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Predicting English Achievement Using Learning Styles of Korean EFL College Students

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Teachers can maximize students' L2 learning by knowing preferred learning styles. This paper presents the results of a survey that asked 309 English learners to identify their perceptual learning style preferences. It further compared students' favored learning styles in terms of their gender and major field of study and explored a possible link between learning styles and English achievement. Collected data using Reid's (1995) questionnaire were analyzed by descriptive statistics, MANOVA, ANOVA, correlations, multiple regressions including squared partial correlations, and Cronbach's alpha. The results indicated that Korean students favored English learning in group regardless of gender, while their preferred mode of learning was significantly different in regard to their major field of study. Certain learning styles might be profitable for English achievement. Multiple regression analyses revealed that individual mode of learning was the best predictor of students' English achievement. It furthermore showed significant relationships between visual and individual styles of learning and English performance. The findings of the study reflected students' English learning context in which English native-speaking teachers frequently used communicative pair and small group activities for speaking practices that were consonant with students' learning styles.

[learning styles/gender and major differences/English achievement, 학습유형/성별과 전공차이/영어성취도]

I. INTRODUCTION

Many studies of foreign or second language (L2) learning have examined the individual difference variables in order to explain the variance in L2 achievement (Bailey, Onwuegbuzie, & Daley, 2000; Ehrman & Oxford, 1995). Among these, cognitive styles (e.g. L2 aptitude and learning strategies) and affective factors (e.g. anxiety, motivation, and self-confidence) have been used the most frequently in an attempt to identify learner variables related to L2 success. However, relatively few studies have been found to account for the role of learning styles in relation to L2 achievement (Bailey et al., 2000; Jones, 1998; Thomas, Cox, & Kojima, 2000). Indeed, research on learning styles generally sought to identify L2 learners' preferred learning styles in order to consider a link between learning styles and various language and cultural backgrounds (Hiser, 2003; Jones, 1998; Lin & Shen, 1996; Park, 1997; Reid, 1987, 1990; Stebbins, 1995). Learning styles have also been found to influence learning strategy use (Rossi-Le, 1995) and gender (Oxford, 1995). L2 scholars also examined mismatches in learners' styles and curriculum or teaching style (Dreyer, 1998; Ehrman, 1996; Felder & Henriques, 1995; Melton, 1990; Peacock, 2001; Pengiran-Jadid, 2003). The primary conclusion of these learning styles research indicated that teachers can maximize students' L2 learning by knowing students' preferred learning styles.

L2 learning styles that persist regardless of teaching methods and materials, can be defined as the innate, habitual, and preferred manners of acquiring, retrieving, and retaining new information and skills (Ehrman & Oxford, 1995; Felder & Henriques, 1995; Kinsella, 1995; Reid, 1987, 1995). For example, some students who prefer to read L2 information can be said to have visual preferences. Reid's (1987, 1995) two hypotheses about learning styles build the theoretical background to the present study: 1) all learners have their own learning styles even though not every learner fits neatly into one or another of learning style categories; and (2) learning will be improved if learners become aware of a wide range of learning styles and extend their own styles. Because a mismatch between learning and teaching styles causes learning difficulties, demotivation, and failure, learning styles may be antecedents of L2 learning success. In other words, learners' L2 learning achievement can be moderated by

their learning styles. Besides, teachers' knowledge of students' learning styles might enable them to identify students who have problems with learning the L2 (Bailey et al., 2000; Ehrman, 1996; Ehrman & Oxford, 1995; Felder & Henriques, 1995; Reid, 1987).

While learning style theories and the assessments can be found in the most popular of journals, only a few studies which contain references to Korean students' learning styles, to my knowledge, have been conducted. Their studies identified Korean students' learning styles preferences (Reid, 1987, 1990) and explored the relationship between learning styles and L2 learning strategies (Kim, 2001; Park, 1999; Park, Lee, & Kang, 2005) and the compatibility between native English teachers' instructional styles and learning styles (Park, 1998). Park (1998) and Park (1999) examined interrealtionship between certain learning styles and English achievement using a translated version of Oxford's (1993) learning styles instrument, while Kim (2001) adopted Kinsella's (1995) instrument. This paucity of research with EFL students on the topic including Korean is large part may be due to the difficulty of developing reliable and valid learning styles instruments for the nonnative English-speaking students (Eliason, 1995; Wintergerst, DeCapua, & Itzen, 2001; Wintergerst, DeCapua, & Verna, 2003). Since the lack of studies leave us an incomplete picture of the nature of learning styles, it is entirely appropriate to consider more research on the role of learning styles in L2 achievement.

