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**DECLARATION**

I declare:

a) that this submission is my own work;
b) that this is written in my own words; and
c) that all quotations from published or unpublished work are acknowledged with quotation marks and references to the work in question.
d) that this dissertation consists of approximately 12,935 words, excluding footnotes, references, figures, tables, appendices & long quotations.

Name: Philip Shigeo Brown

Date: 19th March 2009

# INTEGRATING A VOCABULARY LEARNING STRATEGIES PROGRAM INTO A FIRST-YEAR MEDICAL ENGLISH COURSE

by

**Philip Shigeo Brown**

A dissertation submitted to the School of Humanities of the University of Birmingham
in part fulfillment of the requirements for the degree of

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in

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This dissertation consists of 12,935 words
(excluding footnotes, references, figures, tables, appendices & long quotations)

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# ABSTRACT

This dissertation considers the arguments for and against vocabulary learning strategies (VLS) instruction, and integration of a VLS program into a first-year medical English course at a Japanese university. For teacher-researchers interested in designing and implementing a VLS program, this dissertation offers an example framework of how this might be conducted and evaluated within an action research model. The mostly positive student evaluations of the program, modest increases in students' VLS use, and indications of greater metacognitive awareness all support the continuation of the program with modifications for improved content and research design.

# DEDICATION

This dissertation is dedicated to my Japanese grandmother and late grandfather who passed away during the course of my studies, without whose support my education would not have been possible. どうも有り難うございました。

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**List of Abbreviations**

| | |
|---|---|
| CEF | Course Evaluation Form |
| L1 | First language |
| L2 | Second or other language |
| LLS | Language Learning Strategies |
| MEV | Medical English Vocabulary |
| SBI | Strategies-based instruction |
| VLS | Vocabulary Learning Strategies |
| VLT | Vocabulary Levels Test |
| VTS | Vocabulary Teaching Strategies |
| | |
| M | Mean |
| SD | Standard deviation |

# CHAPTER 1. Introduction

Motivated by research into language learning strategies (LLS) and 'good language learners' (Rubin, 1975; Griffiths, 2008), vocabulary learning strategies (VLS) have in recent years begun attracting increasingly significant attention as researchers and teachers seek to address the issues surrounding the learning and teaching of vocabulary (Moir & Nation, 2008).

This dissertation investigates the integration of a new VLS program into a first-year medical English course at a Japanese university. After examining the justifications for strategies instruction, the dissertation describes both program and research design and implementation. Fundamentally, it follows a small-scale action research model (Richards & Lockhart, 1996) within a wider teacher-research framework (Freeman, 1998). Finally, this study considers possible future improvements to the VLS program as well as to the research model itself.

Chapter 2 begins with a description of the teaching context, thereby situating the inquiry and broadly identifying the issues to be investigated. Chapter 3 provides a review of the relevant research in the wider field of LLS and specific area of VLS and lexical development. The subsequent planning and implementation of the program is outlined in Chapter 4, then results presented, analysed and concurrently discussed in Chapter 5. Chapter 6 then addresses the limitations of both the research and the VLS program and, lastly, based on the understandings and insights gained, considers areas for further innovation and

improvement for the following year's program. Finally, wider implications for VLS instruction and research are commented on.

## CHAPTER 2. Background: a first-year medical English course

"*I don't have enough vocabulary*" and "*How should I learn more words?*" are typical statements and questions that many students have about learning a new language. For Japanese first-year medical university students in Japan studying medical English as a foreign language, the challenges are often at least twofold as they face demanding new medical content knowledge and language. In my context, during the first ten weeks of the first semester, students encounter as many as 130 new medical English terms, from medical department names, such as *otolaryngology*, to diseases and disorders like *myocardial infarction*. In order to pass the course, they are required to understand and use these terms appropriately in class, writing assignments, weekly vocabulary tests, and final oral examinations. Therefore, following discussion with the first-year English program director, a program of VLS training was developed and integrated into the first semester medical English course.

All 100 first-year medical students have to take two 90-minute English classes a week. One class, taught by a Japanese teacher of English on Tuesdays, focuses on 'input' or 'receptive skills', i.e. listening and reading, which includes an Extensive Reading program requiring students to read one graded reader per week. The second class, taught by a native English-speaking teacher on Fridays, emphasises 'output' or 'productive skills', i.e. speaking and writing, although, in actuality, all four skills are necessarily involved.

Prior to the first class, the university sorted the students alphabetically by

surname and split them into two groups of fifty. Furthermore, an initial TOEIC-style placement test for reading and listening was used to rank then divide them into four ability levels. Each class had 13 or 14 students. Class A was taught in the morning, Class B in the afternoon.

For the purposes of this research, it is worth noting that this was my first year teaching at the university. I taught the second highest level students for the first thirteen-week semester and used a designated, in-house medical English course book.

In previous years, students had been expected to learn medical English vocabulary (MEV) and prepare for weekly MEV tests essentially by themselves. The tests usually contain 20 out of an average 30 items for which students have to write the English next to its Japanese translation (for example, see **Appendix A**). Due to the apparent scale of the challenge, as well as my intrinsic interest in learning strategies and lexis, I proposed the integration of a VLS program. My hope was that the inclusion of learner training would help students address the demands of the course, develop their VLS, and, foster greater autonomy. Thus the questions of inquiry initially considered were:

1. *To what extent are Japanese first-year medical English university students aware of their own deployment of VLS?*
2. *How might the integration of a VLS program into their medical English course help these students to increase their awareness of their strategies and promote vocabulary acquisition?*

In addition to fully supporting my proposal and plans to conduct classroom research, the program director also discussed issues as they arose, fielded questions and made helpful suggestions. My roles subsequently included, *inter alia*, the following aspects:

- assessing students' needs;
- teaching and developing the medical English course and materials;
- creating, implementing, adapting, and innovating the VLS program;
- monitoring, testing and evaluating students' abilities;
- researching the classroom context; and
- evaluating the program and my own teaching.

These roles are considered insofar as how they influenced the research questions.

For the teacher-researcher, one of the challenges of classroom research is to find the ethical balance between conducting research that might benefit future generations of students on the one hand, and implementing pedagogic activities that may directly benefit present students on the other. As a teacher first and foremost, my obligation was to ensure that my classes were of maximum benefit to the students there. I shall not attempt to argue this from a scientific research perspective because the classroom-teacher standpoint is the only reality of the situation and precisely what distinguishes this classroom research from a controlled laboratory experiment (cf. Freeman, 1998).

Before proceeding, it is worth uncovering the assumptions upon which this research was based. Three general assumptions were made; namely that the research would be viable, valid, and valuable for current and future students, myself and other teachers/researchers. More specifically pertaining to the two proposed questions of inquiry, a number of key assumptions can be identified as follows:

1. *To what extent are Japanese first-year medical English university students aware of their own deployment of VLS*?

   a) Most learners have a limited awareness of their deployment of VLS.

   b) All learners (can and do) use VLS.

   c) Investigating learners' awareness of VLS is in fact possible.

2. *How might the integration of a VLS program into the medical English course help these students to increase their awareness of their strategies and promote vocabulary acquisition?*

   a) There is a need for a VLS program, and it can benefit learners.

   b) A suitable VLS program can be created and integrated into the current medical English course.

   c) Learners will be receptive to a VLS program.

   d) Any change in vocabulary development will be measurable.

Therefore, in seeking to answer the questions of inquiry, this paper also aims to challenge these underlying assumptions. As a first step, this paper considers the literature to date.

# CHAPTER 3. Learning and teaching vocabulary in another language

Learning and teaching vocabulary in another language has been a major focus of activity for researchers and teachers alike over the past few decades (e.g. Meara, 1983, 1987; Schmitt & McCarthy, 1997; Nation, 2001, 2008) and remains a hot topic. Core themes of this body of research include: definitions of a word and lexical items (e.g. Carter, 1987; McCarthy, 1990); what words should be learned and taught, and what is involved in learning a new word (e.g. Nation, 1990); vocabulary learning strategies (e.g. Schmitt, 1997; Pavičić, 2008); vocabulary teaching (e.g. Thornbury, 2002; Nation, 2001, 2008; McCarten, 2007); monitoring, evaluating and testing vocabulary knowledge and use (e.g. Read, 1997; Bogaards & Laufer, 2004); and designing the vocabulary component of a language course (e.g. Smith, 1996).

For the purposes of this study, as the medical English vocabulary is primarily determined by the course book, **section 3.1** begins with a brief summary of what is involved in learning medical English vocabulary. **Section 3.2** then reviews the relevant research, particularly with regards to VLS use and strategies-based instruction. Criticisms of strategies research are identified in **section 3.3**. Next, definitions of VLS are explored in **section 3.4** with their taxonomies examined in **section 3.5**. **Section 3.6** addresses learner training with further considerations for VLS program design discussed in **section 3.7**. Lastly, **section 3.8** considers data collection methods for research purposes. Relevant issues in the wider field of language learning strategies are also incorporated throughout.

**What is involved in learning medical English?**

Despite the absence of a generally accepted theory of vocabulary acquisition, there are numerous intralexical factors that affect vocabulary learning (e.g. pronounce-ability, orthography, length, morphology, similarity of lexical forms, grammar, and semantic features), with aspects of each that facilitate, hinder, or have no clear effect (Laufer, 1997). Although, it is beyond the scope of this paper to consider how these factors apply to the MEV items, certain words appear easier for students to learn (e.g. *X-ray*) than others (e.g. *anaesthesiology*).

The role of the L1 is also an important consideration (Pavičić 2008). As the majority of the MEV are nouns with single meanings, a direct L1 equivalent usually exists, although there are a few exceptions (e.g. *palpitations, rapid heartbeat,* and *heart flutter* are all realised by the same lexical item in Japanese, 動悸 *douki*). Learning difficult L2 words in context helps learners to fit words into existing lexical networks, whereas easier words (generally with direct syntactic and semantic L1 equivalents) tend not to need contextual support (Groot, 1989, in Meara, 2009).

In the long-term, medical students may need English, for example, to understand and publish new research as well as communicate with patients. In the short-term, students in my context need to learn MEV both receptively and productively, mostly for role-plays and weekly tests. The purpose of

vocabulary learning, i.e. receptive and/or productive word knowledge, is crucial in deciding the best way to learn (Mondria & Wiersma, 2004), as illustrated overleaf in **Table 1**:

**Table 1: Receptive/Productive vocabulary learning aims and teaching implications**

| **Vocabulary learning aim** | **Best way to learn** | **Notes** |
|---|---|---|
| **Receptive word knowledge** | Receptive learning | Productive learning alone leads to substantial receptive learning, but takes more time. |
| **Productive word knowledge** | Productive learning | Adding receptive word knowledge does not lead to improved productive knowledge. |
| **Receptive and Productive** | Receptive and productive learning | Receptive learning alone only leads to limited productive knowledge. |

Mondria and Wiersma (2004, p. 98)

Following Richards (1976), and based on research in experimental psychology and language acquisition, Nation (2001) identified 9 different types of knowledge involved in learning a word. These relate to form, meaning, and use, both receptively and productively, as outlined in **Table 2** below:

**Table 2: What is involved in knowing a word (Nation, 2001:27)**

| | **Receptive use** | **Productive use** |
|---|---|---|
| **Form** | | |
| 1. Spoken form | What does the word sound like? | How is the word pronounced? |
| 2. Written form | What does the word look like? | How is the word written/spelt? |
| 3. Word parts (e.g. root, affixes) | What parts are recognisable? | What word parts express the meaning? |
| **Meaning** | | |
| 4. Connecting form and meaning | What meaning does this word form signal? | What word form can express this meaning? |

| | | |
|---|---|---|
| 5. Concept and referents | What is included in the concept? | What items can the concept refer to? |
| 6. Associations (e.g. synonyms, antonyms) | What other words does this make us think of? | What other words could we use instead of this one? |
| **Use** | | |
| 7. Grammatical functions (e.g. part of speech) | In what patterns does the word occur? | In what patterns must we use this word? |
| 8. Collocations | What words or types of words occur with this one? | What words or types of words must we use with this one? |
| 9. Constraints on use (e.g. register, connotations) | Where, when, and how often would we expect to meet this word? | Where, when, and how often can we use this word? |

This rich amount of information takes time to learn and may not always be necessary or relevant to learners. Moreover, presenting it immediately would probably be overwhelming and for words to be acquired, researchers estimate that somewhere between five and twenty encounters are necessary (McCarten, 2007). Accordingly, the consensus view is that vocabulary learning should be seen as incremental and that learners should be encouraged to develop their knowledge over time through repeated encounters with words (Nation, 2001; Pavičić, 2008), for example through reading (Ellis, 1997; Waring, 2002; Nation, 2008), especially for low-frequency or technical words (e.g. MEV) that occur more frequently in written than spoken language (McCarthy & Carter, 1997).

MEV may be distinguished as being technical vocabulary specific to the field of medicine, occurring more often in medical discourse but otherwise generally

low frequency. Knowing and understanding MEV is therefore closely associated with the relevant medical knowledge and although, "[s]everal writers (Cowan, 1974; Higgins, 1966; Barber, 1962) consider that it is not the English teacher's job to teach technical words" (Nation, 2001, p. 203), teachers can play an important role in helping learners to learn such vocabulary effectively. It is crucial to note that central to this role is the development of independent vocabulary learning skills and strategies in students: it is not possible to teach innumerable low frequency words, and so valuable classroom time is better spent on teaching strategies with which to learn them (Nation, 2008). Thus this paper now turns to vocabulary learning strategies.

**An overview of vocabulary learning strategies research**

Vocabulary learning strategies (VLS) research resides within the context of language learning strategies (LLS), which itself is situated within the wider field of learning strategies. Since Rubin (1975) first considered investigating the strategies of the 'good language learner' and teaching these strategies to less successful learners, a significant number of both teachers and researchers (e.g. Stern, 1975; Naiman, Frohlich, Stern & Todesco, 1978; Willing, 1989; O'Malley & Chamot, 1990; Oxford 1990; Wenden, 1991; Cohen & Macaro, 2007; Griffiths, 2008) have become increasingly interested in the possibilities for language development and autonomy, as the focus on methods and what teachers do shifted to the learning process and how individual learners learn (e.g. Nunan, 1999; Brown, 2001; Dörnyei, 2005). VLS research thus lies at the intersection between this body of research and growth in vocabulary research

in general (Schmitt, 1997; Pavičić, 2008).

As there have already been several useful reviews of the VLS field (e.g. Schmitt, 1997; Nyikos & Fan, 2007; Pavičić, 2008), **subsection 3.2.1** summarises the findings with regards to individual strategies use. **Subsections 3.2.2-4** then focus on long-term study; learner types, beliefs and awareness of VLS; and factors that influence VLS selection and their successful application.

**Strategies use, complexity, and learner abilities**

Chamot (1987, in Pavičić, 2008) discovered that ESL high school students used more strategies for vocabulary learning than any other language learning activity. Repetition was the most frequently mentioned strategy, while more complex strategies such as Keyword Method[1] were used less often (O'Malley *et al* 1985, in Schmitt, 1997) and individual instruction may be a prerequisite (Pressley, Levin & Delaney, 1982, in Schmitt, 1997). Mnemonic techniques such as Keyword, Loci Method, and peg words led to greater retention than rote memorisation (Schmitt, 1997). However, rote learning can lead to significant vocabulary gains (Carter, 1987), and for students accustomed to this these methods, they may be more effective than new strategies (O'Malley & Chamot, 1990). Rote learning may also appear 'natural' for beginners (Griffin

[1] Keyword is a mnemonic strategy that links the new L2 word to an L1 or known L2 word with a similar sound or spelling (Nation, 2008, pp. 110-113), and is one of the most widely researched VLS (Pavičić, 2008). Keyword enhanced word recall (Atkinson & Raugh, 1975; Pressley, Levin & Miller, 1982; Pressley, Levin & Delaney, 1982: all in Schmitt, 1997) and led to longer retention (Elhelou, 1994; Sagarra & Alba, 2006: both in Pavičić, 2008). Moreover, Keyword combined with another complimentary strategy may help to further retention and recall over time (Brown & Perry, 1991; Rodriguez & Sadoski, 2000: both in Pavičić, 2008).

& Harley, 1996, in Pavičić, 2008), perhaps explaining their popularity.

Shallower activities may be more appropriate for beginners (Cohen & Aphek, 1980, 1981: both in O'Malley & Chamot, 1990) while strategies requiring greater depth of processing may be more suitable for intermediate or advanced learners who can utilise more contextual clues, word associations or grouping (Chamot, 1984, in Schmitt, 1997). In contrast, certain complex strategies may be more beneficial than rote learning, regardless of ability (Hogben & Lawson, 1997, in Pavičić, 2008). This lends support to the 'Depth of processing Hypothesis' which states that learning is aided by mental activities involving greater thought or manipulation of a new word (Craik & Lockhart, 1972; Craik & Tulving, 1975: both in Schmitt, 1997). Based on neuro-scientific findings and neuro-linguistic programming, Kuehne (2006) advocates a cognitive technique that combined sensory associations with visual, auditory, and kinaesthetic input for learning vocabulary, especially difficult words.

Nation (2008) has suggested fundamental strategies to be taught, especially to help learners deal with low frequency words independently:

1. Guessing from context, especially using word parts.
2. Using mnemonic techniques, especially keyword.
3. Using dictionaries to determine meaning.
4. Using word cards to aid retention, review, and practice.

Guessing from context is dependent on the ability to decode orthographical form accurately (Ryan, A., 1997), adequate background knowledge, and the

corresponding strategic knowledge (Schmitt, 1997). The context must also be rich enough to contain clues that enable guessing (Nagy, 1997). As word parts analysis may lead to erroneous meanings, it is recommended to use this strategy to check guesses from context (Schmitt, 1997). Dictionaries are a primary reference to initially discover a word's meaning (Scholfield, 1997), and use of a bilingual dictionary in reading aids vocabulary learning and retention (Luppescu & Day, 1995, in Pavičić, 2008).

**Long-term study and vocabulary notebooks**

The incremental nature of vocabulary learning is not only self-evident but well-documented in the literature (Waring, 2002); and whilst forgetting is a natural process, Pimsleur (1967, in Schmitt, 1997) claimed it could be addressed by 'expanding rehearsal' (i.e. increasingly spaced review), possibly with a specific review schedule (Buzan, 1977; Russell, 1979, in Schmitt, 1997; University of California - San Diego, 2008). Accordingly, Thornbury (2002) suggests a compilation of principles to facilitate the transfer of learning from short- to long-term memory, including conscious attention, multiple encounters with lexical items, increasingly spaced review, retrieval and use, memory strategies (e.g. imaging, mnemonics, personalisation), and depth of learning.

Most types of students take notes on vocabulary (Ahmed, 1989), and vocabulary learning can be enriched and organised with vocabulary notebooks based on the following eleven principles:

1. *The best way to remember new words is to incorporate them into language*

*that is already known.*

2. *Organized material is easier to learn.*
3. *Words which are very similar should not be taught* [/learnt!] *at the same time.*
4. *Word pairs* (L1-L2) *can be used to learn a great number of words in a short time.*
5. *Knowing a word entails more than just knowing its meaning.*
6. *The deeper the mental processing used when learning a word, the more likely that a student will remember it.*
7. *The act of recalling a word makes it more likely that a learner will be able to recall it again later.*
8. *Learners must pay close attention in order to learn most effectively.*
9. *Words need to be recycled to be learnt.*
10. *An efficient recycling method: the 'expanding rehearsal'.*
11. *Learners are individuals and have different learning styles.*

Schmitt and Schmitt (1995, pp. 133-6)

Students can keep their notebooks on either loose-leaf paper or index cards. **Figure 1** below provides an illustration of a completed page or card:

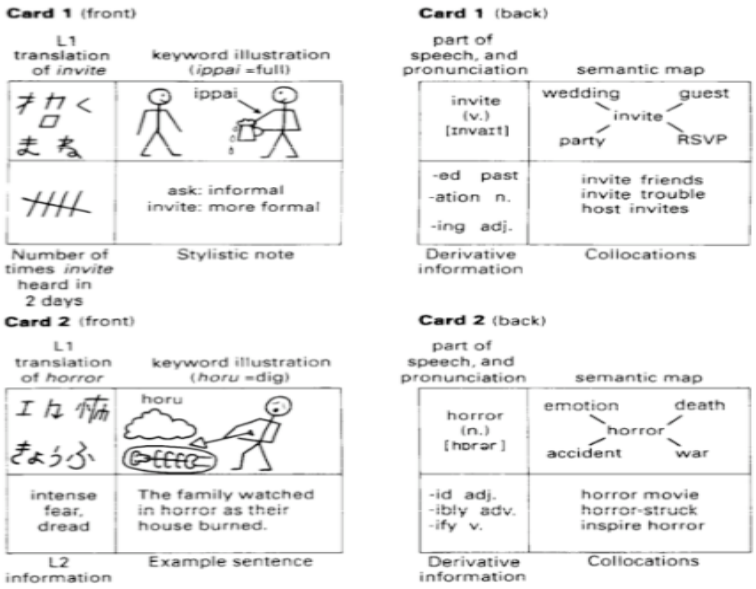


**Figure 1: Completed word cards (Reproduced from Schmitt & Schmitt, 1995, p. 138)**

Hall (2007) investigated vocabulary notebooks of the kind advocated by Schmitt and Schmitt (1995) and McCulloch (2006), and found that Japanese

university students with greater vocabulary knowledge used notebooks to study the depth of information associated with an L2 word more than learners in a nursing school, and generally thought the different types of word knowledge to be more useful. As might be expected, the L1 meaning was the most frequent type of information entered by both groups.

Word cards, with the new L2 word written on one side and the L1 equivalent written on the back, have also been found effective for review when used systematically; they are widely recommended and used in Japan and elsewhere (Schmitt & Schmitt, 1995; Nation, 2001; Waring, 2004).

**Learner types, beliefs, strategies use and awareness**

Using cluster analysis, Ahmed (1989) categorised learners into five types according to the strategies they used. Three 'good learner' types were characterised as: using a variety of strategies; being aware of their learning; knowing the importance of learning words in context; and conscious of the relationship between new and known L2 words. Sanaoui (1995) identified two distinct approaches to learning vocabulary: independent learners who reviewed and practiced target words, structuring and varying their vocabulary learning, as opposed to learners who did not.

Learners may resist giving up familiar strategies in favour of new ones (O'Malley & Chamot, 1990) and culture may give rise to different opinions about the usefulness of VLS (Schmitt, Bird, Tseng & Yang, 1997, in Schmitt,

1997), although context might be more important than cultural background in determining strategies selection (Kojic-Sabo & Lightbrown, 1999). White (2008) emphasises the importance of beliefs on language learning:

> …beliefs are important because learners hold their beliefs to be true and these beliefs then guide how they interpret their experiences and how they behave. …learners' beliefs were likely to affect what they do as language learners – and what they are prepared to do (Abraham and Vann, 1987; Horwitz, 1987, 1988; Wenden, 1986a, 1986b, 1987). …successful learners develop insights into beliefs about the language learning process, their own abilities and the use of effective learning strategies (Ehrman and Oxford, 1989, 1990; Oxford, 1990; Zimmerman and Martinez-Pons, 1986). (p. 121)

For instance, learners are likely to associate mental images during etymological elaboration[2] which has a positive mnemonic effect, but there is no advantage to recall where learners perceived the strategy as unhelpful or irrelevant, or experience frustration (Boers, Demecheleer & Eyckmans 2004).

Schmitt (1997) examined 600 Japanese learners' reported use of VLS and their perceived helpfulness and found different patterns of strategy use by four different age groups. A number of trends in the use of specific strategies and their perceived helpfulness also emerged. However, the question of *why* remained unanswered in Schmitt's study. Similarly, Fan (2003) conducted a wide-scale study involving 1,067 first-year university students of different disciplines in Hong Kong. The VLS survey used a five-point Likert scale in order to glean more detailed information than Schmitt (1997) about the four following issues: (1) the most and least frequently used strategies and those

[2] Etymological elaboration is a teaching technique of proving information about the origins of an idiom.

perceived as most and least useful; (2) discrepancies between perception and usage; (3) strategy use by most proficient L2 users; and (4) strategies most relevant to learning high- and low-frequency words. Even though Fan did not find significant correlations between perceived usefulness and actual use, 24 VLS were used significantly more often by the higher scoring group of learners. She further identified three types of strategies recommended for the learning and teaching of L2 vocabulary:

> 1. Strategies which are perceived to be useful, often used, and used significantly more often by the most proficient students, such as "using the dictionary to find out the context meaning of the new word" and "recalling the meaning of the known words to help with reading."
> 2. Strategies which are perceived to be useful and seldom used, but found to be related to high vocabulary proficiency, such as the management and sources strategies.
> 3. Strategies seldom used and perceived as not too useful, but used significantly more often by more proficient students than by student with lower vocabulary proficiency, such as "I think about my progress in learning vocabulary" and "I used the dictionary to find out the appropriate usage of the word." (p. 235)

The third recommendation, however, may be mistakenly based on the assumption that lower proficiency learners are able to adopt the strategies used significantly more by proficient students. In other words, strategies development or proficiency may also be a key factor in determining strategies selection and use.

