

Crosscultural Differences in Learning Styles of Secondary English Learners

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Abstract

This study investigated the learning styles of English learners (Armenian, Hmong, Korean, Mexican, and Vietnamese) in secondary schools. For statistical analyses a multivariate analysis of variance (MANOVA) and post hoc multiple comparisons of means tests (Scheffe tests) were used. A sample of 857 cases collected from 20 high schools in California found significant ethnic group differences as well as achievement level differences in basic learning style preferences. Students in this study favored a variety of instructional strategies. They exhibited either major or minor preferences for all four basic perceptual learning styles but significant ethnic group differences in preferences for group and individual learning. All students exhibited either major or minor preferences for kinesthetic or tactile learning. Hmong, Mexican, and Vietnamese students preferred group learning while Armenian and Korean students did not. However, all five ethnic groups (Armenian, Hmong, Korean, Mexican, and Vietnamese) showed either major or minor preferences for visual learning. In addition, middle and high achievers were more visual than low achievers; high and middle achievers preferred individual learning but low achievers did not; and newcomers exhibited much greater preference for individual learning than those who had been longer in the United States

Learning styles are broadly described as “cognitive, affective, and physiological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environment” (Keefe, 1979, p. 4). More specifically, style refers to a pervasive quality in the learning strategies or the learning behavior of an individual, “a quality that persists though content may change” (Fischer & Fischer, 1979, p. 245). Also, learning style is a biological and developmental set of personal characteristics that makes

the identical instruction effective for some students and ineffective for others (Dunn & Dunn, 1993, p. 5). Dunn and Dunn (1979) found that only 20 to 30 percent of the school-age children they studied were auditory learners, that 40 percent of the students they studied were visual, and that the remaining 30 to 40 percent were tactile and kinesthetic, visual and tactile, or some other combination.

Research has identified cultural differences in the learning styles of various ethnic groups. Park (1997a) conducted a comparative study of Chinese, Filipino, Korean, Vietnamese, and Anglo students in secondary schools and concluded that Korean, Chinese, and Filipino students were more visual than Anglos and that Korean, Chinese, and Anglo students showed negative preferences for group learning while Vietnamese showed a major preference and Filipino students showed a minor preference. Similarly, in their research with students of diverse backgrounds, Ramirez and Castaneda (1974) discovered that European American students tended to be the most field-independent learners, while Mexican American, American Indian, and African American students tended to be field sensitive (dependent), with Mexican Americans the most field-sensitive. The former tended to learn best in situations that emphasized analytic tasks and with materials void of a social context whereas field-dependent learners tended to learn best in highly social settings. These learners were likely to do best with materials that had human, social content and in situations guided by a teacher and in cooperation with other learners. These studies, thus, reveal significant ethnic group differences in students' learning styles.

Reid's (1987) comparative study of college students learning English as a second language (ESL) reported significant cultural differences in visual, auditory, kinesthetic, tactile, group, and individual learning styles among Korean, Chinese, Japanese, Malay, Arab, and Spanish students. She found that college ESL students strongly preferred kinesthetic and tactile learning and that most groups showed a negative preference for group learning. She also found that students who had been in the United States for more than three years were significantly more auditory in their learning style preferences than those who had been in the United States for shorter periods of time. The means for the learning style preference of those who had lived and studied in the United States the longest most closely resembled the means for the preference of native speakers of English. In addition, Korean students were the most visual in their learning style preferences and were significantly more visual than the U.S. and Japanese students. Chinese and Arab students were strong visual learners. Japanese students were the least auditory of all learners and were significantly less auditory than Chinese and Arab Americans both of whom expressed a strong preference for auditory learning. English speakers rated group work lower than all other language groups and significantly lower than Malay speakers. Reid's findings clearly showed significant implications for ESL instruction at the college level.

