Korean elementary school students' perceptual learning style, ideal L2 self, and motivated behavior

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Kim, Tae-Young. 2009. Korean elementary school students' perceptual learning style, ideal L2 self, and motivated behavior. *Korean Journal of English Language and Linguistics* 9-3, 461-486. This study reports the questionnaire results obtained from 974 Korean elementary school students. Their visual, auditory, and kinesthetic styles were compared with their ability to imagine their future, ideal L2 self, and motivated behavior. The students were mainly visually oriented and this orientation was significantly correlated with their ideal L2 self and motivated behavior, as was the students' auditory orientation. In one gender differentiated finding, females preferred both visual and auditory learning styles, while males preferred the kinesthetic learning style. Regression analysis indicated that the students' ideal L2 self is the most stable factor for predicting their motivated behavior, but that learning style preference also exerts a significant influence on students' motivated behavior. These study results imply that Dörnyei's L2 motivational self-system can be expanded by incorporating various types of perceptual learning styles. Both visual and auditory styles positively affect students' English learning motivation by creating and maintaining their ideal L2 self.

Key Words: perceptual learning styles, ideal L2 self, English learning motivation, imagination, Korean elementary school students

1. Introduction

In this paper, 974 Korean elementary school students' perceptual English learning style preference, ideal second language (L2) self
and motivated behavior are analyzed. Since Dornyei's (2009) L2 motivational self-system is a relatively new proposal in the field of L2 motivation, the exact nature of the ideal L2 self and its relationship to perceptual learning style has not been fully investigated. In Dornyei's new proposal, two psychological concepts are considered: the ideal L2 self and the ought-to L2 self. The ideal L2 self is the degree to which each L2 learner foresees a prosperous future self-image using an L2, and is directly linked to students' L2 learning motivation (Kim, 2009a). Since future imaging is a mental image and the brain area where mental imagery is created is similar to the visual area (Kosslyn et al., 2002), visually-oriented students may better portray the ideal L2 self than others having either auditory or kinesthetic preference (Al-Shehri, 2009).

However, given the nature of language learning and teaching, the postulation that only visual learning style is related to the ideal L2 self and the maintenance of L2 learning motivation remains controversial. Since "the essential purpose of language is communication" (Canale & Swain, 1980, p. 23), L2 learning is basically the acquisition of verbal ability. Through actively trying to express their thoughts in L2 in the classroom, L2 learners can notice the gap between their current level of L2 proficiency and the desirable L2 proficiency (Swain, 1995). L2 learners with auditory sensitivity in the communicative L2 classroom are better able to notice such an L2 gap, which provides facilitative conditions for L2 proficiency enhancement. Auditory learning preference may therefore be equally important in creating and maintaining the ideal L2 self. Put differently, students with visual style dominance may be able to create an ideal L2 self with the help of vivid mental imagery, whereas students with auditory style preference may benefit from their auditory sensitivity which is directly related to the nature of verbal communication in the L2 classrooms.

To date, only visual style preference has been reported to be significantly correlated with the ideal L2 self, the ability to create mental imagery, and motivated L2 behavior (Al-Shehri, 2009). Therefore, this study aims to expand Al-Shehri's research and investigate the role of the three major perceptual learning styles (i.e., visual, auditory, and kinesthetic) (Reid, 1987) in students' ideal L2 self and motivated behavior by analyzing questionnaire data obtained from 974 Korean elementary school students.

