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## **Learning Styles and L2 Vocabulary Learning: Do Referential Preference Learners Gain More Vocabulary Than Expressive Preference Learners?\***

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### ABSTRACT

This study investigates the relationship between learning styles and second language vocabulary learning among young learners. The learning styles were operationalized in accordance with Nelson (1973), in which referential learning occurs when learners prefer to acquire a language through learning single words, whereas expressive learning happens when learners learn a language with entire phrases. After classifying students' learning styles, the present study explored the relationship between learning style (referential vs. expressive) and task types (word vs. idiom) of vocabulary learning. Results indicated that while no interaction between single items was found, there was a significant interaction between referential learning and multi-word expressions (idioms) on vocabulary learning. The results suggest that the Korean students' learning style was related to learning environments, including word-based lessons by school or institute in Korea.

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## I. Introduction

Learners' individual differences that are inherent in the learner can predict success or failure in language learning. Researchers seek to know how different cognitive and personality variables are related and how they interact with learners in language development. Many researchers have identified individual differences in language development (Conway & Eagle, 1997; King & Just, 1991; Schmidt, 2012; Skehan, 1991; Roberts, 2012). According to Skehan (2002), language learning depends on individual characteristics. He emphasized the following five main areas where individual differences in second and foreign language learning are observed: (1) language aptitude; (2) learning style; (3) motivation; (4) learning strategies; and (5) personality. In the present study, we focus on learning styles as one of the most relevant factors that influence second language acquisition. The term 'learning style' refers to (a) type(s) in which a learner approaches a task, a learning situation, or how s/he tries to solve a problem (Cassidy, 2004; Cohen, 2003; Oxford, 2003; Peacock, 2001). Learning style has been variously defined as "the overall patterns that give general direction to learning behavior" (Cornett, 1983: 9) or "the characteristic cognitive, affective and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with and respond to the learning environment" (Keefe, 1979: 5). According to Straková (2004:18), learning styles are "general approaches we use to learn a new language. These are the same styles we use in learning other subjects."

In both educational psychology and Second Language Acquisition (SLA), numerous previous research on learning style has proposed various models and instruments for the description of learners' style preferences (Chapelle and Green, 1992; Ehrman, 1996; Griffiths and Sheen, 1992; Keefe and Ferrell, 1990; Reid, 1995; Skehan, 1989, 1998; Witkin, 1962).

Since the mid-1970s, there has been a substantial growth in the literature on learning styles. L2 acquisition research scholars started to pay more attention to learning styles (Cohen, 2003; Cohen and Dörnyei, 2002; Ehrman, 1996; Ehrman and Oxford, 1990) as being reliable predictors of language learning process. Teachers should consider learners' individual differences professionally throughout the teaching and learning process. In second language acquisition, learning style was defined as "characteristics or traits in respect of which individuals may be shown to differ" (Dörnyei, 2005: 1). Therefore, it is essential that both teachers and language learners are aware of and use of learners' individual characteristics in class instruction and learning activities.

Despite the focus on individual differences in previous L2 acquisition research, little

is currently known about the relative effectiveness of the two learning preference styles (referential and expressive), particularly as concerns the difference in cognitive processes underlying the two approaches. Nelson (1973) describes different characteristics of language development through the prism of the referential and expressive functions of language. During language acquisition, some children tend emphasize single words, simple productive rules for combining words, nouns and noun phrases, and referential functions; by contrast, others use entire phrases and formulas, pronouns, compressed sentences, and expressive or social functions. Nelson (1973) examined referential and expressive styles of language acquisition and their continuity over time.

Based on Nelson's (1973) theory, the present study will seek to analyze children's learning styles through the prism of their referential-expressive learning preferences. Our major goal is to examine individual differences in learning languages. To this end, we focus on the relationship between learning styles and language acquisition, with the specific focus on vocabulary learning, since our participants are young learners. Furthermore, based on the results of data analysis of learning preferences, the effect of learning preferences on vocabulary learning will be analyzed as well. Since two different vocabulary task types could have a different impact on vocabulary learning, the effect of learning style preferences and vocabulary types (single-word items and multi-word items) will be examined. The research questions addressed in the present study are as follows:

- 1) Do learners have learning style preferences (referential vs. expressive) in vocabulary learning?
- 2) Is there a relationship between learning style preferences and vocabulary learning?
- 3) To what extent do the learning style preferences (referential vs. expressive) and task types (single-word items vs. multi-word items) affect vocabulary learning?

