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Using Meaning Discovery Strategies to Comprehend Idioms and Single Words

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Using vocabulary learning strategies allows learners to gain vocabulary autonomously. This study presents data from a self-report survey of Korean university students comparing meaning discovery strategies they employ to comprehend unknown single-word items and unknown idioms. Survey data recorded strategies used by learners, and effectiveness of these strategies measured by rates of correct meaning discovery. The survey revealed that learners relied on context clues, dictionaries, and vocabulary analysis for both idioms and single word vocabulary items with equal effectiveness. Dictionary use was the most effective strategy for correct meaning discovery for both types of vocabulary, although context clues might be a positive factor for idioms but not for single-word items. Data also showed that learners tended to apply strategies methodically rather than heuristically but that methodical application did not necessarily translate into higher rates of correct meaning discovery. Implications for learners and paths for further research are discussed.

Keywords: EFL, vocabulary learning strategies, learner behaviors, Korean EFL learners, English idioms, meaning discovery

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1. INTRODUCTION

Many English language learners (ELLs) view vocabulary acquisition as an important method of improving their language ability (Nyikos & Fan, 2007). Vocabulary learning strategies (VLSs) provide ELLs with tools to assist them in acquiring new vocabulary items that they encounter incidentally, which is important for more advanced learners to increase their L2 vocabulary (Krashen, 1993). Schmitt (1997) divides VLSs into two main categories: meaning discovery strategies are used to understand a new vocabulary item upon encountering it, while consolidation strategies are used to cement the new vocabulary item into the learner's interlanguage.

Previous studies of use patterns and effectiveness of meaning discovery strategies by ELLs primarily focus on single-word vocabulary items. Lexical bundles, which include compound words, fixed phrases, prefabs and idioms, have received less attention. Idioms are encountered often in speech and are common in certain genres of written English (Johnson-Laird, 1993; Moon, 1997), but due to their non-compositional and metaphoric meaning, may require more effort from ELLs to comprehend than single word items or other more transparent lexical bundles. Even after they are comprehended, ELLs may not feel confident employing idioms in their English output (Laufer, 1997).

Some early studies catalogued the ways ELLs approach idioms (Cooper, 1999; Lee, 2003) but do not compare the strategies used to those used for single word items. These early studies of VLS use on idioms suggest heuristic or trial-and-error approaches to idiom meaning discovery by learners. In other words, learners use a variety of VLSs and do not apply them consistently. More recent research on VLS use applied to idioms specifically is rare, but research into VLS use patterns in general (Fu, 2021; Ghalebi, Sadighi, & Bagheri, 2020; Thiendathong & Sukying, 2021) suggests that different learning cultures tend to prefer certain sets of VLSs, which would imply a more methodical approach to meaning discovery. Additionally, studies of VLSs in general (Fan, 2020; Ghalebi, Sadighi, & Bagheri, 2020) suggest that high level learners apply a wider variety of strategies than low level learners. This could be suggestive of a more heuristic approach as noticed by Cooper (1999) and Lee (2003), but more recent research (Laffey, 2016) suggests that VLS use with idioms may be more methodical than heuristic.

In addition to the manner in which ELLs approach idiom comprehension, the effectiveness of the VLSs learners employ should be considered. VLS application and instruction are considered effective, although individual or cultural factors may mediate this (Fan, 2020; Mizumoto & Takeuchi, 2009; Oxford, 2002; Seffar, 2020). In contrast to the ways VLSs are applied to single word items, the intralexical factors of idioms which make them different from single words (Gibbs, 1993; Moon, 1997) may affect the difficulty of discovering the meaning of an idiom and may mediate the effectiveness of

certain VLSs when applied to idioms. As it stands, very little research has been conducted into comparison of VLS patterns of use and effectiveness of VLS application between single words and idioms.