2. Theoretical Overview

In the era of globalization, the meaning of being integrated into a dominant L2 speech community needs critical re-examination. According to criticism by Dornyei (2005, 2009), the label 'integrativeness' in Gardner's (1985, 2001) socio-educational model is ambiguous given the massive increase in communication among people with different L1s. For instance, developments in mass transportation, mass media, and technology (especially, Internet and email) have enabled us to communicate with other language users via English (as an international language) without being physically present in the L2 community. For this reason, Dornyei (2009, p. 24) casts doubt on the construct validity of integrativeness, by asking, "what exactly would be 'the other language community' that the learner would want to get closer to?" Growing dissatisfaction with Gardner's previous paradigm led Dornyei (2005, 2009) to propose another framework, the L2 motivational self-system. This framework can be summarized as follows: if an L2 learner has a vivid image of future L2 self, he/she will genuinely want to learn the L2, and therefore will
exhibit motivated L2 learning behavior. Influenced by Higgins’ (1998) self-discrepancy theory and Markus and Nurius’ (1986) possible self theory, Dörnyei (2009) states that the L2 motivational self-system consists of three main concepts: ideal L2 self, ought-to L2 self, and L2 learning experience. The ideal L2 self deals with one’s competent future L2 speaking self-image, and this is “a powerful motivator to learn the L2 because of the desire to reduce the discrepancy between our actual and ideal selves” (p. 29). The ideal L2 self incorporates Gardner’s integrative motives and internalized instrumental motives. The ought-to L2 self is created when an L2 learner thinks that he/she “ought to possess [the L2] to meet expectation and to avoid possible negative outcomes” (p. 27, original emphasis). This concept is related to Gardner’s instrumental motives, which are less internalized by the L2 learners. The L2 learning experience is considered in the L2 motivational self-system because L2 motivation is constantly changing depending on the immediate learning environment.

The most notable advance in Dörnyei’s (2005, 2009) L2 motivational self-system is the degree of internalizing the future L2-speaking self-image. That is, the traditional instrumental motivation is separated into an ideal L2 self or an ought-to L2 self, depending on the learners’ internalization of their future images. As the L2 learners visualize and elaborate further on their future self, more ideal L2 self is created (Markus & Cross, 1994). Although the L2 self-image may be externally mandated in the beginning, as long as the learner can internalize the reason for learning the L2, it could be transformed into an ideal L2 self that can maximize the motivational effect (Kim, 2009a, 2009b).

This suggests the existence of a theoretical interconnection between the ideal L2 self and the ability to visualize one’s future image. Dörnyei (2009) reiterates the beneficial role of imagination by stating that “the inclusion of imagery is a central element of possible selves theory” (p. 17). The crucial role of imagination has also been documented in neuro-psychology (Modell, 2003), brain-imaging research (Kosslyn et al., 2002), and cultural studies (Wenger, 1998). In the context of L2 learning and use, mental imagery is particularly important in the sense that not all L2 learners can have the opportunity to converse with native L2 speakers. Even in such an adverse, input-impoverished situation, L2 learners could still maintain their L2 learning motivation by constructing vivid and lively imagery of their competent, future L2 self.

From this viewpoint, the mental imagery seems connected to the manifestation of belonging through imagination, by which Wenger (1998) comments that it is “not just the production of personal fantasies. Far from an individual withdrawal from reality, it is a mode of belonging that always involves the social world to expand the scope of reality” (p. 178). With sufficiently strong imagination, L2 learners can enhance their L2 performance (Dörnyei, 2009; Gregg & Hall, 2006). Therefore, it can be hypothesized that the degree of mental imagery by each L2 learner affects the creation of an ideal L2 self, and visually-oriented L2 learners may generally have an advantage in creating the ideal L2 self and consequently in showing a high level of motivated behavior.

Based on this hypothesis, Al-Shehri (2009) examined 98 university and 102 high school students studying English as either a foreign language in Saudi Arabia or an L2 in the UK. He found that the participants’ visual style was highly correlated with an ideal L2 self and motivated behavior via the creation of mental imagery. Table 1 shows the correlations among motivated behavior, ideal L2 self, visual style, and imagination. The participants’ visual style showed statistically significant correlations with imagination ($r = .40$), ideal L2 self ($r = .65$), and motivated behavior ($r = .69$), which corroborates the above hypothesis.
Table 1. Pearson Correlations of the Variables (Al-Shehri, 2009, p. 168)

<table>
<thead>
<tr>
<th></th>
<th>Motivated behavior</th>
<th>Ideal L2 self</th>
<th>Visual style</th>
<th>Imagination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivated behavior</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ideal L2 self</td>
<td>0.78**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Visual style</td>
<td>0.69**</td>
<td>0.65**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Imagination</td>
<td>0.39**</td>
<td>0.46**</td>
<td>0.40**</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note: All correlations are significant at the p<0.01 level.*

However, Al-Shehri (2009) did not include the auditory or kinesthetic learning style preference, and the relationship between these styles and the ideal L2 self has not yet been reported in academia. Although it is legitimate to inquire into the relationship between the visual learning style and psychological constructs in L2 motivational self-system, other perceptual learning styles may bear statistically significant relationships. In addition, according to Dörnyei (2005), successful L2 learners can use both visual and auditory input, which indicates that at least two subtypes of L2 learning styles (i.e., visual and auditory styles) may not be mutually exclusive.