Kudo (1999) found that exposure to many VLS made some students realise how abundant strategies were, and other students planned to try new VLS that looked interesting, although more complex strategies (e.g. Keyword and

semantic mapping) seemed to need instruction before students would attempt them. Additionally, she proposed using a VLS questionnaire as a diagnostic tool to identify strategies use as well as raise learners' awareness (see further, **subsection 3.6.1** below).

To summaries, it is evident that earlier studies primarily looked at individual or small groups of VLS, often in order to find the most effective ones (Pavičić, 2008), while more recent studies have begun to examine the combinations or clusters of strategies and their effective application. A number of researchers argue that the latter studies may be of greater importance (e.g. Porte, 1988; Gu & Johnson, 1996), especially as they relate to learning and learner variables or individual differences.

**Individual differences and strategies**

Dörnyei and Skehan (2003) provide a review of four main areas relating to individual differences: foreign language aptitude; learning style; learner strategies; and motivation. Motivation is often considered essential for learning (e.g. Rubin, 1975) and learners need to develop skills and strategies to sustain and regulate motivation to combat the typical decline that occurs, "…once the initial enthusiasm and novelty of learning a new language begin to wear off" (Ushioda, 2008, p. 27). Rubin (2008) points to research (Rubin & McCoy, 2005) which indicates that effective strategies instruction can improve learners' performance, even where motivation is lacking.

There are few studies on language and personality, but limited research reveals greater fluency amongst extravert than introvert L2 users (particularly in stressful, interpersonal situations), and links "…superior short-term memory and resistance to stress… (Dewaele & Furnham 2000, Dewaele 2002b)" (Dewaele, 2004, p. 134). Learning styles, as indicated by the Chinese version of the Myers-Briggs Type Indicator (MBTI), significantly affected LLS choices, with the most influential factor being 'judging'; including learning styles in strategies training, and encouraging the development of strategies typically associated with other styles (a trait of high achievers) may thus be beneficial (Li & Qin Xiaoqing, 2006). However, Ehrman (2008) cautions teachers against insisting on participation in activities that work against their natural inclinations, and suggests providing variety and alternatives to suit different personalities. Accordingly, the teacher's challenge is to, "…design and deliver language instruction relevant to a multiplicity of learning styles" (Nel, 2008, p. 54). This involves four key areas, outlined in **Table 3** below, that were considered relevant to the present study:

**Table 3: Summary considerations for teachers regarding learning styles (Nel, 2008)**

| Key area | Considerations |
|---|---|
| Instructional planning and presentation | First, identify students' learning styles and raise their awareness of their own preferences. Plan classes with a variety of tasks to enable success for different learning styles. |
| Teaching/Learning environment | Promote a safe, comfortable learning environment where learners feel valued and supported regardless of style. |
| Assessment | Include a variety of assessment components and tools. |
| Learning and teaching style | Be aware of your own style preferences which may affect students' learning (Harmer, 1998). |

Griffiths (2008) draws together other prolific researchers and educators to discuss the interaction between the 'good language learner' and both learner and learning variables, listed in **Table 4** below:

**Table 4: Variables affecting the good language learner (Griffiths, 2008)**

| **Learner variables** | | **Learning variables** | |
|---|---|---|---|
| • motivation | • metacognition | • vocabulary | • reading |
| • age | • autonomy | • grammar | • writing |
| • learning style | • beliefs | • function | • teaching/learning method |
| • personality | • culture | • pronunciation | • strategy instruction |
| • gender | • aptitude | • listening | • error correction |
| • strategies | | • speaking | • tasks |

Although it is not possible to investigate and account for all these variables nor contemplate an all inclusive model to represent their interaction, they provide a useful overview of factors that might need to be considered when implementing a VLS program. In addition, it is worth remembering that, "…strategies are not inherently good, but are dependent on the context in which they are used" (Schmitt, 1997, p. 202). Next, **section 3.3** reviews the major criticisms related to learning strategies research.

### Criticisms of strategies research

It is important to acknowledge that the notion of strategies has not been without controversy. In a recent review, Grenfell and Macaro (2007) summarise the criticisms levied at LLS, which include: doubts regarding self-reports and the validity of making connections between empirical observations and underlying

mental processes (e.g. Seliger, 1983; Ellis, 1986; Rees-Miller, 1993); imprecise terms and a lack of conceptual clarity (Stevick, 1990; Kellerman, 1991; Dörnyei & Skehan, 2003; Dörnyei, 2005; Tseng, Dörnyei & Schmitt, 2006); and uncertainty as to the transferability of inventories across sociocultural domains (LoCastro, 1994) or applicability of culturally-biased expectations (Jones, 1995). In addition, the majority of research has only examined correlations with strategy use and not causality, for example, to determine whether proficiency level dictates strategy selection or if strategies have an effect on proficiency level (Grenfell & Macaro, 2007).

Grenfell and Macaro observe the subsequent modifications to claims about LLS:

> The first is a move away from a general profile of the good language learner to an individual's strategic reaction to a contextualized task or series of tasks. The second is a shift a way from an interest in the quantity of strategy use to an interest in the quality of strategy use. Both these shifts brought with them an increasing interest in metacognition as the orchestrating mechanism for combining strategies effectively in any given situation. (p.23)

This reflects a paradigm shift in educational psychology in the 1990s from product-oriented research on learning strategies (i.e. *what* language learners do) to process-orientated research on a wider concept of self-regulation (i.e. *how* language learners enhance the effectiveness of their learning):

> *Self-regulation* refers to the degree to which individual are active participants in their own learning; it is a more dynamic concept than "*learning strategy,"* highlighting the learners' own "strategic efforts to manage their own achievement through specific beliefs and process" (Zimmerman and Risember, 1997, p.105). (Dörnyei & Skehan, 2003, p. 611)

This shift was mostly prompted by the lack of a sound theoretical basis that frustrated researchers investigating learning strategies. However, Gao (2006) contends that LLS research still has further contributions to make to understanding both self-regulation and the learning process. Similarly, Dörnyei and Skehan (2003), despite their criticisms, acknowledged that learning strategies' can be taught, inherently motivate learners, and help them to become more effective in their learning. Indeed, Dörnyei went so far as to conclude:

> I am in agreement with Hsiao and Oxford's (2002) belief that learning strategies constitute a useful tool kit for active and conscious learning, and that these strategies pave the way toward greater proficiency, learner autonomy, and self-regulation. (Dörnyei, 2005, p. 195)

Accordingly, it is with a strong pedagogical focus that this classroom-research has been conducted with vocabulary learning strategies maintaining centre-stage. Next, **section 3.4** considers what is meant by the term vocabulary learning strategies then **section 3.5** examines their associated taxonomies.

### *What are vocabulary learning strategies?*

In order to establish what VLS are, it is necessary to examine definitions of LLS. A useful point of departure is provided by Pavičić (2008), who reviews and summarises definitions of LLS as follows:

> …specific actions, behaviours, steps or techniques that learners use (often deliberately) to improve their progress in development of their competence in the target language. (pp. 51-2)

Whilst this appears to synthesise all the key elements in previous definitions, Griffiths (2008) proposes a more concise definition of LLS:

> Activities consciously chosen by learners for the purpose of regulating their own

> language learning. (p. 87)

It includes six key elements: (1) activity; (2) a degree of consciousness; (3) option or choice; (4) purposefulness or goal-orientation; (5) regulation or control; and (6) facilitation of learning (contrasted with using) language (Griffiths, 2008). Oxford and Lee (2008) endorse this as "…a succinct definition…" (pp. 309-10), which Griffiths hopes

> …is broad enough to allow the freedom to research areas within it…, but precise enough to exclude learner characteristics or activities which are not language learning strategies (such as learning style, skills, or communication strategies). (p. 87)

For the purposes of this research, Griffith's definition was adapted to formulate a more flexible working definition for vocabulary learning strategies:

> Activities consciously chosen (*or automatically used*)[3] by learners for the purpose of regulating their own (*vocabulary*) learning.
>
> Based on Griffiths (2008) and Pavičić (2008) [my *italics*]

Lastly, Pavičić (2008) points out that VLS may be applied to other tasks (e.g. reading), and general LLS can also serve vocabulary learning (e.g. planning study time).

***How are VLS categorised?***

In the wider field of LLS, although there are numerous taxonomies of LLS (e.g. Naiman *et al.*, 1978; Oxford, 1990; O'Malley & Chamot, 1990; Wenden, 1991; Stern 1992; Brown, 2000), most share a similar classification scheme that

[3] It should be noted, however, that issue of consciousness (or 'deliberate use') remains controversial because LLS may become automatic and subconscious (Wenden, 1991, p. 18), and the point at which this occurs may not be definable, noticeable, or measurable.

comprises of four categories (Dörnyei, 2005; Pavičić, 2008), shown in **Table 5** below:

**Table 5: Four main categories of LLS**

| Category | Description |
|---|---|
| Cognitive strategies | These strategies involve mental steps or actions aimed at understanding, manipulating, storing, and retrieving information. |
| Metacognitive strategies | They refer to the higher order planning, organisation, monitoring, and evaluation of the learning process. |
| Social strategies | This group of strategies relate to cooperating and learning with others. |
| Affective strategies | These are used to regulate and account for emotions or 'affective filters' and experiences that influence participation in learning |

Dörnyei (2005) criticises the last two groups on the grounds that they are not related to the often-cited cognitive theoretical basis of the model as a whole, but concedes that they cannot be omitted. Furthermore, the distinction between one category and the next is not always clear, and individual strategies might logically be placed in different or multiple categories depending on the situation or context in which they are used (Schmitt, 1997).

Following the LLS research, VLS taxonomies were proposed by Stoffer (1995), Gu and Johnson (1996), Schmitt (1997), Kudo (1999), Nation (2001), and Fan (2003). These are outlined in **Appendix B**. More recently, Bennett (2006) created a bilingual survey for the Japanese university context, based on Schmitt (1997) and Fan (2003). He used a five-point Likert scale as per Fan, and selected 39 of Schmitt's 58 VLS although the basis of selection was not made

explicit[4]. Bennett found that the taxonomy held three useful roles, enabling teacher-researchers to: (1) select appropriate VLS for instruction; (2) find evidence of VLS use, or lack thereof, and assess students' beliefs; and (3) assess changes in beliefs and use of VLS over time.

Tseng, Dörnyei, and Schmitt (2006) reviewed the three VLS taxonomies by Schmitt (1997), Gu and Johnson (1996), and Stoffer (1995), and surmised, "It seems that the area of VLS is still in need of an instrument which is truly psychometrically valid" (p.85). As a possible solution, they proposed the *Self-Regulating Capacity in Vocabulary Learning* scale (*SRCvoc*), described as:

> …a new conceptual approach for operationalizing strategic learning and … a new instrument … to measure language learner self-regulation in a situated matter. The items of SRCvoc, instead of being operationalized as specific behavioural descriptions, were designed in a way that they would tap into general trends and inclinations, and the theoretical basis of the proposed construct was provided by Dörnyei's (2001) framework of self-regulation. (Tseng, Dörnyei & Schmitt, 2006, p. 95)

Significantly, they concluded that the instrument was empirically validated with strong evidence of a meaningful, appropriate internal structure of the model. As noted by the authors, the *SRCvoc* is framed in terms of general trends rather than specific behaviours as typical of VLS inventories, as illustrated below:

---

[4] Bennett (*personal communication*, 12th February 2009) removed or combined strategies that fit any one of the following criteria:

i. strategies that were impossible in the students' context (e.g. Use the vocabulary section in your textbook - there was no such section);

ii. strategies that were felt remarkably similar and could be combined without confusing students (e.g. Keyword method, Peg method & Image word's meaning became Make a mental image of the word's meaning); and/or

iii. strategies that were unfamiliar to the teacher-researcher (e.g. Loci method).

1. Once the novelty of learning vocabulary is gone, I easily become impatient with it.
2. When I feel stressed about vocabulary learning, I know how to reduce this stress.
3. When I am studying vocabulary and the learning environment becomes unsuitable, I try to sort out the problem.
4. When learning vocabulary, I have special techniques to achieve my learning goals. (p. 98)

The 'special techniques' (i.e. VLS) and *how* learners solve their problems are not made explicit. Accordingly, Pavičić (2008) points to the continued absence of a satisfactory VLS typology but asserts that Schmitt's taxonomy remains the most comprehensive and, "…needs to be explored in more detail" (p.67). However, in her study of Croatian EFL primary school learners, she determined that previous classifications of VLS (e.g. Kudo, 1999; Oxford, 1990) were inapplicable and thus proposed three new categories for the 27-item *Vocabulary Learning Strategies Questionnaire for Elementary Schools* (*VOLSQES*). Pavičić (2008) concluded:

> …[the VOLSQES]… should be considered valid and reliable in measuring the frequency of VLS use and … is simple enough to administer to elementary school learners… [but]… further and more detailed psychometric testing of the questionnaire should be performed… (p. 104)

To conclude this section, it is evident that the debate regarding strategies categorisation continues, although Pavičić (2008) has taken an important step in devising a questionnaire for primary school EFL learners, and Tseng *et al.* (2006) have offered an alternative path applying self-regulation (see further Tseng & Schmitt, 2008). Of vital importance, however, is the purpose for which a VLS inventory is intended. In my context, it is perhaps not so much

the categorisation of strategies, but the value in having a comprehensive list of VLS applicable to Japanese first-year medical students that is crucial insomuch as it can potentially serve the following key purposes:

1. raising learners' awareness of VLS they use or do not use;
2. introducing new VLS and stimulating thought and/or discussion about them;
3. measuring (changes in) reported use and perceived helpfulness of VLS, and highlighting any differences between beliefs and use; and
4. providing a diagnostic to aid the planning and teaching of a VLS program.

That said, it must be acknowledge that the reliability of self-reports remains questionable (Qian, 2004) and language teachers should therefore "…factor in this possible deviation when teaching new vocabulary or planning and organizing learning activities" (p.167). **Section 3.6** thus reviews learner training prior to considering VLS program design (in **section 3.7**).

**Learner training and VLS**

Following Wenden (1991), Richards, Platt and Platt (1992), and Brown (2000), learner training or strategies-based instruction (SBI) was summarised as, "…teaching learners how to learn, with a view to becoming independent and autonomous learners" (Brown, 2005, p. 14). Whilst acknowledging that some researchers consider learner training unnecessary (e.g. Krashen, 1981; Krashen & Terrell 1983; Kellerman, 1991, in Grenfell & Macaro, 2007) or only weakly effective (Hassan *et al*., 2005, in Rubin, Chamot, Harris & Anderson, 2007), the majority of arguments and research in favour are promising (e.g. Oxford, 1990; O'Malley & Chamot, 1990; Wenden, 1991; Stern, 1992; Nunan, 1997,

1999; Ryan, S., 1997; Brown, 2001; Nation, 2001, 2008; Moir & Nation, 2007).

Learners in my context have had at least 6 years of EFL experience since Junior High School and have proven themselves to be comparatively successful learners based on their university entrance exams and English placement test results. Accordingly, we might question the need for learner training. However, medical English is relatively new for most of them and, consequently, "…they may need to acquire additional strategic knowledge to deal with new kinds of learning" (Rubin *et al.*, 2007, p. 50). Rubin *et al.* also highlight the relationship with motivation:

> Many who take a *required* course are not very motivated and this can directly affect their receptiveness to efforts to facilitate their learning. On the other hand, students who are achievement orientated and want to earn a passing grade, will be more open to such efforts. Those adults for who learning is clearly related to personal or life goals, especially related to career, are likely to be the most motivated and more open to learning about learning. (p. 15)

Although the medical English course is required, feedback from the experienced university staff suggests that most of the students in question would seek at least a passing grade and wished to become doctors (Brown, 2008b). Essentially, learner training might help promote autonomy by raising learners' awareness of a number of key areas: learning behaviours, attitudes, and beliefs; available learning materials and resources; and how best to use them to meet their individual needs, interests and goals.

The research on implementing instruction in LLS indicates an increasing

consensus that: (1) strategies training should be explicit (i.e. learners should be clearly told what and why strategies are being used); and (2) integrated or embedded instruction is more effective (i.e. strategies instruction is included within the regular content of the class as opposed to being taught separately, for example, as a 'study skills' course) (Rubin *et al.*, 2007). More specifically, integrated VLS instruction can lead to significantly improved vocabulary performance (Nyikos & Fan, 2007):

> Although vocabulary learning strategies are embedded in practically all objectives and principles of L2 vocabulary teaching, it is recommended – on the basis of research findings – that elements of explicit strategy training be included. At any rate, learners need to be encouraged to discover new and develop the existing vocabulary learning strategies in order to be able to deal with lexical items on their own and outside the classroom. (Pavičić, 2008, pp. 23-4)

With regards to selecting VLS for instruction, Nation (2001) proposed that:

> …to deserve attention from a teacher a strategy would need to:
> 1. involve choice, that is, there are several strategies to choose from
> 2. be complex, that is, there are several steps to learn
> 3. require knowledge and benefit from training
> 4. increase the efficiency of vocabulary learning and vocabulary use. (p. 217)

The research on VLS training is nonetheless limited, and few instructional programs have been suggested (Pavičić, 2008). An early example was Ellis and Sinclair (1989) who included a chapter on vocabulary within their framework for learner training. Their seven steps aimed to address cognitive, metacognitive, and socio-affective strategies with the following questions:

> Step 1 How do you feel about learning vocabulary?
> Step 2 What do you know about English vocabulary?

Step 3 How well are you doing?
Step 4 What do you need to do next?
Step 5 How do you prefer to learn vocabulary?
Step 6 Do you need to build up your confidence?
Step 7 How do you organise your vocabulary learning? (p. iv)

Recently, Nation (2007, 2008) has outlined an approach to planning and teaching vocabulary which incorporates VLS and, based on the need to develop fluency in strategies use, advocates, "…planning a mini-syllabus for the development of a strategy" (Nation, 2008, p. 77). Nation also provides example sequences for the training of fundamental VLS listed above in **sub-section 3.2.1**. Pavičić (2008) similarly outlines a 'mini plan' with a flexible order depending on learners' needs:

- The teacher demonstrates the use of the strategy.
- Steps involved in the strategy are separately practised.
- Learners in pairs use the strategy, supporting each other.
- Learners report on their strategy use.
- Learners report on the difficulties and success in strategy use outside the classroom.
- Teachers systematically test the use of strategy and provide feedback.
- If needed, learners consult the teacher on their strategy use. (p. 76)

Whilst this appears thorough, a simpler model was preferred, especially given the limited time available for VLS training. Looking at the wider context, almost all SBI models contain the following four stages (Rubin *et al.*, 2007):

1. raising awareness of the strategies learners are already using;
2. teacher presentation and modelling of strategies so that students become increasingly aware of their own thinking and learning processes;
3. multiple practice opportunities to help students move towards autonomous use of the strategies through gradual withdrawal of the scaffolding; and
4. self-evaluation of the effectiveness of the strategies used and transfer of

strategies to fresh tasks. (p. 142)

As per **section 3.2.4** above, SBI is influenced by a number of factors, including the learning context, type of task, and individual learner's style, goals, and background knowledge (Griffiths, 2008). Rubin *et al.* (2007) also summarise the main factors that affect teachers trying to implement SBI: curriculum constraints, teaching style and comfort with it, teacher beliefs, and teacher knowledge and skill in promoting strategies. They emphasised the common need for teachers to educate themselves and develop experientially in order to become effective, and Anderson (2008) further argues that, "If we want to develop metacognitively aware language learners, we must have metacognitively aware teachers" (p. 104). Anderson offers a model of metacognition that comprises five intersecting components illustrated in **Figure 2** below:

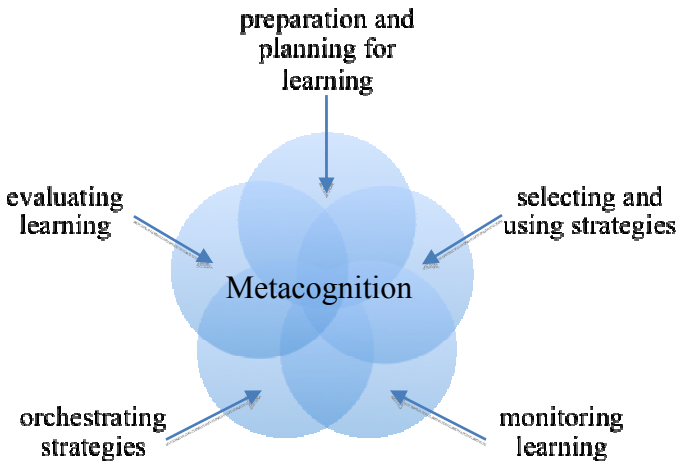


**Figure 2: A model of metacognition (Reproduced from Anderson, 2008, p. 100)**

To support strategies instruction, Anderson also makes practical suggestions to address each component, illustrated overleaf in **Table 6**:

**Table 6: Five components of metacognition (Anderson, 2008)**

| Component | Classroom procedures and learning tools |
|---|---|
| **Preparing and planning for learning** | Activate and build background knowledge. |
| **Selecting and using strategies** | Explicitly teach strategies in the classroom. Use surveys or questionnaires to introduce strategies. |
| **Monitoring learning** | Help students to develop monitoring skills (e.g. using journals or think aloud protocols). |
| **Orchestrating strategies** | Use survey or questionnaires followed by discussion |
| **Evaluating learning** | Use evaluation forms, videos or self-assessment. |

To summarise, learner development and autonomy are facilitated by learner training. This may be seen as a form of scaffolding on a 'macro' level whilst scaffolding on a 'micro' level encourages learners to use strategies independently. Next, **subsections 3.6.1-3** addresses the four stages of SBI.

### Raising learners' awareness of VLS

The first step to learning is 'noticing' (Schmidt 1990), and Rutherford (1987) emphasised consciousness-raising. Similarly, Rubin *et al.* (2007) states:

> Learning strategies instruction begins with helping students become aware of what strategies are and which strategies they are already using (Cohen, 1998; Chamot *et al.*, 1999; Grenfell and Harris, 1999; Macaro, 2001; and Chamot, 2004). This consciousness-raising helps students begin to think about their own learning processes. (p. 143)

Eliciting learners' knowledge about strategies is also essential to determine an appropriate starting point for SBI, while Rubin *et al.* further point out that investigating learners' beliefs will also help to address any motivational issues. They present and evaluate five techniques for raising awareness (shown in

**Table 7** below):

**Table 7: Awareness raising techniques (Rubin *et al.*, 2007, p. 152)**

| Technique | Advantages | Disadvantages |
|---|---|---|
| **Questionnaires**: Task- or skill-specific questionnaires are more useful. | Ready-made questionnaires are easy to use and take relatively little time. | Connections between strategies and task, goal, etc may not be clear. |
| **Focus groups**: Groups of learners focus on particular problems and solutions. | Allows teachers to show how strategies and learners' goals are related. | Takes class time and teachers require knowledge of a range of strategies. |
| **Ask a question**: The teacher asks learners how they produced their answer. | Easy to use at any time. | Prompting may be necessary for learners to access their strategies. |
| **Journals**: Guided questions can help focus learners. | Encourages learners to reflect on an individual basis and consider options. | Journals may need to be written in the learners' first language. |
| **Reading about the process**: Learners can read materials aimed at them. | Learners can individually read about the process in their own time. | Translations may be necessary as materials may not be level-appropriate. |

All of these techniques could feasibly be used in the VLS program, for example, in the form of a VLS questionnaire, in-class activities, reflection tasks, and short articles.

### Presenting and practicing strategies

Rubin *et al.* (2007) emphasises that instruction should be in context, directly addressing learners' problems, and they advise presenting strategies in terms of potential usefulness. Learners need to practice strategies so that they become fluent and comfortable using them, "…to a point where it is easier to use them than not to use them" (Moir & Nation, 2007, p. 171). Teachers hence need to

plan strategies review in class and encourage learners to use them outside class.