II. LITERATURE REVIEW

Reid (1987) studied the sensory preferences of over 1200 college students, mostly ESL students and the rest American students and developed the Perceptual Learning Style Preference Questionnaire (PLSPQ), which is normed on non-native speakers of English. In the PLSPQ, Reid (1987) attempted to determine major, minor, and negative learning styles for the six style preferences: visual (these learners prefer reading and studying charts), auditory (prefer listening to lectures), kinesthetic (prefer experiential learning through active participation), tactile (prefer hands-on work), group (prefer studying with others), and individual (prefer studying alone). The second language version of

the PLSPQ has been used cross-culturally in studies with Chinese (Jones, 1998; Lin & Shen, 1996; Melton, 1990; Peacock, 2001), Japanese (Hyland, 1994; Thomas et al., 2000), Bruneian (Pengiran-Jadid, 2003), and mixed language groups of ESL/EFL students (Reid, 1990; Stebbins, 1995; Wintergerst et al., 2001, 2003), and adult L2 immigrants in the US (Rossi-Le, 1995). Generally speaking, the results of these studies showed that ESL/EFL students favored kinesthetic styles, and disfavored group learning. The researchers, however, suggested that L2 teachers are cautioned against overreliance on the learning styles since certain factors such as English proficiency, cultural background, and the length of time the students have spent studying English could affect students' learning styles (Eliason, 1995).

Indeed, several studies have drawn attention to relationships between learning styles and L2 achievement. At the high school level, although auditory students were more motivated than visual students, the visual learning style was more predictive of Japanese language achievement than auditory and tactile/kinesthetic styles in a study with native English-speaking high school students learning Japanese through the medium of satellite television (Oxford, Park-Oh, Ito, & Sumrall, 1993). However, studies with Korean high school students demonstrated mixed and perplexing results that visual, intuitive, and global males revealed higher scores on listening proficiency measures than auditory, extrovert, and sequential males, while auditory females outperformed visual counterparts (Park, 1998). Furthermore, Park et al. (2005) found no association between learning styles and English vocabulary learning.

At the college level, research has also shown confusing results, indicating that more research is still needed. Reid (1987) suggested that visual and auditory students achieved higher scores in TOEFL. Later, Felder and Henriques (1995) summarized the significant aspects of learning styles in L2 education. They, however, highlighted that a mismatch between learning and teaching styles can lead to learner resentment and failure, although they acknowledged that the differences in L2 achievement may widen between five dichotomous learning styles such as sensing vs. intuitive learners and visual vs. verbal learners. Ehrman and Oxford (1995) reported no significant correlations between learning styles and speaking and reading proficiency, while Baily et al. (2000) found that kinesthetic preference was an important predictor of L2 achievement.

Furthermore, Thomas et al. (2000) concluded that kinesthetic students appeared to have a learning advantage in the practical skill-based L2 classroom, while Yeh and Wang (2003) acknowledged that the influence of learning styles on L2 vocabulary learning was not evident.

With regard to the research on the association between learning styles and L2 achievement, related to EFL students in Korea, Park (1999) examined 114 college students across four major groups and reported that closure-oriented students tended to score better in TOEFL. However, according to Kim (2001), several learning styles were associated with TOEIC scores at nonsignificant correlation levels from .02 to -.23. Moreover, only 1% of variance in TOEIC, the English proficiency measure, was explained by the learning styles. These mixed results imply that learning styles are influenced by the learning situation and content areas (Ehrman, 1996; Westman, 1993) and they may change with the learning tasks (Park, 1999). That is, some students with specific learning preferences may benefit more when taught and evaluated L2 in their styles, whereas some may be particularly subject to lower achievement in a task in which a certain language skill or task is emphasized. For example, given the current trends in L2 pedagogy focusing on interactive pair and small-group activities with native English-speaking teachers, individual learning types may be disadvantaged for L2 performance. Thus, an investigation of the role of learning style in L2 achievement may provide important insights into L2 teachers as the number of native English teachers increases in the English education institutions in Korea.