In this regard, it is necessary to expand Al-Shehri’s (2009) previous study and to examine the role of various perceptual learning styles on L2 motivational self-system in a systematic manner. Since the majority of L2 learning style research was conducted in the 1980s and 1990s (Kinsella, 1995; O’Brein, 1990; Oxford, 1995; Reid, 1987, 1995), it is timely to re-examine Korean EFL learners’ learning preference. Particularly, due to the explosive growth in Internet use and the role of computer literacy (Bawden, 2001; Eshet-Alkali & Amichai-Hamburger, 2004), I speculate that the rapid advancement of Internet technology may have reinforced students’ visual learning preference since Korean elementary school students spend an average of 45 minutes a day on Internet use (S. Park, 2005). Korean elementary school students may show more visually oriented learning preference than the Korean EFL students reported in the previous studies. Therefore, an investigation of Korean students’ visual orientation and comparison with that reported in previous studies would be worthwhile.

Another important consideration for learning style preference and L2 motivation is the gender difference. Oxford (1995) states that males are predominantly kinesthetically oriented while females prefer auditory learning style. Although provisional, she attributes such differences to females’ versatile use of L2 listening strategies and the use of diverse politeness marker, emotional involvement, and attention-getting strategies. In the Korean context, Y. Park (2006) also explored the effect of gender on learning style preference and found that female students preferred visual learning styles whereas male students preferred kinesthetic styles. Regarding the effect of gender on L2 learning motivation, a recent study by Kissau (2006) is illuminating. He investigated 490 Canadian Grade 9 French students as L2 learners. By employing a mixed methodology of questionnaires and interviews, he focused on the phenomenon of male students’ demotivation in French learning. The result of a questionnaire survey, mainly modified from Gardner’s (1985) Attitude-Motivation Test Battery, strongly suggested that female students were highly motivated in all motivational constructs except for items asking about French class anxiety and tolerance of ambiguity. In subsequent interviews with eight core participants (4 boys and 4 girls), Kissau found that male students set less concrete French learning goals and, more importantly, they regarded French as a feminine language, which clearly reflects the pervasive tendency of praising masculinity among adolescent boys (Kissau & Turnbull, 2008).

Even though Kissau’s (2006) research is informative, it may not be directly applicable to Korean EFL learning contexts since the roles of French in Canada and English in Korea are qualitatively different. English is a major school subject, and all Korean students from Grades 3 to 12 are required to learn English. Such
an educational context is drastically different from the Canadian context, where the formal instruction of French terminates at Grade 9. Beyond this school grade, learning French as an L2 becomes entirely optional. Therefore, it would be worthwhile to focus on the effect of gender on Korean elementary students' learning styles and L2 motivational self-system.

This study aims to examine the effect of Korean English learners' learning style preference on L2 motivational self-system (Dörnyei, 2009). A point of interest was whether the study results would corroborate previous research on Korean EFL learners indicating that they still prefer the visual learning style to auditory and kinesthetic ones. Three specific research questions were postulated to investigate the relationship between Korean elementary school students' learning styles, ideal L2 self, and motivated behavior.

1. Among three distinctive perceptual learning styles, which one is the most highly linked to students' ideal L2 self and motivated behavior?
2. Is there any gender difference in students' learning style preference, the ideal L2 self, and motivated L2 behavior?
3. To what degree can Korean elementary school students' English learning motivation and their motivated behavior be explained by perceptual learning styles, imagination, and the ideal L2 self?

3. Methodology

3.1 Participants

The participants in the present study were 974 students attending two Korean elementary schools in a large city in Korea. Their school grade varied from Grades 3 to 6: 238, 261, 225, and 250 for Grades 3, 4, 5, and 6, respectively. They were taught English as a regular school subject for one class-hour (i.e., 40 minutes) a week for Grades 3 and 4 and for two class-hours a week for Grades 5 and 6. In addition to the regular English lessons at school, 87% of the participants were enrolled in extracurricular English learning programs, mostly private English institutes. The data were collected in June 2009.

