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Learning Style Preferences of Secondary English Learners: Armenian, Hmong, Korean, Mexican, and Vietnamese

■ **This study investigates the learning style preferences of Armenian, Hmong, Korean, Mexican, and Vietnamese English learners (ELs) in secondary schools. Measures used include a multivariate analysis of variance (MANOVA) and post hoc multiple comparisons of means tests (Scheffé tests) for statistical analyses. 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. ELs 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 ELs preferred group learning while Armenian and Korean ELs 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 U.S.**

The purpose of this research is to investigate the learning style preferences of Armenian, Hmong, Korean, Mexican, and Vietnamese English learners (ELs) 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 explores the following four hypotheses. First, there are significant differ-

ences in learning style preferences among Armenian, Hmong, Korean, Mexican, and Vietnamese ELs due to their diverse ethnic and cultural backgrounds. Second, there are significant sex differences in learning style preferences due to culturally prescribed gender roles, especially among the Asian groups. Third, student achievement levels are 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 are significantly related to the length of residence in the U.S. due to acculturation factors.

Theoretical Background

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, a *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 and group differences between high achievers and low achievers. 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. She also found that among high, middle, and low achievers, high achievers were the most visual and low achievers were the least visual but that there was no gender difference in preferences for visual learning. Korean, Chinese, and Anglo students showed negative preferences for group learning while Vietnamese showed a major preference and Filipino students showed a minor preference. This study, thus, reveals significant ethnic group differences. As observed in her other studies (Park, 1997b, 2000a, 2000b), Park also found that all students in this study indicated either major or minor preferences for kinesthetic and tactile learning styles. In addition, she found that middle and low achievers had minor preferences and high achievers had a negative preference for group learning. Other research also indicated a relationship between differences in student achievement level and their learning style preferences (Ingham & Price, 1993; Park, 1997b; Suh & Price, 1993).

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 U.S. for more than three years were significantly more auditory in their learning style preferences than those who had been in the U.S. for shorter periods of time. The means for the learning style preference of those who had lived and studied in the U.S. 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 show significant implications for ESL instruction at the college level.

Dunn et al. (1990) conducted a comparative study of learning styles of Chinese, African, Greek, and Mexican American students 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, then Greek Americans, and 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. 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, 2000a; Ryan, 1992; Sims, 1988).

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 are silent and favor group activities, 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 disorienta-

tion 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, 2000a, 2000b) 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 et al. (1990) 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.

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 to1986, 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 schoolwide 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 ELs may increase their achievement levels.

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 U.S. and were nonetheless in ESL classes, whereas 730 (85.2%) were foreign-born. As for length of residence in the U.S., 270 (31.5%) of the respondents had been in the U.S. 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 included students born in the U.S.

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. These statements had students respond on a scale of one to five (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 preceding 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 Scheffé 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 U.S., 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 U.S. on each of the learning style preferences. The *F*-test 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 U.S. 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) (Scheffé 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) (Scheffé tests, $p < .05$); and Armenian students (18.09) had statistically significantly greater preference for individual learning than Mexican students (16.60) (Scheffé 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); and high (18.52) and middle achievers (17.56) had statistically significantly greater preference for individual learning than low achievers (16.30) (Scheffé test, $p < .05$), but there was no statistically significant difference in kinesthetic learning style preference among high, middle, and low achievers (Scheffé test, $p > .05$).

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

Findings and Discussion

This study found ethnic group and student achievement level differences in some learning style preferences of Armenian, Hmong, Korean, Mexican, and Vietnamese English language learners in secondary schools. This study also found statistically significant differences in some learning style preferences relative to students' length of residence in the United States. However, this study did not confirm any differences in any of the learning style preferences related to gender. The following describes each of the six learning style preferences with respect to the previous research questions.

Auditory learning. There are no significant ethnic group or gender differences in auditory learning preferences among Armenian, Hmong, Korean, Vietnamese, and Mexican ELs in secondary schools (Table 1). Nor does the students' length of residence in the U.S. appear to be related to their preferences for auditory learning. Both genders in all groups exhibit either major or minor preferences for auditory learning. However, middle achievers show statistically significant higher preferences for auditory learning than low achievers (Scheffé test, $p < .05$) (Table 2).

Visual learning. As a whole**,** all five ethnic groups in the study exhibit either major or minor preferences for visual learning. Armenian, Korean, Vietnamese, and Mexican-American ELs show minor preferences for visual learning, whereas Hmong students show major preferences for it. This study confirms previous research findings (Park, 1997a, 1997b; Reid, 1987) that Korean students are very visual. There are no significant ethnic group, gender, or achievement level differences among students who prefer visual learning. Nor does length of residence in the U.S. appear to be related to student preferences for it.