Dunn, Gemak, Jalai, Zenhausen, Quinn, and Spiridakis (1990) conducted a crosscultural study of learning styles involving Chinese, African, Greek, and Mexican American children in elementary schools. They concluded that all four groups were field-dependent (preferred to study with peers), with Greek-American children showing the highest group means and African Americans demonstrating the lowest group means. Chinese American elementary school children were the most kinesthetic and tactile among the four groups and were the most significantly different from African Americans, followed by Greek Americans, then last Mexican Americans. The Chinese Americans wanted to study alone rather than with peers and needed more structure than African American or Greek American children but less structure than Mexican Americans. Among the four ethnic groups, the Chinese Americans scored the lowest on a teacher motivation scale (Chinese = 12.72, Greek = 12.88, Mexican = 13.24, and African = 13.68). Suh and Price (1993) conducted a comparative study of Korean secondary students in Korea and American secondary students from an international perspective. They concluded that Korean students in Korea preferred more structure and more formal design, but needed less mobility and were less persistent than American students. Other studies also noted cultural differences in the learning styles of African American, Mexican American, Southeast Asian, and Native American students (Bell, 1994; Dunn, Griggs, & Price, 1993; Guild, 1994; Melear & Richardson, 1994; More, 1990; Park, 2000; Ryan, 1992; Sims, 1988).

Previous research also indicated that students' learning styles were significantly related to their achievement level. Park (1997a) found that among high, middle, and low achievers, high achievers were the most visual and low achievers were the least visual, and that middle and low achievers had minor preferences and high achievers had a negative preference for group learning. Suh and Price (1993) also found that gifted Korean students in Korea were more persistent and expressed greater preference for learning visually and kinesthetically and with more structure than academically non-gifted peers. The gifted students were also less parent-motivated and less desirous of having an authority figure present than the academically non-gifted. They preferred to learn in several ways and less socially than did United States students. Other research also indicated a significant relationship between student achievement level and their learning style preferences (Ingham & Price, 1993; Park, 1997b).

Slavin (1983) and Kagan (1986) observed that cooperative group learning produced gains in academic achievement, especially among African and Latino American students. It also helped all participating students develop social skills and better race relations. In her study of sociocultural influence on classroom interactional styles in Vietnam, Sullivan (1996) noted that in contrast to the general notion that Asian students were silent, Vietnamese college students were quite verbal in their English classes as they responded

to teachers in unison or in chorus. In her study of group work in an ESL classroom, Kinsella (1996) observed that despite the merits of pairing and grouping strategies, not all ESL students in high school or college classrooms embraced collaborative classroom learning with the same zeal as their instructors. In fact, such well-intended instructional efforts as group strategies may be met with reluctance and disorientation on the part of some ESL students due to their cultural backgrounds or pre-immigration schooling experiences. Reid (1987) found that virtually none of the college ESL students in her study chose group learning as a major learning preference. In a similar vein, Park's studies of secondary students (1997a, 1997b, 2000, 2001) also indicated ethnic group differences in students' preferences for group learning.

Other research about learning styles identified gender differences. In his study of young children, Restak (1979) documented various gender differences between boys and girls. He observed that girls were both more sensitive to sounds and more proficient at fine motor performance than boys. Boys, in contrast, showed an early visual superiority to girls. They were, however, clumsier, performing poorly at a detailed activity such as arranging a row of beads, but excelled at other activities requiring total body coordination. Dunn, Griggs, and Price (1993) also found gender differences in their study of the learning styles of Mexican and Anglo-American children in elementary schools and concluded that both Mexican and Anglo female students were more persistent than males; male Mexican-American students had the strongest tactile learning preferences whereas both groups of females in general preferred the least amount of tactile learning; the least auditory were the male Anglo-American children. Dunn, Griggs, and Price found that Mexican-American children were more peer-oriented than students in general and that female Mexican-American children were more peer-oriented than the males. However, Park (1997a) found that there was no gender difference in the learning style preferences of Anglo, Chinese, Filipino, Korean, and Vietnamese students in secondary schools.