3.2 Data Collection Method

The participants were required to complete a questionnaire on learning style, imagination, ideal L2 self, and motivated behavior (see Appendix for sample questions). Based on Al-Shehri (2009), Cohen and Oxford (2001), and Kinsella (1995), the questionnaire comprised two separate parts. The first section asked students' perceptual learning style preference and the degree of imagination. Compared to Al-Shehri, who used Cohen, Oxford, and Chi's (2002) Learning Style Survey, considering the participants' relatively young age and lower level of cognitive development, it was considered appropriate to use Cohen and Oxford's (2001) Learning Style Survey for Young Learners. In the first section, 21 questionnaire items asked students' visual, auditory, and kinesthetic styles. According to Cohen and Oxford (2001), the Learning Style Survey for Young Learners aims to "assess students' general approach to learning," and "is a clear indication of students' overall style preference" (p. 29). In addition, five items were related to the participants' ability for imagination because it was hypothesized that students' vivid mental imagery can mediate their learning styles and ideal L2 self (see Theoretical Overview). Therefore, the first section comprised 26 questions.2

2 A group of SLA scholars (Ehrman & Leaver, 2003; Wintgen, DeCapua, & Itzen, 2001) have pointed out the problems of administering questionnaires on learning style preference because the results may reflect the participants' cultural norms and values, rather than their
The second section deals with students' ideal L2 self (eight items) and motivated behavior and effort (17 items). In order to make a direct comparison between the present study and Al-Shehri's (2009), the second section was translated from Al-Shehri's. All questions used a three-point Likert scale (3 means often or always; 2 means sometimes; 1 means never or rarely).

To establish the internal consistency and content validity, two experienced elementary school teachers were asked to review the questionnaire items, which were then modified. As a result, the revised questionnaire was calibrated to the elementary school students' level of understanding. Two classes (n=58) in the same elementary school participated in the pilot study in April 2009. The Cronbach's alpha indexes calculated for imagination (α=.70), ideal L2 self (α=.85) and motivated behavior and effort (α=.90) in the pilot study indicated that the questionnaire items had high internal consistency reliability (Dornyei, 2007). The students who participated in the pilot study were all excluded from the main study.

3.3 Data Analysis

Since the questionnaire adopted a three-point Likert scale, data continuity could not be guaranteed, and the participants' responses had to be treated as either nominal or ordinal variables, which does not satisfy the basic assumptions in parametric statistical tests (Hatch & Lazaraton, 1991; Howell, 2007). Therefore, if necessary, a series of non-parametric tests were used in order to identify the participants' perceptual learning style. However, it should be noted that the use of the learning style survey in this study is exploratory and confirmatory for the purpose of expanding Al-Shehri's (2009) previous study. Actual teaching implications can only be drawn when this type of research method is combined with other data of triangulation.

However, while coding the data, 3 was given 5 points, 2 was 3 points, and 1 was 1 point.

4. Results and Discussion

In this section, Korean elementary school students' perceptual learning style preference is presented first. Students' visual, auditory, and kinesthetic styles are correlated with imagination, ideal L2 self, and motivated behavior and efforts. In Dornyei's (2009) L2 motivational self-system, the ideal L2 self concerns creating one's prosperous future image and is assumed to be integrally related with students' ability to form mental imagery and their visual learning style preference. In other words, if students prefer learning English by using various visual learning cues or tools (e.g., note-taking, drawing diagrams, and watch learning style preferences, and the relationship between learning styles, ideal L2 self, and their motivated behavior and efforts.

Descriptive analyses were used to collect basic information such as students' gender and school grades. The mean and standard deviation were calculated to measure the students' preferred learning styles. The Mann-Whitney test was conducted to measure the influence of students' gender on their learning styles, ideal L2 self, and motivated behavior and effort. Kendall's tau correlations were used to identify statistically significant relations among the three subtypes of learning style (visual, auditory, and kinesthetic), imagination, ideal L2 self, and motivated behavior and efforts. Stepwise multiple regression analysis was conducted to identify variables predicting the students' motivated behavior and efforts. Alpha was set at .05. In terms of internal consistency reliability, Cronbach's alpha indexes were α=.93 for visual style, α=.90 for auditory style, α=.82 for kinesthetic style, α=.66 for imagination, α=.87 for ideal L2 self, and α=.92 for motivated behavior and efforts.
educational TV programs), their imaginative power is strong and, accordingly, their ideal L2 self is more vivid than others having less visual preference. As stated above, Al-Shehri (2009) confirmed this hypothesis by using correlation analyses of visual style, imagination, ideal L2 self, and motivated behavior. However, the other two major perceptual learning styles, auditory and kinesthetic, are not considered in his study. Thus, it is necessary to investigate the effect of the three dominant learning styles on imagination, ideal L2 self, and motivated behavior and efforts.