2. REVIEW OF THE LITERATURE

2.1. Vocabulary: Single Word Items and Idioms

Vocabulary studies of any type must wrestle with the concept of what exactly constitutes a 'word.' Nation and Waring (1997) define the concept of a *word family* as "a base word, its inflected forms and a small number of reasonably regular derived forms" (p. 8). Using the concept of a word family, the tense variations of a verb or the singular, plural, and possessive of a noun can all be considered the same unit of lexis. ELLs who know the basic rules can comprehend the base form of a new word from any of the permutations within the word family and create other permutations without explicit instruction (Bauer & Nation, 1993; Nation & Webb, 2011). Word families have strong conceptual validity, as the average person will likely consider a word family to be a 'word.'

Word families make sense when dealing with single word vocabulary items but may not be as intuitive when learners are presented with lexical bundles (Biber, Conrad, & Cortes, 2004). Lexical bundles are collocations, or groupings of single word items that frequently appear together, but together have a unified, often specialized or situational, meaning or function (Moon, 1997; Nation, 2013; Schmitt & Schmitt, 2020). Lexical bundles consist of a variety of forms including compound words (*car park*, *freeze-dry*, *long-haired*), phrasal verbs (*turn off*, *run up*), fixed phrases (*of course*, *how do you do*), prefabs (*the fact is*, *in my opinion*), and idioms (*raining cats and dogs*, *spill the beans*) (Moon, 1997; Spratt, Pulverness, & Williams, 2011). The conceptual validity of lexical bundles may vary depending on the type, but lexical bundles have psychological validity based on the idea of lexical chunking (Nation, 2013; Zeschel, 2008). It appears that single word items and lexical bundles are identically stored within the mental lexicon via lexical chunking (Ellis, 1997; Nation, 2013).

Idioms, as other lexical bundles, are stored and accessed in many of the same ways as single-word items (Sprenger, Levelt, & Kempen, 2006). Due to the seemingly arbitrary nature of an idiom's meaning, traditional rote memorization techniques or direct instruction are often seen as the best way for ELLs to acquire idioms, although other methods such as metaphorical mapping have been explored (Chen & Lai, 2013). The context in which an idiom is encountered seems to have some effect upon whether the idiom is interpreted literally or figuratively, as both interpretations remain valid in the

recipient's thought processes until context favors one interpretation over the other (Beck & Weber, 2020). Boers and Demecheleer (2001) suggest that imageability, or the ease with which learners can imagine an idiom, may make some idioms more transparent and thus easier to comprehend for language learners. Hubers, Cucciarini and Strik (2020) argue that L2 learner intuitions of idiom properties, while different from those of L1 speakers, can be reliable data sources, and that more attention should be paid to how L2 learners interact with idioms. If idioms are stored and processed similarly to single-word vocabulary items but L2 learners have different intuitions about idioms than L1 speakers, this raises the question of whether or not the same VLSs are effective for acquisition of both types of vocabulary.

2.2. Vocabulary Learning Strategies

Vocabulary learning strategies are consciously or semi-consciously activated actions that learners take in order to achieve the goal of acquiring new L2 vocabulary (Anderson, 2003; Gass, 2013; Nyikos & Fan, 2007). Schmitt (1997) divides VLSs into two categories, those used for initial meaning discovery of new vocabulary, and those used to consolidate the new vocabulary into the learner's interlanguage. Learners apply strategies when faced with a problem such as encountering a word whose meaning is unknown (Gu, 2003). Strategic competence in learners comes from instruction or training in strategy use by teachers (Hunt & Beglar, 2002; Oxford, 2002) although self-regulation training may prove more effective than instruction on individual VLSs (Tseng, Dörnyei, & Schmitt, 2006).

Tseng and Schmitt's (2008) self-regulation theory of vocabulary acquisition posits that application of VLSs (or vocabulary learning tactics) is part of a recursive and multi-faceted process which leads to vocabulary acquisition. Learners must have initial motivation to interact with new vocabulary encountered. Then they must apply both skill (VLS) and will (motivation) to engage with the new vocabulary. This may need to be done multiple times before the learner has receptive and productive use of the new vocabulary. They suggest that while overall vocabulary acquisition is mainly driven by self-regulation, metacognitive regulation is needed for development of effective VLS, which leads to more efficient vocabulary acquisition.