Most importantly, schools that addressed the learning styles of previously underachieving African-American youngsters showed a significant increase in achievement test scores and improved attitudes toward school when instructional approaches or resources addressed and complemented their learning style strengths (Dunn & Dunn, 1992; Dunn & Griggs, 1988). For example, from 1985 to 1986, Brightwood Elementary School, a predominantly African-American school in North Carolina, responded to the identified learning styles of underachieving African American children and in a school-wide effort, began its four-year learning-style program. Each day, teachers first introduced the lesson using the primary preferences of the children, tactual and kinesthetic. The teachers then directed a 10- to 12-minute reinforcement using the secondary or tertiary preference of the

students. Finally, the teachers had the students engage in verbal reinforcement. Two years into the program, the number of discipline problems had declined dramatically. During the 1985 to 1986 school year, there had been 143 discipline referrals. There were only 14 in the 1988 to 1989 school year and six in the 1990 to 1991 school year. The school's reading and mathematics test scores on the California Achievement Tests rose from the 30th percentile in 1986 to the 83rd in 1988 to the 90th percentile in 1989 and 1990. In contrast, the county's remaining Black population scored in the 42nd percentile and students in the rest of the state of North Carolina scored in the 37th percentile (Klavas, 1994). Similar responsiveness to the learning styles of Armenian, Hmong, Korean, Mexican, and Vietnamese English learners may increase their achievement levels.

The purpose of this research was to investigate the learning styles of diverse English learners (Armenian, Hmong, Korean, Mexican, and Vietnamese) in secondary schools and to identify similarities as well as differences among these ethnic groups in order to help educational practitioners, curriculum developers, and teacher educators with their instructional and curricular delivery and teacher training. This research explored the following four hypotheses. First, there were significant differences in learning style preferences among Armenian, Hmong, Korean, Mexican, and Vietnamese English learners due to their diverse ethnic and cultural backgrounds. Second, there were significant sex differences in learning style preferences due to culturally prescribed gender roles, especially among the Asian groups. Third, student achievement levels were significantly related to the preferences for different learning styles because high achievers in previous studies tended to exhibit different learning styles from low achievers. Fourth, learning style preferences were significantly related to the length of residence in the United States due to acculturation factors.

Method

Sample

The sample for this study included 857 cases collected from 20 high schools (9th to 12th grade) in California between 1995 and 1997. School districts as well as schools were chosen according to the availability of students of diverse backgrounds. Among the 20 participating high schools, 14 were from six school districts (a large metropolitan school district and five satellite districts) in southern California; the other six were from two districts in central California. All the schools had English as a second language (ESL) classes. Teachers of intermediate and advanced ESL classes at each participating school administered the survey on a voluntary basis. All students in

intermediate and advanced ESL classes of these teachers were asked to respond to the questionnaire on a voluntary basis. The return rate of the questionnaires was 87.6%. Students in beginning ESL classes were not included in the survey due to their lack of language skills.

The 857 cases included 183 Armenians, 126 Hmong, 90 Koreans, 80 Vietnamese, and 378 Mexicans. Of these respondents, 127 (14.8%) were born in the United States and were nonetheless in ESL classes, whereas 730 (85.2%) were foreign-born. As for length of residence in the United States, 270 (31.5%) of the respondents had been in the United States for less than three years, as compared to 376 (43.9%) who had been here for four to seven years and 132 (15.4%) for eight or more years. For 79 (9.2%) of the respondents, information regarding the length of residence was not available. Both of these latter groups include students born in the United States.

Instrument

Reid's (1987) self-reporting questionnaire of perceptual learning styles was used. Since the study was concerned with four basic perceptual learning styles and preferences for group and individual learning, Reid's instrument was well suited for the study. Research that identifies and measures perceptual learning styles relies primarily on self-reporting questionnaires in which students select their preferred learning styles (Babich, Burdine, Allbright, & Randol, 1975; Dunn, Dunn, & Price, 1975; Dunn, Griggs, & Price, 1993; Kolb, 1976, 1984; More, 1990; Reid, 1987; Reinert, 1970). The research findings of the Dunns and their colleagues verify that most students correctly identify their learning strengths, particularly when an element is strongly preferred or rejected (Dunn, 1984).

