive Strategies, and Compensation Strategies. The latter includes Metacognitive Strategies , Affective Strategies and Social Strategies.

Table 1
Oxford's (1990) System

Learning Strategies			
General			Specific
Direct Strategies	Memory Strategies	Creating mental linkages	Grouping
			Associating/elaborating
			Placing new words into a context
		Applying images and sounds	Using imagery
			Semantic mapping
			Using keywords
			Representing sounds in memory
		Reviewing well	Structured reviewing
		Employing action	Using physical response or sensation
			Using mechanical techniques
	Cognitive Strategies	Practising	Repeating
			Formally practicing with sounds and writing systems
			Recognising and using formulas and patterns
			Recombining
			Practicing naturalistically
		Receiving and sending messages	Getting the idea quickly
			Using resources for receiving and sending messages
		Analysing and reasoning	Reasoning deductively
			Analysing expressions
			Analysing contrastively (across languages)
			Translating
			Transferring
		Creating structure for input and output	Taking notes
			Summarising
			Highlighting
	Compensation Strategies	Guessing intelligently	Using linguistic clues
			Using other clues
		Overcoming limitations in speaking and writing	Switching to the mother tongue
			Getting help
			Using mime or gesture
			Avoiding communication partially or totally
			Selecting the topic
			Adjusting or approximating the message
			Coining words
			Using a circumlocution or synonym

Indirect Strategies	Metacognitive Strategies	Centring your learning	Overviewing and linking with already known material
			Paying attention
			Delaying speech production to focus on listening
		Arranging and planning your learning	Finding out about language learning
			Organising
			Setting goals and objectives
			Identifying the purpose of a language task
			Planning for a language task
			Seeking practice opportunities
		Evaluating your learning	Self-monitoring
			Self-evaluating
	Affective Strategies	Lowering your anxiety	Using progressive relaxation, deep breathing, or meditation
			Using music
			Using laughter
		Encouraging yourself	Making positive statements
			Taking risks wisely
			Rewarding yourself
		Taking your emotional temperature	Listening to your body
			Using a checklist
			Writing a language learning diary
			Discussing your feelings with someone else
	Social Strategies	Asking questions	Asking for clarification or verification
			Asking for correction
		Cooperating with others	Cooperating with peers
			Cooperating with proficient users of the new language
		Empathising with others	Developing cultural understanding
			Becoming aware of others' thoughts and feelings

From the above we can clearly see that there exists a substantial amount of overlap between the two LLS classification systems. First, O'Malley and Chamot's (1990) Metacognitive Strategies have a straight counterpart in Oxford's (1990) system. This category generally functions as planning, organising, and evaluating one's own language learning. Second, both systems involve strategies handling affect and social interaction. Affective Strategies are techniques for learners to manage their emotional and motivational states, and Social Strategies techniques about learning the target language with other people. O'Malley and Chamot classify Affective Strategies and Social Strategies as one single type: Socio-affective Strategies, whereas Oxford categorises them as separate groups and lists a lot more affective and social strategies than O'Malley and Chamot. Third, O'Malley and Chamot's Cognitive Strategies roughly match a combination of Oxford's Memory Strategies and Cognitive Strategies, with an exception of 'guessing from context (inferencing)', which is part of O'Malley and Chamot's

cognitive category but is listed by Oxford as a compensation strategy to make up for missing knowledge. Unlike O'Malley and Chamot, Oxford intentionally divides Memory Strategies off from Cognitive Strategies as 'Memory Strategies appear to have a very clear, specific function that distinguishes them from many Cognitive Strategies' (Hsiao & Oxford, 2002, p. 371). In other words, although Memory Strategies assist cognition in nature, the operations referred as Memory Strategies are particular mnemonic devices helping learners store and transfer information to long-term memory and retrieve it whenever necessary. Most Memory Strategies tend to be associated with shallow processing while Cognitive Strategies tend to make a contribution to deep processing (Dörnyei, 2005). Lastly, Oxford classifies Compensation Strategies as a separate category because she seems to believe that it is essential to make up for missing knowledge in any of the four language skills: listening, reading, speaking, or writing. This category is intended to enable learners to use the target language for either comprehension (i.e., listening, reading) or production (i.e., speaking, writing) in spite of the missing knowledge.

In the more specific area of VLS, some researchers have also sought to develop a vocabulary-specific strategy classification system. There are two main typologies: Schmitt's (1997) and Stoffer's (1995). Schmitt (1997) claims that Oxford's classification system is generally suitable for VLS but still not satisfactory in a number of aspects:

1. No category in Oxford's system satisfactorily depicts the type of strategies employed by an individual learner when he/she is faced with discovering a new word's meaning without others' help;
2. In Oxford's system, it seems difficult to classify some strategies which could easily fit into two or more groups;
3. In Oxford's system, it remains unclear whether some strategies should be categorised as Memory Strategies or Cognitive Strategies.

Therefore, Schmitt (1997) offers a vocabulary-specific strategy classification system by grouping VLS into two broad categories: Discovery Strategies, i.e., strategies for the discovery of a new word's meaning, and Consolidation Strategies, i.e., strategies for consolidating a word once it has been encountered. The former category involves two subcategories: Determination Strategies and Social Strategies. The latter group includes Social Strategies, Memory Strategies, Cognitive Strategies, and Metacognitive Strategies. Schmitt also stresses that the goal of both Cognitive Strategies and Memory Strategies is to aid recall of words through some form of language manipulation, and more criteria should be used to separate Memory Strategies from Cognitive Strategies. Therefore, he adopted the five areas of storing and memory strategies of Purpura's (1994, cited in Schmitt, 1997, pp. 205-206) as the other criteria, namely, Repeating, Using mechanical means, Associating, Linking with prior knowledge, and Using imagery.

Schmitt's (1997) system seems to be the most comprehensive VLS taxonomy to date, and is a useful attempt to display where general LLS and VLS intersect. However, Schmitt's (1997) system still has its weaknesses. Firstly, it does not include affective strategies. Secondly, a number of items fall into more than one subcategory; for instance, 'flashcards' is grouped into both Determination Strategies and Cognitive Strategies. This would cause confusion in defining and classifying strategy categories. Lastly, there is no clear-cut distinction between Discovery and Consolidation strategies.