Oxford (2002) reported positive links between explicit strategy training and improved language ability, which has been echoed by other researchers (Connor, et al., 2014; Hunt & Beglar, 2002; Mizumoto & Takeuchi, 2009). Self-report surveys of VLS use and helpfulness among East Asian EFL learners (Collins, 2016; Laffey, 2020; Park, 2001; Schmitt, 1997; Wu, 2005) show that using dictionaries, using context clues, and getting help from peers are preferred over other types of VLSs. More recently, electronic or online dictionaries have eclipsed the use of traditional printed dictionaries (Collins, 2016; Laffey,

2019). Early studies into the effectiveness of VLSs for idioms such as Cooper (1999) and Lee (2003) suggested that learners approach idioms in a heuristic fashion. Cooper (1999) used think-aloud protocols to examine how L2 learners approach idioms, and found they rely on a wide variety of VLS, with *guessing from context*, the most widely used VLS, only applied to 28% of all items in his survey. He later reports, "L2 learners are placed in a position of having to solve a comprehension problem by experimenting and evaluating possible answers or solutions through trial and error" (Cooper, 1999, p. 254). Laffey (2016), however, found that L2 learners reported much more consistent or methodical VLS application when approaching idioms, relying heavily on context clues 81% and analyzing the vocabulary 63% of the time. More recent studies of idiom acquisition such as Müller, Son, Nozawa and Dashtestani (2018) have focused on the effectiveness of modalities of learning rather than on the effectiveness of individual strategies or patterns of application.

This study was designed to investigate the gaps noted in previous research into idioms and VLS. It will examine VLS use for English single-word items and for idioms, and will compare the effectiveness of the VLSs employed by the learners. This study seeks to answer the following research questions:

1) What strategies do ELLs employ to comprehend unknown idioms compared to single word items?
2) How does the effectiveness of meaning discovery strategies employed to comprehend idioms compare to their effectiveness with single word items?
3) Do ELLs apply strategies methodically or heuristically when faced with unknown idioms?

3. METHOD

3.1. Participants

Surveys were given to 80 Korean undergraduate students taking sophomore-level English conversation classes, but a large number were not completed correctly. After removing faulty or incomplete surveys, there were 57 surveys remaining which were analyzed for this study. Of these 57 participants, 37 were female and 20 were male. Most were English majors (n = 42), and 17 of the participants had experience living abroad for at least 1 month. The full 80 participants ranged from CEFR A2 to B2 in language proficiency, but because the surveys were anonymized, it is impossible to give exact numbers due to the large number of rejected surveys. IRB approval for data collection was not obtained, as at time of data collection it was not required, but steps were taken to

ensure voluntary participation and protect the privacy of the participants. All students who voluntarily participated were rewarded with extra credit for the course, regardless of whether the survey was completed correctly or not.

3.2. Design of the Survey

The survey instrument presented sixteen vocabulary items, eight single-word items and eight idioms, in context, with the target vocabulary in bold. The sixteen items can be seen in Appendix A. All contexts were taken from the COCA corpus (Davies, 2008) although slightly modified to include only common vocabulary items aside from the target vocabulary. Respondents were asked to first mark if they already knew the vocabulary, and if so, provide a definition or synonym in English or Korean. If the item was unknown, they were asked to try to find the meaning, and to record the VLS used as they did so. A selection of six common VLS, and a seventh option to list other VLS attempted, were provided.

To select the target vocabulary for the survey, fifty uncommon single-word items were selected from Wiktionary Project Gutenberg frequency lists (Wiktionary: Frequency Lists, 2006) of the 10,000 to 20,000 most common words in the public domain e-book repository. The selected words were cross-checked with the Compleat Web VP (Cobb, n.d.) and only retained if they were band 8 or lower. This list was presented to a panel of more advanced students (junior and senior level, plus graduate students) for familiarity, and eight unfamiliar words were chosen. Eight idioms were chosen in a similar fashion, starting with idioms from previous research papers (Liu, 2003; Simpson & Mendis, 2003; Titone & Connine, 1994). An additional step for the idioms was to present them to a panel of thirteen native speakers who rated them on their perceived level of transparency. Once the sixteen target items were selected, context sentences for each were taken from the COCA corpus (Davies, 2008), and all non-target vocabulary was simplified to words within the 3,000 most common word families as rated by the Compleat Web VP (Cobb, n.d.).