The instrument consisted of randomly arranged sets of five Likert-type statements (5 = Strongly agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly disagree) on each of the six learning style preferences to be measured: visual, auditory, kinesthetic, tactile, group learning, and individual learning. Students self-reported grade point averages for the year immediately preceded the survey. A special validity study ($N = 700$) conducted by Coleman et al. (1966) indicated that this item elicited self-reported achievement similar to a direct coding from school records in 93.6 percent of the cases.

Procedure

Multivariate analysis of variance (MANOVA), univariate F tests, and post hoc multiple comparisons of means tests were performed using the Scheffe procedure. The total subject size ($N = 857$) was reduced to 812 cases because 45 cases had missing information. The weighted group means of each of the learning style preferences was used and displayed because of the unequal

size of the samples. As suggested by Reid (1987), the group means were broken down into three ranges: major learning style preference (18.00 and above), minor learning style preferences (16.50–17.99), and negative learning style preference (16.49 or less).

Results

Multivariate analysis of variance (MANOVA) showed that the combined learning style preferences were significantly affected by ethnicity, Wilks Lambda = .86, $F(24, 2711) = 5.10$, $p < .001$ and grade point average (GPA), Wilks Lambda = .95, $F(12, 1554) = 3.13$, $p < .01$, but not by sex, Wilks Lambda = .99, $F(6, 777) = 0.52$, $p > .05$. The results showed very strong associations between ethnicity and combined learning style preferences and between students' achievement level (GPA) and the combined learning style preferences. However, there was no significant interaction between ethnicity and students' achievement level (GPA) observed. The multivariate analysis of variance also revealed that the combined learning style preferences of Armenian, Hmong, Korean, Vietnamese, and Mexican students were affected by their length of residence in the United States, Wilks Lambda = .96, $F(12, 1524) = 2.48$, $p < .005$.

Univariate F tests were performed to investigate the main effect of ethnicity, students' achievement level (GPA), and students' length of residence in the United States on each of the learning style preferences. The F tests results showed that there were statistically significant ethnic group differences in the following learning style preferences: kinesthetic, $F(4, 782) = 5.89$, $p < .001$; tactile, $F(4, 782) = 5.47$, $p < .001$; group, $F(4, 782) = 18.31$, $p < .001$; and individual, $F(4, 782) = 3.32$, $p < .01$. The univariate F tests also showed the main effects of the students' achievement level (GPA) on auditory learning style preference, $F(2, 782) = 6.17$, $p < .005$, kinesthetic learning style preference, $F(2, 782) = 5.79$, $p < .005$, and individual learning style preference, $F(2, 782) = 10.19$, $p < .001$. Additional F tests identified the main effect of students' length of residence in the United States on group learning style preference, $F(2, 767) = 5.67$, $p < .005$, and individual learning style preference, $F(2, 767) = 6.86$, $p < .001$.

To investigate between group differences in those statistically significant learning style preferences, post hoc multiple comparisons of means tests were performed for the independent variable of ethnic group. The tests revealed that Hmong students showed statistically significantly greater preference for kinesthetic (18.85) and tactile (19.35) learning than Korean students (17.36 and 17.75, respectively) (Scheffe tests, $p < .05$); that Hmong (19.41) and Mexican students (17.74) had statistically significantly greater preferences for group learning than Korean (16.00) and Armenian (16.04) students; that

Hmong students showed statistically significantly greater preference for group learning than Mexican students; Vietnamese students (17.98) had statistically significantly greater preference for group learning than Armenian students (16.05) (Scheffe Tests, $p < .05$); and Armenian students (18.09) had statistically significantly greater preference for individual learning than Mexican students (16.60) (Scheffe tests, $p < .05$).

The post hoc multiple comparisons of means tests were also performed for the independent variable of students' achievement level (GPA). The tests showed that middle achievers (18.38) had statistically significantly higher preference for auditory learning than low achievers (17.70); high (18.52) and middle achievers (17.56) had statistically significantly greater preference for individual learning than low achievers (16.30) (Scheffe test, $p < .05$) but there was no statistically significant difference in kinesthetic learning style preference among high, middle and low achievers (Scheffe test, $p > .05$).