The aims of the study were to identify the perceptual learning style preferences of a group of first-year EFL college students and to consider the relationships between the students' learning styles and English achievement. The purpose of this examination of the association was to assess the proportion of variance explained by learning style variables in students' English achievement at the college level. The present study also explored the gender differences in the perceptual learning styles. The following specific research questions were addressed:

1. Which aspects of the perceptual learning styles are the most common among Korean EFL college students?
2. What are differences in the students' learning styles based on their gender

and field of the study?

3. How do the students' learning styles relate to their English achievement scores?

III. RESEARCH DESIGN

1. Participants

The sample comprised 309 students enrolled in a second-semester compulsory college English class. The ages of the students ranged from 17 to 49, with an average of 20.7. All the students were first-year students, with a male-female ratio of 148:161. The students represented eight majors from English, Information and technology, Tourism management, Culinary arts, Food science, Japanese, Computer engineering, and Computer design. When asked to rate themselves on their self-perceived English proficiency, 131 (42.4%) reported their levels as medium, 119 (38.5%) as not good, and 31 (10.0%) as very poor. Eighteen (5.8%) rated their levels as good, while 8 (2.6%) rated themselves as excellent. Of the total participants, 248 (80.3%) reported that they were satisfied with English instruction by native English-speaking teachers. About two-thirds of the participants (205=66.3%) believed that native English teachers are better than Korean-speaking counterparts in teaching target language cultures, while 158 (51.1%) thought that they have more chances to improve English speaking and listening skills when they are taught by native English teachers.

The participants enrolled in General English II at the time of the study. The objective of the General English was to help students attain English ability necessary to participate actively in real conversation and business situations. Instruction was conducted by the native English-speaking teachers emphasizing listening and speaking skills with interactive pair and small-group activities. The course grade was determined by an oral midterm exam (20%) and a standardized written final exam (40%), homework (20%), and attendance and participation (20%) across all the General English classes.

2. Instruments and Procedures

All the participants were given the PLSPQ and a background information questionnaire during class time in the beginning of the fall semester in 2006. The PLSPQ contains 30 items to assess the way students learn best and prefer to learn with 5-point Likert scales (1=Strongly disagree, 5=Strongly agree). For the validity of the PLSPQ, the original items were developed from an extensive collection of comments suggested by consultants in the fields of linguistics and the English learning and teaching programs. Furthermore, the split-half method was used to check reliability of the PLSPQ that has been normed for ESL students (Reid, 1990). Many researchers, studied with a translated version of the PLSPQ, acknowledged that the PLSPQ was a valid and reliable instrument for EFL students' learning styles (Melton, 1990; Peacock, 2001; Thomas et al., 2000). In order to complete the items in students' native language, the PLSPQ without an established Korean version was translated into Korean by English-Korean bilinguals. Furthermore, several modifications were made on the original PLSPQ to suit the English learning situation in Korea. "English" was added to some items to ensure that the students would report their learning style preferences for English learning. The second questionnaire was designed to obtain demographic data about the participants and information relevant to their English learning, such as gender, age, major filed of study, self-assessed English proficiency, and satisfaction with an English class taught by native English-speaking teachers. The questionnaires were not completed anonymously to investigate the associations between students' learning preferences and English achievement. Student identification numbers, thus, were included in the instrument to gain access to their English scores.

English achievement was measured by midterm and final examinations. Oral interviews for the midterm exam and a standardized written final exam were administered to all the participants. There were no speaking or listening components in the final exam. Instead, all the items (22 short-answer and fill-in-the-blank items and 18 multiple choice items) were on communicative grammar construction. The total mark for the midterm exam was 20-point, while the final exam counted for 40-point. Thus, the two scores were combined to make one comprehensive English achievement score, with a maximum

possible score of 60.