Six commonly used VLSs were listed on the survey instrument in order to assist the participants in communicating their thought processes, with a seventh option for other actions that they might consider to have taken to discover the meanings of the target vocabulary. As a self-report instrument, it was not expected that all VLSs actually used would be recorded, but it was hoped that listing and explaining several commonly used VLSs would assist the participants with their introspection as they completed the instrument. The VLSs were taken from Schmitt (1997) although some were condensed into a general category. The six VLSs listed were:

- *Analyze the constituent parts of the vocabulary*

- *Use context clues to guess the meaning*
- *Compare the target to a similar known vocabulary item*
- *Find the vocabulary in a dictionary*
- *Ask a peer for help*
- *Imagine the literal meaning of the expression*

To ensure the validity of the survey instrument, all instructions and the VLSs were presented in Korean. The Korean translation was checked for accuracy and clarity by two native Korean speaking colleagues. The purpose of the survey was to elicit self-report information of VLSs consciously used. Anderson (2003) distinguishes between strategies, which are consciously activated, and skills, which are unconsciously activated. By this definition of strategy, the survey document was able to record strategies, and actions which have become automatized by the learners are skills and therefore not relevant to this study. The survey asked the learners to record their strategy use as they worked towards meaning discovery, which should be more accurate than post hoc assessments of strategy use after the survey has been completed. After data was collected, two measures of reliability were calculated using SPSS v21.0. The rates of correct responses were measured with Cronbach's alpha reliability of .89, and split-half reliability showed a Spearman-Brown coefficient of .87.

3.3. Survey Procedure and Data Analysis

The survey was administered as part of normal classroom activities. The instructions were delivered in Korean and English, and two examples, one with an idiom and one with a single-word item, were demonstrated both to explain the procedure but also to explain the suggested VLSs. Participants were asked to read each item, and to indicate if the target vocabulary was already known. If it was unknown, they were asked to attempt to discover the meaning, and try to record, to the best of their ability, the VLSs used during this process. Whether initially known or unknown, they were asked to provide a definition or synonym in either Korean or English for each target word.

Half of the participants randomly received surveys with the idioms before single-word items, the other half had surveys with the single-word items first and idioms second, to control for possible ordering effects. Once the surveys were distributed, the researcher and an assistant were available to answer any questions. The survey took less than ten minutes for a few participants, with the slowest taking around thirty-five minutes to complete.

Once the surveys were complete, the VLSs reported were tallied for total uses, scoring one point per use, in order to investigate which VLSs were used, and how consistent the participants were in their VLS usage. Participants were instructed to record any VLS they

used multiple times if they used it more than once on the same vocabulary item, so there was theoretically no upper limit to the number of times a strategy could be counted in the tally of total uses although in this case the maximum was eight, once per item of each type. The researcher and an assistant evaluated the correctness of each item, scoring zero points for incorrect answers, one point for partially correct answers where the answer was similar in some respect to the correct meaning as used in the context, or was related to a different meaning of the vocabulary, and two points were given for correct answers. Both the researcher and the assistant had to agree for an answer to be considered partially correct. All further statistical analysis of the data was conducted using SPSS v21.0 software with a preset *p* value of .05.

4. RESULTS

4.1. Comparison of VLS Used

Strategy use scores were calculated by tallying one point for every reported use of a particular VLS and then dividing by the number of participants to get a mean value. The mean number of times each VLS was used for single-word items and idioms are shown in Table 1. Because many of the participants never reported using certain VLSs in the survey, several of the results have large standard deviations due to clusters of "0" results from these participants, creating a non-normal distribution of results (*SD* larger than mean).