While the systems discussed above are all based on theoretical induction, Stoffer's (1995) study attempted to categorise strategies from an empirical study of her own. She developed an inventory of nine categories from the

analysis of the data from a self-composed 53-item vocabulary learning strategy questionnaires. The nine factors resulting from a factor analysis are listed below:

1. Strategies involving authentic language use
2. Strategies involving creative activities
3. Strategies used for self-motivation
4. Strategies used to create mental linkages
5. Memory strategies
6. Visual/auditory strategies
7. Strategies involving physical action
8. Strategies used to overcome anxiety
9. Strategies used to organize words

However, such classification tends to result in an unidentifiable group of strategies in each factor. For example, Item 13 'Use rhymes to remember new words' falls into three factors: 5, 6 and 7. Item 18 'Break lists into smaller parts' falls into both factors 5 and 9.

Considering all the strengths and limitations existing in the above classification systems, we developed an all-encompassing inventory.

Classification of VLS in This Study

We classify VLS into 4 broad categories and 25 subcategories (Table 2). The four main strategies are Metacognitive Strategies, Cognitive Strategies, Memory Strategies and Socio-affective Strategies. Metacognitive Strategies in our classification stemming from O'Malley and Chamot (1990) refer to as higher order executive skills, using knowledge about cognitive processes and involving an attempt to regulate language learning by way of planning, monitoring, and evaluating. They include three subgroups: Paying Attention, Arranging and Planning, and Monitoring and Evaluation. As vocabulary learning is closely linked to the mechanism of memory, Memory Strategies are isolated from Cognitive Strategies. The definition of Cognitive Strategies in our classification is adapted from Schmitt (1997), namely, approaches 'not so focused on manipulative mental processing, including guessing, 'repetition and using mechanical means to study vocabulary.' Cognitive Strategies thus can be further grouped into Guessing, Using Dictionaries, Using Study Aids, Taking Notes, Repetition, Word Lists, and Activation. Memory Strategies are referred to as approaches associating new words to existing knowledge (Schmitt, 1997), including Grouping, Word Structure, Association/Elaboration, Imagery, Visual Encoding, Auditory Encoding, Semantic Encoding, Contextual Encoding, Structured Reviewing, Using Keywords, Paraphrasing, and Physical Action.

Table 2
Classification of VLS in This Study

Categories	Subcategories	Descriptions/Definitions
Metacognitive Strategies (MET)	Paying Attention	Deciding in advance to pay attention in general to a vocabulary learning task and to ignore distractions by directed attention, and/or to pay attention to specific aspects of vocabulary learning tasks or to situational details.
	Arranging & Planning	Involving finding out about vocabulary learning, organising the schedule, setting goals and objectives, considering task purposes, planning for tasks, and seeking chances to practise words.
	Monitoring & Evaluation	Identifying errors in understanding or producing the new word, tracking the source of important errors, trying to eliminate such errors, and evaluating one's own progress in vocabulary learning.
Cognitive Strategies (COG)	Guessing	Seeking and using linguistic or other (i.e., background knowledge) clues in order to guess the meaning of a new word.
	Using Dictionaries	Using dictionaries as a resource to find out the meaning and use of a new word, and ways of looking up a word in the dictionary.
	Using Study Aids	Using resources other than dictionaries to help learn or practise new words.
	Taking Notes	Putting synonyms or antonyms together in the notebook, or writing down the meaning of vocabulary when it is thought to be commonly used or interesting, when it is looked up in the dictionary, or when it can help distinguish between the meanings of words.
	Repetition	Saying, listening to, or writing a new word over and over.
	Word Lists	Using word lists and flashcards for the initial exposure to a word and reviewing it afterwards.
	Activation	Practising new words in listening, speaking, reading and writing, and practising new words in imaginary/realistic settings.
Memory Strategies (MEM)	Grouping	Classifying words based on topic, type of word, practical function, similarity and opposition, etc.
	Association/Elaboration	Relating new words to known words or concepts, or relating one piece of information to another, to create associations in memory.
	Word Structure	Structurally analysing a new word to determine or consolidate its meaning.
	Imagery	Relating new words to concepts in memory by means of meaningful visual imagery, either in the mind or in an actual drawing. The image can be a picture of a word, a set of locations for remembering a sequence of words, or a mental representation of the letters of a word.
	Visual Encoding	Using visual cues to facilitate recall, typically the words' orthographical form.

	Auditory Encoding	Representing a new word's phonological form to facilitate recall by creating a meaningful, sound-based association between new words and known words, using phonetic spelling, and using rhymes.
	Semantic Encoding	Producing semantic networks or grids to remember words.
	Contextual Encoding	Memorising new words in a context.
	Structured Reviewing	Going over new words soon after the initial meeting, and then at carefully planned intervals.
	Using Keywords	Remembering a new word by using auditory and visual links.
	Paraphrasing	Reformulating a word's meaning to improve recall of the word.
	Physical Action	Physically acting out a new word, or meaningfully relating a new word to a physical feeling or sensation.
Socio-affective Strategies (SOC)	Questioning for Clarification/Correction	Asking others to explain, paraphrase, correct, or give examples.
	Cooperation	Working with peers or proficient English users inside and/or outside class.
	Managing Emotion	Relaxing, encouraging and rewarding oneself, paying attention to signals given by body, and discussing feelings with someone else.

Socio-affective strategies relate to social and affective domains. They are interrelated and complementary and are not mutually exclusive, as for language learners, especially Chinese EFL learners, who are inclined to be shy and reticent, while using social strategies like 'I interact with native speakers', tend to use strategies relating to affect or emotion, like 'I try to relax whenever I am afraid of using a word.' at the same time, to keep the conversation going. This is the reason why the two dimensions are classified into one single group of strategies. Socio-affective Strategies are thus referred to as the ways in which learners choose to interact with others or ideationally control over affect (O'Malley & Chamot, 1990). They include Questioning for Clarification/Correction, Cooperation, and Managing Emotion.