3. Data Analyses

Descriptive statistics were calculated to summarize the participants' responses to the PLSPQ as well as the background questionnaire. A multivariate analysis of variance (MANOVA) and a univariate ANOVA were performed to examine influences of gender and major field of study on students' learning preferences. Correlation coefficients were used to assess the relationship between learning styles and English achievement. Multiple regression was conducted to assess the relative contribution of learning style variables in English achievement. Finally, squared partial correlation was used to examine unique contribution of each learning style variable as a proportion of R^2. Cronbach's alpha was used to check reliability for the instrument. The reliability coefficient of the Korean version of the PLSPQ was .81, indicating that the modified PLSPQ was internally consistent in measuring Korean EFL students' learning preferences.

IV. RESULTS

1. Learning Style Preferences of Korean EFL College Students

As shown in Table 1, the responses showed that Korean EFL college students had all six major learning style preferences. The students favored group, auditory, and tactile styles, while they less favored an individual style. The results in the present study were different from that found by Reid (1987) studying with Korean ESL students in some respects. Whereas Reid reported kinesthetic learning as the most preferred learning style and group as a negative preference, my participants reported the group style as the most preferred one. Furthermore, Reid found that Korean ESL students perceived individual learning style to be a minor style, but the present result indicated it as a major style.

TABLE 1
Means of Learning Style Preferences of Korean Students

Study	Visual	Auditory	Tactile	Kinesthetic	Individual	Group
Kim (2006)	15.51	15.90	15.75	15.68	14.86	16.44
Reid (1987)	14.07	13.73	14.48	14.58	12.46	11.42

Note: Preference means 13.5 and above = major learning style preference; means of 11.50-13.49 = minor learning style preference; means of 11.49 or less = negative learning style preference (Reid, 1987).

2. Learning Style Differences across Gender and Major Fields of Study

A MANOVA indicated that there was no significant gender differences, with a multivariate F (6, 302) = .812 at p= .56. Furthermore, the univariate ANOVA confirmed that no particular learning style preference was significantly related to gender as displayed in Table 2. Male students displayed slightly higher mean scores on all the learning style preferences, with the exception of an individual style, than females, but the differences were not significant. It appeared that male students preferred more project-based and hands-on learning than females. Furthermore, males were more kinesthetically oriented who prefer to receive information through sensory modes and thus, they favored more methodical and concrete input than female counterparts. However, both tactile and kinesthetic styles showed nonsignificant differences regarding gender with probability p=.065 and p=.069, respectively.

TABLE 2
Learning Styles by Students' Gender

	Visual	Auditory	Tactile	Kinesthetic	Individual	Group
Male (N=148)	15.67	16.13	16.16	16.11	14.82	16.83
Female (N=161)	15.36	15.69	15.37	15.27	14.89	16.07
F	.61	1.27	3.42	3.30	.02	2.33

*p <.05, **p <.01 in the ANOVA.

Students' responses for all eight major fields indicated significant major differences in learning style preferences with an F (7, 301) = 8.148 (p< .001) in

the MANOVA. The ANOVA also revealed significant mean differences among the major groups as appeared in Table 3. Group learning was the most preferred major learning style except English, culinary arts, and information technology. Visual learning was selected as the most preferred style by the students in English, whereas group learning was the most favored style for Japanese students. It should be noted that differences in mean scores on group learning between Japanese students and all other majors were not significant due to the small number of Japanese participants with high fluctuation in their responses. Tourism management majors were significantly more group-oriented than English and culinary arts majors. In addition, culinary arts majors were the most oriented towards individual learning, while students in information technology favored auditory the most. Finally, students in computer engineering preferred tactile learning and those in computer design significantly more favored either tactile (M=17.20) or kinesthetic (M=17.20) mode of learning than food science majors (M=14.46).