TABLE 1

Mean Strategy Use by Participants

Strategy	Single-Word Items		Idioms	
	Mean	*SD*	*Mean*	*SD*
Analyzing the vocabulary	2.79	3.22	2.75	3.28
Using context clues	7.04	1.72	6.56	2.06
Comparing to similar words known	1.47	2.38	1.35	2.36
Using a dictionary	4.82	2.85	3.91	2.95
Help from peers	0.79	1.84	0.46	1.30
Imagining the literal meaning	1.32	2.16	2.65	3.00
Other	0.04	0.27	0.04	0.27

This data shows that the participants *used context clues* far more than any other VLS. *Using a dictionary* was the second most used VLS, and *analysis of the vocabulary* was the third most used. *Asking peers for help* was the least used VLS, not counting the "Other" category. The rankings of the above VLSs are the same regardless of whether looking at single-word items or idioms, but the fourth and fifth most used VLSs differ. For single-

word items, *comparing to similar words known* ranked higher than *imagining the literal meaning*, while for idioms these two VLSs were reversed in rank.

In order to test of there were any statistical differences between the strategy use scores for single-word items and idioms, a one-way MANOVA was used due to the non-normal distribution of several of the VLS. The MANOVA compared the means of each of the six VLSs, with the independent variable of vocabulary type and the dependent variable of strategy use means. The analysis showed no significant variation, F (7,106) = 1.677, p = .123; Wilks' lambda = 0.900. There does not seem to be any difference in the methods of VLS use by the participants when faced with unknown single-word items or idioms.

4.2. Effectiveness of VLS Used

To measure the effectiveness of the VLSs in the survey, all survey items were rated for correctness as described above. The researcher and an assistant rated each answer as incorrect (0 points), partially correct (1 point), or correct (2 points). Both raters had to agree on the scores before they were considered final. Overall, 53.46% (SD = 27.82) of all items were answered correctly. For the eight single-word items, 50.09% (SD = 27.90) of survey items were answered correctly. Idiom items were answered correctly 56.58% (SD = 31.99) of the time. An independent samples t-test of overall correctness showed no significant difference between the two types of vocabulary, t(112) = -1.155, p = .147. This suggests that the participants' VLS routines, which were similar for both types of vocabulary item, had a similar level of effectiveness for both single-word items and idioms.

While overall strategy use by the participants showed equal effectiveness for both types of vocabulary item, the researcher was curious if specific VLS use might be connected to correctness, and so looked for correlations between use of each VLS and correct meaning discovery for both single-word items and for idioms. The correctness percentage of single-word items showed that there were significant correlations with *comparing similar vocabulary*, *using a dictionary*, and *imagining the literal meaning*. For idioms, there were significant correlations for *analyzing the vocabulary*, *comparing similar vocabulary*, and *using a dictionary*. Among all these correlations, only *using a dictionary* had a positive correlation. The correlations can be seen in Table 2.

TABLE 2

Correlations Between Correctness and Strategy Use

Strategy	Single-Word Items		Idioms	
	r (55)	*p*	*r* (55)	*p*
Analyzing the vocabulary	-.238	.074	-.443**	.001
Using context clues	-.150	.265	.254	.057
Comparing to similar words known	-.429**	.001	-.410**	.002
Using a dictionary	.462**	.000	.450**	.000
Help from peers	-.138	3.06	-.006	.963
Imagining the literal meaning	-.286*	.031	-.117	.387
Other	.125	.356	.081	.550

* Correlation is significant at the .05 level (2-tailed)
** Correlation is significant at the .01 level (2-tailed)

As can be seen, only *using a dictionary* had a positive correlation to correctness for both single-word items and for idioms. *Comparing the target vocabulary to a similar word known* was negatively correlated to correctness for both types of target vocabulary. Additionally, *imagining the literal meaning* of the target vocabulary was negatively correlated to correctness for single-word items; while *analysis of the target vocabulary* was negatively correlated with correctness for idioms. Based on these correlations, a multiple regression analysis was performed with the strategy use scores for both single-word items and idioms as the independent variables and percent correct scores as the dependent variables. The results of this regression analysis are presented in Table 3.