4.1 Korean Elementary School Students' General Characteristics on Learning Styles

Previous research (Reid, 1982, 1995) indicated that Korean students prefer visual learning to auditory and kinesthetic learning. In addition, given Al-Shehri’s (2009) study results, Korean students' visual learning preference may bear statistically significant correlations with imagination, ideal L2 self, and motivated behavior and efforts. Table 2 presents the general descriptive statistics of the six variables measured in the study, and Table 3 shows the correlation between these variables.

Table 2. Descriptive Statistics of the Variables Measured in the Questionnaire (N=974)

<table>
<thead>
<tr>
<th></th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td>1.00</td>
<td>5.00</td>
<td>3.25</td>
<td>.809</td>
</tr>
<tr>
<td>Auditory</td>
<td>1.00</td>
<td>5.00</td>
<td>3.09</td>
<td>.837</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>1.00</td>
<td>5.00</td>
<td>3.15</td>
<td>.983</td>
</tr>
<tr>
<td>Imagination</td>
<td>1.00</td>
<td>5.00</td>
<td>2.35</td>
<td>.936</td>
</tr>
<tr>
<td>Ideal L2 self</td>
<td>1.00</td>
<td>5.00</td>
<td>3.54</td>
<td>1.04</td>
</tr>
<tr>
<td>Motivated behavior</td>
<td>1.00</td>
<td>5.00</td>
<td>3.25</td>
<td>.97</td>
</tr>
</tbody>
</table>

As shown in Table 2, compared to auditory and kinesthetic styles, the Korean elementary school students were more visually oriented. In addition, the standard deviation of visual style was less than that of auditory and kinesthetic styles, indicating that Korean students' visual orientation, compared with other variables, did not differ much among the participants. The average of kinesthetic style was only 2.35, demonstrating that Korean students do not prefer L2 learning involving body or hand movement. This characteristic will be discussed in detail in the following section.

Table 3. Kendall’s Tau Correlations of the Variables (N=974)

<table>
<thead>
<tr>
<th></th>
<th>Visual</th>
<th>Auditory</th>
<th>Kinesthetic</th>
<th>Imagination</th>
<th>Ideal L2 self</th>
<th>Motivated behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auditory</td>
<td>.365</td>
<td></td>
<td>.215</td>
<td>.318</td>
<td>.286</td>
<td>.323</td>
</tr>
<tr>
<td>Kinesthetic</td>
<td>.215</td>
<td>.318</td>
<td>.299</td>
<td>.295</td>
<td>.286</td>
<td>.323</td>
</tr>
<tr>
<td>Imagination</td>
<td>.299</td>
<td>.295</td>
<td>.318</td>
<td>.395</td>
<td>.286</td>
<td>.323</td>
</tr>
<tr>
<td>Ideal L2 self</td>
<td>.286</td>
<td>.295</td>
<td>.295</td>
<td>.395</td>
<td>.286</td>
<td>.323</td>
</tr>
<tr>
<td>Motivated behavior</td>
<td>.286</td>
<td>.295</td>
<td>.295</td>
<td>.395</td>
<td>.286</td>
<td>.323</td>
</tr>
</tbody>
</table>

Note: * means significant at the p<.01 level.

Table 3 demonstrates the correlations among the study variables. As hypothesized, the Korean elementary school students' visual preference was significantly correlated with imagination, ideal L2 self, and motivated behavior. However, the correlation coefficients reported in Al-Shehri's (2009) study were much higher than those of the present study. For example, Al-Shehri reported that the correlation coefficients of .40 between visual style and imagination, .65 between visual style and the ideal L2 self, and .69 between visual style and motivated behavior, all of which were considerably higher than the coefficients shown in Table 3 (r=.215, r=.384, and r=.416, respectively).
Table 3 also gives information on the relationship between the two other perceptual learning preferences (i.e., auditory and kinesthetic) and motivational constructs. Specifically, learners' auditory style preference was significantly correlated with imagination \((r=.318)\), ideal L2 self \((r=.288)\), and motivated behavior \((r=.323)\). Even though these correlation coefficients were slightly lower than the visual style preference, it was confirmed that auditory learning preference was correlated with the creation of concrete mental imagery and the ideal L2 self, which are crucial elements of L2 motivation in Dornyei's (2005, 2009) L2 motivational self-system.