TABLE 3
Learning Styles by Students' Major

Major field	Visual	Auditory	Tactile	Kinesthetic	Individual	Group
English (N=38)	16.37	16.05	15.26	14.81	16.05	14.87
Japanese (N=20)	15.35	15.35	14.65	14.45	13.50	18.25
Tourism management (N=50)	16.18	16.08	15.04	15.84	14.58	18.14
Culinary arts (N=48)	16.17	15.35	16.67	16.27	17.04	14.96
Food science (N=54)	14.42	15.48	14.46	13.94	14.54	16.00
Information technology (N=28)	16.07	16.89	16.14	16.78	16.00	15.64
Computer engineering (N=27)	15.52	14.52	16.70	16.26	13.89	16.26
Computer design (N=44)	14.34	17.16	17.20	17.20	12.64	17.80
F	2.40*	2.34*	3.35**	3.52**	5.00**	4.18**

*p <.05, **p <.01 in the ANOVA.

3. The Relationship between Learning Styles and English Achievement

Twenty-one students did not provide their identification numbers indicating that they would not release their English test scores. In addition, 14 students did not take either an oral midterm or a written final exam. Learning style

preference data for these 35 students were excluded from all further analyses, and therefore 274 students' responses to learning style items and both oral and written tested English achievement scores as well as self-assessed English proficiency were included in the analyses. Table 4 gives preliminary analysis results of tested and self-assessed English proficiency scores by gender. There were significant gender differences in scores on the oral and overall oral and written English achievement measures, while there were no significant differences in scores of the written test and self-rated proficiency considering gender.

TABLE 4
Descriptive Summary of English Achievement by Gender

	Male (N=133)		Female (N=141)		*F*
	Mean	SD	Mean	SD	
Oral	14.83	3.75	15.74	3.65	4.10*
Written	27.88	7.87	29.52	7.43	3.17
Oral and written	42.71	10.48	45.26	10.13	4.19*
Self-assessed proficiency	2.47	.87	2.57	.80	1.08

*p <.05, **p <.01 in the ANOVA.

Table 5 shows the correlations between English achievement and each of the six learning style variables. Visual and individual styles were significantly associated with all scores on English achievement measured in the study: oral, written, overall oral and written, and self-assessed proficiency. Furthermore, it can be viewed that kinesthetic learning style correlated significantly with students' self-assessed English proficiency (r =.20, p <.001).

TABLE 5
Correlations between Learning Styles and English Achievement

	Visual	Auditory	Tactile	Kinesthetic	Individual	Group
Oral	.16**	.11	.09	.03	.19**	-.10
Written	.14*	.06	-.02	.01	.17**	-.07
Oral and written	.15*	.08	.02	.02	.19**	-.09
Self-assessed proficiency	.17**	-.01	.10	.20**	.13*	.05

*p <.05, **p <.01.

In order to assess the relative importance of each of the six learning style variables in the prediction of English achievement, multiple regression methods were conducted. Oral and written scores on English represented two dependent variables and the six learning style preferences comprised the independent variables. All possible subsets (APS) multiple regression was used to select an optimal set of learning style independent variables based on the maximum proportion of variance in English achievement explained. As displayed in Table 6, the APS regression indicated that the following three learning style variables predicted students′ oral English achievement: visual, auditory, and individual. These three variables combined to explain 9.6% of the total variance, indicating small effect sizes. Overall, individual preference (3.8%) contributed the most variance to students′ oral performance. The regression model suggested that students with the higher scores on the oral English achievement measure tended to prefer to receive information through visual, auditory, and individual learning modes.

TABLE 6
Multiple Regression for Predicting Oral Achievement

	Standardized regression coefficient (Beta)	*t*-value	Squared partial correlation (%)
Visual	.16	2.64**	2.5
Auditory	.12	2.02*	1.5
Tactile	.09	1.48	.8
Kinesthetic	.03	.51	.5
Individual	.19	3.16**	3.8
Group	-.09	-1.53	.5

*p <.05, **p <.01.

With regard to the prediction of written performance, the APS regression included two learning style variables: visual and individual as presented in Table 7. The two variables explained 5.9% of the total variance of written achievement. Individual preference also contributed the most variance (3.2%) to the prediction of written performance. According to Cohen′s (1988) suggestion, the value of the squared partial correlation in the present study indicates small effect size.[1)]

In the meantime, the findings from the correlations (*see* Table 5) indicated

that visual and individual variables were significantly correlated with oral performance. In the regression model, however, auditory was also selected as a contributor to oral performance as displayed in Table 6. An analysis of the intercorrelations among the six learning style variables might explain this discrepancy in results between the correlations and multiple regression analysis. Auditory variable may play a suppressor variable role in the regression model. Suppressor variables, according to Wolley (1997), help the prediction of independent variables by their correlation with other independent variables that are irrelevant to the prediction of the dependent variable.