TABLE 3

Single-Word Item and Idiom Strategy Use and Correctness Regression Analysis

	Single-Word Items				Idioms			
	b	SE *b*	β	*t*	*b*	SE *b*	β	*t*
Constant	52.78	14.59		3.62	20.68	14.67		1.41
Analyzing the vocabulary	-1.01	0.94	-.12	-1.07	-3.39	0.95	-.35**	-3.57
Using context clues	-2.29	1.72	-.14	-1.33	4.48	1.62	.29**	2.75
Comparing to similar vocab	-2.80	1.25	-.24*	-2.25	-3.84	1.37	-.28**	-2.81
Using a dictionary	5.31	1.01	.54***	4.83	4.95	1.08	.46***	4.57
Help from peers	-6.49	1.60	-.43***	-4.05	-2.31	2.40	-.09	-0.97
Imagining the literal meaning	-0.34	1.44	-.03	-0.24	0.92	1.07	.09	0.87

Notes: Single-word Item R^2 = .51 (*ps* <.001). Idiom R^2 = .57 (*ps* <.001). *p < .05; **p < .01; ***p < .001

The results of the regression analysis show that for single-word items, *using a dictionary* was a significant positive factor, while *comparing similar vocabulary known* and *help from peers* was a significant negative factor on correctness. *Analysis of the vocabulary* was not a significant factor. For idioms, the results show that both *using a dictionary* and *using context clues* were significantly positive factors of correctness. *Analysis of the vocabulary* and *comparing similar vocabulary known* had a significant negative influence on correct

meaning discovery. *Help from peers* was not a significant factor in correctness for idioms. *Imagining the literal meaning* of the vocabulary was not a significant factor for either single-word items or idioms.

4.3. Patterns of VLS Used

For each item on the survey, the VLSs reported to be used by each participant were recorded as a string of numbered code, which was analyzed for patterns of VLS use. Each code was from one to four digits long, as no participant reported more than four strategies used on any one item. Items which the participants claimed to already know were given a code of 0.

Participants that applied the same VLS pattern on at least five items of each type were rated as having a strong tendency towards consistency. Participants who did not apply the same pattern of VLSs to more than three items of each type were rated as being inconsistent in their VLS use. Participants between these extremes were rated as being semi-consistent in their VLS use. Of the 57 participants, 32 participants in this survey had a strong tendency towards consistency in their VLS use, including six who were completely consistent. There were 13 participants with a weaker tendency towards consistency, using a pattern on some but not all items, or having consistent initial and secondary moves, but varied third or fourth moves. Finally, 12 participants showed a high degree of variety in their VLS use.

The correctness scores described above were compared between these three groups: consistent VLS users, semi-consistent VLS users, and inconsistent VLS users. A one-way ANOVA, with consistency of VLS use as the independent variable and correctness scores as the dependent variable, showed no significant difference between consistency of VLS application and correct meaning discovery, F (2, 54) = 0.94, p = .40. While most participants of this study applied VLSs consistently, the pattern of VLS use did not seem to affect the rates of successful meaning discovery.

5. DISCUSSION

The survey data collected in this study gives an interesting picture of how Korean EFL learners apply meaning discovery VLSs when faced with novel single-word items and idiom vocabulary, and how effectively those VLSs can be put to use. The first question this study seeks to answer is whether there are any differences in VLS application between single-word items and idioms. The self-report data collected here suggests that Korean tertiary ELLs rely primarily on *using context clues*, *using a dictionary*, and then *analysis of*

the vocabulary for both types of vocabulary. For the lesser used strategies, learners relied more on *comparing to similar words known* for single-word items (mean 1.47 for single-word items, 1.35 for idioms), and *imagining the literal meaning* more for idioms (mean 1.32 for single-word items, 2.65 for idioms). *Help from peers* was rarely used for either type of vocabulary. The MANOVA analysis confirmed that the small observed differences between the two groups were not significant, which suggests that the participants of this study rely on key meaning discovery VLSs for unfamiliar idioms, just as they do for unfamiliar single word items.