## **II. Literature Review**

### **A. Studies on learning styles as individual differences**

In the literature, learning style is defined as "an individual's natural, habitual, and preferred ways of absorbing, processing, and retaining new information and skills" (Kinsella, 1995b: 171). Numerous different learning styles models exist, and each has a unique combination of learning style variables. For instance, according to Dörnyei (2005: 2) "Individual differences have been found to be the most consistent predictors of L2

learning success...No other phenomena investigated within SLA have even come close to this level of impact.”

Skehan's (1991: 277) model of the relationship of individual differences to language learning specifies why learning style might play an important role in individual differences. Some SLA scholars have analyzed a language learning process as it naturally occurs in learners. In what follows, these style preferences will be discussed in further detail.

## **B. Previous research on referential and expressive learning styles**

Language learners' individual characteristics are essential aspects of successful language acquisition. In the learning process, learners appear to have preferences in second language acquisition; specifically, some learners acquire language using referential learning, while others prefer expressive learning. Referential learning occurs when learners prefer to acquire language with single words, whereas expressive learning occurs when learners prefer to learn the language with entire phrases. Teachers need to consider learners' individual differences professionally throughout the teaching and learning process. It is essential that both teachers and language learners are aware of and use learners' individual characteristics in class instruction and learning activities.

Nelson (1973) was the first to introduce the referential-expressive distinction in language learning. According to Nelson (1973), some children prefer learning the language with single words and rely on the referential function of language; by contrast, others use whole phrases and make use of expressive or social functions of language.

Furthermore, Cruttenden (1981) also conducted the phonological and grammatical analyses of child language, with the specific focus on finding a system in the child's production or in its relationship to the adult language. Cruttenden (1981) argued that language learning occurs in two stages: (1) item learning that includes acquisition of language forms closely connected to other already known forms and (2) system learning related to the communication of acquired language forms. The former stage applies at various levels of language (phonology, intonation, morphology and syntax, and semantics) before the latter stage which, according to Cruttenden (1981), may involve segmentation and subsequent substitution. Item learning might be referred to referential learning, while and system learning is related to expressive learning.

Likewise, Peters (1977) proposed that, throughout their language development, children use two strategies: (1) analytic (from the parts to the whole) and (2) gestalt (from the whole to the parts). He argued that some children aim at sentence targets, rather than at single word targets, thereby making using of the second strategy mentioned above. Nelson (1981) referred to the gestalt style as expressive learning, since it is used in social

contexts, and to analytic style as referential learning, as it is used in situations like reading books with parents.

### **C. Arguments about Referential and Expressive Learning Distinction**

Previously, children's language acquisition has been most frequently studied using Nelson's (1973) referential-expressive distinction. Nelson (1973) was the first to establish groups of language learners according to the number of words for objects in their vocabularies. Children with more than 50% nouns in their vocabularies were called referential learners, while those with a lower percentage of nouns were called expressive learners.

Expressive learning implies a largely object-oriented language acquisition, while referential learning relies more on a self-oriented language acquisition. Nelson (1973: 24) described the important role of personal-social language which "consists of a significant degree of stereotyped phrases and expressions useful for dealing with people." She emphasized that there are more function words in a social language. She also noted that there is a considerable variation in children's L1 vocabulary development at early stages (Nelson, 1981). She even examined which learning type leads to faster learning or more adequate speech production. The results showed that the referential learners' group acquired more vocabulary than the expressive learners' group. The group difference was substantial: the average size of the referential group's vocabulary was 215 nouns, while that of the expressive group was 144 nouns.