TABLE 7
Multiple Regression for Predicting Written Achievement

	Standardized regression coefficient (Beta)	*t*-value	Squared partial correlation (%)
Visual	.14	2.34*	2.0
Auditory	.07	1.09	.4
Tactile	-.02	-.30	0
Kinesthetic	.02	.27	0
Individual	.18	3.01**	3.2
Group	-.06	-.97	.3

*p <.05, **p <.01.

TABLE 8
Intercorrelations among Learning Style Variables

	Visual	Auditory	Tactile	Kinesthetic	Individual
Auditory	.07				
Tactile	.34**	15*			
Kinesthetic	.16**	.31**	.62**		
Individual	.56**	-.06	.10	-.04	
Group	.01	.39**	.36**	.49**	-.42**

*p <.05, **p <.01.

As appeared in Table 8, the correlation between auditory and visual was .07

1) Squared partial correlation values between 2 and 12.99% indicate small effect sizes, values between 13 and 25.99% represent medium effect sizes, and values of 26% and higher indicate large effect size (Cohen, 1988).

and that between auditory and individual was -.06, both were not statistically significant. Whereas, the correlations between auditory and irrelevant variables to the prediction of English achievement such as tactile, kinesthetic, and group were .15, .31, and .39, respectively, indicating statistically significant associations. This provided clear evidence that auditory acted as a suppressor variable in the regression model. Furthermore, auditory increased the predictive power of visual and individual styles in oral English achievement by 1.5%.

V. DISCUSSION

This study was designed to identify Korean EFL college students' learning styles as measured by PLSPQ, and to compare their style preferences across gender and academic majors. It has also examined the links between learning style preferences and English achievement. The results indicated that the students had higher preferences for group, auditory, and tactile learning styles. Comparing results from this study with those from Reid (1987), a considerable degree of difference was evident. The greatest difference was in group styles; negative in Reid and the most favored in the present study. Students' responses reflected their English learning context and current trends in English instruction in Korea where English native-speaking teachers often used communicative pair and small group activities for speaking practices. That is, L2 learning practice has shifted from teacher-directed classroom tasks to a more communicative approach and become more learner-centered. The students perceived that group activities used in their English classes were consonant teaching techniques with their learning styles. Furthermore, students' weak preference for individual styles can be partially explained by the nature of English classes that they were enrolled at the time of the study. All the participants, as noted earlier, enrolled in a required English class taught by native English-speaking teachers.

In terms of gender and major differences in English learning styles, there were no significant differences in any learning styles by gender, while majors affected significantly students' preferences of learning styles. The findings regarding gender that male students were more kinesthetically oriented and favored tactile learning more than female counterparts, and thus the males were

likely to prefer the concrete conceptualization mode of learning contradict those reported by Oxford (1995). Oxford reported that men preferred to receive information via more abstract mode of learning. Furthermore, out of accordance with previous research findings reported by Lin and Shen (1996), males in the present study expressed a greater preference for various learning styles than females. In order to address gender issues in more conclusive recommendations, further examinations, accordingly, are needed.

On the other hand, previous studies reported that students with different majors tended to have different style preferences (Reid, 1987; Thomas et al., 2000). The present study provided additional empirical evidence of the influences of major field on learning styles and further showed some interesting tendencies. For example, English majors were more likely to prefer visual and auditory styles, while computer engineering and design students were more tactile and group-oriented. Students' experiences such as more frequent exposure to reading materials for the English students and projected-based learning contents for computer-related majors, might influence their typical way of utilizing input in the learning context. It can be seen that learning styles are situation-specific and therefore are affected by learning content areas and context (Nelson, 1995; Park et al., 2005; Stebbins, 1995; Westman, 1993).