As a result, the four strategy categories are further divided into 25 subcategories. The four categories and their subcategories underlay the basic framework for the SIVL.

Assessment of Vocabulary Learning Strategies

Questionnaires are the most commonly-used tools to assess strategy use. One easy way to compose questionnaires is to transform an existing taxonomy into self-reported questionnaires. Five self-reported questionnaires related to the present study are discussed: 1) Oxford's (1990) Strategy Inventory for Language Learning (SILL), 2) Stoffer's (1995) Vocabulary Learning Strategies Inventory (VOLSI), 3) Schmitt's (1997) VLS List and Kudo's (1999) VLS Questionnaire, 4) Gu and Johnson's (1996) Vocabulary Learning Questionnaire and 5) Tseng, Dornyei and Schmitt's (2006) Self-regulating Capacity in Vocabulary Learning.

Oxford's (1990) SILL (Version for Speakers of Other Language Learning English)

Oxford developed the SILL based on her strategy taxonomy. This has been the most popular and practical instrument for assessing language learning strategy use in different cultural ESL/EFL contexts. The SILL is a 5-point Likert-type scale containing 50 individual items, divided into six parts as discussed above. With regard to the psychometric properties of the instrument, much evidence has shown that the SILL appears to have utility, reliability and validity in varying EFL contexts. The SILL proved to be very useful particularly in EFL classrooms, with the main goal of revealing the relationship between strategy use and language performance, between strategy use and individual differences such as gender, motivation, learning styles, etc. (Oxford & Burry-Stock, 1995). Dörnyei (2005) also admits that the SILL is 'a useful instrument for raising student awareness of L2 learning strategies and for initiating class discussions' (p. 183). In addition, the reliability of the SILL has been checked across many cultural groups. For example, in the Taiwanese/Chinese EFL context, the SILL has obtained a high reliability coefficient (Cronbach alpha) of .94 (Yang, 1999). As for the criterion-related and construct validities of the SILL, there is considerable evidence mainly based on 'its predictive and correlative link with language performance (course grades, standardised test scores, ratings of proficiency), as well as its confirmed relationship to sensory preferences' (Oxford & Burry-Stock, 1995, p. 1).

Stoffer's (1995) VOLSI

According to Stoffer (1995), the VOLSI is a 53-item 5-point Likert-type scale and was validated with high reliability (Cronbach alpha = .90). Evidence for its content-related validity could be assumed in that the 53 items on the VOLSI evolved directly from the literature, and were reviewed by several experts in SLA. Evidence for its construct validity was also provided: (1) the spectrum of the item-to-total correlations of the VOLSI reached from .19 to .58, with the majority of items in the area of moderate to high correlations (.30 to .50); (2) the correlation coefficient between the VOLSI and the SILL was .70, revealing a high relationship between the two instruments; while the former measures vocabulary learning strategies, a more specialised area, the latter assesses general language learning strategies. However, the VOLSI does not seem to have a solid theoretical support, although this would not affect the usefulness of the instrument pedagogically. It would be hard for researchers to interpret the results and then make implications for future research.

Schmitt's (1997) list of VLS and Kudo's (1999) VLS questionnaire

Schmitt's (1997) list of vocabulary learning strategies contains 58 items; it however has not been validated. Based on Schmitt's list, Kudo (1999) developed a 44-item six-point Likert scale of vocabulary learning strategy questionnaire, divided into four categories, i.e., Memory Strategies, Cognitive Strategies, Metacognitive Strategies, and Social Strategies. The reliability coefficients (Cronbach alpha) of the four strategy categories are relatively high, ranging from .69 to .77, thus the reliability being established. Although results from a factor analysis turned out to be consistent with Oxford's classification system, Schmitt's (1997) VLS list and Kudo's (1999) questionnaire did not include any affective strategies.

Gu and Johnson's (1996) VLQ Version 3, Section 3 – Vocabulary Learning Strategies

Gu and Johnson (1996) used a vocabulary learning questionnaire to elicit Chinese university non-English majors' beliefs about vocabulary learning and their vocabulary learning strategies. The Vocabulary Learning Strategies

section includes 91 items, divided into two broad categories: Metacognitive Regulation, and Cognitive Strategies. Metacognitive Regulation was further categorised into Selective Attention (7 items) and Self-initiation (5 items). Cognitive Strategies were further categorised into 6 main groups. The internal consistency reliabilities of the majority of the categories and subcategories in the Vocabulary Learning Strategies section were over .60 (Cronbach alpha), as suggested by Dörnyei (2003). Evidence for the validity of the instrument could be assumed to some extent due to the fact that 'the questionnaire, written in Chinese, reflected previous quantitative and qualitative research (e.g., Ahmed, 1989; Oxford, 1990; Politzer & McGroarty, 1985) and item analyses that removed redundant items from two earlier pilot versions' (Gu & Johnson, 1996, p.648). However, it should be noted that although this questionnaire was developed particularly for Chinese university EFL learners, it has lacked items related to social or affective strategies.

Tseng, Dornyei and Schmitt's (2006) Self-regulating Capacity in Vocabulary Learning

Tseng, Dornyei and Schmitt (2006) proposed a 20-item questionnaire, Self-regulating Capacity in Vocabulary Learning, as a new approach to assessing strategic learning. This questionnaire is based on a theoretical framework which views strategic learning from a volitional/motivational perspective, thus unavoidably leading to focusing more on the affective domain, which relatively ignores the cognitive aspect. Besides, vocabulary learning is a multi-dimensional process, involving a great number of intertwining factors, and accounting for the process of vocabulary learning from all kinds of theoretical perspectives seems too difficult. Therefore, it would seem understandable and natural for Tseng et al. (2006) to see strategic learning from a volitional point of view. Given the limitations of the above empirical studies, the SIVL for this research was thus developed.