The significance of such variation is questionable. In fact, the differences in the proportion of nouns in children's vocabularies can be based on various reasons, such as that some children are slower than others, or that children are using different strategies to acquire a language (Lieven, 1989). Therefore, Lieven and Pine (1992) formulated several reasons why the referential-expressive distinction should be redefined. First, there is confusion whether the categories are functionally or formally defined. Second, the referential category is extremely inconsistent. Finally, Nelson (1973) defined expressive learning in an exclusively negative way. By contrast, Lieven and Pine (1992) pointed out the problems with the social-expressive category in Nelson's (1973) original study. They argued that "the attempt to differentiate children on the basis of their preference for social interaction appears somewhat problematic, since most language used by children at this stage is highly social, and this applies as much to the use of object names by referential children as to any other kind of language use" (Lieven & Pine, 1992: 292)

Furthermore, in contrast to Nelson (1981) who indicated that some children use language in a cognitive context, while others do so in the social context, Bates and

MacWinney (1987) described these learning preferences as psycholinguistic in nature. Therefore, according to Bates and MacWinney (1987), all different learning approaches should be considered to reveal the full range of possibilities in children's language learning (Nelson, 1981).

Likewise, Peters (1983) argued that variation in early vocabulary composition may be best described not so much in terms of the way language is used, as in terms of the kinds of units which children are extracting from their input. Moreover, Nelson (1981) mentioned that the input that children receive can affect their learning preferences.

Table 1. Background information of the participants

Proficiency level	Gender	No. of students	Years of learning English (years)	Experience studying in abroad (years)	Experience attending English kindergarten (years)
Low (24)	10 males	2	4	1	1
		8	4	0	0
	14 females	6	3	0	0
		8	3	0	0
High (24)	13 males	1	8	5	0
		5	5	2	3
	11 females	10	4	1	2
		8	4	1/2	2

### III. Methodology

#### A. Participants

The participants in the present study were 48 private elementary school students in 3<sup>rd</sup> grade (10 years old) from the same school in an urban area of Seoul. The students' average proficiency level of English was much higher than that of students from regular public schools. The school ranked the second on the Evaluation of the National Level of Academic Achievement, specifically in English. All students were native speakers of Korean who had been learning English as a foreign language. All students had learned English from grade 1. During grades 1 and 2, they mastered phonics and practiced short sentences or short stories. From grade 3, they studied language arts three times and social studies two times in a week. The number of the students in these two groups was 24 and 24, respectively. The students were divided into the high proficiency group and the low

proficiency group. Their proficiency level was described according to their placement test scores that they had taken in the beginning of the semester. The placement test evaluated all four standard language skills: listening, speaking, reading, and writing. The placement test is a standardized English test called JET (Junior English Test) writing held by YBM. JET writing test includes grammar, vocabulary, mechanics, flow, and style.

With regard to students' academic history, most of them attended English institutes from grade 1, and there were six students who graduated from an English kindergarten. There was also one student in the proficient group who came to Korea that year from California in the US. Table 1 shows the background information of the students.

#### *The high proficiency group*

Students assigned to this group were all Korean students, but most had lived or studied abroad in countries such as Canada and the United States; all students had a good command of English. These students' proficiency ranged from intermediate to high intermediate according to 2012 ACTFL Proficiency Guideline<sup>1</sup>. The students were able to understand one utterance at a time while being engaged in face-to-face conversation or in routine listening tasks, such as understanding highly contextualized messages, straightforward announcements, or simple instructions and directions. The students were also able to recombine learned material in order to express personal meanings. They could ask simple questions and handle a straightforward survival situation. They produced sentence-level language, ranging from discrete sentences to a string of sentences. They could also successfully handle uncomplicated tasks and social situations requiring an exchange of basic information related to their work, school, and interests. In reading, they were able to understand information conveyed in simple, predictable, loosely connected texts. They also heavily relied on contextual clues. They could easily understand the meaning of a text when the format of the text was familiar. As concerns writing, they were able to accomplish simple writing tasks, such as writing simple messages and letters, requests for information, and notes. Furthermore, they could ask and respond to simple questions in writing. They were able to create with the language and communicate simple facts and ideas in a series of loosely connected sentences on topics of personal interest and social needs. They used basic vocabulary and structure to express meaning that was comprehensible to those accustomed to the writing of non-natives.