However, a different explanation is needed for interpreting Korean elementary school students' kinesthetic style. As shown in Table 3, Korean students' kinesthetic learning preference did not bear any statistically significant correlations with the ideal L2 self and motivated behavior, despite its correlations with other learning styles. In the Korean EFL classroom, kinesthetic style may be the last learning style to be encouraged by teachers. In many cases, teachers are impeded in their efforts in classroom management due to the typical class size of 30 to 40 students (Seth, 2002). Therefore, students with kinesthetic orientation may be unduly stigmatized as troublemakers by their peers and L2 teachers since they constantly want to change their bodily posture, which often distracts other pupils' attention. L2 teachers may suppress students' kinesthetic learning style by admonishing these students to be attentive and keep quiet. In this Korean L2 classroom context, a kinesthetic learning style may not be encouraged and thus cannot be aligned to the creation of an ideal L2 self and motivated behavior. Rather, L2 teachers as well as other peers in the classroom may consider L2 students with kinesthetic dominance as attention-deficit learners. This may be reflected in the results of Table 3.⁴

⁴ C. Park (2002) reports on intercultural learning style differences. In

### 4.2 Gender Difference in Learning Styles and Motivational Constructs

As stated above, as well as a visual preference, Korean elementary school students also showed an auditory learning preference. Previous research revealed gender differences in students' perceptual learning styles and L2 learning motivation. For example, it was argued that females are sensitive to auditory (Oxford, 1995) or visual input (Y. Park, 2006), whereas males show kinesthetic preference. Kissau (2006) reports that Canadian female students were more motivated to learn a foreign language than their male counterparts. In order to identify the effect of gender on students' learning styles and on other related L2 motivational constructs, Tables 4 presents a gender comparison of the mean and standard deviation of each variable.

**Table 4. Descriptive Statistics for the Variables Based on Student Gender**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>(m)</td>
</tr>
<tr>
<td>Auditory style</td>
<td>477</td>
<td>3.0253</td>
</tr>
<tr>
<td>Kinesthetic style</td>
<td>477</td>
<td>2.4502</td>
</tr>
<tr>
<td>Imagination</td>
<td>476</td>
<td>3.1302</td>
</tr>
<tr>
<td>Ideal L2 self</td>
<td>476</td>
<td>3.3900</td>
</tr>
<tr>
<td>Motivated behavior</td>
<td>475</td>
<td>3.1374</td>
</tr>
</tbody>
</table>

The descriptive statistics in Table 4 reveal that the female students preferred visual and auditory styles more than the males, whereas the male students showed a kinesthetic learning style. In the US, she compared ESL students from five different countries of origin (i.e., America, Hmong, Korea, Vietnam, Mexico). Korean ESL students were the least kinesthetically oriented group, which she attributes to Korean classroom culture.
preference. In terms of imagination, ideal L2 self, and motivated behavior, the means of the female students were higher than those of the males. Table 5 presents the results of the Mann-Whitney test conducted to measure the differential effect of gender difference on the variables.

Table 5. The Effect of Gender on the Variables

<table>
<thead>
<tr>
<th></th>
<th>Visual</th>
<th>Auditory</th>
<th>Kinesthetic</th>
<th>Imagination</th>
<th>Ideal L2 self</th>
<th>Motivated behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U test</td>
<td>105234</td>
<td>102481</td>
<td>102618</td>
<td>10041.5</td>
<td>81070</td>
<td>79004</td>
</tr>
<tr>
<td>Significance</td>
<td>.027</td>
<td>.001</td>
<td>.005</td>
<td>.178</td>
<td>.000</td>
<td>.010</td>
</tr>
</tbody>
</table>

Note: N=958, * means significant at the p<.05 level; ** means significant at the p<.01 level.