Compilation of SIVL and Initial Validation

Procedures for Compiling the SIVL

In the process of compiling questionnaire items, DeVellis's (1991) guidelines for scale development were incorporated in constructing the SIVL. We started generating items without any number limitations (Dörnyei, 2003, p. 51). Consequently, a total of 170 statements were initially constructed for the SIVL, 29 under Metacognitive Strategies, 69 under Cognitive Strategies, 56 under Memory Strategies, and 16 under Socio-affective Strategies. A 5-point Likert scale, the most commonly-used scale for self-reported questionnaire was also adopted, ranging from 1) Never, (2) Seldom, (3) Occasionally, (4) Often, to (5) Always. Another reason for employing such a method is that it is a method of analysis closer to the raw data than comparisons based on average responses for each item. All of the items except one (which we invented) were from existing established questionnaires, e.g., 89 items from Gu and Johnson's (1996), 29 from Stoffer's (1995), 35 adapted from Schmitt's (1997), 8 from Kudo's (1999), 8 from or adapted from Oxford's (1990) SILL. These 170 statements were repeatedly revised regarding eight aspects, i.e., wording, repetition of the meanings between items, appropriateness of the content of each heading, rare strategies, Chinese as the first language, adult EFL learners, all items being stated positively, and consistency of the level of specificity of items throughout the inventory. An expert panel was then employed to ensure the content reliability of both English and Chinese versions. Consequently, the 110-item SIVL emerged.

Refining and Shortening the 110-item SIVL

To develop a shorter version of the SIVL and assess its reliability and validity, a pilot study was conducted.

Procedure

The 110-item SIVL was administered to 125 randomly-selected undergraduates at a Chinese university. After an initial elimination of unusable data, 107 valid cases remained, including 59 males and 48 females. Most students spent about 20 minutes finishing the questionnaires.

Three statistical methods were employed to reduce the strategy items. i.e., item analysis by using reliability procedure, descriptive analysis, and correlation analysis. First, an item analysis for a single construct was conducted. Items whose item-to-total correlations were less than 0.30 were considered to be removed, as according to Denscombe (2003, p. 263), any correlation coefficient between 0.30 and 0.70 (plus or minus) is generally regarded as a reasonable correlation between two variables. Descriptive statistics were then used to obtain the means of the remaining individual items; the items whose means were less than 2.35 were deleted. The reasons for setting 2.35 as the cut-point were two-fold. First, the gap between the means above and below it was relatively clear and wide (0.06), compared to other possible cut-off points among the individual strategies of low frequency use. Second, after some more items were deleted at this cut-point, the remaining in the SIVL could still reflect a comprehensive profile in strategy frequency use. Next, correlation analyses (Spearman rho) on the remaining items in the SIVL were executed to test the relationships between individual items and the four strategy categories. Each item whose correlation with its corresponding strategy category was weaker than those with any of the other three strategy categories was then under the consideration of being omitted from the SIVL. Lastly, reliability analysis was run to assess the reliability and validity of the newly-developed SIVL. A combination of item analysis with correlation analysis for multiple sub-constructs was run to validate the theoretically assumed four-fold categorization system in the SIVL (cf: Green & Salkind, 2003).

Results and Discussion

The first run of item analysis was conducted on the 110 items in the SIVL. Fifteen items were deleted thanks to their weak correlations with the whole SIVL scale (less than .30), except Item 48 "I memorise a new word by writing it repeatedly," because of its significant connection with Cognitive Strategies (r=.30) at the .01 level and its high frequency use (mean=3.77). Next, descriptive statistics on the remaining 96 items in the SIVL were used to obtain the individual items whose frequency use was below 2.35. Consequently, 17 items were removed.

A correlation analysis was then carried out on the remaining 79 items in the SIVL. The majority of the items were found to have the strongest connection with their corresponding strategy category, except 3 items whose correlation with Cognitive Strategies is either equal to or even weaker than that with the other strategy categories. Two of the 3 items were then deleted; the item "I remember a new word by saying it repeatedly," was retained," due to its popularity with Chinese EFL learners.

Lastly, 5 items under Memory Strategies were deleted from the SIVL for varying reasons. For example, 3 items had stronger relationship with other strategy categories, and 2 items had equal correlation with the other two strategy categories.

All the procedures above resulted in a new 72-item SIVL, involving 16 items under Metacognitive Strategies, 25 under Cognitive Strategies, 24 under Memory Strategies, and 7 under Socio-affective Strategies (See Appendix A).

Revalidating the 72-item SIVL

A much larger sample was chosen to revalidate the 72- item SIVL. Participants were 558 2nd-year students (200 males and 358 females) randomly chosen by class from different departments of three universities. Confirmatory factor analysis (CFA), a special case of *structural equation modelling* (SEM) and exploratory factory analysis (EFA) were employed. A total sample size of 528 were used for the analysis, as 30 cases with missing values were left out, given that CFA requires a fully-crossed data set. There were two main reasons for CFA being chosen to assess the construct validity of the SIVL. First, a sample of 528 participants would be large enough to produce reliable results. Second, the instrument would be more robust if the construct validity could also be assumed by means of a more sophisticated statistical tool such as CFA. Also, the CFA model can specify the pattern by which each measure loads on a particular factor (Byrne, 2001, p. 12).

VLS was assumed to be a construct with four subconstructs, i.e., Metacognitive, Cognitive, Memory, and Socio-affective Strategies. Accordingly, the model to be tested in CFA postulated *a priori* that VLS as the underlying latent construct was one general factor with four indicators/subconstructs. This hypothesised model could be assessed by looking at the extent to which it adequately described the sample data. Although there was no consensus on the criteria of assessing a model, the three types of criteria provided by Bagozzi and Yi (1988, p. 82) seemed to be most comprehensive, i.e., 1) Preliminary Fit Criteria, 2) Overall Model Fit, and 3) Fit of Internal Structure of a Model. How well the model fit the sample data would determine whether the instrument had reliability and validity.

EFA using the principal axis factoring method was conducted to examine the unidimensionality of the instrument, which is a crucial attribute of any latent variable/scale. In other words, behind every measurement item, there should be one and only one underlying construct; that is, each measurement item should reflect only its associated latent construct without significantly reflecting any other construct (Gefen, 2003). Before computing EFA, we examined the appropriateness of the data for factor analysis by using the two criteria suggested by Hair et al. (1998): the Bartlett test of sphericity and the measure of sampling adequacy (MSA).