The post hoc multiple comparisons of means tests for the independent variable of students' length of residence in the United States showed that students who had been in the United States for more than eight years (18.55) had much greater preference for group learning than those who had lived in the United States for one to three years (17.13) or four to seven years (17.14) (Scheffe tests, $p < .05$). Conversely, students who had been in the United States for less than three years had much greater preference (18.02) for individual learning than those who had been here for more than eight years (16.33) (Scheffe tests, $p < .05$).

Findings and Discussion

Armenian, Hmong, Korean, Mexican, and Vietnamese English learners in the study exhibited statistically significant ethnic group and achievement level differences in their learning styles. Some learning styles of these students were significantly correlated with their length of residence in the United States. However, both boys and girls exhibited similar learning style preferences. The following describes each of six learning style preferences reported by students with respect to the previous research questions.

Auditory Learning

There were no significant ethnic group or gender differences in auditory learning preferences among Armenian, Hmong, Korean, Vietnamese, and Mexican American English learners in secondary schools (see Table 1). Nor did the students' length of residence in the United States appear to be related to their preferences for auditory learning. Both boys and girls in all groups exhibited either major or minor preferences for auditory learning. However, middle achievers showed statistically significant higher preferences for auditory learning than low achievers (Scheffe test, $p < .05$; see Table 2).

Table 1

Learning Styles Preference Means by Ethnic Background

Learning Styles	Ethnic group				
	Armenian	Hmong	Korean	Vietnamese	Mexican
Auditory					
M	17.94	18.11	17.89	17.88	18.21
SD	2.65	3.34	2.84	3.69	3.32
Visual					
M	17.19	18.34	17.56	17.39	17.06
SD	3.19	3.14	2.88	3.99	3.70
Kinesthetic*					
M	18.23	18.86	17.37	17.99	18.44
SD	2.72	3.09	2.93	2.93	3.47
Tactile*					
M	18.15	19.35	17.75	18.06	18.62
SD	3.69	3.33	3.22	4.22	3.69
Group*					
M	16.05	19.41	16.00	17.98	17.74
SD	4.65	3.74	4.06	4.40	4.38
Individual					
M	18.09	17.78	17.47	16.49	16.60
SD	4.43	4.33	3.86	4.70	4.67

Note. Preference means 18.00 and above = major learning style preference; 16.50 and above = minor leaning style preference; 16.49 or less = negative learning style preference.

* = statistically significant difference.

M = means.

SD = standard deviation.

Table 2

Learning Style Preference Means by Grade Point Average

Learning Styles	Group		
	High	Middle	Low
Auditory M SD	18.33 3.17	18.38 3.08	17.70 3.22
Visual M SD	18.44 3.24	18.23 3.21	17.87 3.04
Kinesthetic* M SD	18.59 3.20	18.54 3.22	17.98 3.36
Tactile* M SD	18.79 3.50	18.70 3.43	18.07 3.85
Group* M SD	17.00 4.31	17.29 4.35	17.58 4.50
Individual M SD	18.52 4.27	17.56 4.29	16.30 4.46

Note. Preference means 18.00 and above = major learning style preference; 16.50 and above = minor leaning style preference; 16.49 or less = negative learning style preference.
* = statistically significant difference.

M = means.

SD = standard deviation.

High achievers = A; middle achievers = B; and low achievers = C, D, and “I don’t know.”

Visual Learning

As a whole, all five ethnic groups in the study exhibited either major or minor preferences for visual learning. Armenian, Korean, Vietnamese, and Mexican American English learners indicated minor preferences for visual learning, whereas Hmong students indicated major preferences for it. This study confirmed previous research findings (Park, 1997a, 1997b; Reid, 1987) that Korean students were very visual. There were no significant ethnic group, gender, or achievement level differences among students who preferred

visual learning. Nor did length of residence in the United States appear to be related to student preferences for it.

Kinesthetic Learning

All five ethnic groups in the current study indicated either major or minor preferences for kinesthetic learning although there was a statistically significant difference in preferences for kinesthetic learning between the Hmongs, who indicated a major preference, and Koreans, who showed minor preference for it (Scheffe test, $p < .05$). However, there were no statistically significant differences in kinesthetic learning relative to students' gender, achievement level, or length of residence in the United States. This study confirmed previous research findings by Park (1997a, 1997b, 2000, 2001) and Reid (1987) that students generally preferred to learn through a kinesthetic mode. The English learners in this study were no exception.