The analysis of the data suggests that learners treat unknown idioms the same as they do unknown single-word items, despite the different characteristics of idioms as units of vocabulary. The data collected here is similar to other VLS studies not specifically targeting idioms, which show that dictionary use, context clues, analysis of the vocabulary and/or translation are common (Fan, 2020; Fu, 2021; Thiendathong & Sukying, 2021; Wu, 2005). In the current survey, the target vocabulary items were enhanced with bold text, so the participants were aware of the cohesive nature of the item. This leaves open the question of how learners might apply meaning discovery VLSs to idioms encountered naturally in text or speech, when the cohesive nature of the lexical bundles may not be obvious. It does suggest that learners who are aware of and alert to potential lexical bundles in English will be able to apply the same VLSs that they do to unknown single-word items if these lexical bundles are correctly identified. This may be in line with Beck and Weber's (2020) finding that both figurative and literal interpretations of an encountered idiom remain active until context makes one a better fit, but more study is needed to address this.

The second question of this study asks about the effectiveness of meaning discovery VLS application for single-word items and idioms. If learners are employing the same VLSs to both types of unknown vocabulary, this will only help if the VLSs they use are equally effective for both types of unknown vocabulary. In this survey, the participants were able to discover the meaning of idioms and single-word items at similar rates ($t(112) = -1.155$, $p = .147$), suggesting that the VLS routines they employ are equally effective for both unknown single-word items and for unknown idioms.

Looking at the VLSs which were significant contributors to correctness using regression analysis, *using a dictionary* appears to be the only effective strategy for single-word items. However, for idioms, the regression analysis showed that both *using a dictionary* and *using context clues* contributed to successful discovery of the meaning, even though *using context clues* did not have a significant correlation with correctness. This is most likely due to *using context clues* being the most used VLS overall. Other VLSs were either not significant factors in meaning discovery, or else were negative factors. The results of the current study suggest that dictionary use may be the only reliably effective VLS for

meaning discovery, but this is in contrast to several studies which suggest that strategy instruction (Mizumoto & Takeuchi, 2009; Seffar, 2020) or cultural and/or individual learner differences (Fan, 2020; Mizumoto & Takeuchi, 2009) play a larger role in effectiveness than choice of VLS.

It is not surprising that *using a dictionary* might lead to a novel vocabulary item's successful meaning discovery. While some participants may have decided on dictionary entries which did not match the sense for which the target vocabulary was used in the context of the entry, they at least had access to many possible meanings through the dictionary entry. The more interesting data point is that the regression analysis showed that *using context clues*, the most widely used VLS in this survey, was a significant factor of correctness for unknown idioms, while it had no significant effect on single-word items. One possible reason for this may be the figurative or metaphorical nature of idioms. It could be that context helps to unlock potential meanings, and the metaphor behind the idiom's meaning, if understood, confirms which guess is correct (Beck & Weber, 2020). For single-word items, there is no underlying metaphor to consult, which would render all potential guesses equally valid to the learner. If this is the case, the compositionality (transparency) of the idiom may make some idioms more or less amenable to correct guessing from context. This is an area in which future studies may shed some light.

Several VLSs in this study were negatively correlated with correctness scores, which on the surface suggests that these strategies are ineffective. *Analysis of the vocabulary* (checking word class, tense, examining roots and affixes, etc.) had no significant effect on single-word items, but was a negative factor for idioms. This may be due to analyzing each word of the idiom separately, in violation of the idiom's institutionality and compositionality (Moon, 1997). This may be an indication that additional strategy training is needed by some of these learners (Fan, 2020; Seffar, 2020) so that they may more effectively implement these strategies.

Imagining the literal meaning was a strategy which the researcher had assumed would help learners to unlock the metaphor of idioms, but would not provide help with single-word items. This study shows that while it was used more often with idioms, it did not help in this regard. It may be due to the fact that the literal meaning of the idiom's constituent vocabulary misled the learners (Beck & Weber, 2020), or possibly that the conceptual image of the idiom did not trigger the actual figurative meaning for cultural reasons, such as Korean using different types of metaphors for certain situations (Boers & Demecheleer, 2001).