To verify the theoretically assigned subcategories within each of the four strategy categories in the SIVL, EFA using the principal components method was run on the items within the four strategy categories respectively. VARIMAX was used as the rotational method; a loading absolute value was set in advance to be greater than 0.30 (inclusive), which 'is considered to be a substantial link of a factor and test' (Hatch & Lazaraton, 1991, p. 494). Two criteria were used to determine the number of extracted factors: eigenvalues and scree test (cf: Green & Salkind, 2003). All factors that had eigenvalues greater than 1 were to be retained. As this criterion might not always produce accurate results, the scree test, which examines the plot of the eigenvalues and retains all factors with eigenvalues in the sharp descent part of the plot before the eigenvalues start to level off, was used as a complementary tool.

Results and Discussion

As mentioned above, CFA was conducted to assess the construct validity of the 72-item SIVL. Figure 1 shows the factor loadings and squared multiple correlations of the four indicators with the latent factor "VLS". The numbers on the path are the factor loadings of the four strategy categories, while the numbers on the right side of the four strategy categories are their squared multiple correlations (i.e., individual item reliabilities).

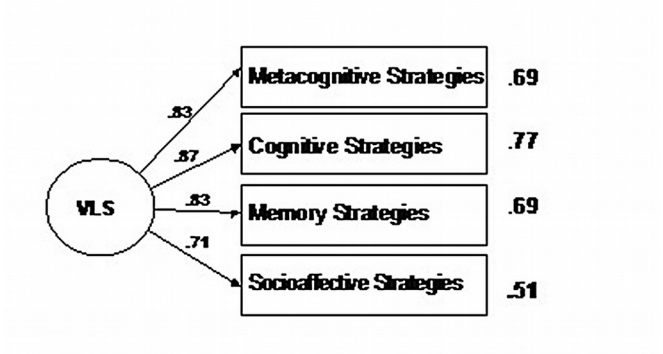

Figure 1. Confirmatory Factor Analysis of the Hypothesised Model

Table 3 provides a detailed assessment of the model in terms of model fit criteria, levels of acceptable fit, and evaluation of the instrument (i.e., the SIVL). In addition to Bagozzi and Yi (1988), the criteria provided in Table 3 also referred to Bagozzi (1981), Byrne (2001), Doll, Xia, and Torkzadeh (1994), Hair et al. (1998), Marsh and Hocevar (1985), and Tabachnick and Fidell (2001).

In terms of the preliminary fit criteria, three aspects of statistics were checked: the correlations among the four variables were very good, ranging between .60 and .73; factor loadings fell within the acceptable range, varying between .71 and .87, and their standard errors were appropriate. These results suggested that no redundant variables existed; the four subscales (i.e., strategy categories) seemed to be distinguished from each other properly, and the construct validity of the SIVL could be acceptable.

Regarding the overall model fit, three clusters of goodness-of-fit measures were adopted. The first cluster of fit statistics yielded a χ^2 value of 5.06 with 2 degree of freedom and a probability greater than .05 (p = .08), a standardised RMR value of 0.01, and a RMSEA value of 0.054, thereby suggesting that the hypothesised model was an adequate representation of the sample data and could be accepted. Besides, both GFI (.995) and AGFI (.977), basically comparing the hypothesised model with the null model, were consistent in reflecting a good fit to the sample data.

Regarding the second set of fit statistics, a number of incremental/comparative fit indices were all far beyond the suggested value (>.90). Both NFI and CFI, comparing the hypothesised model with the independence model and providing a measure of complete covariation in the data (Byrne, 2001), were .996 and .997 respectively, as shown in Table 3, consistently indicating that the hypothesised model represented an excellent fit to the sample data. The IFI, tackling the issues of parsimony and sample size and acknowledged to be linked to the NFI, was .997, uniformly pointing to a well-fitting model. The TLI/NNFI, like the other indices discussed above, produces values ranging from zero to 1.00, with values close to .95 (for large samples) reflecting

good fit (Hu & Bentler, 1999). Accordingly, its value of .992 for the hypothesised model once again suggested an excellent fit. Although those indices discussed above evaluated a model from slightly different perspectives, they unanimously suggested that the hypothesised model was appropriate and significant.

Table 3
Evaluation of the Measurement Model

Model Fit Criteria	Levels of Acceptable Fit	Evaluation of the SIVL
Preliminary Fit Criteria		
Correlations among variables	Not too close to or greater than 1.00	Very good (.60 ~.73)
Factor loadings	.50<λ<.95	Very good (see Figure 1)
Standard errors	Absence of too large or small standard errors	Very good (.04 ~.06)
Overall Model Fit		
Chi-square Value	Nonsignificant with *p*-value≥.05	Good (χ^2=5.06, df=2, *p*=.08)
χ^2/df	≤ 2 ~ 5	Good (2.53)
Standardised Root mean square residual (RMR)	≤ .05	Good (0.01)
Goodness of fit index (GFI)	>.90	Very good (.995)
Adjusted goodness of fit index (AGFI)	>.90	Very good (.977)
Incremental fit index (IFI)	>.90	Very good (.997)
Normed fit index (NFI)	>.90	Very good (.996)
Comparative fit index (CFI)	>.90	Very good (.997)
Tucker-Lewis index (TLI)	Close to .95	Very good (.992)
Root mean square error of approximation (RMSEA)	<.05 ~.08	Good (.054)
Hoelter's Critical *N* (CN)	Hoelter's .05 and .01 CN values > 200	Very good (*N*=625 at .05, *N*=961 at .01)
Ratio of sample size to number of free parameters	Ratio > 5:1	Very good (ratio≈66:1)
Fit of Internal Structure of a Model		
Individual item reliability	*Pi*≥.50	Good (see Figure 6.1)
Composite reliability	*Pc*≥.70	Very good (.89)
Variance extracted	≥.50	Very good (.66)
Significant parameter estimates confirming hypotheses	*t* value > ±1.96 at *p*<.05, or *t* value > ±2.576 at *p*<.01	Very good (all > 17 at *p* <.01)