**Self-evaluation of strategies use**

> Learners need to reflect on and question their own learning behaviour. … Learners can also keep a written record of their own learning including their reflections on what worked well and what did not. (Moir & Nation, 2007, p. 171)

Self-evaluating strategies is essential to develop learners' critical awareness of how well they use strategies, when they are effective (or not), and the possibility of transfer to other learning goals (Rubin *et al.*, 2007). Learners should also be encouraged to evaluate their learning goals which can be made more successful if they are 'SMART': **s**pecific, **m**easurable, **a**ttainable, **r**elevant, and **t**ime-bound (Drucker, 1954; Rubin & McCoy, 2008).

**Further considerations for designing a VLS program**

Ghazal (2007) summarises the steps for establishing a framework for VLS instruction in EFL: highlight the benefits of strategies training; identify learners' current strategies use; determine the strategies and combinations to be taught (Fan, 2003); explain the goals and ideal conditions of each strategy; plan SBI with mini-syllabi for individual strategies, ensuring adequate time for VLS practice and development (Nation, 2001); and consider the learner and learning variables that influence strategies' effectiveness. In addition, vocabulary learning activities in course materials should be analysed since they potentially involve numerous VLS (Jurković, 2006). While considering all the variables and ideal conditions may in reality be overwhelming, especially for teachers

who are new to SBI (Rubin *et al.,* 2008; Anderson, 2008), most steps appear not only manageable but practical.

Next, Nation (2008) suggests that teachers' roles with respect to vocabulary are as follows:

> …in order of importance, (1) to plan and implement an appropriate vocabulary learning program for learners, (2) to train learners in useful vocabulary learning strategies, (3) to test and monitor learners to ensure that they are receiving an appropriate program, and (4) finally to teach high frequency vocabulary. (p. xii)

Key issues in planning and implementing a VLS program, including VLS training have been addressed in **sections 3.1-6** above, so **subsections 3.7.1-2** briefly turn to the latter two roles.

**Testing and monitoring learners**

Nation (2008) identifies different purposes and features of vocabulary tests and provides a useful overview, including a criteria for their evaluation. In my context, vocabulary tests are needed to promote learning, assess students knowledge of MEV and award a grade, and measure vocabulary growth.

Accordingly, 9 weekly MEV tests formed part of the medical English course and accounted for 25% of students final grade. In addition, the *Vocabulary Levels Test* (VLT) offers a practical and reliable measure of learners' receptive vocabulary knowledge (Laufer, 1998, Beglar & Hunt, 1999) and is perhaps the best-known (Read, 2004). It is essentially a diagnostic test but may also measure vocabulary growth, and has been used in a numerous studies (e.g.

Smith, 1996; Laufer, 1998; Bennett, 2006; Hall, 2007). Although newer versions are more reliable (Nation, 2008), the older versions take less time to complete, containing 18 rather than 30 items in each level. However, testing only the breadth of receptive vocabulary is limited:

> … ultimately the question is not what learners know about a word but what they can do with it: being able to pronounce it, recognize it in connected speech and writing, and use it fluently in their own production. Thus, measures of declarative knowledge need to be complemented by test of vocabulary in use in order to obtain a full picture of the learners' lexical competence. (Read, 2004, p. 273)

Taking this into consideration, lexical profilers group texts into different vocabulary frequency levels, e.g. *VocabProfile* (Heatley & Nation, 1994; Cobb, no date) and *Lexical Frequency Profile* (Laufer & Nation, 1995). They may indicate not only vocabulary growth (Laufer, 1998) but also development in the complexity of learners' vocabulary use and, by implication, proficiency (Bennett, 2006).

**Teaching vocabulary**

Based on feedback from the program director (Brown, 2008b), my learners were assumed to have a reasonable command of the most frequent words so only some deliberate teaching of MEV in class, which would further serve to demonstrate VLS, was anticipated.

Nation (2008) outlines the deliberate teaching of vocabulary and illustrates ways to highlight meaning, form, and use. Similarly, Pavičić (2008) identifies two major categories of vocabulary teaching strategies (VTS); first relating to

presentation of new lexical items (meaning and form); and, second, review and consolidation. **Table 8** below lists the most prevalent VTS:

**Table 8: Most frequently mentioned vocabulary teaching strategies (Pavičić, 2008)**

| **Meaning-focused presentation** | **Connecting meaning and attending to form** |
|---|---|
| Connecting an L2 item with its equivalent in L1 | Oral drill |
| Defining the meaning | Phonetic transcription |
| Presentation through context | Presentation of the graphic from |
| Directly connecting the meaning to real objects or phenomena | Encouraging learners to try and spell the word |
| Active involvement of learners in presentation | |
| **Review and consolidation** | |
| Mechanical repetition | Copying words |
| Integrating new words with the already known | Word manipulation |
| Semantic elaboration | Creating mental images |
| Tasks for word identification | Personalisation |
| Tasks for recalling words from memory | Productive use of words |
| Tasks for expansion of lexical knowledge | Multiple encounters with the word |

MEV is presented in the textbook in bilingual word lists. These appear to offer the most efficient way to convey meaning and learn large amounts of vocabulary in a short time (Nation, 1982). However, linking L2 words with pictures can be more effective than only using L1 equivalents (e.g. Kopstein & Roshal, 1954; Webber, 1978: both in Schmitt, 1997). Grouping words (O'Malley & Chamot, 1990) and presenting vocabulary in colour, notably blue and red, also aid vocabulary retention (Gnoinska, 1998). Additionally, physical action during learning facilitates language recall (Saltz & Donnenwerth-Nolan, 1981, in Schmitt, 1997), and may be used spontaneously by learners (O'Malley

*et al*, 1983, in Schmitt, 1997) or as teaching methodology, e.g. Total Physical Response (TPR) (Asher, 1977, in Schmitt, 1997).

In addition to implementing a system for structured study and revision, with revision activities in class before the test, teachers can facilitate students vocabulary learning by providing information about aspects of word knowledge, ways to learn vocabulary (i.e. VLS), and different learning styles (Smith, 1996). Different techniques may be better suited to students with particular learning styles so including a variety will help to cater for classes with different learners (Oxford & Crookall, 1990).

**Research considerations**

Freeman (1998, p. 97), expanding of Denzin (1978, quoted in Patton, 1990) outlines five dimensions of triangulation (illustrated in **Figure 3** below) to help ensure rigorous and reliable research:

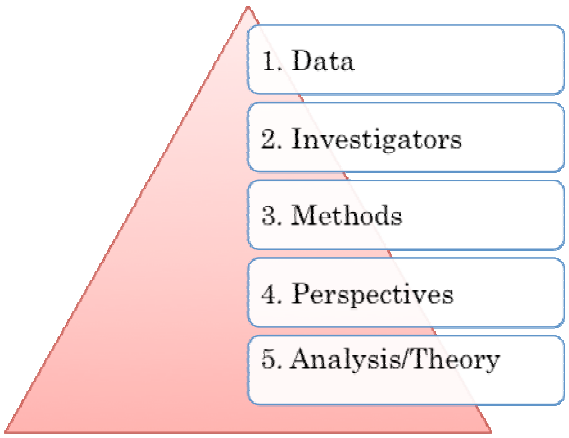


**Figure 3: Freeman's (1998) five dimensions of triangulation**

This might be applied to my context as outlined in **Table 9** overleaf:

**Table 9: Possible applications of triangulation in my context**

| Form of triangulation | Application of triangulation in my context |
|---|---|
| **1. Data** (qualitative & quantitative)<br>a. Learners' vocabulary levels<br>b. Learners' beliefs and use of VLS | Vocabulary Levels Test, MEV tests, VLS surveys, written reflection assignments, end of course evaluation forms, and interviews. |
| **2. Investigators** | Teacher-researcher, outside observer(s), and learners. |
| **3. Methods** | Tests, written assignments, questionnaires, surveys, interviews, classroom observation, and teaching journal. |
| **4. Perspectives** | Learners, teacher-researcher, and outside observer |
| **5. Analysis/Theory** | Cognitive theory, learner development, autonomy, language learning strategies, self-regulation. |

## Summary

This chapter has defined medical English vocabulary, considered what is involved in learning MEV both receptively and productively, and noted the incremental nature of vocabulary learning (**section 3.1**). VLS research has been reviewed with a focus on fundamental strategies, long-term vocabulary development, and strategies use. It was found that strategies use is inextricably linked with both learner and learning variables which depend on the individual, the task, and context (**section 3.2**). Despite criticisms (**section 3.3**), VLS appear to have clear pedagogical benefits, not least related to motivation. Following a broad definition of VLS (**section 3.4**), a number of taxonomies were reviewed with their useful roles in VLS instruction, program planning, and research (**section 3.5**). **Section 3.6** examined models of learner training that generally had four key stages (awareness-raising, presenting, practicing, and evaluating

strategies) before **section 3.7** summarised the further considerations for a VLS program, including the selection, combination, and teaching of strategies; testing and monitoring; and vocabulary instruction. Finally, **section 3.8** considered triangulated research methods and data collection not only to investigate my context but also serve learners' needs.

The next chapter outlines the development and integration of the VLS program into the medical English course, and how research was conducted.

# CHAPTER 4. Innovating and integrating a VLS program

As a teacher investigating my own context, it was necessary to remain flexible to the changing needs of my learners and institutional requirements. The research agenda also needed to respond appropriately to meet professional and ethical obligations and priorities. Thus it was strongly felt that research methods used in class should also serve learners' and course goals. In order not to have potentially denied one class the opportunity to benefit from a VLS program, an experimental research design with a control group and experimental group was ruled out. Besides, the small sample group (26 students) would have made it difficult to produce results that might be generalised. Hence, classroom-based action research with detailed descriptions of the research context and procedures focusing on qualitative data but supplemented with quantitative measures was preferred. Next, **section 4.1** outlines the planning process, **section 4.2** the implementation of the VLS program, and **section 4.3** provides a summary.

## Planning and designing the VLS program

The planning phase necessarily accounted for three main perspectives; those of the learner, the teacher, and the researcher respectively. From my perspective as a teacher, it was essential to devise a VLS program that complemented the course content and materials. After analysing the opportunities for vocabulary learning in the course book (cf. Jurković, 2006), Chamot *et al.* (1999) appeared to offer an suitable frame of reference with its easy-to-follow, practical approach to learning strategies instruction that considers both language and

content. Referring to the learning strategies summary (pp. 15-17), I planned to integrate these into my classes (**Appendix C**). However, what I did in practice proved to be notably different (as per **section 4.2** below).

For classroom research, adapting Bennett (2006), the following instruments were administered at the beginning and end of the course: (1) Vocabulary Levels Test (VLT) (on receptive knowledge) (paper version); (2) VLS Survey; and (3) written reflection assignments. The VLT was discussed above in **subsection 3.7.1** so **sub-sections 4.1.1-2** focus on the VLS survey and assignments. **Subsection 4.1.3** outlines Vocabulary Learning Sheets, and **subsection 4.1.4** briefly summarises other data collection methods selected.

**The VLS Survey**

Originally, I intended to use the survey developed by Bennett (2006). Therefore, prior to my study, I conducted an item analysis (recommended by Dörnyei, 2003) with a native Japanese speaker who is very proficient in English and is not an English teacher. It emerged that it was not always certain whether or not a new strategy would be useful, especially where learners did not know what a strategy entailed, and some strategies (e.g. *B5 Talk with native speakers*) seemed context dependent and beyond learners' control (Brown, 2008a). A number of other critical issues arose relating to the following three areas: (1) inaccurate or unclear translations, vagueness and/or lack of illustrative examples to help learners more clearly understand what strategies involve; (2) use of Japanese technical terms which were opaque to a non-specialist; and (3)

mistakes or inconsistencies. (See **Appendix D** for details.)

Nonetheless, at the time, Bennett (2006) offered a convenient, comprehensive-looking survey and a useful starting point for this study. The Japanese translations were removed on the assumption that they would not be necessary for my learners, and modifications made with reference to Kudo (1999) and Oxford (1990). Next, original strategies thought relevant to the course (e.g. *I use a medical dictionary to look up new medical English words*) and strategies relating to available technology (e.g. *I watch or listen to English language learning programs on CD/ radio/ TV/ DVD/ Video/ Internet*) were added. Lastly, the categories were removed as they were not thought relevant to the learners and might prove a distraction. This initial survey was piloted with a Canadian colleague, who had previously taught the medical English course, and an advanced native Malay speaker with upper-intermediate to advanced level English. Based on their feedback (Brown, 2008a), the final version of the VLS Survey (**Appendix E**) hopefully used clearer, more consistent wording, and included more relevant examples than the original, e.g. *I find the meaning of new English words by dividing them into parts I understand (e.g. cardiology → 'cardio' = heart; 'logy' = study of).*

**VLS Assignments**

An initial guided reflection task based on Chamot *et al.* (1999) aimed to have students identify some of their own VLS and express them independently (see **section 3.6**), prior to exposure to the VLS Survey:

**Assignment I**

Choose 3 words. Write 300-400 words on how you learned them. What did you do? How often and how long for? How successful were you? (Brown, 2008b)

A similar task at the end of the course was not only designed to encourage reflection, but also to enable a comparison that might indicate changes in behaviour, attitudes, and/or beliefs:

**Assignment III**

Choose 3 *new* words that you want to learn and remember (e.g. for next week's test on *Essential Medical Vocabulary*). Write 300-400-words on how you learned them. Make sure you answer the following questions:

- What did you do to learn and remember them (i.e. what vocabulary learning strategies did you use)?
- How often did you study the words? When did you study them? How long did you study the words for?
- How successful do you think you were in learning and remembering the three words? (Brown, 2008b)

The assignments would further provide data that could be analysed using *VocabProfile* (see **subsection 3.7.1** above).

### Vocabulary Learning Sheets

Vocabulary notebooks offer a way for learners to organise their vocabulary learning (discussed above in **subsection 3.2.3**). Following experimentation and piloting in other classes (Brown, 2008a), I thus developed the Vocabulary Learning (VL) Sheets (**Appendix F**) to be introduced in class (explained in **Appendix H**) then used freely by students out of class.

### Other data collection methods

A teaching journal specifically for the medical English course was kept with

entries for lesson planning prior to class and reflection notes afterwards (Brown, 2008b). In addition, an end-of-semester Course Evaluation Form (CEF) (**Appendix G**) was created to obtain anonymous student feedback. Unbeknown to me at the time, the program director administered a questionnaire in Japanese.

**Implementing the VLS Program**

Based on my journal (Brown, 2008b), **Table 10** below outlines the week-by-week implementation of the VLS Program over the first semester (**Appendix H** provides details so that other teacher-researchers might be able to follow the steps taken). Classroom activities using the same day's MEV test items are asterisked(*): these generally provided both vocabulary review (cf. Smith, 1996) and introduced or recycled VLS.

**Table 10: Week-by-week implementation of the VLS program (Brown, 2008b)**

| |
|---|
| **Week 1:** Introductions, overview, goals, Vocabulary Levels Tests, VLS reflection task |
| **Week 2:** Role-plays, TPR, *Slam**, Weekly MEV tests, Self-Assessment, VLS survey |
| **Week 3:** VLS Survey, Activities*, Vocabulary Learning Sheets, dictionary training |
| **Week 4:** VL Sheets*, SA Cards, role-plays, combining strategies, reflection |
| **Week 5:** Identifying VLS, VL Sheets, SA cards, cognitive styles |
| **Week 6:** VLS awareness, grouping*, role-plays*, asking for help, learning from mistakes |
| **Week 7:** MEV in context*, personalisation*, circumlocution/making definitions* |
| **Week 8:** MEV in context, role-plays, cue cards, fill in the missing letters*, pair study* |
| **Week 9:** Note-taking, role-plays, dictation*, listening bingo* |
| **Week 10:** Multiple role-plays*, *Attack bingo** |
| **Week 11:** Self- and peer-review, Vocabulary Levels Tests |
| **Week 12:** Oral interviews, VLS Survey, Consent Forms |
| **Week 13:** Oral interviews, Course Evaluation Forms |

Despite the best intentions to provide both classes with the same VLS program, some clear differences occurred, and the unpredictable nature of the classroom is well-recognised as well as differences in student-student and student-teacher dynamics. In addition, teacher development and experience from teaching Class A in the morning most likely contributed to the smoother facilitation of Class B in the afternoon. It is important, therefore, to acknowledge how this potentially affected the learning outcomes and research findings. Class B notably received additional VLS instruction as follows: 5-10 minutes electronic dictionary training (week 3); 10 minutes extra peer-to-peer teaching on combining strategies (week 4); 10 minutes longer for the circumlocution game (week 7); and 5-10 minutes to play (not just watch) *Attack Bingo* (week 10). (See **Appendix H** for details.)

Lastly, **Figure 4** overleaf illustrates the components of the VLS program, medical English course (*HealthCare English 110@*), and classroom research.

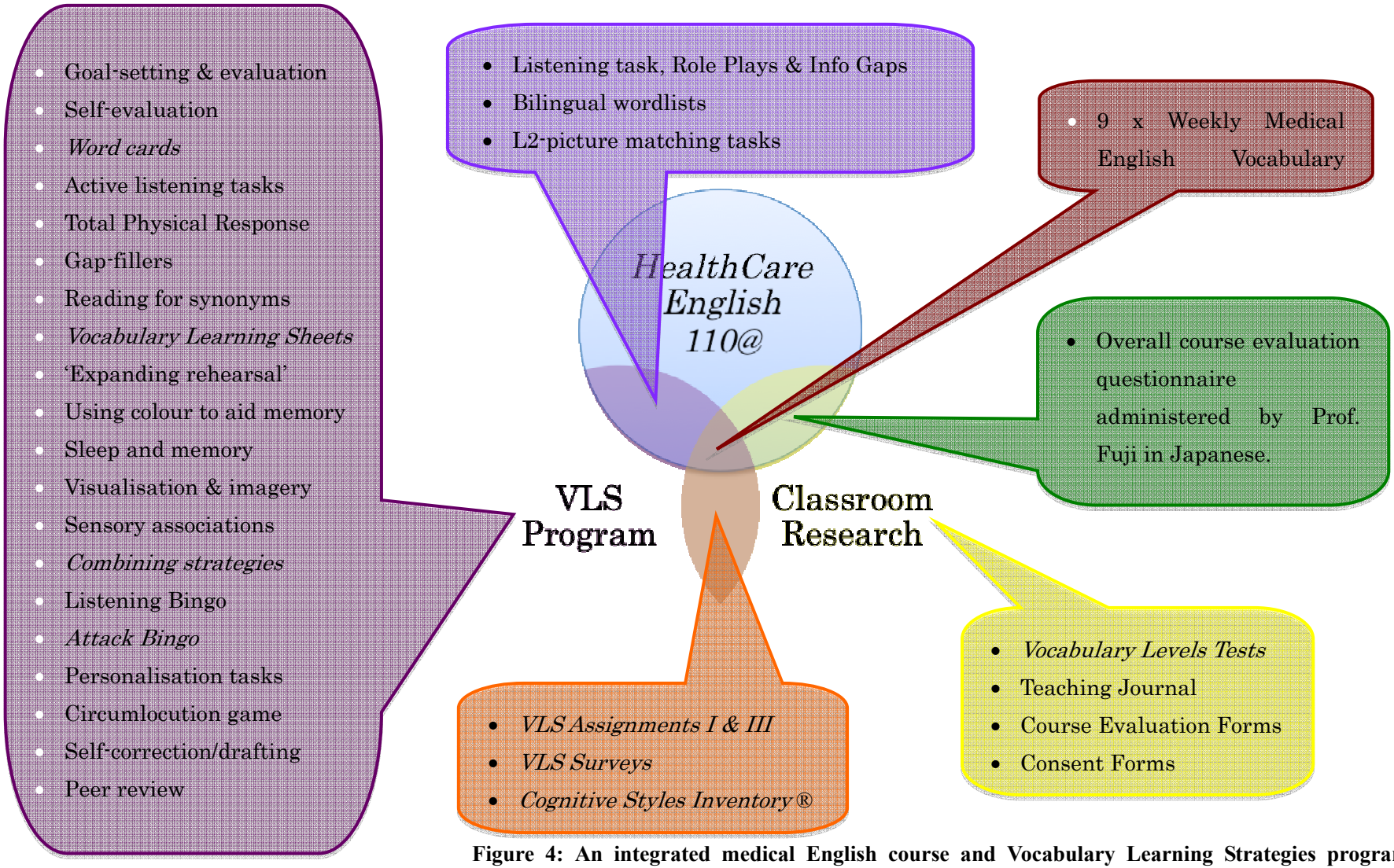


**Figure 4: An integrated medical English course and Vocabulary Learning Strategies program**

# CHAPTER 5. Results and findings

Returning to the questions of enquiry for this study, the three primary tools selected to investigate learners' awareness, use, and perceived usefulness of VLS were the VLS reflection assignments, 66-item VLS Survey, and Course Evaluation Forms. These tools might further reveal changes in students' awareness of VLS. Finally, the initial and final Vocabulary Levels Test and *VocabProfile* results for Assignments I and III were chosen to indicate vocabulary gains in receptive and productive knowledge respectively. Together with the MEV test results, they might also point to students' vocabulary level relative to their classmates (Students 1-13 were in Class A, and 14-26 in Class B). In addition to answering the research questions, the information might help to evaluating and inform the VLS program for future innovation. The results and findings are examined in **sections 5.1-4**, then the research questions answered in **section 5.5** below.

**VLS Assignments: results and findings**

The assignments were initially analysed for evidence of VLS use and cross-referenced with the VLS Survey. Most VLS were easy to identify in the assignments although many were implied so the data was coded accordingly.[5] In total, 53 strategies were identified and/or implied in Assignment I, including 5 not originally listed on the VLS Survey:

#67 I study just before going to sleep
#68 I use my mobile phone memo function (cf. #46, #54, #47)
#69 I check the etymology of a word

[5] Due to lack of time and resources, the assignments were not independently coded.

#70 I read many example sentences (cf. #4, #6, #52)

#71 I teach someone the word (cf. #16, #65).

In Assignment III, 47 listed VLS were identified and/or implied, and 2 new strategies were added:

#72 I used combined strategies (**Appendix I**)

#73 I ask other people about their word associations (cf. #16, #65)

Although fewer different strategies were reported in Assignment III, the number of VLS per student increased by 20.9% (highlighted in **Table 11**):

**Table 11: VLS identified or implied in VLS Assignments**

| **VLS identified or implied by 26 students** | **Assignment** | | **Change** | |
|---|---|---|---|---|
| | **I** | **III** | **Raw #** | **%** |
| Mean average number of VLS clearly identified | 6.19 | 7.00 | +0.81 | +13.1 |
| Mean average number of VLS implied | 1.88 | 2.77 | +0.89 | +47.3 |
| Mean average number of VLS identified and/or implied | 8.08 | 9.77 | +1.69 | +20.9 |

The increase in the VLS identified and/or implied in students' assignment may not, however, have been (solely) due to increased strategies use. An improvement in students' abilities to recognise as well as write about VLS may also have been explanatory factors. Furthermore, the nature of the target words were different in each assignment, with notably more medical and low-frequency words selected for Assignment III, as confirmed by a summary *VocabProfile* analysis (**Table 12** below):

**Table 12: Summary *VocabProfile* analysis of target words selected for assignments**

| ***VocabProfile* analysis** | **Assignment I** | **Assignment III** |
|---|---|---|
| Mean % words in the most frequent 1000 words (K1) | 21.21 | 9.41 |
| Mean % words in the 2nd most frequent 1000 words (K2) | 17.17 | 1.18 |
| Mean % Academic Word List (AWL) words | 4.04 | 0.00 |
| Mean % Off-list words | 55.56 | 87.06 |

Lastly, in Assignment I, a few students wrote about words they had learnt in their childhood (including one student who chose two Japanese words), and some may have chosen words that seemed easier to write about (e.g. *one, yes, Good day!*). These factors may also have affected the results.

Next, **Tables 13-14** overleaf set out the most frequently mentioned strategies in the assignments. The majority of these VLS were reported in both assignments (as highlighted). Almost all of these strategies were included in the VLS program (VLS subject to explicit SBI are in blue font); and although causality cannot be proved, the strategy of studying before sleeping (#67) seemed to have been popularised by one or two of the students (Brown, 2008b).