The final question this study sought to answer was that of patterns of VLS application by EFL learners. An early study by Cooper (1999) observed a heuristic approach to VLS application by learners, which was supported by Lee (2003). In contrast to those studies, the data collected here shows that most of the participants were methodical in their VLS

application, with only a minority using a trial-and-error approach, which supports the earlier findings of methodical VLS application by Laffey (2016) and Orfan (2020). However, consistency did not lead to more accurate meaning discovery compared to the participants who applied VLSs in a heuristic fashion. These findings may indicate that the numerous calls for explicit strategy instruction for ELLs (Connor, et al., 2014; Hunt & Beglar, 2002; Mizumoto & Takeuchi, 2009; Oxford, 2002) have had a positive effect on learners, but that VLS application in any fashion, whether methodical or heuristic, may be sufficient for vocabulary meaning discovery. Further studies expressly designed to answer this question, and supported by qualitative data as well as quantitative data, may help to discover if this is the case.

6. CONCLUSION

This study sought to investigate whether Korean ELLs use similar or different meaning discovery vocabulary learning strategies when faced with unknown idioms than they use when faced with unknown single-word items. It also sought to investigate the effectiveness of the various VLS applied and to look for patterns of VLS use. The data collected in this study suggests that Korean ELLs tend to approach both single-word items and idioms in the same manner, at least as long as the idiom is recognized as a unit. The learners primarily rely on *using context clues* when faced with unknown vocabulary. *Using a dictionary* appears to be the most effective method of successfully meaning discovery. *Using context clues* may help with idioms but did not show much effect with single-word items. Other VLSs were not helpful with successful meaning discovery. Finally, the data presented here suggests that learners tend to use VLSs methodically, which is in contrast to some early studies that posited a heuristic approach.

Because the data collected in this survey is self-report data and relies on the participants being metacognitively aware of what steps they are taking to discover the meanings of the target vocabulary and then accurately report it, the findings here are limited. Think-aloud protocol data from a parallel experiment run simultaneously to this one may help to answer this question (Laffey, 2022). Another potential limitation of this study is that the contexts in which each item was embedded were not controlled for, which may have resulted in some contexts being richer in clues than others. Future studies may wish to compare the effectiveness of VLSs applied to the same items in different contexts in order to control for this.

The data collected here suggests that efforts to explicitly teach vocabulary learning strategies have been effective. Korean EFL learners are able to apply their repertoires of VLSs to both single-word items and to idioms with similar levels of correctness. Educators

should continue to instruct learners on VLSs explicitly. They should also focus on teaching awareness of idioms and other lexical bundles in English, and to instruct learners in effective dictionary use in order to have the best chance of successful meaning discovery when faced with unknown vocabulary.

Applicable level: Tertiary

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APPENDIX A

Target Vocabulary Items in Context

1. Malnikov looked at Cloud, his mouth **agape**, then walked slowly to his desk.
2. Dana watched wolves **canter** through her yard and worried about the safety of her cows.
3. Cathy wasn't fat but she was **buxom** and her shirt was a little tight and showed a lot of skin.
4. Hodler was an artist, and his mountain paintings **evince** much more than a heavenly admiration for their fantastic properties.
5. Mike was in a good mood, Kris thought at his **jocose** voice, and she hated to spoil it.
6. Her comment made my heart **patter**. I guess the family had all been talking about me.
7. Tarantino's creatively twisted jokes, his **randy** talk, and some crazy performances will keep you laughing at his movies.
8. Anyway, he said, he couldn't **quibble** with the health department's standards since he wants people to be safe.
9. Please don't ask me to decide that. Ask Mary. She **calls the shots** around here.
10. Josh thought Alex **hit below the belt** when he stole Josh's girlfriend, but everyone else said it was no problem.
11. Jenny was telling us about the movie, but she **went off on a tangent** about her favorite actor and never finished telling us about the movie.
12. This new coffee shop **is the cat's whiskers**. I want to go there every day.
13. Houston is a terrible city to visit, but **on the flip side** it's a great place to live.
14. The president was angry with the protesters and asked the police to **throw the book at** them.
15. I think I need a new job. This job has me **stuck in a rut** and I hate it.
16. Jane wouldn't trade lunches with Sue, so Sue had to **sweeten the kitty** and buy Jane a drink to go with lunch.