Regarding the last set of fit statistics, Hoelter's Critical *N* (CN) (labelled as Hoelter's .05 and .01 indices), is considerably different from those discussed earlier due to the fact that its focus is directly on the adequacy of sample size rather than on model fit (Byrne, 2001). In other words, it is to estimate a sample size that would be large enough to yield an adequate model fit for a test. A value over 200 indicates that a model sufficiently represents the sample data (Hoelter, 1983). As displayed in Table 3, both the .05 and .01 CN values for the hypothesised model were in excess of 200 (625 and 961 respectively). This finding indicates that the sample size in this study (N = 528) was satisfactory. Moreover, the ratio of sample size to number of free parameters was 66:1, showing additional evidence for the hypothesised model being well-fitting and meaningful.

All the results and findings regarding overall model fit seemed to address an overall adequacy of the hypothesised model; that is, this model was an excellent representation of the sample data. Nevertheless, information on the nature of individual parameters and other aspects of the internal structure of a model did not seem to be explicitly provided. It is critical to look at such information for the present situation, as there was still a possibility of certain parameters corresponding to hypothesised relations being nonsignificant, and/or measures of low reliability existing even when the overall model fit reflected a satisfactory model (Bagozzi & Yi, 1988). In other words, having the overall model fit is a necessary but insufficient proof of model adequacy. Therefore, the fit of the internal structure of a model was scrutinised for the reliability of the construct. As listed in Table 3, four criterion aspects were examined, i.e., individual item reliability, composite reliability of a whole scale, average variance extracted from a set of measures of a latent variable, and significant parameter estimates confirming hypotheses. While the individual item reliabilities, i.e., the squared multiple correlations of the four indicators, and significant parameter estimates can be obtained directly from Amos 20, the composite reliability and average variance extracted need to be calculated manually by using the following two formulas:

1.

$$\text{Construct reliability} = \frac{(\text{Sum of standardised loadings})^2}{(\text{Sum of standardised loadings})^2 + \text{Sum of indicator measurement error}}$$

2.

$$\text{Variance extracted} = \frac{\text{Sum of squared standardised loadings}}{\text{Sum of squared standardised loadings} + \text{Sum of indicator measurement error}}$$

(Hair et al., 1998, p. 624)

As shown in Table 3, the individual item reliabilities for the four strategy categories ranged from moderate to high in value. The composite reliability was quite high, with the value of .89 greatly exceeding the recommended threshold value of .70. As a complementary measure to the construct reliability value, the overall amount of variance extracted in the four indicators (i.e., strategy categories) accounted for by the latent construct of VLS reached 66%, which also went beyond the suggested level of .50. These results imply that the SIVL is a practical construct with a satisfactory overall reliability. As for parameter estimates, all the parameter estimates turned out

to be significant at the level of .01, with all the *t*-values greater than ±2.576 (all actually above 17 at $p<.01$). This finding suggests that all the four indicators were justifiable and key to the hypothesised model (Bagozzi & Yi, 1988; Byrne, 2001).

The evaluation of the measurement model discussed above established the construct reliability and validity of the SIVL but did not explicitly provide information in terms of the unidimensionality of the scale. An EFA using principal axis factoring method was conducted for this purpose. The EFA results revealed that the majority of the variance was explained by one single factor (above 74%), and the eigenvlaue of the second largest factor was marginal in comparison with the first (.45 vs 2.98). The factor loadings of the four strategy categories on the one unrotated factor were .83 for Metacognitive Strategies, .87 for Cognitive Strategies, .83 for Memory Strategies, and .71 for Socio-affective Strategies, which displayed a consistently high pattern. All the above results provide good evidence for the unidimensionality of the scale; that is, the four strategy categories tapped into one single underlying trait.

After the unidimensionality of the instrument was ensured, it would be more justifiable to assess its internal consistency reliability using Cronbach alpha, as one of the assumptions of Cronbach alpha is that the unidimensionality of a scale exists (Hair et al., 1998). As a whole, the 72-item SIVL turned out to have very good internal consistency reliability, with the Cronbach alpha index of being .95. The theoretically assumed four strategy categories were also revealed to statistically have consistent reliability, as the Cronbach alpha indices for each category were acceptable, with .84 (MET), .89 (COG), .91(MEM) and .75 (SOC) respectively, all beyond the recommended threshold level of .60 (Dörnyei, 2003).

The last stage of the validation procedures was to statistically explore the theoretically assigned subcategories within each of the four strategy categories by running an EFA.

Within Metacognitive Strategies, four factors were retained, explaining a total variance of about 54%. Table 4 demonstrates the factor loadings of each item on its corresponding factor(s). Although four items seemed to load on two factors, their loadings on one of the factors (e.g. .72 for Item 9 on F1) were far beyond the ones on the other (e.g. .35 for Item 9 on F4). Therefore, Metacognitive Strategies could be decomposed into four subcategories, which were identified and labelled as follows:

- Organising and Monitoring (F1, 5 items, i.e., Items 2, 9-10, 15-16)
- Directed Attention (F2, 4 items, i.e., Items 11-14)
- Selective Attention (F3, 4 items, i.e., Items 3-6)
- Learning to Learn (F4, 3 items, i.e., Items 1, 7-8)

Consequently, the three theoretically assumed subcategories (Paying Attention (Items 1-6), Arranging & Planning (Items 7-13), and Monitoring & Evaluation (Items 14-16) were replaced by the four newly yielded counterparts, which seemed to be supported both statistically and practically.