#### *The low proficiency group*

Language skills of the students in the low proficiency group ranged from 'novices

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<sup>1</sup> See [https://www.actfl.org/sites/default/files/pdfs/public/ACTFLProficiencyGuidelines2012\\_FINAL.pdf](https://www.actfl.org/sites/default/files/pdfs/public/ACTFLProficiencyGuidelines2012_FINAL.pdf)

mid' to 'novice high' according to ACTFL Proficiency Guidelines. The students were able to communicate short messages on highly predictable, everyday topics that affected them directly. They did so primarily through the use of isolated words and phrases that they had previously encountered, memorized, and recalled. In writing, they could produce lists and notes by writing words and phrases. They could also reproduce practiced material to convey simple messages and transcribed familiar words or phrases. As for listening, they were able to comprehend key words, true cognates, and highly contextualized and predictable formulaic expressions. They could understand words and phrases from simple questions, statements, and high-frequency commands. The students in the low proficiency group could understand key words and cognates, as well as formulaic phrases. Finally, they were able to understand a text when they could anticipate the information in that text.

## **B. Instruments**

### **1. Measuring Learning Styles**

Learning style was measured using two approaches: (1) "learning style assessment" based on a revised version of Cohen's (2006) Learning Style Survey (LSS) and (2) interviews with participants. The survey questionnaire was in English, and the Korean translation was also provided on the other side of the same sheet.

#### *Learning Style Assessment*

Learning styles were examined by the revised version of Cohen's (2006) Learning Style Survey (LSS) to identify learning styles of participants. Both participants and the instructor who taught them for the last 3 years answered the LSS questionnaires. The survey consisted of a total of 20 statements, 10 corresponding to referential learning and 10 corresponding to the expressive learning. The survey was held for 5 minutes for all students. The participants self-assessed their learning preferences based on a 4-point Likert Scale (0=never, 1=rarely, 2=sometimes, 3=often, 4=always). Below are the reasons why the LSS was chosen in the present study.

1. It is a representative and commonly used instrument in the field in that its items examine behavioral correlates of learning style.
2. The LSS evolved from a valid and reliable learning styles instrument, Oxford's (1995b) Style Analysis Survey.



3. The LSS is notable for its practicality, as it is a nonproprietary instrument that is quick to administer and easy to score.

All items with odd numbers in the questionnaire were closely related to referential learning, whereas all items with even number in the questionnaire were related to expressive learning.

As mentioned above, the participants self-rated their learning preferences on a 4-point Likert scale, where 1 refers to no preference while 5 means the strongest preference. Reliability was calculated by means of Cronbach's alpha. The reliability of 10 referential-preference-related items was 0.84, and Cronbach's alpha of 10 expressive-preference-related items was 0.76.

Table 2. Descriptive statistics of learning style survey ( $n=46$ )

Type of Items	Min	Max	Mean	SD
Referential Style	1.10	4.80	3.24	.70
Expressive Style	1.80	4.90	3.42	.63

Note. Min=Minimum; Max=Maximum; SD=Standard Deviation

### *Learning Style Interviews*

Classifying the participants into referential or expressive learners based only on the results of a survey would be too straightforward; therefore, interviews with the participants were based on the results of the survey. For the interviews, based on the results of the survey, 15 students were chosen: 5 participants who had higher scores on the referential learning style, 5 participants who had higher scores on the expressive learning style, and 5 participants who had equal scores on both referential and expressive learning styles. The participants were interviewed using the following 2 interview questions:

1. Do you prefer to study individual words or entire phrases?
2. Why do you prefer learning style that you answer in #1?

## **2. Language Learning Assessment**

According to Laufer, Eder, Hill, and Congdon (2004: 205), "a good vocabulary test should measure the text to which people can correctly associate word form with the

concept the form denotes.” This observation was taken into account in the production of test materials.

Laufer et al. (2004: 209) argued that there are various ways in which the form-meaning link can be tested and proposed the following hierarchy (form most to least difficult, with the last two equal):

1. Active Recall: ability to produce L2 forms;
2. Passive Recall: ability to produce the meaning of a given L2 form;
3. Active Recognition: ability to choose the L2 word from a number of possibilities;
4. Passive Recognition: ability to choose the meaning of a given L2 form.