Tactile Learning

All five ethnic groups also indicated either major or minor preferences for tactile learning although there was a statistically significant difference between Hmong students, who indicated a major preference, and Korean students, who showed a minor preference (Scheffe test, $p < .05$). This study also confirmed previous research findings by Park (1997b, 2000) and Reid (1987) that students preferred to learn through a tactile mode. However, there were no statistically significant gender or achievement level differences among students who preferred tactile learning nor significant differences relative to their length of residence in the United States.

Group Learning

There were statistically significant ethnic group differences in preferences for group learning (Scheffe test, $p < .05$; see Table 1). Regardless of gender or student achievement level, Hmong, Mexican, and Vietnamese English learners showed statistically greater preferences for group learning than Koreans and Armenians who showed negative preference for it (see Table 1). This study confirmed the research findings by Ramirez and Castaneda (1974), Slavin (1983), Kagan (1986), Dunn et al. (1990), and Dunn, Griggs, and Price (1993) that Latino (Mexican) students favored group activities; it also confirmed Sullivan's findings (1996) that Vietnamese college students in Vietnam favored group activities. But this study refuted Reid's findings (1987) that most college ESL students, including Spanish students, did not care for group learning.

The negative preferences for group learning expressed by the Korean and Armenian English learners could be a reflection of their lack of exposure to small group activities in their native countries prior to their immigration given that there are hardly any small group activities or experiential or

interactive learning activities in Korean classrooms in Korea (Park, 1997a, p. 68; Park, 1999, p. 59). Also, Korean and Armenian students' negative preferences for group learning could be a reflection of their individualism or competitive spirit in Armenian or Korean classrooms (Park, 1997a, p. 69) or the teaching styles they have encountered since immigrating. Quite interestingly, there was a statistically significant difference in preferences for group learning between Hmong students who showed major preference for it and Mexican students who showed minor preference for it. In other words, although Mexican students appeared to prefer group learning, Hmong students' preference for group learning appeared to be much greater. This phenomenon may be attributable to the cultural upbringing of the Hmongs back in their native country (Laos) in which villagers and ethnic clans emphasized mutual assistance.

This study also showed statistically significant differences between students who had been in the United States for eight or more years and those who had been here less than eight years (Scheffe test, $p < .05$). Students who had been in the United States for more than eight years indicated a major preference for group learning and showed statistically significant higher preference for group learning than those who had been here for less than eight years and indicated minor preferences for it. These findings revealed that the longer immigrant students attended American schools, the greater preferences for group learning they appeared to develop. This may be attributable to their exposure to a wide range of small group activities prevalent in American classrooms.

Individual Learning

There was a statistically significant ethnic group difference in preferences for individual learning, especially between Armenian students who showed major preference and Mexican students who showed minor preference (Scheffe test, $p < .05$); however, there was no gender difference. Also, there were statistically significant differences relative to students' achievement level and length of residence in the United States (Scheffe tests, $p < .05$). High and middle achievers had statistically much greater preferences for individual learning than low achievers, who showed a negative preference for it. Students who had been in the United States for fewer than three years indicated much greater preference for individual learning than those who had been in the United States for more than eight years (Scheffe test, $p < .05$), signifying that immigrant students in this study appeared to prefer individual learning, but as they acculturated to the American school setting, they tended to develop a preference for group learning.

Conclusion

The results of this study shed important light on the learning style preferences of Armenian, Hmong, Korean, Vietnamese, and Mexican English learners in secondary schools and have great implications for teachers, teacher educators, and curriculum developers.

Secondary English learners in this study favored a variety of instructional strategies. They exhibited either major or minor learning style preferences for all four basic perceptual learning styles and ethnic group differences in group and individual learning styles. All the ethnic groups indicated either major or minor preferences for kinesthetic and tactile learning. All of them appeared to be visual learners. In addition, Hmong, Mexican, and Vietnamese students preferred group learning while Armenian and Korean students did not. Further research would be necessary to identify other learning style preferences of these groups in addition to these basic learning styles examined in the study.