Table 4

Factor Loadings of the Four Subcategories within Metacognitive Strategies

		Metacognitive Strategies			
Item	Brief Description	F1	F2	F3	F4
stra9	Plan schedule to have enough time for word study	.72			.35
stra10	Have clear goals of improving vocabulary	.65			.32
stra16	Self-test vocabulary	.62			
stra15	Think about progress in learning words	.62	.33		
stra2	Break lists into parts	.47			
stra12	Use various means to make clear unsure words		.72		
stra11	Care about words the teacher doesn't emphasise		.68		
stra14	Aware when I incorrectly used a word and use the information to do better		.66		
stra13	Associate a new word with a known one that sounds similar		.63		
stra4	Know when a new word is essential for comprehension			.72	
stra3	Know when to skip a new word			.72	
stra5	Know important words for learning			.70	
stra6	Look up interesting words			.46	.37
stra7	Try to find ways as many as possible to use new words				.73
stra8	Try to find ways to become a better word learner	.30			.72
stra1	Pay attention to vocabulary use in speech				.49

Within Cognitive Strategies, seven factors were extracted, accounting for a total variance of over 63%. Seven out of 25 items turned out to load on two factors. We decided to cluster each of them into the factor on which it had a higher loading, although one of the 7 items (i.e., Item 26) had a high loading on both of the two factors (F4 and F6). This can be that F4 and F6 are both about referring to resources. The results turned out to be generally consistent with the theoretically assigned subcategories, except that Using Dictionaries were split into two factors (i.e., F3 and F4). On a closer look, the 5 items pooled together under F3 seemed to focus on referring to dictionaries as a lexical resource, while the 4 items under F4 seemed to be more concerned about how to look up a word. Consequently, the seven factors within Cognitive Strategies were identified and labelled as follows:

- Activation (F1, 5 items, i.e., Items 37-40)
- Guessing (F2, 4 items, i.e., Items 17-20)
- Choosing Dictionaries as a Lexical Resource (F3, 5 items, i.e., Items 21-25)
- Looking Up (F4, 4 items, i.e., Items 26-29)
- Taking Notes (F5, 3 items, i.e., Items 32-34)
- Using Study Aids (F6, 2 items, i.e., Items 30-31)
- Repetition (F7, 2 items, i.e., Items 35-36)

Within Memory Strategies, five factors, accounting for a total variance of over 54%, were retained. 14 out of 24 items loaded on more than one factors. 13 items were located under whichever factor they had a higher loading on. The only item (i.e., Item 61), loaded on two factors, i.e., F2 and F3, was put under F3 which had a slightly lower loading with it than F2 (.48 and .43, respectively). As a result, the five factors were identified and labelled as:

- Association/Elaboration (F1, 7 items, i.e., Items 43-46, 48-50)
- Word Structure (F2, 4 items, i.e., Items 42, 51-53)
- Other Memory Strategies (F3, 6 items, i.e., Items 60-65)
- Applying Images (F4, 4 items, i.e., Items 47, 54-55, 59)
- Visual Encoding (F5, 3 items, i.e., Items 56-58)

Compared with the theoretically assumed subcategories within Memory Strategies, three factors (i.e., F1, F2 & F5) were named after three of the theoretically assumed subcategories, as they were in general consistent with each other, although several individual items under the three subcategories were relocated. F4 was termed as Applying Images in that the four items under it were all concerned with using images to memorise vocabulary. As for F3, involving the three items theoretically assigned to Contextual Encoding, and the other three originally representing three theoretically assumed subcategories (i.e., Reviewing, Using Keywords, and Paraphrasing), it seemed unlikely to label it in the way of labelling other factors whose items were much more easily found to have something in common. Therefore, we labelled it as Other Memory Strategies.

Within Socio-affective Strategies, two clear factors were extracted, explaining a total variance of about 61%. This finding turned out to be in accordance with the theoretically assumed two subcategories: Questioning for Clarification (F2, 2 items, i.e., Items 66-67) and Managing Emotion (F1, 5 items, i.e., Items 68-72).

Therefore, it seems that the theoretically assumed subcategories within each of the four strategy categories are generally supported by the results from factor analysis. On the one hand, the results provide plenty of evidence for the existence of the theoretically assumed subcategories within Cognitive Strategies and Socio-affective Strategies. On the other hand, the four categories within Metacognitive Strategies resulted from factor analysis seem to be more justifiable than the original three subcategories, although at the same time, they do share similarities to a certain extent. Memory Strategies turned out to be a more complicated category with multiple subcategories.

Conclusion

The Strategy Inventory for Vocabulary Learning (SIVL) was developed through three stages. In the first stage, 170 items were pooled from various existing inventories and was reduced to 110 items. In the second stage, the instrument was shortened by mainly using the results of descriptive statistics and item analysis, and was then validated by using reliability analysis, and a combination of item analysis and correlation analysis. As a result, a shorter version of the 72-item SIVL emerged with good reliability and content-related and construct-related validities. Finally, the psychometric properties of the refined SIVL were assessed by using confirmatory and exploratory factor analyses. The results revealed that the SIVL had satisfactory psychometric features and that the hypothesised theoretical model had a good fit to the sample data. This confirming evidence implies that the

SIVL can serve as a reliable and valid research instrument for evaluating Chinese EFL learners' vocabulary learning strategy use at the tertiary level.

Limitations and Implications

Limitations of this research have some implications for future research. For example, this research is a questionnaire study, which might not be able to truly reflect what a learner actually does while dealing with a word (Nation, 2001). Given the quantitative nature of this study, it is recommended future researchers look at both the quantity and quality of learners' strategy use, and the correlation between the quality and quantity of strategy use. Considering that the SIVL was situated in the Chinese tertiary context, future research can employ it at primary and secondary levels in the Chinese EFL context, as well as other similar EFL contexts.

The SIVL can serve as a diagnostic tool for teaching and learning. Among a number of common ways of strategy elicitation methods the questionnaire is one of the more controlled and systematic ways of collecting information on strategy use. Therefore, the validated strategy inventory, the SIVL can serve as a valuable resource for teachers and students equally. It will take only 10 minutes to complete the SIVL. Once the results are obtained, the students can be aware of the general pattern of their vocabulary strategy use, and then reflect upon their strategy use in learning. In other words, the information obtained from the SIVL can be used by teachers to help their students, or by the learners to raise their awareness of what strategies they use and what strategies they need to take training on. Once the reflection is done, teachers can provide their students training or the learners themselves can find online training resources for some particular strategies which are believed to be worth trying out to facilitate word learning in the future; for example, some Memory Strategies such as the keyword method which has been found popular with the western learners can be singled out for training Chinese learners. However, as results revealed in previous studies (Chesterfield & Chesterfield, 1985; Schmitt, 1997) that the pattern of strategy use can change over time; this procedure can be recycled, for example, once in a couple of months, although the frequency depends on each individual learner's situation and needs in their vocabulary learning.