**Table 13: VLS identified/implied most in Assignment I**

| Vocabulary Learning Strategy | Number of students | | |
|---|---|---|---|
| | Identified VLS use | Implied VLS use | Total |
| #31 I connect new words to personal experiences. | 15 | 0 | 15 |
| #4 I use an English-English dictionary to look up new words. | 8 | 6 | 14 |
| #58 I review new words often. | 10 | 1 | 11 |
| #61 I have clear goals for improving my medical English vocabulary. | 3 | 8 | 11 |
| #64 I try to find out how to be a better learner of English. | 8 | 3 | 11 |
| #35 I use new English words in a sentence. | 10 | 0 | 10 |
| #29 I repeat/say new English words several times out loud. | 9 | 0 | 9 |
| #39 I write new English words several times. | 8 | 0 | 8 |
| #60 I test myself or ask other people to test me. | 7 | 1 | 8 |
| #6 I use an English-Japanese dictionary to look up new words. | 2 | 5 | 7 |
| #65 I look for people I can talk to in English. | 4 | 3 | 7 |

Blue = VLS explicitly taught in the program

**Table 14: VLS identified/implied most in Assignment III**

| Vocabulary Learning Strategy | Number of students | | |
|---|---|---|---|
| | Identified VLS use | Implied VLS use | Total |
| #58 I review new words often. | 21 | 0 | 21 |
| #64 I try to find out how to be a better learner of English. | 13 | 8 | 18 |
| #35 I use new English words in a sentence. | 12 | 3 | 15 |
| #39 I write new English words several times. | 11 | 4 | 15 |
| #4 I use an English-English dictionary to look up new words | 7 | 6 | 13 |
| #30 I connect new words to other words I know with the same/similar or opposite meanings. | 8 | 5 | 13 |
| #29 I repeat/say new English words several times out loud. | 10 | 1 | 11 |
| #36 I learn the meaning of word parts and use them to remember new words. | 9 | 0 | 9 |
| #62 I think about my progress in learning MEV. | 3 | 6 | 9 |
| #24 I make a mental image of a new word's meaning. | 6 | 2 | 8 |
| #26 I look carefully and notice the spelling of new words. | 5 | 3 | 8 |
| #33 I try to find patterns in English and group words (by meaning, grammar, spelling, etc). | 4 | 4 | 8 |
| #60 I test myself or ask other people to test me. | 7 | 1 | 8 |
| #67 I study just before going to sleep | 8 | 0 | 8 |

Highlighted = VLS both most used and perceived as most useful

Next, the assignments were analysed using *VocabProfile* with procedures based on Laufer (1998)[6]. The result are summarised in **Table 15** below:

**Table 15: Summary *VocabProfile* analysis of VLS Assignments**

| ***VocabProfile* analysis of 26 students' assignments** | **Assignment** | | **Change** | |
|---|---|---|---|---|
| | **I** | **III** | **Raw #** | **%** |
| Mean % words in the most frequent 1000 (K1) | 88.87 | 86.24 | -2.63 | -2.96 |
| Mean % words in the second most frequent 1000 (K2) | 4.58 | 4.71 | 0.13 | 2.93 |
| Mean % Academic Word List (AWL) words | 1.43 | 3.37 | 1.94 | 134.93 |
| Mean % Off-list words | 5.11 | 5.68 | 0.56 | 11.03 |
| Anglo-Saxon index | 82.50 | 79.47 | -3.03 | -3.68 |
| Greco-Latin/French cognate index | 17.50 | 20.53 | 3.03 | 17.34 |
| Mean total number of words (tokens) | 290.31 | 321.38 | 31.08 | 10.70 |
| Mean total number of different words (types) | 125.69 | 134.77 | 9.08 | 7.22 |
| Type-token ratio | 0.45 | 0.42 | -0.02 | -4.76 |
| Lexical density (content words/tokens) | 0.47 | 0.51 | 0.04 | 8.82 |

On average, assignments became longer and more complex (as indicated by a dramatic rise in AWL words, a higher Greco-Latin/French index and percentage of off-list words, a greater number of types, and increased lexical density). However, it should be noted that Assignment III was drafted, peer-reviewed/edited, and redrafted whereas Assignment I was not. To provide a better basis for comparison and more reliable measure of productive vocabulary growth, the tasks need to be as similar as possible and set under the same conditions.

[6] Prior to entering the assignments into *VocabProfile*, spellings were corrected, proper nouns and incorrectly used words were omitted (although a less strict standard of correctness, based on the conveyance of meaning, was applied). Numerals were also deleted together with 'word parts' (e.g. *con sti pa tion*) unless they constituted words in themselves (e.g. *pan*). Finally, quotations and sentences copied directly from other sources were removed.

**VLS Survey: results and findings**

**Subsection 5.2.1** examines the data from the initial VLS Survey before turning to the final survey in **5.2.2**, and analysing the changes between surveys in **5.2.3**.

## Initial VLS Survey results and findings

**Figure 5** below illustrates the initial VLS Survey results which indicated a low-to-moderate average use of the 66 listed strategies across the 26 students (mean, M = 2.72; standard deviation, SD = 0.38). There were no overall 'high' strategy users (M ≥ 3.5, cf. Oxford, 1990), and 5 students were 'low' users (M < 2.5). Overall, students perceived VLS as generally useful (M = 3.43, SD = 0.40), with 11 students considering them *very useful* (M ≥ 3.5) and no students believed them to be less than *somewhat useful* (M < 2.5).

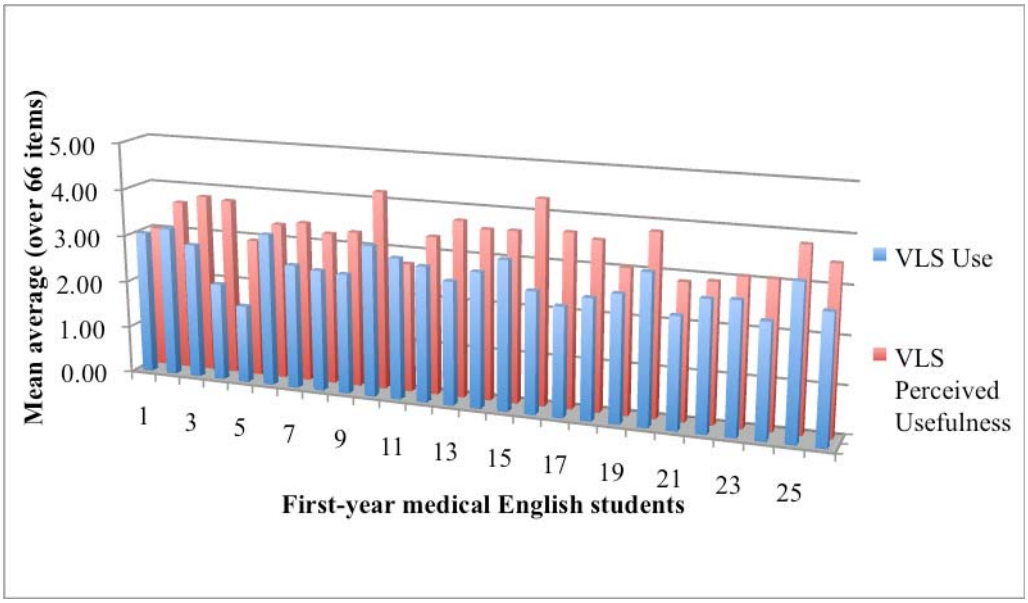


**Figure 5: Initial VLS use and perceived usefulness by 26 first-year medical English students**

A correlation between each students' mean VLS use and perceived usefulness was found using a Paired Samples t-test (t(25)= -7.504, p = .205, d = .257). In

other words, there was a slight tendency for students who on average perceived strategies as more useful to use strategies more often, as might be expected (White, 2008).

Examining individual VLS, **Figure 6** below illustrates the gap between use and perceived usefulness. Mirroring previous research, a correlation between the students' mean use of individual VLS and each strategies' perceived usefulness was found ($t(65)= -1.16$, $p = .000$, $d = .471$). In short, strategies that were perceived as more useful were generally used more often. However, it was apparent that certain strategies, though perceived as *very useful*, were underutilised (e.g. #11, #14, #54). This information was thus used to inform the VLS program design (Fan, 2003), as discussed in **subsection 3.2.2** and outlined in **4.2** above.

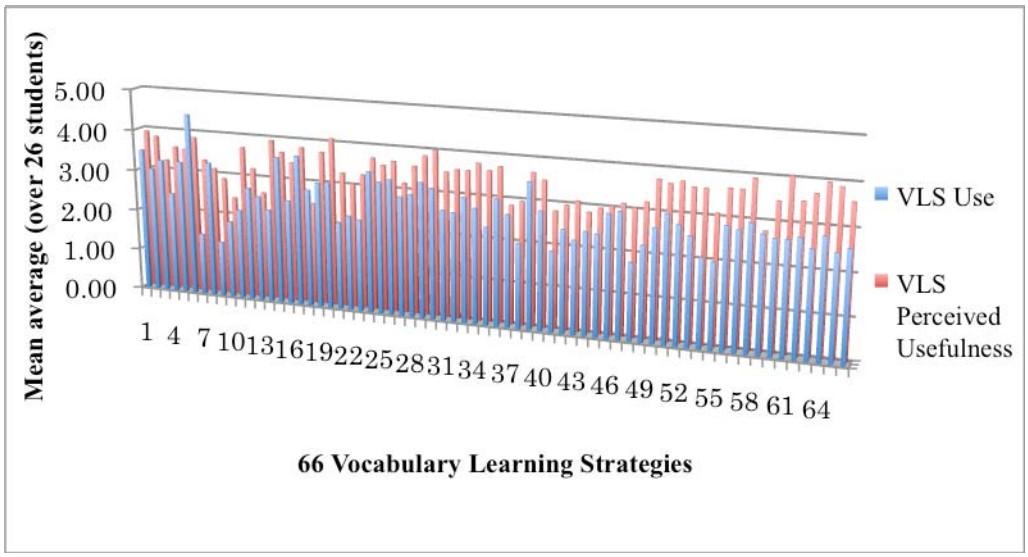


**Figure 6: Initial use and perceived usefulness of 66 VLS**

Overleaf, **Tables 16-19** list the VLS that were used most and least often, and those that were considered most and least useful by the students as a whole.

**Table 16: VLS initially most used VLS**

| Vocabulary Learning Strategy | Mean |
|---|---|
| #6 I use an English-Japanese dictionary to look up new words. | 4.46 |
| #17 If I do not understand something in English, I ask the other person to slow down or say it again. | 3.65 |
| #15 I pay attention when someone is speaking English. | 3.58 |
| #1 To understand unfamiliar/new English words, I make guesses (using pictures, the speaker's gestures/expression, the context). | 3.50 |
| #39 I write new English words several times. | |
| #24 I make a mental image of a new word's meaning. | 3.42 |
| #8 I use a Japanese-English dictionary to look up new words | 3.31 |
| #3 I look for words in Japanese (or other language I know) that are similar to new words in English (e.g.リストラ-restructuring). | 3.27 |
| #5 I check new words' class (e.g. noun, verb, adjective, adverb). | |
| #26 I look carefully and notice the spelling of new words. | |
| #29 I repeat/say new English words several times out loud. | |
| # 25 I connect the sound of new words and an image or picture of the words to help me remember. | 3.19 |
| #30 I connect new words to other words I know with the same/ similar or opposite meaning (e.g. *enormous=huge←→tiny/ minute*). | 3.15 |
| #20 I encourage myself to speak English & not worry about mistakes. | 3.08 |

Blue = VLS explicitly taught in the program

**Table 17: VLS initially perceived most useful**

| Vocabulary Learning Strategy | Mean |
|---|---|
| #20 I encourage myself to speak English & not worry about mistakes. | 4.08 |
| #61 I have clear goals for improving my medical English vocabulary. | 4.04 |
| #30 I connect new words to other words I know with the same/ similar or opposite meaning (e.g. *enormous=huge ←→tiny/minute*). | 4.00 |
| #64 I try to find out how to be a better learner of English. | 3.96 |
| #1 To understand unfamiliar/new English words, I make guesses (using pictures, the speaker's gestures/expression, the context). | 3.92 |
| #14 I ask the teacher to check my understanding of new words or notes. | |
| #58 I review new words often. | |
| #65 I look for people I can talk to in English. | 3.88 |
| #6 I use an English-Japanese dictionary to look up new words. | 3.85 |
| #29 I repeat/say new English words several times out loud. | |
| #2 I find the meaning of new English words by dividing them into parts I understand (e.g. cardiology→cardio=heart; logy=study of). | 3.81 |
| #17 If I do not understand something in English, I ask the other person to slow down or say it again. | |
| #34 I remember the words around the new words (e.g. *We conducted an experiment on how we learn*) or 'chunks'/idioms (e.g. *look after*). | 3.77 |

Highlighted = VLS both most used and perceived as most useful

**Table 18: VLS initially least used**

| Vocabulary Learning Strategy | Mean |
|---|---|
| #14 I ask the teacher to check my understanding of new words or notes | 2.27 |
| #49 I talk to myself or imagine conversations in English using new words. | |
| #23 I draw pictures to help me remember new words. | 2.23 |
| #43 I use rhymes, songs and/or chants to remember new English words. | |
| #11 I ask the teacher to explain the meaning and give an example. | 2.19 |
| #21 I write down or talk about my feelings learning English. | 2.12 |
| #54 I write notes, messages, letters or reports in English. | |
| #38 I use physical actions or gestures with new English words. | 2.04 |
| #55 I use English language learning games and software. | |
| #41 I write a note of when and where I first heard or saw a new word. | 1.92 |
| #10 I use translation software. | 1.88 |
| #48 I put English labels on physical objects. | 1.85 |
| #7 I use a medical dictionary to look up new medical English words. | 1.50 |
| #9 I use a thesaurus. | 1.35 |

Blue = VLS explicitly taught in the program

**Table 19: VLS initially perceived least useful**

| Vocabulary Learning Strategy | Mean |
|---|---|
| #22 I give myself a reward or treat when I do well in English. | 3.04 |
| #46 I make lists of new words. | |
| #48 I put English labels on physical objects. | |
| #38 I use physical actions or gestures with new English words. | 2.96 |
| #42 I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign. | |
| #45 I use flashcards (with pictures and/or words in English and/or Japanese) to remember new English words. | |
| #9 I use a thesaurus. | 2.88 |
| #37 I make my own definition of new words or imagine the meaning. | 2.85 |
| #44 I remember a new English word by making a mental picture of the situation in which the word might be used in the future. | |
| #41 I write a note of when and where I first heard or saw a new word. | 2.81 |
| #59 I select which new words to learn and which new words to ignore. | 2.77 |
| #13 I ask someone for a Japanese translation. | 2.62 |
| #18 I notice if I am tense or nervous when I am studying or using English. | 2.46 |
| #10 I use translation software. | 2.42 |

Highlighted = VLS both least used and perceived as least useful

Notably, only the top five VLS (#6, #17, #15, #1, #39) enjoyed a high degree of use ($M \geq 3.5$) with English-Japanese dictionary usage dominating (as per Fan, 2003), whereas 19 strategies were used infrequently ($M < 2.5$). Four of the top five related to understanding or discovering meaning (as per Bennett, 2006), while cognitive or memory strategies represented the majority of the other most used VLS. In contrast, those perceived as most useful also included metacognitive strategies

> #58 I review new words often
> #61 I have clear goals for improving my medical English vocabulary
> #64 I try to find out how to be a better learner of English
> #65 I look for people I can talk to in English

and socioaffective strategies

> #14 I ask the teacher to check my understanding of new words or notes
> #20 I encourage myself to speak English and not worry about mistakes
> #65 I look for people I can talk to in English.

This may be significant because studies show that higher proficiency, independent learners tend to use more metacognitive strategies (Ahmed, 1989; Sanaoui, 1995), and whilst my students recognise the value of these strategies, their actions do not reflect their beliefs. With regards to VLS instruction, therefore, it might be anticipated that student would be receptive to a program that included these strategies. On the other hand, the *somewhat* perceived usefulness of #45 and #46 might indicate a barrier for some students with respect to VL Sheets.

The prevalence of VLS #20, #65, and #29 *I repeat/say new English words several times out loud* may also have been connected to the overall aims of the

course to develop students' speaking skills (cf. Mondria & Wiersma, 2004). Promisingly, 39 strategies were perceived as useful ($M \geq 3.5$), and only two strategies scored below 2.5:

#10 I use translation software

#18 I notice if I am tense or nervous when I am studying or using English.

Without interview, one can only speculate on students' reasons for these answers, but the strategic benefits of just noticing nervousness seems to be unclear.[7]

Interestingly, asking for a Japanese translation (#13) was perceived as relatively *not very useful* (cf. Nation, 2001), but may have been the result of culture and beliefs (**subsection 3.2.2**), or lack of awareness regarding VLS existence and/or usefulness. For instance, several students did not know what a thesaurus was and many had never used one (#9) (Brown, 2008b). Further investigation into both learner and learning variables (cf. Griffiths, 2008) may also help to better understand these results.

Though informative, descriptive statistics do not provide detail, so a closer examination of individual strategies and students should not be overlooked. Overleaf, **Figure 7** illustrates the initial frequency proportions of VLS use:

[7] It should also be noted that a typo in the original VLS Survey (*I notice if I am tense or nervous when I am studying of using English*!) may also have affected this result.

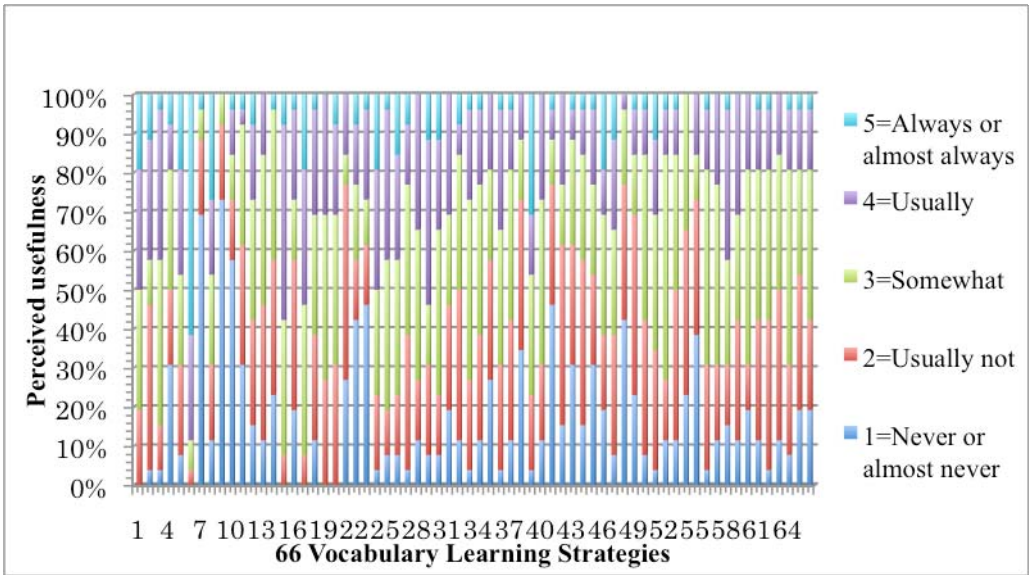


**Figure 7: Initial frequency proportion of VLS use by 26 students**

As might be expected, frequency of use for most strategies lies mostly between *usually not* and *usually true of me* (2-4), although there are some visible exceptions which appear amongst the most and least used VLS. For example, self-reward (#22) was *not* or *not very useful* for 15 students, but 6 students nonetheless found it *very* or *extremely useful* (highlighted in **Table 20** below):

**Table 20: Examples of initial frequency variation in VLS use**

| **Vocabulary Learning Strategy** | **Mean (SD)** | **Frequency &** # of students | | | | |
|---|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** | **5** |
| #22 I give myself a reward/treat when I do well in English. | 2.31 (1.38) | 11 | 4 | 5 | 4 | 2 |
| #23 I draw pictures to help me remember new words. | 2.23 (1.37) | 12 | 4 | 3 | 6 | 1 |
| #24 I make a mental image of a new word's meaning. | 3.42 (1.14) | 1 | 5 | 7 | 8 | 5 |
| #39 I write new English words several times. | 3.50 (1.24) | 1 | 5 | 8 | 4 | 8 |

Similarly, even the strategies perceived least useful overall (e.g. #10 and #18) were considered *very useful* by certain students, shown in **Figure 8** overleaf:

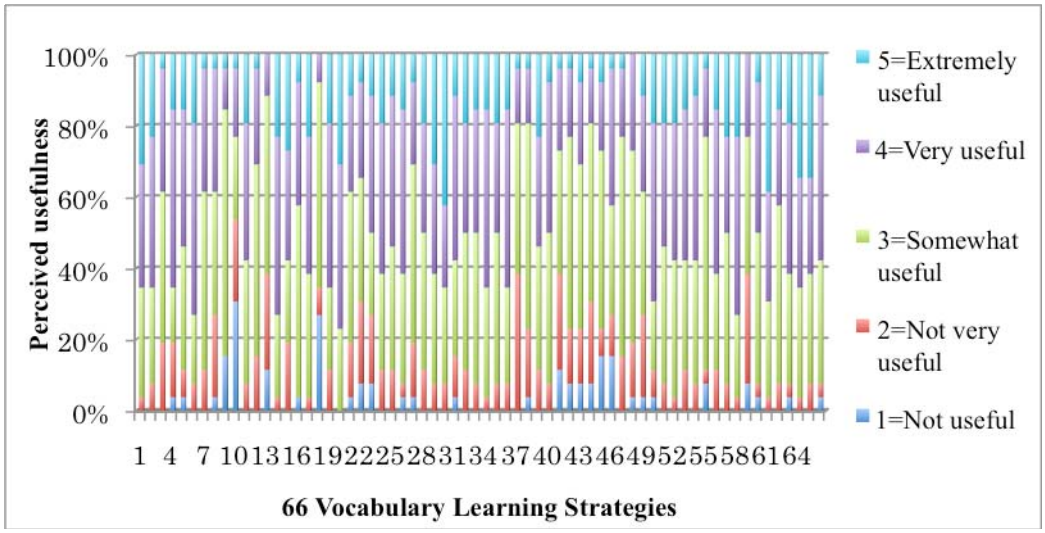


**Figure 8: Initial proportions of VLS perceived usefulness by 26 students**

These differences of opinion regarding usefulness, and individual differences with respect to use, further highlight the variation between learners and underscore the need to consider this when designing and implementing a VLS program (Oxford & Crookall, 1990; Nel, 2008).

## Final VLS Survey results and findings

The final results revealed that VLS were still generally perceived as useful (M = 3.53, SD = 0.35) with 12 students ≥ 3.5. More hopeful was a moderate average use of the 66 VLS by the 26 students (M = 3.15, SD = 0.44) which represented a 0.43 (15.8%) increase since the initial survey, with 6 high and only 3 low strategy users. A correlation between each students' mean VLS use and perceived usefulness was also found ($t(25) = -4.797$, $p = .009$, $d = .500$). In other words, there was a strong tendency, on average, for students who perceived strategies as more useful to use strategies more often. This indicated greater congruency between students' behaviour and beliefs, illustrated in

**Figure 9** below:

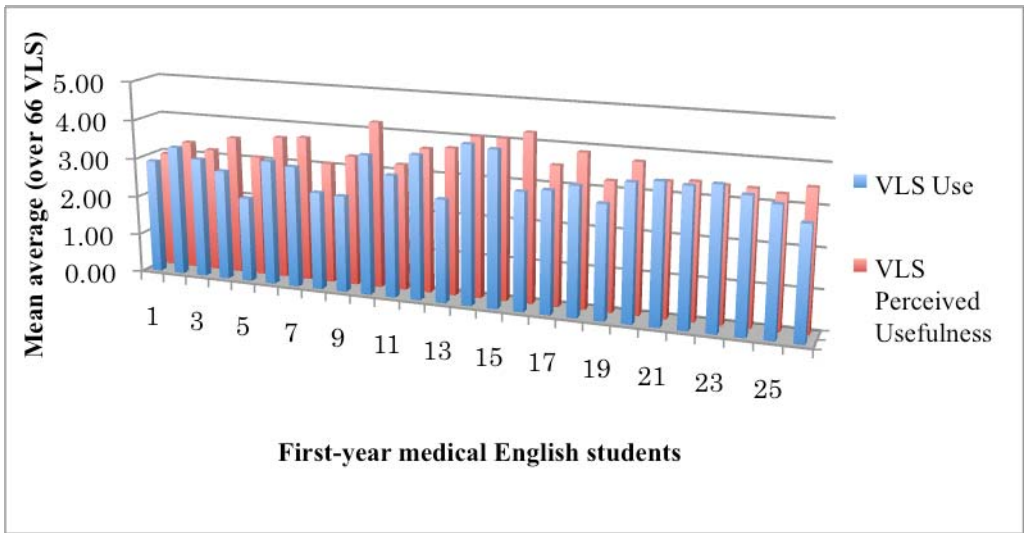


**Figure 9: Final VLS use and perceived usefulness by 26 first-year medical English students**

Next, **Figure 10** illustrates the generally reduced gaps between use and perceived usefulness of the 66 VLS. A correlation between the students' mean use of individual VLS and their perceived usefulness was found ($t(65)= -1.37$, $p = .000$, $d = .573$), reflecting an even stronger tendency for strategies that were perceived as more useful to be used more often (White, 2008).