Finally, the correlational analyses revealed that visual and individual styles associated with significantly higher oral and written scores on English achievement although the magnitude of the correlations appeared small. These significant correlations are indication of a link between learning styles and English achievement demonstrating consistency with the previous research findings across culture (Bailey et al., 2000; Jones, 1998; Kim, 2001; Park, 1998; Park, 1999; Thomas et al., 2000). In contrast, auditory learning listening to lectures, tactile learning doing hands-on activities, and kinesthetic learning involving role-playing styles did not correlate with English achievement. Furthermore, stronger orientation towards group style correlated with lower scores on English tests, although the relationship was not significant. In other words, the group style, the most preferred style for the students, was not related to any of four English achievement measures. These findings of a significant link between visual and individual and L2 achievement and a nonsignificant relationship between group style and L2 achievement also

reflected learning situations in typical tertiary institutions that most of the time and energy is spent catering for visual (reading) and individual (self-directed study) preferences (Reid, 1987). In sum, higher achievers in English tended to study alone and to prefer receive input via reading, while suppressing the significance of auditory style.

In the meantime, the regression model indicated that visual and individual styles were best predictors of achievement in college English classes. Auditory also contributed indirectly to the model. However, only small proportion of variance in English achievement (9.6% for oral; 5.9% for written) was explained by the learning styles. This finding of small amount of shared variance is also consistent with the previous one that learning style variables may not as strongly related to L2 achievement as are cognitive and affective variables (Bailey et al., 2000; Ehrman & Oxford, 1995; Kim, 2001; Oxford et al., 1993). It is reasonable to assume that significant but weak ability of learning styles to predict L2 achievement is related to its definition. Learning styles, as noted earlier, are the innate, habitual, and preferred ways of learning (Ehrman & Oxford, 1995; Felder & Henriques, 1995; Kinsella, 1995; Reid, 1987, 1995). That is, innate and habitual learning styles are likely already shaped, so that they precede L2 achievement rather than reverse when college student enroll in L2 classes (Bailey et al., 2000). It is also possible that preferred learning styles formed in terms of students' specific learning contents do not change while their learning English three hours per week.

VI. CONCLUSIONS

The findings of the present study indicated that Korean students favored English learning in group regardless of gender, while their preferred mode of learning was significantly different with respect to their major field of study. Furthermore, certain learning styles might be profitable for English achievement. The regression model showed significant relationships between visual and individual styles and English achievement. The study's findings lead to a number of implications for L2 teachers. A mismatch between teaching and learning styles, as Reid (1987, 1995) mentioned, causes learning frustration and

failure. Therefore, L2 teachers may help students identify their own learning styles in which they feel comfortable, so that they can capitalize on their learning strengths (Eliason, 1995). Furthermore, teachers may use students' learning styles as a guide for syllabus design to achieve being consonant with teaching styles (Jones, 1998). However, because learning styles within a class generally differ, teacher can present new information and materials in two complementary modes of learning to accommodate contrasting style preferences (individual and group) implementing a variety of activities (Peacock, 2001).

For the last time, several limitations must be stated. It would be premature to conclude that learning styles are predictors of L2 achievement due to only a small proportion of its variance explained in L2 performance. It is also unclear whether learning styles are direct causes or indirect causes of L2 achievement because many researchers hypothesized that learning styles are correlated with L2 proficiency in terms of their relationship to learning strategies (Ehrman & Oxford, 1995; Kim, 2001; Oxford et al., 1993; Park, 1999; Park et al., 2005). One should be, thus, acknowledged that the myriad factors can affect students' L2 achievement. Given these limitations, it is important to note implications the study has for future research. In order to address the full complexity of learning styles, future research needs to consider a great number of variables including learning strategies with quantitative and qualitative analyses. For example, further investigation, as suggested by Bailey et al. (2000), whether learning styles relate to cognitive, affective, and personality factors in predicting L2 performance, will provide deeper understanding of the bases of individual differences in L2 learning. Finally, as the number of English native-speaking teachers increases in English education institutions in Korea (Roh, 2006), it is entirely appropriate to attend to an issue of mismatch between teaching and learning styles to alleviate any potential conflicts.

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예시 언어(Examples in): English
적용가능 언어(Applicable Languages): English
적용가능 수준(Applicable Levels): College

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