Pedagogical Implications

Based upon the findings of this study, teachers are encouraged to try to use more visual materials to provide effective instruction for these English learners. Using real objects, pictures, charts, character webs, maps, graphs, computer graphics, graphic organizers, semantic maps, and showing films and videos along with other materials that can make instructional content visual would be helpful for these students. In addition, teachers could have students draw pictures or create charts and diagrams to help explore the meaning of what they read and discuss.

This study also shows that cooperative learning activities in small groups appear to match the learning style preferences of Hmong, Mexican, and Vietnamese students but would be a mismatch with Armenian and Korean students. Teachers need to carefully orchestrate small group activities for Hmong, Mexican, and Vietnamese students while starting with pairing techniques for Armenian and Korean students who do not care for group learning, especially during the initial stage of their adjustment to an American classroom setting.

In addition, 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. An emphasis on total physical response activities (Asher, 1982) that synchronize verbal statements with body movements is a must for any newcomer in a beginning-level ESL class. In early intermediate ESL classes, teachers may have students engage in game, dance, or drama activities, for example, having students take part in a “people hunt” or a square dance, play “Hokey Pokey” or “London Bridge,” sing an American pop song or a favorite song of their country, or engage in a guessing game such as charades. Later

they may write about these activities. Or in some advanced ESL classes, as in the movie *Erin Brockovich*, teachers could have students check the chromium level of drinking water in their neighborhood, as well as interview people in the community using formula questions, to determine if the water quality is hazard-free, and write about it into an "I-Search Paper" (a report) with illustrations and their recommendations (Macrorie, 1988).¹ Or in a social studies class teachers could have students act out a historical incident of the American Civil War by dividing a class into two groups. First, they have one half of the class act out the role of the Southern soldiers, and the other half of the class act out as Northern soldiers all in appropriate masks or paper costumes. Then, they have two groups debate against each other defending their positions, take them out into the baseball field, and have them simulate the actual Civil War. Then, back in the classroom, teachers might have students write a letter home pretending to be a soldier in the Civil War. Likewise, in an English class, teachers could have students role-play story characters, make comic strips or do a story-board (a series of pictures illustrating the story line) of what they have just read and discussed (Park, 1994), or create a character mobile or a mural of a story. In science or math classes, teachers may use materials that will involve them in laboratory experiments and have them discuss, draw, and write about them in learning teams, as well as a variety of computer-assisted instructional activities with the use of Internet and content-related computer games. Also, hands-on activities, such math manipulatives as fraction stacks and bars, pattern blocks and cuisenaire rods, colored chips, base-ten blocks, algebra and integer tiles, geoboards, task cards, electroboards, flip-charts, and computer-assisted instruction will greatly assist all students, especially Hmong students.² These findings also have great implications for materials development and for teacher education.

In order to provide a viable educational environment for all students, it is important that teachers understand their own teaching styles, adjust their teaching styles to accommodate the diverse learning styles of their students, and redesign their classroom environments with flexibility and responsiveness. Teachers may also want to identify the learning styles of their students, match their teaching styles to students' learning styles for difficult tasks, and reinforce the learning content through the secondary and tertiary learning styles of their students. Teachers may want to strengthen students' weaker learning styles through easier tasks and drills by planning and delivering a series of instructional events in diverse learning styles. In addition, teachers may always strive to employ diverse instructional approaches because classrooms are very likely to consist of students of diverse backgrounds. Teachers could allow students to learn through all their senses with the use of multimedia presentations and multi-sensory resources. Thus they could meet the learning

needs of all students with multiple opportunities for learning. Furthermore, teachers may try to teach students diverse and specific learning strategies and help them become effective strategy users, as well as competent and self-directed learners in order to improve their overall academic performance.

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Endnotes

¹ For an excellent presentation of the I-search paper technique, see the following web site: http://sheffner.home.pipeline.com/I-search_examples/i_search.html

² For additional information, please see Chapter 3 of Huetinck and Munshin (2000).