Gender effects were identified in all variables except for imagination. Particularly, the gender difference in visual learning style was statistically significant, indicating that Korean female students were more visually oriented than male students. This confirms Y. Park’s (2006) previous research. As for the ideal L2 self and motivated behavior, female students were better able to create an ideal L2 self and were more motivated than their male counterparts in a statistical sense, which is similar to Kissau’s (2006) Canadian students. As previously stated, a considerable difference exists in educational contexts between Canada and Korea: French was considered a feminine language and not an appropriate school subject for boys in Canada, whereas English in Korea has a very different status. Since English is regarded as an essential skill for social mobility, economic gain, and improved life conditions (Kim, 2006), students strive to increase their English proficiency. The female dominance shown in Table 5, therefore, requires further investigation.

4.3 The Effect of Perceptual Learning Styles on Motivated Behavior

In order to investigate the impacts of perceptual learning styles on motivated L2 learning behavior, the students’ three perceptual learning preferences (i.e., visual, auditory, and kinesthetic styles), imagination, and ideal L2 self were entered as independent variables in regression analysis. The Variance Inflation Factor (VIF) ranged from 1.089 to 1.608, and the Tolerance from .622 to .918, indicating the absence of any multicollinearity in the regression model. Approximately 65% of the total variance was explained by four variables: the ideal L2 self, visual style, auditory style, and kinesthetic style.

Table 6. Stepwise Regression Analysis for Variables Predicting Motivated Behavior

<table>
<thead>
<tr>
<th>Step</th>
<th>R</th>
<th>R²</th>
<th>ΔR²</th>
<th>F</th>
<th>Collinearity statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideal L2 self</td>
<td>.771</td>
<td>.595</td>
<td>.594</td>
<td>24.222***</td>
<td>.701</td>
</tr>
<tr>
<td>Visual style</td>
<td>.796</td>
<td>.634</td>
<td>.633</td>
<td>6.971***</td>
<td>.622</td>
</tr>
<tr>
<td>Auditory style</td>
<td>.802</td>
<td>.643</td>
<td>.642</td>
<td>5.295***</td>
<td>.668</td>
</tr>
<tr>
<td>Kinesthetic style</td>
<td>.806</td>
<td>.649</td>
<td>.648</td>
<td>3.660***</td>
<td>.918</td>
</tr>
</tbody>
</table>

Note: N=957; ** means significant at the p<.001 level.

The students’ imagination was not identified as a meaningful predictor for motivated L2 behavior. This indicated that although imagination was significantly correlated with learning style preference (r=.215 for visual style, r=.318 for auditory style, r=.299 for kinesthetic style), it was not an immediate predicting factor for students’ motivated behavior. This is confirmed in a partial correlation analysis between motivated behavior and imagination. When controlled for the combined effect of learning style preference and the ideal L2 self, the correlation coefficient was .26 and the significance was .469. This implies that imagination and motivated behavior may not have been directly related.
Moreover, the kinesthetic learning preference exerted a negative influence on the students' motivated behavior, which was attributed to the problems that teachers have in controlling the large classes typically found in Korean schools, as discussed above in relation to the results of Table 3.

In the correlations of the variables presented in Table 3, kinesthetic style was not significantly correlated with either the ideal L2 self or the motivated behavior. In addition, in Table 6, the same perceptual learning style negatively influenced motivated L2 behavior. Therefore, the adoption of the kinesthetic learning style in the Korean classroom context remains problematic. If L2 teachers and other teachers do not recognize and appreciate the value of the kinesthetic learning style, students with this style may not have an equal opportunity to motivate themselves or create an ideal L2 self.

The construct validity of the kinesthetic learning style becomes much more complicated if we add the dimension of gender difference. In Tables 4 and 5 above, boys' kinesthetic style was significantly stronger than their female counterparts, but girls excelled over boys in all other variables. Nonetheless, in Tables 3 and 6, kinesthetic learning preference was not significantly correlated with the ideal L2 self and motivated behavior and even exerted a negative influence on the students' motivated behavior. This indicates that male students with kinesthetic style preference suffer a disadvantage in L2 learning. Boys' kinesthetic orientation may remain unsupported or in worst cases may be actively discouraged by educators. As shown in Tables 3 and 6, this is not beneficial to creating an ideal L2 self and will eventually have a negative influence on L2 motivation. C. Park (2002, p. 225) stated that

Educators need to plan instructional activities and develop curricular materials that will require whole body involvement and provide experiential and interactive learning for these students so that they can learn by doing.