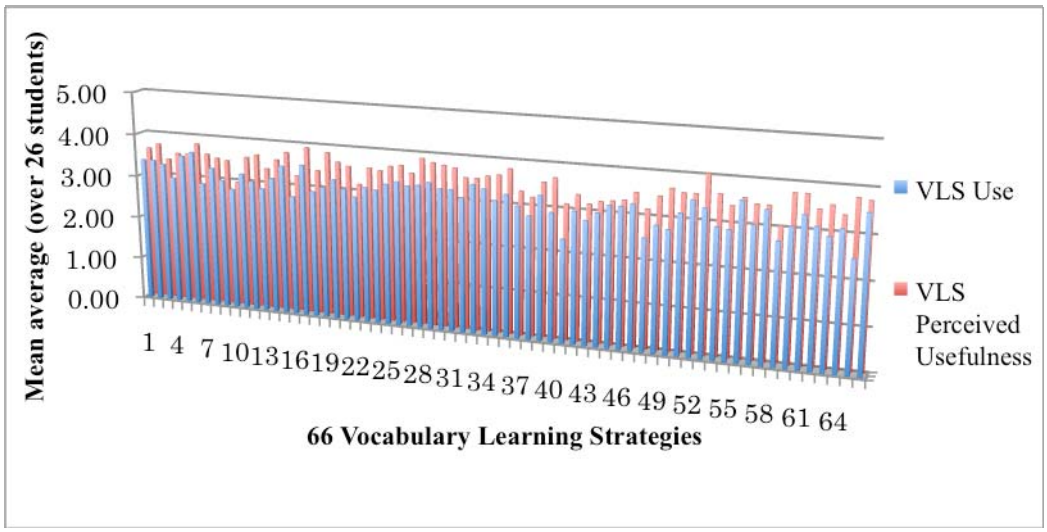


**Figure 10: Final use and perceived usefulness of 66 VLS**

Overall, 43 strategies were perceived as useful ($M \geq 3.5$), compared to 39

initially. Using translation software (#10) was perceived least useful by 26 students (M = 2.96) and the only score less than 3. Overleaf, **Tables 21-22** list the most used VLS and those perceived most useful by the end of the course. The strategies that had not previously featured among the most used and useful strategies in **Tables 16-17** are highlighted.

The top 7 strategies (#6, #56, #17, #66, #5, #15, #52) enjoyed a high degree of use ($M \geq 3.5$) and only one strategy (#41) had low usage (M = 2.38, SD = 1.17), compared with 19 initially. Although an English-Japanese dictionary (#6) remained the most used VLS, its mean score fell dramatically from M = 4.46 to 3.65. Again, without interview, the reasons for this are open to speculation. For example, was this due to the development of alternative strategies (e.g. guessing from context), change in goals/context (e.g. from reading/writing to listening/speaking in real-time communication), and/or some other factors?

Compared with before, metacognitive VLS (#58, #61, #66), including strategies that appear to have been linked to the written reflection assignments, became more prominent among the most used strategies.. This seems particularly important as one of the program goals had been to raise learners' metacognitive awareness, as well as strategies' use, based on the belief that it might help students to become more effective and autonomous learners in control of their learning. Notably, all of the most used strategies were explicitly included in the VLS program, except #52 which was already part of the course.

**Table 21: VLS most used according to the Final VLS Survey**

| Vocabulary Learning Strategy | Mean |
|---|---|
| #6 I use an English-Japanese dictionary to look up new words. | 3.65 |
| #56 I notice my English mistakes and use that information to help me do better. | 3.58 |
| #17 If I do not understand something in English, I ask the other person to slow down or say it again. | 3.56 |
| #66 I keep a learning journal on how I learn. | 3.54 |
| #5 I check new words' class (e.g. noun, verb, adjective, adverb). | |
| #15 I pay attention when someone is speaking English. | 3.50 |
| #52 I read English language learning materials (e.g. textbooks, workbooks). | |
| #33 I try to find patterns in English and group words (for example, by meaning, grammar, spelling and/or pronunciation). | 3.44 |
| #58 I review words often. | 3.42 |
| #29 I repeat/say new English words several times out loud. | 3.40 |
| #1 To understand unfamiliar/new English words, I make guesses (using pictures, the speaker's gestures/expression, the context). | 3.38 |
| #2 I find the meaning of new English words by dividing them into parts I understand (e.g. *cardiology→cardio=heart; logy=study of*). | |
| #61 I have clear goals for improving my medical English vocabulary. | |

Blue = VLS explicitly taught in the program

**Table 22: VLS perceived most useful according to the Final VLS Survey**

| Vocabulary Learning Strategy | Mean |
|---|---|
| #53 I read for pleasure (e.g. newspapers, books, magazines, Internet). | 4.04 |
| #17 If I do not understand something in English, I ask the other person to slow down or say it again. | 3.92 |
| #28 I listen carefully and try to remember the sound of new words. | 3.88 |
| #19 I try to relax whenever I feel nervous or afraid of using English. | 3.84 |
| #6 I use an English-Japanese dictionary to look up new words. | 3.81 |
| #29 I repeat/say new English words several times out loud. | 3.80 |
| #36 I learn the meaning of word parts and use them to remember new words (e.g. *neuro + logy + ist -> neurologist*). | |
| #61 I have clear goals for improving my medical English vocabulary. | 3.77 |
| #60 I test myself or ask other people to test me. | |
| #65 I look for people I can talk to in English. | |
| #30 I connect new words to other words I know with the same/ similar or opposite meaning (e.g. *enormous=huge ←→tiny/minute*). | |
| #66 I keep a learning journal on how I learn. | 3.73 |
| #2 I find the meaning of new English words by dividing them into parts I understand (e.g. *cardiology→cardio=heart; logy=study of*). | |
| #40 I use the words I know in different ways. | |

Highlighted = VLS not previously featuring among the most used/useful.

Turning to VLS perceived as most useful, reading for pleasure (#53) featuring at the top seems likely to be a result of the graded reading program set up in the Tuesday classes. Strategies #19, #28, #40 and #61 were implicitly included in the program. However, it cannot be determined whether changes in beliefs were due to the course or not.

VLS #65 (looking for other people to talk to in English) was notably listed among the strategies perceived as most useful in both surveys but, in terms of use, only increased from M = 2.50 to 2.54. Although not explicitly part of the VLS program, classes were designed for learners to spend most of their class time talking to each other in English. Despite encouraging learners to talk to each other in English, students commonly expressed resistance to doing so outside of the classroom, listing a number of reasons; namely, worrying about copying each others' mistakes and feeling strange or embarrassed (Brown, 2008b). Even so, students did slightly increase the amount that they practised or studied new words together (#16) (from M = 2.54 to 2.80) and one student reported his strategy of asking other senior students about their word associations and teaching them new words.

**Changes in students' individual VLS use and perceived usefulness**

The changes that occurred in 24 students' individual strategy use and perceived usefulness can be examined[8]. 19 students increased their mean average use of

[8] 2 students were removed from the data for this analysis: student 13, who copied the results from the initial VLS Survey to the final survey exactly because he believed there had been absolutely no change in his answers; and student 19, who did not complete the final survey.

the 66 VLS, including 11 students who increased by ≥ 0.5. The five remaining students experienced a negligible overall decrease. Changes in use and perceived usefulness ranged from -4 to +4, as shown in **Figures 11-12** below:

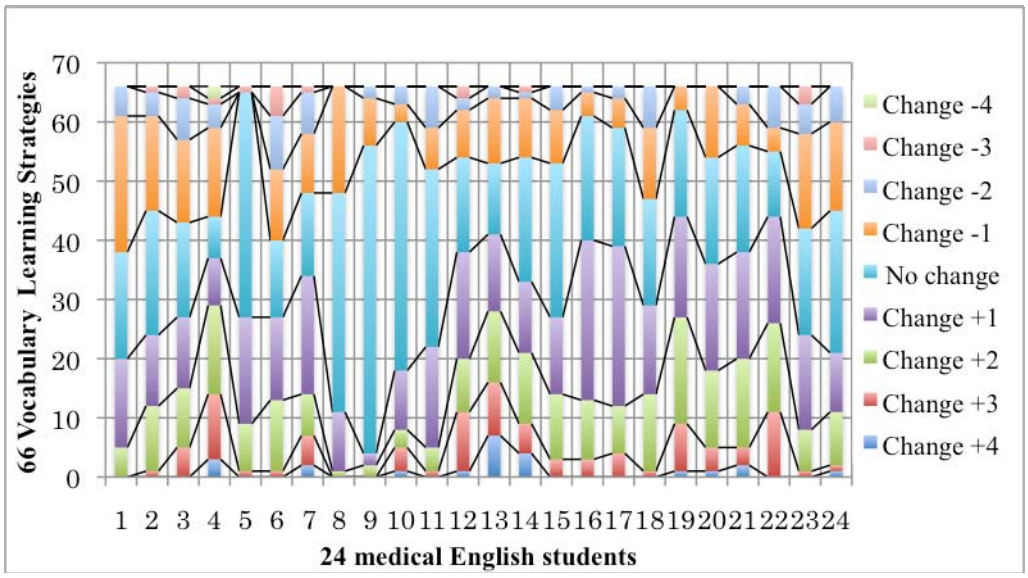


**Figure 11: Changes in 24 students' use of 66 VLS**

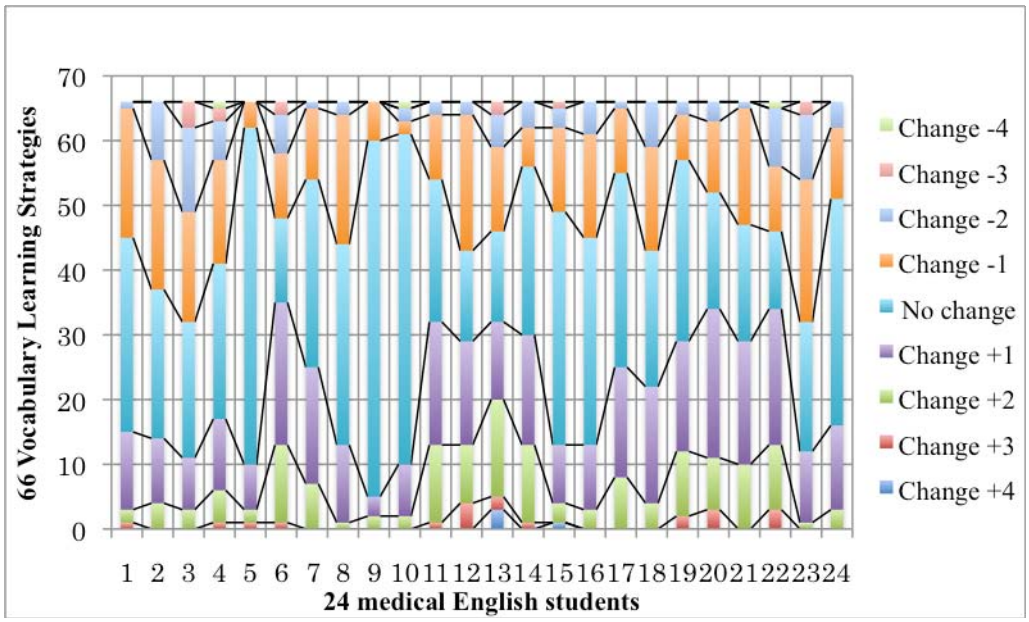


**Figure 12: Changes in 24 students' perceived usefulness of 66 VLS**

Most changes in use ranged between -1 and +2, whereas changes in perceived usefulness mostly occurred between -1 and +1. Whilst the majority of students

made mostly small changes, a few made a number of quite significant changes (≥ ±3). For example, Student 4 reported increases of VLS use of +3 for eleven strategies and +4 for three VLS, and decreases of -3 for one VLS and -4 for two strategies, as exemplified in **Table 23** below:

**Table 23: Changes in Student 4's VLS use and perceived usefulness (PU)**

| Vocabulary Learning Strategies with significant changes | Final use (Change) | Final PU (Change) |
|---|---|---|
| #38 I use physical actions or gestures with new English words. | 5 (+4) | 4 (+1) |
| #55 I use English language learning games and software. | 5 (+4) | 3 (-1) |
| #60 I test myself or ask other people to test me. | 5 (+4) | 3 (0) |
| #39 I write new English words several times. | 1 (-3) | 4 (0) |
| #24 I make a mental image of a new word's meaning. | 1 (-4) | 2 (-3) |
| #50 I watch or listen to English language learning programs on CD/radio/TV/DVD/Video/Internet. | 1 (-4) | 3 (+2) |

Certain strategies appeared over-utilised (e.g. #55 and #60) while others seemed underutilised (#39 and #50) *vis-à-vis* their perceived usefulness. Whilst the reasons for any of the discrepancies cannot be determined without further investigation, #60 may be a due to the course requirements (i.e. tests) which raises the question as to whether or not the student's behaviour can truly be described as strategic (cf. Dörnyei & Skehan, 2003).

Next changes in the use and perceived usefulness of each of the 66 VLS by 24 students were examined. Overall, there was a positive change in the mean use of 56 VLS (with 24 VLS ≥ +0.5, including 6 strategies ≥ +1), no change for 2 strategies, and a negative change for 8 (but only #6 < -0.5). Meanwhile, there was a positive change in the mean perceived usefulness of 37 strategies (with 5

VLS ≥ +0.5), 4 were unchanged, and 25 were negative (but only #64 < -0.5).

Lastly, statistical analysis was used to investigate if any of the changes correlated with VLS instruction. Since the degree of SBI might have affected the likelihood of successful uptake, the strategies were coded based on the four stages of SBI (Rubin *et al*., 2007), shown in **Appendix L** and summarised in **Table 24** below:

**Table 24: Degree of VLS instruction**

| Degree of VLS instruction | Explicit | Implicit |
|---|---|---|
| 1 = Presentation/Modelling and/or information/ explanation only | 3 | 0 |
| 2 = Opportunities for practice after presentation, etc. | 26 | 11 |
| 3 = Evaluation of the strategy after presentation and practice | 7 | 0 |
| **Total** | **36** | **11** |

Just over half of the 66 VLS received explicit instruction, with presentation and practice opportunities for 32 strategies. Evaluation was defined with reference to Chamot *et al* (1999) and the questions set out in Assignment II. Preliminary analysis revealed that VLS that received explicit instruction increased (M = 0.51, SD = 0.50) more than those strategies that did not (M = 0.37, SD = 0.33), although the difference was not statistically significant.

However, it is apparent that neither a positive nor negative change in use or perceived usefulness is necessarily good or bad in terms of learning outcomes. The crucial point is that students select and use VLS or combinations of VLS that are most beneficial to them (1) at their current levels of language and strategies development, (2) for the task in hand, and (3) the context within

which they are operating (cf. Schmitt, 1997; Rubin *et al.*, 2007).

**Course Evaluation Forms: results and findings**

The Course Evaluation Forms (**Appendix G**) were completed anonymously in English during the exam weeks. Unfortunately, this meant that the data could not be correlated with individual students' scores or surveys, and the response rate was possibly lowered as students knew that their grades would not be affected (Brown, 2008b). On the other hand, it was hoped that the answers would be more honest.

**Degree of thought on learning vocabulary and awareness of VLS**

Part I sought to investigate learners' awareness of VLS with the following questions:

**A) *Before* the course:**

1. How much did you think about 'how you learned and remembered new words'?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Why or why not? _____

2. How aware were you of your own vocabulary learning strategies?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Comments: _____

**B) *Now*:**

1. How much do you think about 'how you learn and remember new words'?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Why or why not? _____

2. How aware are you of your own vocabulary learning strategies?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Comments: _____

On average, students reported that they thought a lot more about their vocabulary learning after the course (M = 3.73, SD = 0.53) than beforehand (M = 2.58, SD = 0.95), and became more aware of their strategies (M = 2.46, SD = 0.81 increased to M = 3.23, SD = 0.86). **Figure 13** below shows that 17 students thought more about learning vocabulary at the end of the course; and all of the nine who felt there had been no change had already thought *a lot* or *somewhat* about their vocabulary learning.

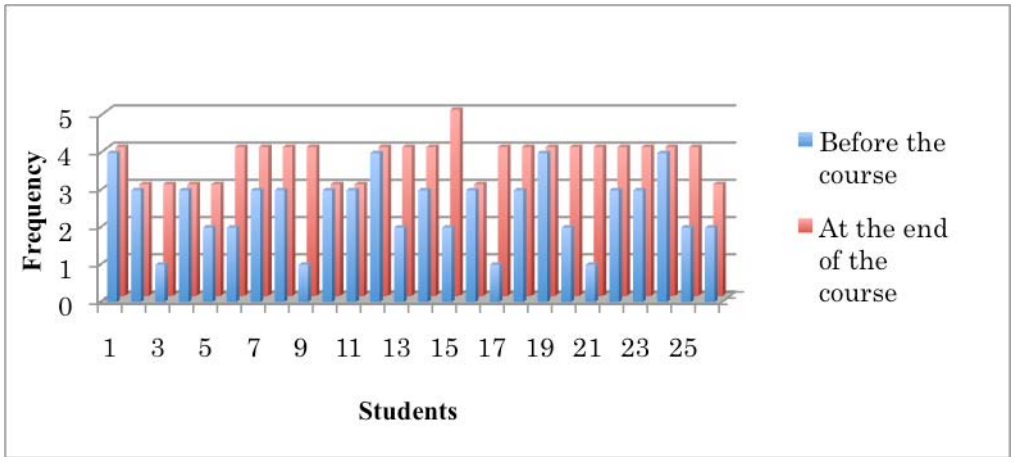


**Figure 13: How often students thought about 'how words were learned and remembered'**

A selection of representative comments reflect students' aims to more efficiently learn vocabulary, pass exams and improve their English skills:

> **How much did you think about 'how you learned and remembered new words'? Why?**
>
> 4 – I had to remember words in order to pass the entrance exams [Student 19]
>
> 3 – Because I am poor at English [Student 8]
>
> 2 – Because I don't have enough time to study [Student 16]
>
> **How much do you think about 'how you learn and remember new words'? Why?**
>
> 5 – Three assignments remind me of learning new words [Student 15]
>
> 4 – I want to remember new medical words as quick as I can [Student 19]
>
> 3 – To improve my English skill better than past [Student 10]

Below, **Figure 14** shows that 14 students increased their awareness of VLS whilst 11 were unchanged:

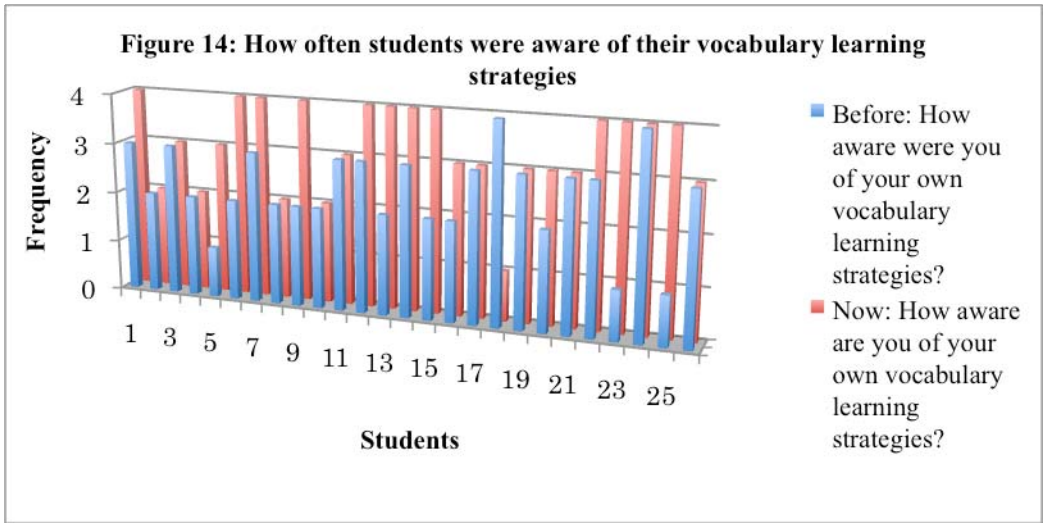


**Figure 14: How often students were aware of their vocabulary learning strategies**

One exception, Student 18, indicated that although (s)he thought more about vocabulary learning, (s)he was significantly less aware of her/his VLS. This may have reflected strategies becoming automated and subconscious, although it is not possible to confirm this from her/his comments:

> In this class, I thought how to learn new words. Now, I must learn a lot of medical words, so I want to remember new words perfectly. I thought of many learning strategies. I think that these are good strategies.

Most of the other comments also reflected positive changes in attitudes or beliefs (except for Student 10):

> **How aware were you of your own vocabulary learning strategies? Why?**
>
> 3 – I tried some ways [Student 12]
>
> 3 – I didn't use so much ways (*sic*) [Student 22]
>
> 1 – I thought learning new words was only writing repeatidly (*sic*) [Student 25]
>
> **How aware are you of your own vocabulary learning strategies? Why?**
>
> 4 – In this class, I learned many strategies [Student 14]
>
> 4 – From now on, I want to use my own vocabulary learning strategies [Student 23]
>
> 2 – My strategies don't change before (*sic*) [Student 10]

Some students also commented on the changes they experienced and referred to both specific strategies and more general approaches:

> ***In class…***
>
> Learning with other classmates reinforced my memory [Student 7]
>
> I was encouraged by [the teacher] so changed into learning words together [Student 14]
>
> ***Out of class…***
>
> I became to use dictionary more often [Student 15]
>
> By trying to read English books [Student 16]

## VLS program evaluation

In Part II of the course evaluation, students rated the usefulness of the different aspects of the program. The results are summarised **Appendix M** (with M ≥ 3.5 highlighted).

Students clearly valued the Japanese-to-English weekly MEV tests most highly (M = 4.13, SD = 0.61), illustrated with the following comments:

> 5 – I can know new medical words [Student 19]
>
> 5 – In the future we need it [Student 22]
>
> 4 – We have to learn new words for this test [Student 8].

Though also highly rated, there were some noticeable differences of opinion regarding English-only tests (Class A, M = 3.77, SD = 0.73; Class B, M = 4.36, SD = 0.67):

> 4 - We have to try understand English [Student 8]
>
> 4 - Very difficult [Student 18]
>
> 4 - I think it helps me to remember the word's meaning deeply. [Student 25].

The VLT was also seen as useful (M = 3.63, SD = 0.71). The high appraisal of tests may reflect the value placed on testing in English education in Japan in

general as well as in the medical English course.

In a class, role-plays were most highly valued by students overall (M = 3.87), who commented on their enjoyment and future applicability. Of the VLS focused on in class, only 'Combining Strategies' scored well in both classes (M = 3.68). However, there were differences of opinion (SD = 0.84); several students found it very useful and memorable, while other students may have benefitted from further practice:

> 3 – I could not master this strategies (sic) [Student 8]

VL Sheets were *very useful* for 8 students, *somewhat useful* for 10 students, and *not very useful* for 5 students. Three students further reported that the sheets helped them to remember words more easily but one felt there was a lot of information.

On average, Class B more favourably rated the other aspects of the VLS program than Class A. This raises the question as to whether or not the additional 5-10 minutes that they had in Weeks 3, 4, 7, and 10 may have influenced these results, and if so, to what extent.