Laufer et al. (2004) suggested that using multiple test formats gives an indication of the strength of lexical knowledge. Based on this format, Schmitt (2010: 276) revised the form-meaning link as follows:

1. Form recall: d\_\_\_\_\_ *hund*
2. Meaning recall: dog *h*\_\_\_\_\_
3. Form recognition: *hund*      a. cat      b. dog      c. mouse      d. bird
4. Meaning recognition: dog      a. *Katze*      b. *hund*      c. *maus*      d. *vogel*

In the present study, the above form-meaning link was used. The strength of vocabulary learning was measured through two tasks: (1) form recognition and (2) meaning recognition. The form recognition task provided the participants with four Korean possibilities from which to choose the correct translation of each English prompt. The meaning recognition task required learners to choose Korean translation for each English word.

### 3. Pre-tests and post-tests

The present study involved no teaching. Instead, the students studied the vocabulary list and the idiom list on their own. There were two task types: (1) a vocabulary list that contained single items and (2) an idiom list that contained multi-word expressions. Each list had 14 items and was given to the students as a handout. In the vocabulary list and idiom list, there were English words or idioms with the Korean meaning for each item (see Appendix B).

To create the vocabulary list and the idiom list with the items that would be

unfamiliar to all students, 30 words were selected from the grade 4 language arts textbook that the students would learn in the next semester, and then these words were tested by students. Based on the results, the following 14 words were selected: *floppy, porch, impatient, predict, rattle, bursting, brag, drool, collar, snoop, nursery, rodent, grunt, and snort* (see Table 3 and Appendix B). The strength of learning was measured with two tests: form recognition and meaning recognition. Both pre- and post-tests included all of 14 words.

Pre- vocabulary test was 4-choice multiple choice questions with 7 words in the form recognition task and 7 words in the meaning recognition task. Post-vocabulary test was the same as pre-test except for the order of presentation of words. In the vocabulary test, both receptive (form recognition) and productive (meaning recognition) tests were given (see Appendix B).

To collect the multi-word items for the idiom list, the same procedure as the one we used for collecting single-word items for the vocabulary list was used. 30 idioms were chosen from the language arts textbook. Among 30 idioms, the following 14 idioms were selected: *bury the hatchet, a wild goose chase, sitting on a gold mine, as the crow flies, lay on egg, on thin ice, win by a nose, tall story, bench warmer, have a big mouth, a little bird told me, mum's the word, why the long face?, and fat chance* (see Table 2 and Appendix B). The procedure was identical to the task with single-word items, except for providing the idiom list instead of the vocabulary list.

Table 3. Single-word items in the vocabulary list and multi-word items in the idiom list

Single-word items (14)	floppy, porch, impatient, predict, rattle, bursting, brag, drool, collar, snoop, nursery, rodent, grunt, snort
Multi-word items (14)	bury the hatchet, a wild goose chase, sitting on a gold mine, as the crow flies, lay on egg, on thin ice, win by a nose, tall story, bench warmer, have a big mouth, a little bird told me, mum's the word, why the long face?, fat chance

## C. Procedure

### *Procedure with single-word items*

The procedures specified in Table 2 were run on the same day during the 40-minute class. 14 multiple-choice items with 7 questions in the receptive (form recognition) task and 7 questions in the productive (meaning recognition) task as a pre-test were offered to the participants. Then, the single-word vocabulary list handout was provided, and the participants studied the list on their own. The multiple-choice vocabulary test was given to the participants as a post-test. Finally, the participants completed the learning style survey questionnaire. The procedure proceeded in the following time order; 10 minutes

for pre-test, 15 minutes for self-study, 10 minutes for post-test, and 5 minutes for the survey.

#### *Procedure with multi-word items*

One week after the single-word task, the multi-word task was run. 14 multiple-choice items with 7 questions in the receptive (form recognition) task and 7 questions in the productive (meaning recognition) task were offered to the participants as a pre-test. Then, the multi-word vocabulary list handout was provided, and the participants studied the list on their own. The multiple-choice vocabulary test was given to the participants as a post-test. The procedure proceeded in the following time order; 10 minutes for pre-test, 20 minutes for self-study, and 10 minutes for post-test. Self-study time for multi-word test was 5 minutes longer than for the single-word test, since multi-word items are more difficult to learn.