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Appendix A
The 72-item SIVL

Part A: Metacognitive Strategies (MET) (16 items)

1. I pay close attention to the vocabulary use in my speech and that of others.
2. I break lists into smaller parts.
3. I know when I need to skip or pass a new word.
4. I know when a new word is essential for adequate comprehension of a passage.
5. I know which words are important for me to learn.
6. I look up words that I'm interested in.
7. I try to find as many ways as I can to use new English words.
8. I try to find out how to be a better learner of English words.
9. I plan my schedule so I will have enough time to study English words.
10. I have clear goals for improving my vocabulary.
11. I care about vocabulary items my English teacher doesn't mention or emphasise.
12. I use various means to make clear vocabulary items that I am not quite clear of.
13. I associate a new word with a known English word that sounds similar.
14. I am aware when I have not used a new word correctly and use that information to help me do better.
15. I think about my progress in learning English words.
16. I test my vocabulary with word tests or other means.

Part B: Cognitive Strategies (COG) (25 items)

17. I make use of the logical development in the context (e.g. cause and effect) when guessing the meaning of a word.
18. I make use of my common sense and knowledge of the world when guessing the meaning of a word.
19. I analyse the word structure (prefix, root, and suffix) when guessing the meaning of a word.
20. I use alternative cues and try again if I fail to guess the meaning of a word.
21. When I want to confirm my guess about a word, I look it up.
22. When looking up a word in a dictionary, I pay attention to sample sentences illustrating its various meanings.
23. I look for phrases or set expressions that go with the word I look up.
24. When I want to know more about a word that I already have some knowledge of, I look it up.
25. When I get interested in another new word in the definitions of the word I look up, I look up this word as well.
26. If the new word I try to look up seems to have a prefix or suffix, I will try the entry for the stem.
27. If the unknown word appears to be an irregularly inflected form or a spelling variant, I will scan nearby entries.
28. If there are multiple senses or homographic entries, I use various information (e.g. part of speech, pronunciation, style, collocation, meaning, etc.) to reduce them by elimination.

29. I try to integrate dictionary definitions into the context where the unknown was met and arrive at a contextual meaning by adjusting for complementation and collocation, part of speech, and breadth of meaning.
30. I use audio, video, computer aids to learn or consolidate my vocabulary.
31. I learn words written on commercial items.
32. I make a note of the meaning of a new word when I think it is commonly-used or interesting.
33. I take notes when I look up a word.
34. I make notes when I want to help myself distinguish between the meanings of two or more words.
35. I remember a new word by saying it repeatedly.
36. I memorise a new word by writing it repeatedly.
37. I try to read as much as possible so that I can make use of the words I tried to remember.
38. I make up my own sentences using the words I just learned.
39. I try to use the newly learned words as much as possible in speech and writing.
40. I try to use newly learned words in real situations.
41. I try to use newly learned words in imaginary situations in my mind.

Part C: Memory Strategies (MEM) (24 items)

42. I group new words by grammatical class, e.g. nouns, verbs, adjectives, etc.
43. When I meet a new word, I search in my memory and see if I have any synonyms and antonyms in my vocabulary stock.
44. I remember a group of new words that share a similar part in spelling.
45. I associate a group of new words that share a similar part in spelling with a known word that looks or sounds similar to the shared part (neighbour, sleigh, weigh).
46. I create a sentence in Chinese when I link a new word to a known word.
47. I learn new words by relating them to myself or my personal experience.
48. I connect the new word to its synonyms and antonyms (blossom/flower; wet/dry).
49. I associate the word with its coordinates/subordiantes/superordinates (apple/peach; animal/dog; spinach/vegetable).
50. I use 'scales' for gradable adjectives (cold, cool, warm, hot).
51. I deliberately study word-formation rules in order to remember more words.
52. I remember a word's part of speech.
53. I learn the words of an idiom together.
54. I create a mental image of the new word to help me remember it.
55. I create mental images of association when I link a new word to a known word.
56. I visualise the new word to help me remember it.
57. I remember the spelling of a word by breaking it into several visual parts.
58. I remember together words that are spelled similarly.
59. I try to create semantic networks in my mind and remember words in meaningful groups.
60. I remember a new word together with the context where it occurs.

61. I deliberately read books in my areas of interest so that I can find out and remember the special terminology that I know in Chinese.
62. I associate a new word with its preceding/following words to remember it better.
63. I review new words soon after the initial meeting.
64. I link new words to similar sounding Chinese words.
65. I paraphrase the word's meaning.

Part D: Socio-affective Strategies (SOC) (7 items)

66. I ask teachers or others for the meaning of a new word.
67. I ask teachers or others for paraphrases or synonyms of a new word.
68. I try to relax whenever I am afraid of using a word.
69. I encourage myself to use new words even when I am afraid of making mistakes.
70. I give myself a reward or treat after I have successfully recalled new words.
71. I feel successful when having learned new words.
72. I enjoy learning new vocabulary.

About the Authors

Dr. Xuelian Xu received her PhD in Applied Linguistics from the University of Nottingham , UK. She worked as Assistant Professor at Macau University of Science and Technology. Currently, she is teaching in the Language Centre, Xi'an Jiaotong-Liverpool University. Her main research focus is on vocabulary, motivation and EAP.

Dr. Wen-Cheng Hsu obtained his PhD from the University of Nottingham. His teaching experience spans more than 15 years across various levels and cultures. He is now teaching in the Language Centre, Xi'an Jiaotong-Liverpool University. His research interests revolve around learning strategies, learner autonomy, teacher autonomy, and EAP.