Unfortunately, the VLS Survey was only rated *somewhat useful* (M = 2.96), but with the greatest differences of opinion (SD = 1.12):

> 5 – We can know new vocabulary learning strategies [Students 23]
> 5 – Because it was useful beyond my expectation [Student 25]
> 3 – It contained many useless factor [Student 7]

When administering the VLS Survey again at the end of the course, one or two

students reacted in Japanese by saying, “Again? What a nuisance!” (Brown, 2008b). This underscores the importance of survey design and administration (Dörnyei, 2003).

*Filling in the missing letters* of previously studied items had been intended to help student focus on spelling which had been a notable issue in prior MEV tests (Brown, 2008b). However, students overall rated this less than *somewhat useful* (M =2.74), despite differences of opinion (SD = 1.05):

> 4 - It helps us to remember new words. [Student 23]
> 2 - It is difficult. [Student 2]
> 2 - I think this won't help for me. [Student 15]

Consequently, it seems sensible to replace this with alternative VLS training.

**Additional feedback**

In response to an open question in the overall course evaluation questionnaire (administered in Japanese), two students wrote that, “The lessons on how to learn vocabulary were very useful.” (Fujii, *personal communication*, 30th January 2009).

**Student levels**

The initial and final Vocabulary Levels Tests were used to indicate students’ receptive vocabulary growth. Comparing students’ initial score (M = 61.6) and final score (M = 64.7) by means of a paired *t-test* results in t = -2.90 with 25 degrees of freedom, and the probability of this result, assuming the null hypothesis, is 0.008. Hence it is highly unlikely that this increase was due to

random sampling. However, no correlations were found between VLT scores and VLS use or perceived usefulness. Furthermore, there were no correlations with MEV test scores. Hence there was no evidence to support any relationship between VLS use or perceived usefulness and students vocabulary knowledge as measured by the MEV tests and VLT scores.

***To what extent are Japanese learners of English aware of their own deployment of vocabulary learning strategies? How might the integration of a VLS program into the medical English course help these students to increase their awareness of their strategies and promote vocabulary acquisition?***

Students' responses to Part A on the CEF supported the notion that, prior to the course, most learners had a limited awareness of their deployment of VLS and only thought *a little* about how they learned and remembered new words. Their answers in Part B suggested that by the end of the VLS program, students were both more aware and thought more about learning vocabulary, on average, between *somewhat* and *very much* (summarised in **Table 25** below).

**Table 25: Changes in degree of thought on vocabulary learning and VLS awareness**

| | **Before** | **After** |
|---|---|---|
| How much students thought about how they learned and remembered new words | M = 2.58<br>≥3: 15 students | M = 3.73<br>≥3: 26 students |
| How aware students were of their own vocabulary learning strategies | M = 2.46<br>≥3: 13 students | M = 3.23<br>≥3: 21 students |

Assignment I and the initial VLS Survey indicated that students were already

using a wide range of VLS prior to the course and these were considered useful. This belief continued to hold true and overall strategy use slightly increased by the end of the program for the majority of students. The results are summarised below in **Table 26**:

**Table 26: Changes in VLS use and perceived usefulness**

| | Key measures | Before | After |
|---|---|---|---|
| **26 students use of VLS** | **Mean** | 2.73 | 3.15 |
| | **High (M ≥ 3.5)** | 0 students | 6 students |
| | **Low (M < 2.5)** | 5 students | 3 students |
| **26 students perceived usefulness of VLS** | **Mean** | 3.43 | 3.53 |
| | **High (M ≥ 3.5)** | 11 students | 12 students |
| | **Low (M < 2.5)** | 0 students | 0 students |
| **Use of 66 VLS by 26 students** | **Mean** | 2.72 | 3.15 |
| | **High (M ≥ 3.5)** | 5 VLS | 7 VLS |
| | **Low (M < 2.5)** | 19 VLS | 1 VLS |
| **Perceived usefulness of 66 VLS by 26 students** | **Mean** | 3.43 | 3.53 |
| | **High (M ≥ 3.5)** | 39 VLS | 43 VLS |
| | **Low (M < 2.5)** | 2 VLS | 0 VLS |

The VLT scores indicated a small but statistically significant increase in students' receptive vocabulary. However, as there was no control group, it was not possible to ascertain from either the VLT or MEV test scores whether or not the VLS program actually furthered vocabulary acquisition.

# CHAPTER 6. Further Discussion

Having examined the results and findings in Chapter 5, **sections 6.1-2** address the limitations in both the research and VLS program before turning to teaching and research implications in **section 6.3**.

**Limitations of the research design, data collection methods and analysis**

In retrospect, it was clear that whilst a sizeable amount of data was collected, generated and analysed, the research questions could only be answered to a limited extent, primarily due to the pedagogical decision that ruled out an experimental research design.

By using multiple methods of data collection including both qualitative and qualitative measures, it was hoped that results might be verified. However, the precise data necessary to answer the research questions effectively was not perhaps determined clearly enough from the outset, thus limiting triangulation. The anonymous CEF meant that results could not be cross-referenced or analysed for correlation, and the absence of follow-up interviews hampered investigation into the reasons and beliefs that underlay strategies use.[9]

The assignments, VLS Survey, and CEF all rely on self-report which is sometimes called into question with regards to accuracy, reliability, and validity in terms of the extent to which the 'internal reality' is represented (Seliger, 1983; Qian, 2004; White, Schramm & Chamot, 2007). There are also inherent

[9] Although one student volunteered, it was unfortunately not possible to find a mutually convenient time to conduct and interview.

difficulties with interpreting Likert scale type instruments:

> …frames of reference may not be the same for all respondents, a higher rating may indicate higher awareness rather than more frequent use and so on (Gu, Wen and Wu, 1995). (Griffiths, 2008, p. 89)

In addition, an individual's concept of relative words (e.g. *a little, somewhat*) may change with task, context, and development. For example, a learner may initially feel that studying vocabulary once a week in class for 15-20 minutes is usual. However, after discovering that most other students also study vocabulary outside class everyday for 30 minutes, their perception may change. Third, the survey results do not reveal possible reasons (cf. Schmitt, 1997) or show if VLS use is, in fact, strategic (cf. Dörnyei & Skehan, 2003), and the single grouping of *Never or almost never* may be particularly problematical, as exemplified in **Figure 15** below:

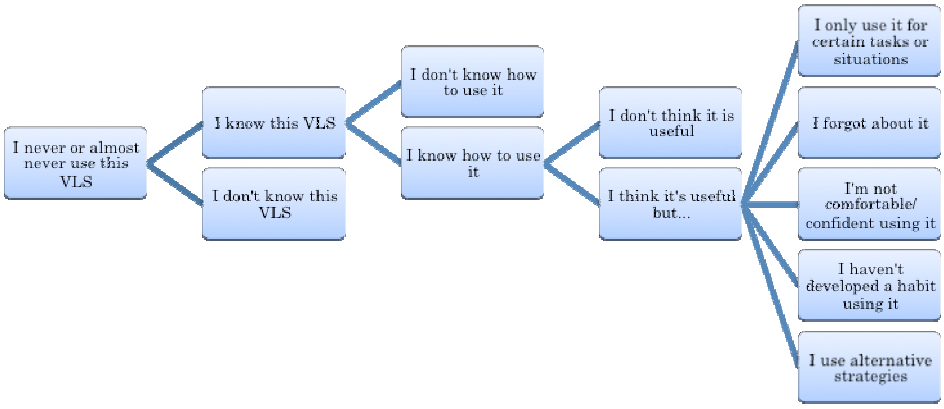


**Figure 15: Possible reasons for *Never* or *Almost never* using a VLS**

When comparing initial and final VLS Survey results, a number of issues became apparent. First, the basis of students' answers was not known. For example, to what extent were initial survey answers based on their learning experiences or their current situation and goals, and to what degree were end of course answers determined by students' experiences during the course? These

critical questions may also undermine the psychometric validity of the questionnaires (cf. Dörnyei, 2005) and rationale for comparison. Secondly, the degree of thought and care that was put into the answers may have been affected by the length of the VLS Survey. Thirdly, for students in Class A who may have compared their initial and final surveys, how did their previous answers influence their final ones?

With regards to measuring vocabulary development, given that students were studying a content-based course with medical English, the VLT may not have been an appropriate instrument with which to measure their vocabulary growth as it is based on general English. On the other hand, the MEV tests contained suitable content but were not used to measure initial and final MEV knowledge. Finally, Assignments I and II differed in both their content and writing process, undermining the basis for comparison.

Although greater strategy use is often associated with 'good language learners', this does not necessarily amount to 'better' strategy use (Grenfell & Macaro, 2007). Obviously, with so many strategies available, it would be impractical if not impossible to use all of them. With a limited time, learners make choices about which VLS to use. Therefore, discovering if and when learners make strategic choices, and the reasons and factors that influence their decisions may also prove enlightening. Evidently, we need to consider how we can measure students' abilities to select the most appropriate strategies and combinations, then use them effectively and fluently. The quality, not merely the quantity of

strategies use needs to be investigated (Grenfell & Macaro, 2007).

**VLS program limitations**

Firstly, to what extent did the course objectives, content, materials, activities, assessment, and context influence students' VLS selection and effectiveness? For example, the MEV that learners had to learn was constrained by the course textbook and weekly tests. Therefore there was limited scope to personalise vocabulary development and select words that met students' individual needs and interests. In addition, the MEV tests' emphasis on writing the L1 translation out of context, together with the provision of bilingual wordlists, may have led students to favour particular cognitive and memory techniques.

Only a very limited number of VLS were actually subject to the four stages of explicit SBI (Rubin *et al*., 2007). In an attempt to interest and engage learners, and cover as many potentially useful VLS as possible, the resulting program may have been undermined by a lack of repeat opportunities to promote uptake and develop students' fluency in using strategies, for example, with regards to Vocabulary Learning Sheets and combining strategies. This was compounded by the fact that the medical English course had not originally been designed with a VLS program in mind.

Originally, I had naively thought that integrating a VLS program into the medical English course would be a straightforward matter of dove-tailing two programs. However, as I progressed through the planning stage, I realised that

the I would need to consider VLS training and vocabulary teaching strategies, and was constantly learning and developing as a teacher and researcher, both of medical English and SBI (cf. Rubin *et al*., 2007).

**Teacher-research implications**

The previous section highlighted the fact that there were more lessons learned than discoveries made, but it is upon this foundation that innovations and improvements may be better informed as this paper now considers the implications for teaching and research.

Although there was no evidence of any causal link between learners' reported VLS use and vocabulary development, overall findings suggested the VLS program was mostly beneficial for the majority of students in terms of raising awareness, introducing and developing strategies use. For me, this justifies its continuance but with a number of changes to further develop a program that more effectively: (1) encourages reflection; (2) exposes learners to a wide range of VLS; (3) teaches new strategies; and (4) provides opportunities for students to develop fluency (a) in using and (b) evaluating strategies, with the overall goal of enhancing learners' abilities to select and combine strategies that are best suited to them as individuals, the task in hand, and their learning context. The following changes are being considered for next year:

1. Refinement or replacement of the VLS Survey with a more relevant and concise instrument. For example, the survey might include new popular strategies (e.g. #67 studying before sleeping) while omitted less useful

ones (e.g. #10 using translation software), and/or focus on only the strategies subject to instruction. An instrument that attempts to investigate the quality or effectiveness of VLS use might also prove fruitful!

2. More explicit explanations of the potential benefits and goals of the overall program as well as individual VLS. Testimonials based on student feedback might also serve as a useful tool.
3. Increased recycling to develop fluency and promote greater uptake of VLS. For example, *Filling in the Gaps* might be replaced with a review of previously taught strategies, e.g. combining strategies (**Appendix I**).
4. Discussion and sharing of VLS in class to promote strategies awareness and exchange in meaningful interaction and peer-to-peer teaching.
5. 10-minute journal-writing to promote reflection and evaluation of strategies as well as learning in general, and serve to develop writing fluency whilst acting as a mode for greater teacher-student interaction.
6. Using 'think aloud' protocols both as a teaching and research tool to gain and promote learners' insights into VLS use.
7. Adjusting the grading system to better reflect the efforts students are expected to make, for example, with respect to Vocabulary Learning Sheets and journals.
8. Developing and administering an initial and final MEV test based on the course content to measure MEV development.
9. Collaborating with a colleague to set up a control group for an experimental research design.

This dissertation has sought to answer two specific questions of inquiry:

1. *To what extent are Japanese learners of English aware of their own deployment of vocabulary learning strategies*?
2. *How might the integration of a VLS program into the medical English course help these students to increase their awareness of their strategies and promote vocabulary acquisition?*

In the process, the dissertation has also considered the fundamental arguments for teaching VLS: namely, there are too many words to teach, and limited valuable classroom time is better spent on developing learners' lifelong learning skills. At the heart of the matter lies another key question: *How compelling is the evidence that VLS instruction works?*

Although it was difficult to evaluate the effectiveness of the VLS program, VLS surveys, student feedback and course evaluations suggest that the VLS program was beneficial in the following ways:

1. most learners became more aware of their own VLS use and the availability of a wider range of strategies;
2. learners had the opportunity to try new strategies and accept or reject them as they were encouraged to find what worked best for them individually to meet their learning goals; and
3. most learners' VLS use and beliefs regarding usefulness showed more significant congruency by the end of the program.

Furthermore, teacher development, program development, and learner

development seem inextricably intertwined. The process of innovating and integrating a VLS program, coupled with ongoing teacher-research and reflective practice, arguably leads to greater teacher metacognition that may serve to develop more metacognitively aware learners (cf. Anderson, 2008), and design and deliver increasingly effective vocabulary learning strategies instruction (cf. Rubin *et al.*, 2007).

For other teacher-researchers who may be considering introducing a vocabulary learning strategies (VLS) program into their own context, it is hoped that this dissertation might offer one example of how a program was (1) developed and initially integrated into a content-based first-year medical English course for intermediate to high-level learners at a Japanese university; and (2) investigated and innovated within a classroom action research framework.

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**Online resources and websites**

Cognitive Styles Inventory: www.PersonalityPathways.com

Compleat Lextutor: http://www.lextutor.ca/

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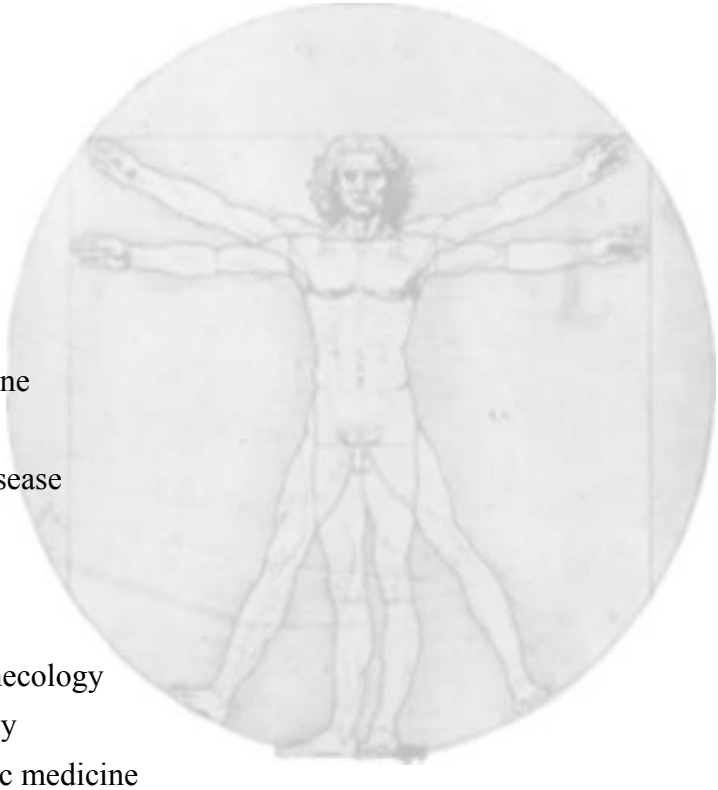
**Appendices**

Appendix A: Medical Departments Test 1: Answer Key

| | | | | |
|---|---|---|---|---|
| **1.** 小児科 | **5.** 心臓外科 | **9.** 整形外科 | **13.** 循環器内科 | **17.** 麻酔科 |
| **2.** 神経科 | **6.** 皮膚科 | **10.** 呼吸器内科 | **14.** 産婦人科 | **18.** 耳鼻科 |
| **3.** 泌尿器科 | **7.** 放射線科 | **11.** 脳神経外科 | **15.** 眼科 | **19.** 消化器内科 |
| **4.** 精神科 | **8.** 内科 | **12.** 癌科 | **16.** 心療内科 | **20.** 形成外科 |

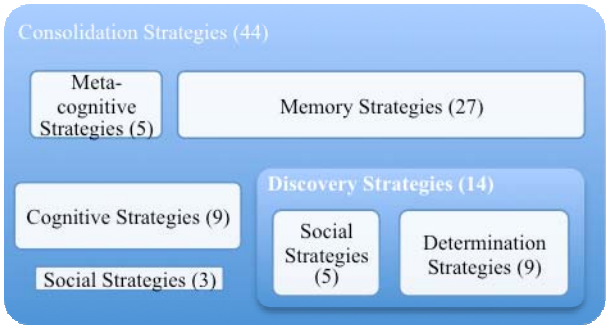
NAME: _ANSWER KEY_____ STUDENT'S ID. NUMBER:_____



1.pediatrics
2.neurology
3.urology
4.psychiatry
5.cardiosurgery
6.dermatology
7.radiology
8.internal medicine
9.orthopedics
10.respiratory disease
11.neurosurgery
12.oncology
13.cardiology
14.obstetrics/gynecology
15.ophthalmology
16.psychosomatic medicine
17.anesthesiology
18.otolaryngology
19.gastroenterology
20.plastic surgery

Appendix B: Summary evaluation of VLS taxonomies

| Author(s) | Description | Summary evaluation |
|---|---|---|
| **Stoffer (1995)** | The *Vocabulary Strategy Inventory* (*VOLSI*) contained 53 strategies in 9 categories, as follows: strategies involving (1) authentic language use, (2) creative activities, and (3) physical action; (4) memory, and (5) visual/auditory strategies; strategies used to (6) create mental linkages; (7) organise words; and (8) overcome anxiety; and (9) strategies used for self-motivation. | Stoffer (1995) offered an empirical basis for category assignment based on factor analysis (Schmitt, 1997), although Pavičić (2008) notes Kudo (1999) and remarks on the absence of detailed data to support the categories. |
| **Gu and Johnson (1996)** | The *Vocabulary Learning Questionnaire* (*VLQ Version 3*) contained 91 items divided into the following 8 categories: (1) selective attention; (2) self-initiating; (3) guessing strategies (using existing knowledge, linguistic cues, immediate/wider context); (4) dictionary use strategies; (5) strategies for recording vocabulary; (6) memorisation by repetition; (7) memorisation by coding (associating, elaborating, creating mental linkages, visual/ auditory/ semantic/ contextual coding, word structure); and (8) activation strategies. | This is one of the most comprehensive VLS taxonomies and sought to establish the strategies used by Chinese EFL university students. Gu and Johnson found that students with larger vocabularies, though not necessarily higher proficiency, use more strategies. The 9 categories may also be classified into metacognitive, cognitive, memory, and activation strategies (Ghazal, 2007). |
| **Schmitt (1997)** | Schmitt followed Oxford's (1990) classification system in four areas (social, memory, cognitive, and metacognitive strategies) then added a new fifth category, *determination strategies*, to account for how learners sought to discover a new word's meaning without help from another person. An overarching more basic distinction separates strategies for (1) initially discovering a word's meaning and (2) subsequently remembering the word (Cook & Mayer, 1983); Nation, 1990). Following a preliminary analysis (Schmitt & Schmitt, 1993), Schmitt created a 58-item inventory with 14 discovery strategies (comprising of | Schmitt acknowledged that the categories are problematical as almost all Discover Strategies could be used for consolidation but nevertheless followed Oxford's (1990) assertion that the LLS field was, "…in its infancy and so categories are still fluid and open to debate" (Schmitt, 1997, p. 207). The taxonomy might be schematically illustrated as shown below: |

| | | |
|---|---|---|
| | 9 determination and 5 social strategies) and 44 consolidation strategies (comprising of 27 memory, 9 cognitive, 5 metacognitive, and 3 social strategies). Schmitt also surveyed learners' use of VLS and their beliefs about how helpful they thought the strategies were. |  |
| **Kudo (1999)** | The 56-item questionnaire was based on Schmitt (1997) but with a six-point Likert scale and four categories (social, memory, cognitive, and metacognitive) with 14 items in each. Factor analysis had been conducted on a pilot study and certain items eliminated to improve the reliability and validity of the final questionnaire which consequently contained 44 items with 11 in each category. | From my own research perspective, Kudo was one of the most interesting attempts to apply Schmitt's model, aiming to describe and categorise VLS used by Japanese senior high school students. Final analysis indicated the existence of only two categories: direct and indirect. |
| **Nation (2001)** | The taxonomy included 3 categories: (1) Planning (choosing words, the aspects of word knowledge, strategies, and planning repetition); (2) Sources (analysing the word, using context, consulting a reference source in L1 or L2, and using parallels in L1 and L2; and (3) Processing (noticing, retrieving, and generating). | Nation's taxonomy is simpler and aims to separate elements of word knowledge (outlined previously in **Table 2**, **section 3.1**) from vocabulary sources, and learning processes. |
| **Fan (2003)** | The 56-item VLS questionnaire had nine categories (based on Gu & Johnson, 1996; Naiman *et al.*, 1978; O'Malley & Chamot, 1990; Oxford, 1990; Rubin, 1981; and a pilot study with student interviews): 5 management; 8 sources; 8 guessing; 13 dictionary; 5 repetition; 5 association; 5 grouping; 4 analysis; and 3 known words strategies. | Fan examined frequency of use, perceived usefulness and actual usefulness of VLS. In addition, the relationship between types of strategies use and high- and low-frequency words was investigated. |