Table 4. Overview of the procedure used in both tasks

Task Type	Date	Procedure
Single-word items	June 12	Test to collect single-word items (15 min.)
	June 14	Pretest (10 min.) -> Studying Vocabulary List (15 min.) -> Post (10 min.) -> Learning Style Survey (5 min.)
Multi-word items	June 19	Test to collect multi-word items (15 min.)
	June 20	Pretest (10 min.) -> Studying Idiom List (15 min.) -> Post (10 min.)

## **D. Data analysis**

Among 48 participants, 2 participants could not complete the study. One student from the high proficiency group went to America for 2 months, and the other was absent for two weeks due to sickness. Therefore, the tasks were completed by a total of 46 participants.

#### *Learning Style Assessment*

The learning styles measure was scored by the present researcher. Scores for each modality were computed by adding the ratings for each individual statement related to that modality. The total possible for each learning style modality was 40 points (0-4 points per item, 10 items per modality). Each participant's overall learning style preference was determined to be the modality in which that participant had the highest overall score. When no such difference was present, the participants were considered to have a mixed preference.

*Learning Style Interview*

The students' interviews were recorded and transcribed. Since students felt nervous about answering in English, some students answered in Korean, and their responses were translated into English.

*Vocabulary Assessment*

The vocabulary tests were graded by hand by the present investigator. Each item answered correctly on both pre- and post- tests was awarded two points. For each testing period, the scores from the two tasks (form recognition and meaning recognition) were added, and the results calculated for the two tasks together. The maximum number of points possible per each pretest or posttest was 28 (14 items x 2 points/item). Point totals of form and meaning recognition tasks of each pretest and posttest were used to calculate gain scores from pretest to posttest.

*Statistical Analysis*

All data from the current study were entered into SPSS version 24.0 for statistical analysis. Research Question 1 on the learning style preference was answered based on the descriptive analysis of the data. Specifically, the prevalence of referential and expressive preferences was calculated by summing up the number of individuals who indicated each preference type on the LSS. Research Question 2 was answered by conducting repeated measures ANOVAs with one between-subject variable (learning style preference) and one within-subject variable (condition).

## **IV. Results**

### **A. Learner's Learning Style Preferences (Referential vs. Expressive) on Vocabulary Learning**

In order to classify the students into two groups, each preferring either the referential or the expressive learning style, the mean differences of learning styles were calculated. Six participants who had zero values, which indicated no preference to either of the two styles, were excluded from further data analysis. Furthermore, 27 participants preferred referential style of learning, while 13 students preferred expressive style of learning. These participants were coded into a categorical variable containing two levels (referential preference vs. expressive preference). In order to ensure that the newly created two groups differ in terms of referential and expressive preferences, two separate independent t-tests were performed with the two grouping variables as an independent

variable. The independent t-test of reference preference showed a significant group difference ( $t(38) = -2.2.98, p = .027$ ) and that of expressive preference confirmed the significant difference ( $t(38) = 2.215, p = .033$ ). These results contradict Cruttenden's (1981) argument that children tend to prefer the commutation of forms or referents in L1 vocabulary learning, while some (other) form is held constant. This refers to referential preferences according to Nelson (1973). Therefore, we expected that there would be more participants who would prefer referential learning than expressive learning.

The results, however, showed the opposite pattern. There were more students who preferred expressive learning than referential learning. During the interviews, most expressive students answered that they liked to study English with games and fun activities for the second interview question. Expressive learning items in the questionnaire were related to activities and games, which might explain why many students said they liked expressive learning more than referential learning. Previous studies also demonstrated that students reported more interest in simulation or game activities than in the conventional instruction (Brom, Preuss, & Klement, 2011; Costabile, De Angeli, Roselli, Lanzilotti & Plantamura, 2003; McMullen, 1987).

Table 5. Descriptive statistics for perception of referential and expressive preferences

Type	Referential Preference Group ( $n = 13$ )		Expressive Preference Group ( $n = 27$ )	
	M	SD	M	SD
Referential Preference	3.58	.79	3.04	.66
Expressive Preference	3.10	.71	3.57	.58

Note. M=Mean; SD=Standard Deviation

As shown in Table 5, the students in the referential preference group showed a greater mean in the referential preference items ( $M = 3.58, SD = .79$ ) compared to students in the other group ( $M = 3.04, SD = .65$ ). In contrast, the students in the expressive preference group had a higher mean in in the expressive preference items ( $M = 3.57, SD = .58$ ) than the other group ( $M = 3.10, SD = .70$ ).