However, given the current Korean classroom settings, the actual implementation of the kinesthetic learning style to Korean English classroom may require meticulous, individualized curriculum design with solid theoretical guidance such as multiple intelligences (H. Gardner, 1983). The construct validity of the kinesthetic learning style for Korean students needs to be re-examined after such curriculum reform is implemented.

5. Summary and Implications

Dörnyey's (2005, 2009) L2 motivational self-system emphasized mental imagery and the ideal L2 self, which are linked to the visual learning style. To date, only Al-Shehri's (2009) study has investigated the relationship between perceptual learning style preference, imagination, ideal L2 self, and motivated behavior. I endeavored to expand Al-Shehri's previous research design by incorporating auditory and kinesthetic learning styles. The research findings are summarized as follows:

1. Korean elementary students' auditory learning style was significantly correlated with other variables, although the visual style prevailed among the students.
2. Significant gender differences existed among Korean students. Girls preferred visual and auditory learning styles, while boys preferred the kinesthetic learning style.
3. The kinesthetic style exerted a negative influence on motivated behavior. All subtypes of learning styles as
well as the ideal L2 self were predicting factors for Korean students' motivated behavior.

This study has a couple of important educational implications. As has been demonstrated herein, Korean elementary school students predominantly showed visual orientation, indicating that they may be able to learn better when exposed to visual L2 input utilizing charts, graphs, diagram, tables, and photos. In addition, students' visual preference was significantly correlated with mental imagery, ideal L2 self, and motivated L2 behavior. This suggests that L2 teachers can facilitate their students' L2 learning motivation by providing them with a variety of opportunities to maximize their visual learning style. Nonetheless, as Nel (2008, p. 56) warns, there remains no definitive answer to the question of "should the style of teaching be consistent with the style of learning or not?"

6. Suggestions for Future Research

The present research needs to be refined by the collaborative works from related academic areas. For example, by utilizing functional magnetic resonance imaging (fMRI) and positron emission tomography (PET), learning style preferences can be precisely described and diagnosed (Kosslyn et al., 2002). In this regard, potential research topics could center on the following questions: How could the brain of visually oriented L2 learners be activated compared with that of L2 learners with auditory orientation? Can the strength of internalizing a vivid future L2 self-image be precisely mapped by using brain imaging technology?

Another promising research direction is a (quasi-)longitudinal analysis of learning style preference, ideal L2 self, and motivated behavior in different age groups. Since the present study focused only on elementary school students, it remains unclear how older students respond to the same questionnaire. Existing studies on learning style preference usually focus on a specific age group (Ham, 2005 and Lee, 2008 for college level; Y. Park, 2006 for elementary school level). Therefore, it would be worthwhile to investigate the effect of learning styles on L2 motivational self-system in different age groups.

References


Appendix
Sample of Questionnaire Items

Part 1: Perceptual Learning Style and Imagination

A. Visual Style (7 items; Cronbach's α=.93)
1. I remember something better if I write it down.  
2. When I listen to a teacher, I imagine pictures, numbers or words.  
3. I highlight the text in different colors when I study English.

B. Auditory Style (7 items; Cronbach's α=.90)
1. I remember things better if I discuss them with someone.
2. I like for someone to give me the instructions out loud.
3. I can study better when I listen to music.

C. Kinesthetic Style (7 items; Cronbach's α=.82)
1. I just start to do things, rather than paying attention to the instructions.
2. If I have a choice between sitting and standing, I prefer to stand.
3. I move my hands a lot when I speak English.

D. Imagination (5 items; Cronbach's α=.65)
1. When I read an interesting story, I imagine its events and characters.
2. When I feel distressed, I imagine things that make me feel happy.
3. I sometimes get drifted away by imagination.

Part 2: The Ideal L2 self and motivated behavior

A. Ideal L2 self (8 items; Cronbach's α=.87)
1. I believe that I can speak English well.
2. Whatever I do in the future, I think I will need English.
3. If my dreams come true, I will speak English fluently in the future.
4. The things I want to do in the future require me to speak English.
B. Motivated Behavior (17 items; Cronbach's α=.92)
1. If teacher gave me an extra homework, I would like to do it.
2. I frequently think over what we have learned in my English class.
3. I am prepared to expend a lot of effort in learning English.
4. I have a very strong desire to learn English.
5. I am determined to push myself to learn English.
6. Learning English is very important in my life.
7. I am really eager to learn English.
8. I am willing to work hard at learning English.