## Appendix C: Planning and implementing the VLS program

**Key:** Normal text = Planned; Blue = Explicit strategies instruction; Red = MEV Tests;
~~Strike through text~~ = Cut; **Bold = added after initial planning**

| Week | Aims and functions | Activities/Resources | Learning Strategies |
|---|---|---|---|
| **1** | Class introductions, goals & expectations<br>Outline aims, objectives, content & evaluation<br>Introduce VLS program | Vocabulary Levels Test<br>~~VLS Survey & Journal,~~<br>Assessment criteria<br>**Self-assessment (SA) Cards**<br>VLS Assignment I<br>Bilingual wordlist | Set goals<br>Take notes<br>Use resources<br>**Cooperate**<br>Evaluate ~~yourself~~ & your strategies |
| **2** | Introductions<br>Asking general questions<br>Giving basic information<br>Giving instructions<br>Asking for permission | Active LC tasks (miming & *Slam*)<br>Role-plays<br>Labelled picture<br>Bilingual wordlist<br>**Word cards**<br>Symptoms 1<br>**SA cards**<br>**HW: VLS Survey** | Activate background knowledge<br>Manipulate/ Act out<br>**Cooperate**<br>~~Use imagery~~<br>**Evaluate yourself & Check Goals**<br>**Evaluate your strategies** |
| **3** | Greeting<br>Asking personal details<br>Clarifying & confirming<br>Asking about symptoms<br>Advising patients | **VLS Survey Q&A**<br>Gap filler LC task<br>Role-play & Practice<br>Bilingual wordlist<br>Medical Departments I<br>**VL Sheets** | ~~Predict~~<br>**Cooperate**<br>Directed attention<br>Selectively attend<br>Ask questions to clarify<br>**Organizational planning** |
| **4** | Greeting<br>Giving instructions<br>Asking about symptoms | Gap filler LC task<br>Role-play & Practice<br>Bilingual wordlist<br>~~**Review VLS Survey (T-led Q&A)**~~<br>**Combining Strategies**<br>**Jigsaw reading task**<br>**Peer-to-peer teaching**<br>**Review VL Sheets & SA cards** | **Make and** verify predictions<br>Directed attention<br>**Selectively attend**<br>**Cooperate**<br>~~Substitute~~<br>Imagine with keyword<br>**Combine strategies: audio, visual, kinaesthetic; imagery** |

| | | | |
|---|---|---|---|
| | | Symptoms 2<br>**Assignment writing guidelines**<br>**HW: Assignment II** | **& five senses**<br>**Evaluate strategies** |
| **5** | Asking about symptoms, health & habits.<br>Giving instructions | **Review VLS Survey (T-led Q&A)**<br>**Check VL Sheets & SA Cards**<br>**Cognitive Styles Inventory®**<br>**Jigsaw reading task**<br>~~Gap filler LC task~~<br>~~Practice & Role-play~~<br>Symptoms Final | Inference<br>**Cooperate**<br>**Selectively attend**<br>Summarise |
| **6** | Greeting<br>Basic questions<br>Asking about symptoms<br>Advising patients<br>Giving directions | **Total Physical Response**<br>LC task, Role-play/Info Gap<br>Bilingual wordlist<br>Medical Departments 2<br>**Check VL Sheets**<br>**HW: Self-correct Assignment II** | **Directed attention**<br>**Selectively attend**<br>~~Organizational planning~~<br>Cooperate<br>Group/Classify |
| **7** | Explaining procedures<br>Giving instructions<br>Scheduling appointments | **Vocabulary Review**<br>**Personalisation task**<br>**LC text-rearranging task**<br>Practice & Role-play<br>Labelled picture<br>**Circumlocution game**<br>Bilingual wordlist<br>~~Essential Vocabulary 1~~<br>**Medical English (Procedures)** | **Contextualize**<br>**Personalize**<br>**Cooperate**<br>Ask if it makes sense<br>**Make and verify predictions**<br>**Directed attention**<br>**Selectively attend**<br>***Look, cover, speak***<br>**Substitute**<br>~~Transfer/ Cognates~~ |
| **8** | Asking about experiences<br>Explaining procedures & side-effects<br>Reassuring patients | LC task: Medical procedures<br>**Reading for synonyms**<br>Role-play **with cue cards**<br>**Fill in the missing letters**<br>~~Essential Vocabulary 2~~<br>**Diseases & Disorders 1**<br>Bilingual wordlist<br>**HW: Medical procedure** | **Activate background knowledge**<br>**Make and verify predictions**<br>**Directed attention**<br>**Selectively attend**<br>**Cooperate**<br>**Substitute**<br>~~Personalize/~~ Contextualize<br>~~Deduction/ Induction~~ |
| **9** | Asking about health | **LC annotated drawing task** | **Directed attention** |

| | | | |
|---|---|---|---|
| | condition, family medical history & medication | **Student-Teacher** Role-play<br>**LC Bingo: keywords in context**<br>Bilingual wordlist<br>~~Diseases & Disorders 1~~<br>Diseases & Disorders 1B<br>**HW: Admission Interview Prep** | **Talk yourself through it (Self-talk)**<br>**Selectively attend**<br>**Cooperate**<br>**Personalize/ Contextualize**<br>Ask questions to clarify |
| **10** | Asking about allergies, medication, diet & habits<br>Asking about concerns<br>Reassuring patients | **Check SA cards**<br>Role-play: Admission Interviews<br>Bilingual wordlist<br>***Attack Bingo!* Vocabulary review**<br>Diseases & Disorders Review<br>**HW: Assignment III** | **Evaluate yourself**<br>**Personalize/ Contextualize**<br>**Ask questions to clarify**<br>**Cooperate**<br>**Evaluate your strategies** |
| **11** | Vocabulary Levels Test 2<br>VLS Survey 2<br>Outline exam procedures<br>VSL Assignment II | ~~Practice & Role-play~~<br>~~Bilingual wordlist~~<br>**Assignment writing guidelines**<br>**Assessment criteria**<br>**Assignment III: proof-reading, self-correction, and self-assessment; peer-to-peer reading & evaluation**<br>Vocabulary Levels Test<br>**SA Cards**<br>**Final evaluation sheets**<br>**Email writing blank-filler**<br>**Examination procedures**<br>**HW: Revise Assignment III** | Talk yourself through it (Self-talk)<br>**Evaluate yourself**<br>**Cooperate**<br>Evaluate your strategies |
| **12** | Oral Interviews I | Role-play scenarios I<br>VLS Survey<br>**Consent forms** | Talk yourself through it (Self-talk)<br>Evaluate your strategies |
| **13** | Oral Interviews II | Role-play scenarios II:<br>**Course Evaluation Form** | Talk yourself through it (Self-talk)<br>Evaluate your strategies |
| See further, *The Learning Strategies Handbook* (Chamot *et al.*, 1999) | | | |

Appendix D: Key issues with Bennett's (2006) VLS survey

| **Issues** | **Illustrative examples** |
|---|---|
| Inaccurate or unclear translations, vagueness and/or lack of illustrative examples to help learners more clearly understand what strategies involve. | ・ Item A4 included, "(先生の)" meaning *the teacher's* gestures, which was extra information not provided by the English.<br>・ A6 says "Japanese-English dictionary" in English but English-Japanese (英和) dictionary in Japanese.<br>・ In B1, "sentence" was translated to 例文 (*reibun*) meaning 'example'.<br>・ In C9, たくさん meaning 'many' or 'a lot of' was used to translate "several" rather than いくつも (*ikutsumo*).<br>・ 覚える (*oboeru*) was used to translate 'study' and 'learn' as well as 'remember' [See C10, C11, C17].<br>・ The meaning of 'study' was found open to interpretation, for example in *B3 Study the word with your classmates* and *StudyC11 Study the sound of a word*.<br>・ *C17 Use physical action when learning a word* was translated to "Use your body (and) remember". |
| Use of Japanese technical terms which were opaque to a non-specialist | In C5, 類義語 (*ruigigo*) meaning 'synonym or similar word' and 反義語 (*hangigo*) meaning 'antonym' are used rather than the more familiar 同意語 (*douigo*) or 同義語 (*dougigo*) and 反対語(*hantaigo*) or 反意語(*hanigo*). Moreover, one of three Japanese teachers of English asked was not familiar with *hangigo* (but could understand the meaning), while the other two and a native Japanese translator/teacher seldom used it. However, *ruigigo* was used most by a Japanese translator/teacher, together with 類語 (*ruigo*) (Brown, 2008c). |
| Mistakes or inconsistencies | ・ In A1 and C15, "…*word's form* (verb, noun…)" should read *word class* or *part of speech* [c.f. C13].<br>・ Pronouns and possessive adjectives, e.g. *When I find a new English word that I don't know, I… B2 Ask your classmates for the meaning* should read *<u>my</u> classmates.* |

Appendix E: VLS Survey (Final Version)

**Name: _____ Student number: _____ Class: _____**

**Teacher: _____ Date: _____ Time taken: _____**

| **A) How often do you do this?** | **B) What do you think about it?** |
|---|---|
| 1 = Never or almost never true of me<br>2 = Usually not true of me<br>3 = Somewhat true of me<br>4 = Usually true of me<br>5 = Always or almost always true of me | 1 = It is NOT useful<br>2 = It is not very useful<br>3 = It is somewhat useful<br>4 = It is very useful<br>5 = It is extremely useful |
| | |

| # | **Vocabulary Learning Strategies**<br>(Based on Bennett, 2006; Kudo, 1999; Schmitt, 1997; Oxford, 1990) | **A** | **B** |
|---|---|---|---|
| 1 | To understand unfamiliar/new English words, I make guesses (using pictures, the speaker's gestures/expression, the context). | | |
| 2 | I find the meaning of new English words by dividing them into parts I understand (e.g. cardiology → 'cardio' = heart; 'logy' = study of). | | |
| 3 | I look for words in Japanese (or other language I know) that are similar to new words in English (e.g. リストラ - restructuring) | | |
| 4 | I use an English-English dictionary to look up new words. | | |
| 5 | I check new words' class (e.g. noun, verb, adjective, adverb, etc). | | |
| 6 | I use an English-Japanese dictionary to look up new words. | | |
| 7 | I use a medical dictionary to look up new medical English words. | | |
| 8 | I use a Japanese-English dictionary to look up new words | | |
| 9 | I use a thesaurus. | | |
| 10 | I use translation software. | | |
| 11 | I ask the teacher to explain the meaning and give an example. | | |
| 12 | I ask other students for the meaning of new words and examples. | | |
| 13 | I ask someone for a Japanese translation. | | |
| 14 | I ask the teacher to check my understanding of new words or notes. | | |
| 15 | I pay attention when someone is speaking English. | | |
| 16 | I practise/study new words with other students. | | |

| | | | |
|---|---|---|---|
| 17 | If I do not understand something in English, I ask the other person to slow down or say it again. | | |
| 18 | I notice if I am tense or nervous when I am studying of using English. | | |
| 19 | I try to relax whenever I feel nervous or afraid of using English. | | |
| 20 | I encourage myself to speak English and not worry about mistakes. | | |
| 21 | I write down or talk about my feelings learning English. | | |
| 22 | I give myself a reward or treat when I do well in English. | | |
| 23 | I draw pictures to help me remember new words. | | |
| 24 | I make a mental image of a new word's meaning. | | |
| 25 | I connect the sound of new words and an image or picture of the words to help me remember. | | |
| 26 | I look carefully and notice the spelling of new words. | | |
| 27 | I make a mental image of new words' written form/spelling. | | |
| 28 | I listen carefully and try to remember the sound of new words. | | |
| 29 | I repeat/say new English words several times out loud. | | |
| 30 | I connect new words to other words I know with the same/similar or opposite meanings (e.g. *enormous* = *huge* ←→ *tiny*/*minute*). | | |
| 31 | I connect new words to personal experiences. | | |
| 32 | I remember words in 'scales' or ranking (e.g. *never* -> *occasionally* -> *sometimes* -> *often* -> *usually* -> *always*). | | |
| 33 | I try to find patterns in English and group words (for example, by meaning, grammar, spelling and/or pronunciation). | | |
| 34 | I remember the words around the new words (e.g. *We conducted an experiment on how we learn*) or 'chunks' and idioms (e.g. *look after*). | | |
| 35 | I use new English words in a sentence. | | |
| 36 | I learn the meaning of word parts and use them to remember new words (e.g. *neuro* + *logy* + *ist* → *neurologist*). | | |
| 37 | I make my own definition of new words or imagine the meaning. | | |
| 38 | I use physical actions or gestures with new English words. | | |
| 39 | I write new English words several times. | | |
| 40 | I use the words I know in different ways. | | |
| 41 | I write a note of when and where I first heard or saw a new word. | | |
| 42 | I remember new English words or phrases by remembering their location on the page, on the board, or on a street sign. | | |
| 43 | I use rhymes, songs and/or chants to remember new English words. | | |

| | | | |
|---|---|---|---|
| 44 | I remember a new English word by making a mental picture of the situation in which the word might be used in the future. | | |
| 44 | I use flashcards (with pictures and/or words in English and/or Japanese) to remember new English words. | | |
| 46 | I make lists of new words. | | |
| 47 | I highlight new words. | | |
| 48 | I put English labels on physical objects. | | |
| 49 | I talk to myself or imagine conversations in English using new words. | | |
| 50 | I watch or listen to English language learning programs on CD/radio/TV/DVD/Video/Internet. | | |
| 51 | I watch or listen to authentic English (e.g. news, movies, drama, etc) | | |
| 52 | I read English language learning materials (e.g. textbooks, workbooks). | | |
| 53 | I read for pleasure (e.g. newspapers, books, magazines, Internet). | | |
| 54 | I write notes, messages, letters or reports in English. | | |
| 55 | I use English language learning games and software. | | |
| 56 | I notice my English mistakes and use that information to help me do better. | | |
| 57 | I try to find as many ways as I can to use new words and phrases. | | |
| 58 | I review new words often. | | |
| 59 | I select which new words to learn and which new words to ignore. | | |
| 60 | I test myself or ask other people to test me. | | |
| 61 | I have clear goals for improving my medical English vocabulary. | | |
| 62 | I think about my progress in learning medical English vocabulary. | | |
| 63 | I plan my schedule so that I will have enough time to study English. | | |
| 64 | I try to find out how to be a better learner of English. | | |
| 65 | I look for people I can talk to in English. | | |
| 66 | I keep a learning journal on how I learn. | | |

## Appendix F: Vocabulary Learning Sheets

Front

| 1. New word/phrase<br>2. Pronunciation<br>3. Part of speech<br>4. Derivations | 5. Example sentence(s)<br>6. Collocations<br>7. Keyword / Illustration |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Back

| 8. Meaning in English<br>9. Synonyms<br>10. Japanese | 11. Antonyms<br>12. Other related words<br>****Five-minute reviews**** |
|---|---|
| | 10min 24hrs 1wk 1mth 4mths |
| | 10min 24hrs 1wk 1mth 4mths |
| | 10min 24hrs 1wk 1mth 4mths |
| | 10min 24hrs 1wk 1mth 4mths |
| | 10min 24hrs 1wk 1mth 4mths |
| | 10min 24hrs 1wk 1mth 4mths |
| | |

| | | | | | |
|---|---|---|---|---|---|
| | 10min | 24hrs | 1wk | 1mth | 4mths |

Brown, P.S. (2008) Based on Schmitt & Schmitt (1995), Hall (2007), Nation (2001), and Pimsleur (1967)

Appendix G: Course Evaluation Form

Your answers to this questionnaire will help to improve the Medical English course at Jikei. It will not affect your grade and you do not have to give your name. Thank you!

A) ***Before* the course:**

1. How much did you think about 'how you learned and remembered new words'?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Why or why not? _____

_____

2. How aware were you of your own vocabulary learning strategies?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Comments: _____

_____

B) ***Now*:**

1. How much do you think about 'how you learn and remember new words'?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Why or why not? _____

_____

2. How aware are you of your own vocabulary learning strategies?

1. Not at all 2. A little 3. Somewhat 4. A lot 5. All the time

Comments: _____

_____

C) If you experienced any changes in how you learned and remembered new words, what were the changes, both in and out of class? What do you think caused those changes?

In class: _____

_____

_____

Out of class: _____

_____

_____

_____

**How useful were each of the following areas? Why or why not?**

Please work by yourself and give each area a rating. Add your comments to explain your answer.

1 = It was NOT useful 2 = It was not very useful 3 = It was somewhat useful

4 = It was very useful 5 = It was extremely useful N/A = I was absent or did not do this

| | |
|---|---|
| 1. The Vocabulary Levels Tests (2k, 3k, 5k, UWL, 10k) | Rating: _____ |
| Why? _____ | |

| | |
|---|---|
| 2. The Vocabulary Learning Strategies Surveys (66 items) | Rating: _____ |
| Why? _____ | |

| | |
|---|---|
| 3a. Assignment I: *How you learn and remember any 3 new words?* | Rating: _____ |
| Why? _____ | |
| 3b. Assignment II: *How you combine vocabulary learning strategies* | Rating: _____ |
| Why? _____ | |
| 3c. Assignment III: *How you learn and remember 3 new medical words* | Rating: _____ |
| Why? _____ | |

| | |
|---|---|
| 4. Weekly Self-Assessment | Rating: _____ |
| Why? _____ | |

| | |
|---|---|
| 5a. Medical English Vocabulary tests (Japanese to English translation) | Rating: _____ |
| Why? _____ | |
| 5b. Medical English Vocabulary tests (English only) | Rating: _____ |
| Why? _____ | |

| | |
|---|---|
| 6a. Role-playing various hospital situations | Rating: _____ |
| Why? _____ | |
| 6b. Week2: Listening '*karuta*' with Medical English word-cards (symptoms) | Rating: _____ |
| Why? _____ | |
| 6c. Week3: Vocabulary Learning Sheets | Rating: _____ |
| Why? _____ | |
| 6d. Week4: Combining strategies: actions, mental images and five senses | Rating: _____ |
| Why? _____ | |
| 6e. Week5: Cognitive Styles Inventory | Rating: _____ |
| Why? _____ | |
| 6f. Week6: Grouping/Classifying (medical departments) | Rating: _____ |
| Why? _____ | |
| 6g. Week7: Personalising examples (medical procedures) | Rating: _____ |
| Why? _____ | |
| 6h. Week8: Filling in the missing letters (e.g. *d_s_a_e_ and d_s_r_e_s*) | Rating: _____ |
| Why? _____ | |
| 6i. Week9: Listening *Bingo!* (diseases and disorders) | Rating: _____ |
| Why? _____ | |
| 6j. Week10: *Attack Bingo!* (diseases and disorders) | Rating: _____ |
| Why? _____ | |
| 6k. Week11: Reading, checking and evaluating your assignments together | Rating: _____ |
| Why? _____ | |

May I contact you to ask about your answers: Yes / No (please circle)

Would you volunteer to take part in a short interview: Yes / No (please circle)

Name (Optional but please provide if you circled 'Yes'): _____

## Appendix H: Week-by-week implementation of the VLS Program

| **Week 1: Introductions, overview, goals, Levels Tests, VLS reflection task** |
|---|
| An ice-breaker encouraged students to share goals and reasons for taking the course (medicine), and discuss their ideal classroom learning environment (cf. Nel, 2008). Following a course overview (including syllabus aims and objectives, an outline, and assessment for medical English), students were provided with the English program assessment criteria and given time to clarify any outstanding points, either in English or Japanese (cf. VLS#61). 'Survival' English communication strategies (#17) were introduced and practiced, then the students then sat the VLT (20-25 minutes). For homework, students completed the reflection task, Assignment I (cf. #54 & 66), and they were informed that their first weekly MEV test the following week would be based on the bilingual list of symptoms in their textbook (cf. #61 & 63). |
| **Week 2: Role-plays, TPR, Weekly MEV tests, Self-Assessment, VLS survey** |
| In addition to textbook activities involving recorded dialogues, miming (#38), scripted role-plays and tasks, students were introduced to simple word cards with MEV printed on them (#44). However, due to an additional ten minutes spent on listening and follow-up tasks, the planned activities using the word cards to review symptoms vocabulary were replaced by an alternative ten-minute active listening task, *Slam**, similar to a well-known, traditional Japanese game, *karuta* (#55). I briefly talked about all of the 25 symptoms that would appear on the test, putting them into a natural context and using gestures to help convey meaning, e.g. *People with rheumatoid arthritis suffer from stiff, painful joints* (#1). Students had to listen for the symptoms and race against two other students to grab the corresponding word-card. Afterwards, it was pointed out that they could make their own cards with medical words written in English on one side and Japanese on the other, and use them study together (#16) as well as by themselves.<br><br>After explaining the value of self-assessment, I had students fill in Self-Assessment (SA) Cards for their in-class participation (using the criteria provided in Week 1) (#61 & 62). They then completed the weekly MEV test, *Symptoms Test 1* in about ten minutes (cf. #60). These were collected for me to mark outside class. Finally, the VLS Survey was briefly explained, exemplified, then set as homework, together with learning vocabulary for medical departments.<br><br>After classes, teachers were suddenly informed that all teachers in the first-year medical English program were required to teach paragraph writing and set four essays during the first semester. As a result, an additional VLS Assignment was set mid-course, and students were required to produce a draft and final version of Assignment III. |
| **Week 3: VLS Survey, Vocabulary Learning Sheets, Dictionary training** |
| The VLT was returned with a brief explanation of how to interpret the results based on Cobb (no |

date); basically, scores under 83% indicated an area in need of attention.[10] However, I pointed out that rather than focus on the 5k-10k word levels, time would be better spent on MEV and academic vocabulary (Nation, 2001) (cf. #59). Next, students had 10-15 minutes to clarify any questions on the VLS Survey and amend or complete their answers as necessary before being collected. Forty minutes of classroom activities* involving listening, reading and speaking provided students with opportunities to review and use vocabulary for both symptoms and medical departments before the MEV test.

In the final ten minutes, VL Sheets (cf. #46) were introduced and demonstrated with the example *constipation*. Guided questions were used to scaffold the task and elicit information to complete an entry together, shown below:

| 1. New word/phrase<br>2. Pronunciation<br>3. Part of speech<br>4. Derivations | 5. Example sentence(s)<br>6. Collocations<br>7. Keyword / Illustration |
|---|---|
| 1. constipation<br>2.<br>3. [n, uncountable]<br>4. constipated [adj]<br>constipate [v] | 5. I have severe constipation.<br>Many women suffer from chronic bouts of constipation.<br>6. have, get, suffer from, prevent, cure; severe, chronic, idiopathic<br>7. |

Front

| 8. Meaning in English<br>9. Synonyms<br>10. Japanese | 11. Antonyms<br>12. Other related words<br>**Five-minute reviews** |
|---|---|
| 8. have difficulty emptying your bowels<br>9. irregularity<br>10. 便秘 | 11. incontinence, diarrhea<br>12. bowel, digestive disorder, lack of fibre, faeces/poo<br>10min \| 24hrs \| 1wk \| 1mth \| 4mths |

Back

Students were encouraged to draw pictures to help them remember new words(#23). Using word parts (#2 & 36) and Keyword technique (#25) were also demonstrated. An additional 5-10 minutes enabled Class B some additional Electronic Dictionary (ED) training: students used both bilingual

[10] It was later discovered that the information regarding VLT scores was erroneously based on Cobb (unknown) where the 83% benchmark was for the *productive* test, *not* receptive.

and learner dictionaries (#4 & 6) and a thesaurus (#9) to check definitions, parts of speech (i.e. word class) (#5), example sentences (#1 & 35), collocations (#34), synonyms and antonyms (#30). For homework, students were instructed to use the VL Sheets to help them prepare for the next MEV test. It was pointed out that they did *not* need to complete all the information but should enter the L1 translation and any other information they knew. Then, when reviewing, an addition piece of information should be added. The recommended review cycle was also highlighted as a means to study smarter rather than just harder (#58) and online dictionary references were provided so students could check pronunciation (#7).

After class, I emailed students with a link to the VLT online so that they would be able to take it as often as they liked. But, when the test was given again in Week 11, it became apparent that none of the students had tried it despite being 'only one-click away'!

**Week 4: VL Sheets, SA Cards, role-plays, combining strategies, reflection**

I reviewed students' VL Sheets briefly during registration and checked SA Cards for completion. As only one out of twenty-six students had used the VL Sheets and just sixteen had completed their SA Cards, five-minutes was used to emphasise their benefits. Then I briefly explained the significance of colour (Gnoinska, 1998), and as also pointed out by a student in Assignment I, sleep and memory (*Cell Press*, 2006). An additional ten minutes was allocated for students to begin completing entries for the VL Sheets in class*. Textbook materials and activities then included multiple role-plays with patients describing symptoms.

I demonstrated and led students through a series of strategies combining audio-visual and kinaesthetic input, mental images (or visualisation techniques), and sensory association or 'anchoring' (Kuehne, 2006) (#24, 25, 26, 27, 28, 29, 31 & 38). Due to the number of steps involved, this was followed up with a 10-15-minute jigsaw reading task describing the steps students had just undertaken (**Appendix I**). In groups of three, students then had 10-15 minutes to peer-teach a medical word of their choice using the same method* (although Class B had an extra 10 minutes) (#16). After that, students had their weekly MEV test. For homework, they were asked to (re-)read their feedback from Assignment I, try today's combined strategies to help them prepare for the next MEV test, then write a report (Assignment II) about their experiences (#54 & 64) while referring to a handout on writing assignments:

**Assignment II: Combining strategies**

In your report, please answer the following questions:

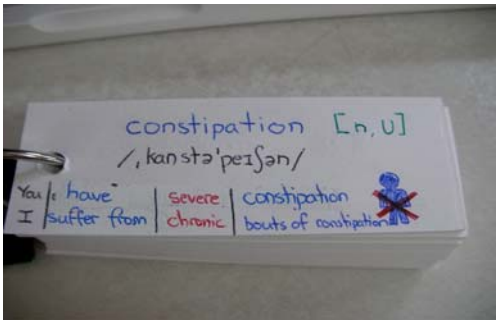
1. Which words did you use these strategies for?
2. Did the combination of strategies help you? Why do you think so?
3. Are their other strategies that might work better?

4. In what situations does this strategy work well for you? When does it not work so well?

Your report must be 300-400 words. The basic structure should have an introduction, body, and conclusion and remember to put a title, the date and your name at the top. When you finish, read your report carefully then ask a friend to check it before you submit it next class. Also, read your first assignment again, and check that you have followed the previous recommendations! (Brown, 2008b)

**Week 5: Identifying VLS, VL Sheets, SA cards, cognitive styles**

The VLS Surveys were returned and students asked to identify which strategies they had used in the past month and when. During this time, VL Sheets and SA Cards were checked again. Some students explained that they had not used the VL Sheets but used word cards instead and/or had their own preferred VLS (Brown, 2008b). Consequently, I told the classes that they did not *have* to use the sheets *but* they were there to help, and they should try them at least for one week. Alternatively, they could use word cards as shown below:





Next, the Cognitive Style Inventory © Published by Ross Reinhold & Reinhold Development 1997 - 2006 was administered in a slightly modified format (**Appendix J**) with permission from the author. Lastly, students had a MEV test to review symptoms.