## B. Relationship Between Learning Style Preferences and Vocabulary Learning with Single-Word Items

Table 6 shows means and standard deviations of pre-test and post-test with single-word items completed by the referential preference group (RPG) and the expressive preferred group (EPG). Although there was a learning gain in scores of both RPG and

EPG, the scores of RPG ( $M = 6.54$ ,  $SD = 2.50$ ) exceeded those of EPG ( $M = 4.78$ ,  $SD = 2.82$ ) in pre-test. The result of post-test with single items also present more scores achieved by RPG ( $M = 23.08$ ,  $SD = 4.99$ ) than by EPG ( $M = 18.81$ ,  $SD = 8.07$ ), and there was more learning gain in SPG than in IPG.

Table 6. Descriptive statistics of pre- and post-test scores with single-word items

	Referential Preference ( $n = 13$ )		Expressive Preference ( $n = 27$ )	
	M	SD	M	SD
Pretest	6.54	2.50	4.78	2.82
Posttest	23.08	4.99	18.81	8.07

Note. M=Mean; SD=Standard Deviation

In order to address Research Question 2, we focused on the main effect and interactions between learning styles and task types. A two-way repeated ANOVA was performed with time (within-subject effect) and group (between-subject effect) as two independent variables and pre- and post-test scores of single items as dependent variables.

The results indicated a significant effect for time ( $F(1, 38) = 199.291$ ,  $p = .0001$ , eta-squared = .84), but not for group ( $F(1, 38) = 4.057$ ,  $p = .051$ ). The time x group interaction effect was not found,  $F(1, 38) = 1.334$ ,  $p = .255$ ). Therefore, learning style does not play a role in learning single words.

Table 7. Examples for interview comments

Questions	Example
Comments for Q2 of students who answered they preferred to study English with individual words	<ul style="list-style-type: none"> <li>* I like to play games with my friends.</li> <li>* I do not want to study English.</li> <li>* I...I get prize from my mom when I get good grade in vocabulary test at academy.</li> <li>* English difficult.</li> </ul>
Comments for Q2 of students who answered they preferred to study English with who phrases	<ul style="list-style-type: none"> <li>* My teacher plays games a lot with us.</li> <li>* I hate vocabulary tests.</li> <li>* My academy has vocabulary tests all the time. I hate it.</li> <li>* I love to play games with my English teacher.</li> <li>* I like to play with my friends.</li> </ul>

These findings are consistent with the findings reported by Peters (1983) and Nelson (1981). In particular, Nelson (1981) argued that input can have a huge impact on learning preference. These results may due to the vocabulary test-oriented English lessons in Korea. Although Korean National English Curriculum requires content-based learning and teaching, until now, most English lessons, particularly in primary school, focus more on vocabulary learning and teaching. Furthermore, most Korean students attended English academy where vocabulary tests were held every day or every week, so students were used to memorizing vocabulary regardless of their learning preferences. Therefore, it remains unclear whether it is learning style preferences or the traditional ways of teaching English in Korean schools that affect to acquisition of single-word items in vocabulary learning. It could be speculated that the impact of learning style preference on vocabulary learning are relative to input styles.

### C. Relationship between Learning Style Preferences and Vocabulary Learning with Multi-Word Items

In this section, we present the results of the analysis for SPG and IPG of pre-test and post-test with multi-word items. Table 7 shows that both IPG ( $M = 1.93$ ,  $SD = 1.84$ ) and SPG ( $M = 1.38$ ,  $SD = 1.56$ ) had very low average scores in pre-test, since students were not used to idioms. However, in the post test, SPG ( $M = 5.85$ ,  $SD = 2.61$ ) had slightly better scores than IPG ( $M = 4.04$ ,  $SD = 2.50$ ).