During the week following class, all the data entry and initial analysis of VLS surveys was completed. The gap between the actual use of VLS and their perceived usefulness was examined in order to establish which VLS might benefit most from strategies training: VLS with the largest gap and a perceived usefulness mean score ≥ 3.5 were included in the program wherever possible. Other strategies were also included where they complemented the materials (see **subsection 5.1.1**).

**Week 6: VLS awareness, grouping, asking for help, learning from mistakes**

In an effort to further demonstrate the usefulness of the VLS Survey, I specifically referred students to strategy #33 on the VLS Survey then asked them to individually classify medical departments before comparing and discussing their decisions in small groups of three or four*. Next, a number of TPR activities were included prior to role-plays on giving directions, and student were asked to

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|---|
| find the corresponding strategy (#38). I had students read strategy #14 (asking a teacher to check your notes), then checked VL Sheets again whilst inviting students to ask questions (#11)*. After directing students to strategy #56 (noticing and learning from one's mistakes), I asked them to correct their own assignments based on my comments and the coding system outlined in a handout from Week 4. Students were given 10 minutes in class then asked to finish at home. Lastly, an English-only MEV test required students to fill in the blanks based on the lesson dialogue and materials. |
| **Week 7: Personalisation, circumlocution, definitions, vocabulary in context** |
| A review of the homework on MEV relating to medical procedures was conducted at the beginning of class with concept-checking questions. Student were then asked to 'personalise' the vocabulary by creating their own sentences in pairs (#16, 31 & 35). After the textbook listening tasks and role-plays, a 20-minute circumlocution game* involved students having to identify the MEV items taped to their back by asking questions, creating and listening to each others' definitions and examples (#12 & 35). Notably, as most students in Class A had not completed their homework, they had about 10 minutes less time to do this than Class B. Finally, an English-only MEV test first required matching terms with their basic definitions (from a learner dictionary) (#4), then using them in corpus-based example sentences. After the test, I asked Class B whether they preferred English-only tests or Japanese-to-English. A couple of more vocal students said English-only, but most students remained quiet. |
| **Week 8: MEV in context, role-plays, cue cards, fill in the missing letters** |
| Textbook materials focused on listening and reading then role-plays explaining medical procedures. Key phrases and sentence stems on strips of card were given to pairs of students to support the dialogues. Students' answers on previous MEV tests had revealed widespread difficulties with spelling, so I gave them a simple task to fill in the missing letters for relevant words, e.g. *h_p_t_t_s* → *hepatitis**. They then had 5-10 minutes for either individual or peer-to-peer study before the MEV test on diseases and disorders*. For homework, students had to investigate a medical procedure and be prepared to explain it next class. They were referred to online dictionaries (#7) and useful medical English websites. |
| **Week 9: Note-taking, role-plays, dictation, listening bingo** |
| Students listened to a recorded doctor-patient conversation, took notes then drew and labelled a corresponding diagram of the patient's family health history. Following up on the homework assignment, they practiced explaining a medical procedure to other students (#16) before taking part in a one-to-one role-play with me as their patient. Afterwards, students made simple bingo cards following my dictation and were encouraged to clarify and confirm spellings (#17)*. This was followed by a listening bingo* with key words in context, then the weekly MEV test. |
| **Week 10: Multiple role-plays, *Attack bingo*** |

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| Students prepared and repeatedly role-played various admission interview scenarios for about an hour. A one-on-one variation of bingo, *Attack Bingo**, was also demonstrated but only played by students in Class B while Class A spent 5-10 minutes longer asking about homework Assignment III, and the final exams. Students then had their final weekly MEV test. |
| **Week 11: Self- and peer-review, Vocabulary Levels Test** |
| The evaluation guidelines and handout on writing assignments were reviewed in class. Students were then asked to proof-read and grade their own work, and do the same anonymously for a classmate. For homework, students had to revise their assignments. (NB The affect this might have had on comparing Assignments I and III had not been considered as I had been focused on helping students to improve their assignment writing.)<br><br>Next, students re-sat the VLT which was then marked together in class. SA Cards were collected with the final Grading Sheets on which they pencilled in their anticipated grades. Lastly, the examination procedures for the oral interviews in the following two weeks were explained. |
| **Week 12: Oral interviews, VLS Survey, Consent Form** |
| While waiting for or after finishing their final one-to-one oral interview, students were asked to fill out the VLS Survey again. After seeing a student in Class B begin to take out the original VLS Survey from Week 2, I stopped him and specifically instructed the class NOT to refer back to it. No such instruction, however, had been given to Class A. Lastly, all students signed consent forms (**Appendix K**) permitting their work and data to be used for research on the condition of anonymity. |
| **Week 13: Oral interview, Course evaluation** |
| While waiting for or after finishing their one-to-one oral interview, students were asked to fill in a Course Evaluation Form (**Appendix G**). I requested written comments to explain their answers, and pointed out that they did not need to give their name and it would not affect their final grade. |

(Brown, 2008b)

## Appendix I: Combining strategies

In order to learn and remember new words, it is sometimes more effective to combine vocabulary learning strategies. The method below illustrates how several strategies may be used together, for example, to learn nauseous, meaning to feel sick.

First, please listen and repeat: nauseous. I'm feeling nauseous. I'm feeling sick. And make a gesture and show you are feeling sick – *not* being sick!

Next, let's use all of our five (or six!) senses! These can be very powerful! For example, when you hear a particular song, you may be reminded of a certain time or place. The smell of a specific perfume or cologne will remind you of someone you know or knew. A certain taste may bring back a particular memory, and so on. So, first make a mental picture to help you remember the meaning of nauseous. For example, I imagine someone who looks green. Second, what sound can you imagine hearing? And what feeling or touch do you remember? Lastly, what taste and smell do you connect with the word nauseous.

Now imagine you are holding a pen. Raise your arm and write with me while looking up: n … a … u … s … e … o … u … s. Nauseous. Now close your eyes and write it one more time: n … a … u … s … e … o … u … s. Nauseous. In your imagination, what colour did you use to write nauseous? For example, I wrote it in black on a whiteboard. Now in your imagination, change the colour. For example, I'm changing it to sickly green on a sickly yellow background! Now make the letters brighter and more in focus. Imagine adjusting a TV screen or camera lens. Did you know that using our brains more actively and creatively improves our memory?

Finally, let's check that we remember the spelling: n … a … u … s … e … o … u … s. Nauseous. To be 100% sure, please spell it backwards – this way, you cannot rely on the sound of a word to help you guess the spelling: n ← a ← u ← s ← e ← o ← u ← s. Nauseous. And one last time: n ← a ← u ← s ← e ← o ← u ← s. Nauseous.

As you can see, this is quite a long process and you will probably not need it for every word, but it may be useful when trying to learn and remember more difficult, longer medical English words. Please try this technique to learn and remember at least three new words this week, and write a report about your experiences.

## Appendix J: Cognitive Style Inventory©

**Cognitive Style Inventory©**

Most recent revision 12/12/06 - Ross Reinhold, INTJ

www.PersonalityPathways.com



Determining one's natural Myers-Briggs Type or one's Personality Type is frequently complicated by our life-long learning experiences. The classic question is: "Am I this way because I learned it or is this just the way I am?"

In reviewing the comparisons in our inventory, you may find yourself drawn equally to opposing choices. In such cases I suggest you try to think back to how you were before the age of 12 or even younger if you can recall. The rationale for this suggestion is the fact that by the time we are 3 years old, the core of our cognitive organization is well-fixed. . . although the brain continues to allow some plasticity until puberty.

After the onset of puberty, our adult learning begins to overlay our core personality - which is when the blending of nature and nurture becomes more evident. For some people, this "learning" serves to strengthen what is already there, but with others it produces multiple faces to personality. Discovering or rediscovering this innate core of yourself is part of the journey of using personality type to enrich your life.

Each of the four questions of the CSI inventory has two parts. The first part is a general description of the preference choices. The second part is a list of paired statements. Use both parts to form your opinion on your more dominant preference.

**Further recommended reading**

Articles from *Pathways* contributors:
http://www.personalitypathways.com/MBTI_articles.html
Archived articles:
http://www.personalitypathways.com/mbti_archives.html
Recommended books:
http://www.personalitypathways.com/mbti-books.html

**Q1. Which is your most natural energy orientation?**

Every person has two faces. One is directed towards the OUTER world of activities, excitements, people, and things. The other is directed inward to the INNER world of thoughts, interests, ideas, and imagination.

While these are two different but complementary sides of our nature, most people have an innate preference towards energy from either the OUTER or the INNER world. Thus one of their faces, either the Extraverted (E) or Introverted (I), takes the lead in their personality development and plays a more dominant role in their behavior.

| **Extraverted Characteristics** | **Introverted Characteristics** |
|---|---|
| Act first, think/reflect later | Think/reflect first, then Act |
| Feel deprived when cut-off from interaction with the outside world | Regularly require an amount of "private time" to recharge batteries |
| Usually open to and motivated by outside world of people and things | Motivated internally, mind is sometimes so active it is "closed" to outside world |
| Enjoy wide variety and change in people relationships | Prefer one-to-one communication and relationships |

**Choose which best fits: Extraversion (E) Introversion (I)**

**Q2. Which way of Perceiving or understanding is most "automatic" or natural?**

The Sensing (S) side of our brain notices the sights, sounds, smells and all the sensory details of the PRESENT. It categorizes, organizes, records and stores the specifics from the here and now. It is REALITY based, dealing with "what is." It also provides the specific details of memory & recollections from PAST events.

The Intuitive (N) side of our brain seeks to understand, interpret and form OVERALL patterns of all the information that is collected and records these patterns and relationships. It speculates on POSSIBILITIES, including looking into and forecasting the FUTURE. It is imaginative and conceptual.

While both kinds of perceiving are necessary and used by all people, each of us instinctively tends to favor one over the other.

| Sensing Characteristics | Intuitive Characteristics |
|---|---|
| Mentally live in the Now, attending to present opportunities | Mentally live in the Future, attending to future possibilities |
| Using common sense and creating practical solutions is automatic-instinctual | Using imagination and creating/inventing new possibilities is automatic-instinctual |
| Memory recall is rich in detail of facts and past events | Memory recall emphasizes patterns, contexts, and connections |
| Best improvise from past experience | Best improvise from theoretical understanding |
| Like clear and concrete information; dislike guessing when facts are "fuzzy" | Comfortable with ambiguous, fuzzy data and with guessing its meaning. |

**Choose which best fits: Sensing (S) iNtuition (N)**

**Q3. Which way of forming Judgments and making choices is most natural?**

The Thinking (T) side of our brain analyzes information in a DETACHED, objective fashion. It operates from factual principles, deduces and forms conclusions systematically. It is our logical nature.

The Feeling (F) side of our brain forms conclusions in an ATTACHED and somewhat global manner, based on likes/dislikes, impact on others, and human and aesthetic values. It is our subjective nature.

While everyone uses both means of forming conclusions, each person has a natural bias towards one over the other so that when they give us conflicting directions - one side is the natural trump card or tiebreaker.

| Thinking Characteristics | Feeling Characteristics |
|---|---|
| Instinctively search for facts and logic in a decision situation. | Instinctively employ personal feelings and impact on people in decision situations |
| Naturally notices tasks and work to be accomplished. | Naturally sensitive to people needs and reactions. |
| Easily able to provide an objective and critical analysis. | Naturally seek consensus and popular opinions. |
| Accept conflict as a natural, normal part of relationships with people. | Unsettled by conflict; have almost a toxic reaction to disharmony. |

**Choose which best fits:** **Thinking (T)** **Feeling (F)**

**Q4. What is your "action orientation" towards the outside world?**

All people use both judging (thinking and feeling) and perceiving (sensing and intuition) processes to store information, organize our thoughts, make decisions, take actions and manage our lives. Yet one of these processes (Judging or Perceiving) tends to take the lead in our relationship with the outside world . . . while the other governs our inner world.

A Judging (J) style approaches the outside world WITH A PLAN and is oriented towards organizing one's surroundings, being prepared, making decisions and reaching closure and completion.

A Perceiving (P) style takes the outside world AS IT COMES and is adopting and adapting, flexible, open-ended and receptive to new opportunities and changing game plans.

| **Judging Characteristics** | **Perceiving Characteristics** |
|---|---|
| Plan many of the details in advance before moving into action. | Comfortable moving into action without a plan; plan on-the-go. |
| Focus on task-related action; complete meaningful segments before moving on. | Like to multitask, have variety, mix work and play. |
| Work best and avoid stress when keep ahead of deadlines. | Naturally tolerant of time pressure; work best close to the deadlines. |
| Naturally use targets, dates and standard routines to manage life. | Instinctively avoid commitments which interfere with flexibility, freedom and variety |

**Choose which best fits:** **Judging (J)** **Perceiving (P)**

**Your 4 Personality Type Letters:**

| | | | |
|---|---|---|---|
| | | | |

Please note that taking a bona fide MBTI inventory from a person qualified to administer it is the best way to get a measure of what might be one's Personality Type.

## Appendix K: Consent Form

I hereby give my consent to Philip Shigeo Brown to use all the data from this course for research purposes, on the understanding that my identity shall be protected.

私はここに、フィリップ・シゲオ・ブラウン氏が本講座での全てのデータを研究目的、且つ私の個人情報は保護されるという条件下においてのみ、使用することを承諾します。

Signed (署名): _____ Date (日付): _____

## Appendix L: Vocabulary Learning Strategies included in the program

| SBI | # | Vocabulary Learning Strategy | Initial Use | Final Use | Change in Use | Initial Usefulness | Final Usefulness | Change in Usefulness |
|---|---|---|---|---|---|---|---|---|
| **Explicit:** 1. Presentation 2. Practice 3. Evaluation | 24 | I make a mental image of a new word's meaning. | 3.42 | 3.12 | (0.30) | 3.69 | 3.52 | (0.17) |
| | 25 | I connect the sound of new words and an image or picture of the words to help me remember. | 3.19 | 3.28 | 0.09 | 3.54 | 3.64 | 0.10 |
| | 26 | I look carefully and notice the spelling of new words. | 3.27 | 3.36 | 0.09 | 3.65 | 3.68 | 0.03 |
| | 27 | I make a mental image of new words' written form/spelling. | 2.88 | 3.28 | 0.40 | 3.15 | 3.52 | 0.37 |
| | 29 | I repeat/say new English words several times out loud. | 3.27 | 3.40 | 0.13 | 3.85 | 3.80 | (0.05) |
| | 31 | I connect new words to personal experiences. | 2.65 | 3.28 | 0.63 | 3.50 | 3.72 | 0.22 |
| | 38 | I use physical actions or gestures with new English words. | 2.04 | 2.84 | 0.80 | 2.96 | 3.20 | 0.24 |
| **Explicit:** 1. Presentation 2. Practice | 1 | To understand unfamiliar/new English words, I make guesses (using pictures, the speaker's gestures/expression, the context). | 3.50 | 3.38 | (0.12) | 3.92 | 3.62 | (0.31) |
| | 2 | I find the meaning of new English words by dividing them into parts I understand (e.g. *cardiology -> 'cardio' = heart; 'logy' = study of*). | 3.04 | 3.38 | 0.35 | 3.81 | 3.73 | (0.08) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 4 | I use an English–English dictionary to look up new words. | 2.46 | 3.00 | 0.54 | 3.58 | 3.54 | (0.04) |
| | 5 | I check new words' class (e.g. noun, verb, adjective, adverb, etc). | 3.27 | 3.54 | 0.27 | 3.54 | 3.54 | 0.00 |
| | 6 | I use an English–Japanese dictionary to look up new words. | 4.46 | 3.65 | (0.81) | 3.85 | 3.81 | (0.04) |
| | 11 | I ask the teacher to explain the meaning and give an example. | 2.19 | 3.23 | 1.04 | 3.69 | 3.58 | (0.12) |
| | 12 | I ask other students for the meaning of new words and examples. | 2.77 | 3.08 | 0.31 | 3.19 | 3.65 | 0.46 |
| | 14 | I ask the teacher to check my understanding of new words or notes. | 2.27 | 3.19 | 0.92 | 3.92 | 3.58 | (0.35) |
| | 16 | I practise/study new words with other students. | 2.54 | 2.80 | 0.26 | 3.42 | 3.24 | (0.18) |
| | 17 | If I do not understand something in English, I ask the other person to slow down or say it again. | 3.65 | 3.56 | (0.09) | 3.81 | 3.92 | 0.11 |
| | 30 | I connect new words to other words I know with the same/similar or opposite meanings (*e.g. enormous = huge <–> tiny/minute*). | 3.15 | 3.28 | 0.13 | 4.00 | 3.76 | (0.24) |
| | 33 | I try to find patterns in English and group words (for example, by meaning, grammar, spelling and/or pronunciation). | 3.00 | 3.44 | 0.44 | 3.58 | 3.52 | (0.06) |
| | 34 | I remember the words around the new words (e.g. *We conducted an experiment on how we learn*) or 'chunks' and idioms (e.g. *look after*). | 2.77 | 3.36 | 0.59 | 3.77 | 3.60 | (0.17) |
| | 35 | I use new English words in a sentence. | 2.35 | 3.12 | 0.77 | 3.62 | 3.64 | 0.02 |
| | 36 | I learn the meaning of word parts and use them to remember new words (e.g. *neuro + logy + ist –> neurologist*). | 3.04 | 3.28 | 0.24 | 3.73 | 3.80 | 0.07 |
| | 37 | I make my own definition of new words or imagine the meaning. | 2.69 | 3.04 | 0.35 | 2.85 | 3.32 | 0.47 |
| | 45 | I use flashcards (with pictures and/or words in English and/or Japanese) to remember new English words. | 2.42 | 3.23 | 0.81 | 2.96 | 3.27 | 0.31 |
| | 46 | I make lists of new words. | 2.92 | 3.23 | 0.31 | 3.04 | 3.31 | 0.27 |
| | 53 | I read for pleasure (e.g. newspapers, books, magazines, Internet). | 2.58 | 3.35 | 0.77 | 3.62 | 4.04 | 0.42 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 54 | I write notes, messages, letters or reports in English. | 2.12 | 2.96 | 0.85 | 3.62 | 3.62 | 0.00 |
| | 55 | I use English language learning games and software. | 2.04 | 2.92 | 0.88 | 3.08 | 3.38 | 0.31 |
| | 56 | I notice my English mistakes and use that information to help me do better. | 2.88 | 3.58 | 0.69 | 3.65 | 3.58 | (0.08) |
| | 58 | I review new words often. | 3.00 | 3.42 | 0.42 | 3.92 | 3.46 | (0.46) |
| | 60 | I test myself or ask other people to test me. | 2.69 | 3.12 | 0.42 | 3.46 | 3.77 | 0.31 |
| | 62 | I think about my progress in learning medical English vocabulary. | 2.77 | 3.15 | 0.38 | 3.50 | 3.46 | (0.04) |
| | 66 | I keep a learning journal on how I learn. | 2.62 | 3.54 | 0.92 | 3.58 | 3.73 | 0.15 |
| **Explicit**: | 7 | I use a medical dictionary to look up new medical English words | 1.50 | 2.92 | 1.42 | 3.31 | 3.58 | 0.27 |
| 1. Presentation | 9 | I use a thesaurus. | 1.35 | 3.04 | 1.69 | 2.88 | 3.46 | 0.58 |
| | 23 | I draw pictures to help me remember new words. | 2.23 | 3.16 | 0.93 | 3.27 | 3.56 | 0.29 |
| **Implicit**: | 13 | I ask someone for a Japanese translation. | 2.58 | 2.92 | 0.35 | 2.62 | 3.35 | 0.73 |
| 1. Presentation | 15 | I pay attention when someone is speaking English. | 3.58 | 3.50 | (0.08) | 3.65 | 3.77 | 0.12 |
| 2. Practice | 19 | I try to relax whenever I feel nervous or afraid of using English. | 3.04 | 3.08 | 0.04 | 3.73 | 3.84 | 0.11 |
| | 28 | I listen carefully and try to remember the sound of new words. | 2.96 | 3.32 | 0.36 | 3.58 | 3.88 | 0.30 |
| | 40 | I use the words I know in different ways. | 2.85 | 2.96 | 0.11 | 3.50 | 3.68 | 0.18 |
| | 47 | I highlight new words. | 3.00 | 3.31 | 0.31 | 3.12 | 3.50 | 0.38 |
| | 50 | I watch or listen to English language learning programs on CD/radio/TV/DVD/Video/Internet. | 2.69 | 2.81 | 0.12 | 3.73 | 3.65 | (0.08) |
| | 52 | I read English language learning materials (e.g. textbooks, workbooks). | 2.81 | 3.50 | 0.69 | 3.73 | 3.58 | (0.15) |
| | 61 | I have clear goals for improving my medical English vocabulary. | 2.69 | 3.38 | 0.69 | 4.04 | 3.77 | (0.27) |
| | 63 | I plan my schedule so that I will have enough time to study English. | 2.54 | 2.96 | 0.42 | 3.69 | 3.58 | (0.12) |
| | 64 | I try to find out how to be a better learner of English. | 2.85 | 3.15 | 0.31 | 3.96 | 3.38 | (0.58) |

## Appendix M: Course evaluation results

| **Aspects of the VLS Program:** How useful were each of the following areas? (1 = NOT useful; 2 = not very; 3 = somewhat; 4 = very useful; 5 = extremely useful) | **Class A** | | **Class B** | | **Overall** | |
|---|---|---|---|---|---|---|
| | **M** | **SD** | **M** | **SD** | **M** | **SD** |
| 1. The Vocabulary Levels Tests (2k, 3k, 5k, UWL, 10k) | 3.69 | 0.63 | 3.55 | 0.82 | 3.63 | 0.71 |
| 2. The Vocabulary Learning Strategies Surveys (66 items) | 2.85 | 0.90 | 3.09 | 1.38 | 2.96 | 1.12 |
| 3a. Assignment I: *How you learn and remember (any) 3 new words* | 3.31 | 0.85 | 3.20 | 0.79 | 3.26 | 0.81 |
| 3b. Assignment II: *How you combine vocabulary learning strategies* | 3.23 | 0.83 | 3.10 | 0.74 | 3.17 | 0.78 |
| 3c. Assignment III: *How you learn and remember 3 new (medical) words* | 3.46 | 1.05 | 3.40 | 0.84 | 3.43 | 0.95 |
| 4. Weekly Self-Assessment | 3.08 | 0.86 | 3.18 | 0.75 | 3.13 | 0.80 |
| 5a. Medical English Vocabulary tests (Japanese to English) | 4.00 | 0.58 | 4.27 | 0.65 | 4.13 | 0.61 |
| 5b. Medical English Vocabulary tests (English only) | 3.77 | 0.73 | 4.36 | 0.67 | 4.04 | 0.75 |
| 6a. Role-playing various hospital situations | 3.54 | 0.88 | 4.30 | 0.82 | 3.87 | 0.92 |
| 6b. Week2: Listening '*karuta*' with word-cards (symptoms) | 2.92 | 0.79 | 3.60 | 0.97 | 3.23 | 0.92 |
| 6c. Week3: Vocabulary Learning Sheets | 3.15 | 0.80 | 3.10 | 0.74 | 3.13 | 0.76 |
| 6d. Week4: Combining strategies: actions, mental images & 5 senses | 3.58 | 0.90 | 3.80 | 0.79 | 3.68 | 0.84 |
| 6e. Week5: Cognitive Styles Inventory © | 3.42 | 0.51 | 3.14 | 0.69 | 3.32 | 0.58 |
| 6f. Week6: Grouping/Classifying (medical departments) | 3.08 | 0.64 | 3.70 | 0.95 | 3.35 | 0.83 |
| 6g. Week7: Personalising examples (medical procedures) | 3.42 | 0.51 | 3.90 | 0.74 | 3.64 | 0.66 |
| 6h. Week8: Filling in the missing letters | 2.54 | 1.05 | 3.00 | 1.05 | 2.74 | 1.05 |
| 6i. Week9: Listening *Bingo!* (diseases and disorders) | 3.00 | 0.91 | 3.40 | 0.97 | 3.17 | 0.94 |
| 6j. Week10: *Attack Bingo!* (diseases and disorders) | 3.00 | 0.95 | 3.50 | 0.97 | 3.23 | 0.97 |
| 6k. Week11: Reading, checking & evaluating your assignments together | 3.08 | 1.12 | 3.60 | 0.84 | 3.30 | 1.02 |