Table 8. Descriptive statistics of pre- and post-test scores with multi-word items

	Referential Preference ( $n = 13$ )		Expressive Preference ( $n = 27$ )	
	M	SD	M	SD
Pretest	1.38	1.56	5.85	2.61
Posttest	1.93	1.84	4.04	2.50

Note. M=Mean; SD=Standard Deviation

To address Research Question 3, we performed a two-way repeated ANOVA, with time (within-subject effect) and group (between-subject effect) as two independent variables and pre- and post-test scores of single items as dependent variables. The results indicated a significant effect for time ( $F(1,38) = 63.208$ ,  $p = .0001$ , eta-squared = .63), but no effect for group ( $F(1, 38) = 1.802$ ,  $p = .31$ ). The time x group interaction was significant,  $F(1, 38) = 8.08$ ,  $p = .007$ , eta-squared = .18). Contrary to our expectation, there was a significant effect on referential preferred group with multi-word items. The



group that preferred the expressive learning style tended to study entire phrases; therefore, I hypothesized that the group which preferred the expressive learning style would have a significant effect on multi-word items.

Table 9. Results of repeated measures ANOVAs

Effect	F	<i>p</i>	$\eta^2$
Time	F(1, 38) = 63.21	.001	.83
Group	F(1, 38) = 1.802	.31	.03
Time X Group	F(1, 38) = 8.08	.007	.18

The results showed that the students who preferred referential learning had significant effect with multi-word items. These results are not in line with Nelson (1973) who argued that children who had more expressive tendencies were more likely to learn non-segmented multi-word expressions. To reiterate, this might be the effect of the Korean learning settings. Students with more experience in memorizing words tend to better memorize phrases as well.

## V. Conclusion

The present study has several limitations. The first limitation concerns the sample size. While 46 students were comparable (but 6 students were excluded because of technical difficulty), future studies in this area should seek to recruit more participants. There are also weaknesses associated with only Korean students who had similar input experience with referential learning styles. In further research, this bias could be mitigated by employing participants with different backgrounds, such as different input experience, cultures, and previous L2 language experiences. Another interesting direction for future research would be to analyze different proficiency levels. It would be interesting to examine whether findings of the present study would also hold for lower or higher proficiency L2 learners. For the future studies in this area, not only students' survey, but also adding parents or care-takers' questionnaires might be a better way of conducting more accurate research. Further research can also involve teaching, such as matching and mismatching of learning styles with teaching styles and studying an effect on L2 vocabulary retention through the preferred learning style.

The major aim of the present study was to examine individual differences in learning a foreign language. We studied relationship between learning styles and language

acquisition, with the specific focus on vocabulary learning. This study attempted to classify children's learning styles into referential preferred learning and expressive preferred learning. Furthermore, based on the results of data analysis, the relationship between learning style preferences and different vocabulary learning was examined. We also analyzed the impact of learning style preferences and vocabulary types (single-word items and multi-word items).

Our results demonstrate that the students could be reliably classified into two groups: those preferring referential learning style and those preferring expressive learning style. The results on learning style and vocabulary types showed that there was a significant effect on referential preferred learning with multi-word items. The result was different from the hypothesis; however, this has an important pedagogical implication.

This suggests that not only the learners' learning styles but also input by teachers and learning environment, such as textbooks and institute, might have a greater effect on vocabulary learning than students' own learning style preferences. Jang and Cho (2017) mentioned the importance of the patterns of the types of questions used by the teachers. They suggested that referential questions that are appropriate for language ability and cognitive level of students helped students' language development. Referential question stimulates language learners to express their ideas and feelings (Brock, 1986). In addition, Ellis (1993) emphasized the importance of giving a supportive classroom environment as a place where students are not afraid to make mistake or errors will encourage students to experiment with language and express their ideas and feelings.

Language learners' individual characteristics are essential aspects of successful language acquisition. Depending on an array of variables, some students may prefer expressive learning or referential learning. Furthermore, several studies have found that academic achievement is positively affected when teaching is consistent with students' preferred learning style (Dunn, Beaudry, & Klavas, 1989; Dunn, Dunn, & Price, 1977; Mickler & Zippert, 1987; Miller, Alay, & McKinley, 1987). In classroom settings, it is particularly important that learners know their learning style if they are adults. If learners are children, then it will be a teacher's responsibility to find his/her learner's preferred learning style. The results of the learning style instruments could be used by teachers in developing teaching materials and lesson plans. Teachers should provide not only referential lessons, but also expressive lessons. Instructors should vary instructions to encompass different learning modalities. More future research is needed in this area with other variables that affect the second language learning.

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