Table 1
Learning Style Preference Means by Ethnic Background

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

Note. Preference means 18.00 and above = major learning style preference; 16.50 and above = minor learning 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	**Auditory***		**Visual**		**Kinesthetic**		**Tactile**		**Group**		**Individual***	
	M	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
High	18.33	3.17	18.44	3.24	18.59	3.20	18.79	3.50	17.00	4.31	18.52	4.27
Middle	18.38	3.08	18.23	3.21	18.54	3.22	18.70	3.43	17.29	4.35	17.56	4.29
Low	17.70	3.22	17.87	3.04	17.98	3.36	18.07	3.85	17.58	4.50	16.30	4.46

Note: Preference means 18.00 and above = major learning style preference; 16.50 and above = minor learning 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."

Kinesthetic learning. All five ethnic groups in the current study show either major or minor preferences for kinesthetic learning although there is a statistically significant difference in preferences for kinesthetic learning style between the Hmong, who indicated a major preference, and Koreans, who showed minor preference for it (Scheffé test, $p < .05$). However, there are no statistically significant differences in kinesthetic learning relative to students' gender, achievement level, or length of residence in the United States. This study confirms previous research findings by Park (1997a, 1997b, 2000a, 2000b) and Reid (1987) that students generally prefer to learn through a kinesthetic mode. The ELs in this study are no exception.

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

Group learning. There are statistically significant ethnic group differences in preferences for group learning (Scheffé test, $p < .05$, Table 1). Regardless of gender or student achievement level, Hmong, Mexican, and Vietnamese ELs show statistically greater preferences for group learning than Koreans and Armenians who show negative preference for it (Table 1). This study confirms the research findings by Slavin (1983), Kagan (1986), Dunn et al. (1990), and Dunn et al. (1993) that elementary Latino (Mexican) students favored group activities; it also confirms Sullivan's findings (1996) that Vietnamese college students in Vietnam favored group activities. But this study refutes 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 ELs could be a reflection of their lack of exposure to small group activities in their native countries prior to their immigration, or even a reflection of the teaching styles they have encountered since immigrating. Quite interestingly, there is a statistically significant difference in preferences for group learning between Hmong ELs who show major preference for it and Mexican ELs who show minor preference for it. In other words, although Mexican-American ELs appear to prefer group learning, Hmong ELs' preference for group learning appears to be much greater.

This study also shows statistically significant differences between students who have been in the U.S. for eight or more years and those who have been here less than eight years (Scheffé test, $p < .05$). Students who have been in the U.S. for more than eight years have a major preference for group learning and show statistically significant higher preference for group learning than those who have been here for less than eight years and have minor pref-

erences for it. These findings reveal that the longer immigrant students attend American schools, the greater preferences for group learning they appear to develop. This may be attributable to their exposure to a wide range of small group activities prevalent in American classrooms.

Individual learning. There is a statistically significant ethnic group difference in preferences for an individual learning style, especially between Armenians who show major preference and Mexican ELs who show minor preference (Scheffé test, $p < .05$); however, there is no gender difference. Also, there are statistically significant differences relative to students' achievement level and length of residence in the United States (Scheffé tests, $p < .05$). High and middle achievers have statistically much greater preferences for individual learning than low achievers, who show a negative preference for it. Students who have been in the U.S. for fewer than three years have much greater preference for individual learning than those who have been in the U.S. for more than eight years (Scheffé test, $p < .05$), indicating that immigrant students in this study appear to prefer individual learning, but as they acculturate to the American school setting, they tend 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 ELs in secondary schools and have great implications for teachers, teacher educators, and curriculum developers.

Secondary ELs in this study favor a variety of instructional strategies. They exhibit 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 indicate either major or minor preferences for kinesthetic and tactile learning. All of them appear to be visual learners. In addition, Hmong, Mexican, and Vietnamese ELs, in secondary schools prefer group learning while Armenian and Korean ELs do not. Further research would be necessary to identify other learning style preferences of these groups in addition to basic learning styles examined in this 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 ELs. 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 ELs but would be a mismatch with Armenian and Korean ELs. Teachers need to carefully orchestrate small group activities for Hmong, Mexican, and Vietnamese ELs while starting with pairing techniques for Armenian and Korean ELs who do not care for group learning, especially during the initial stage of their adjustment to an American classroom setting.

In addition, educators should plan instructional activities and develop curricular materials that will require whole body involvement and provide experiential and interactive learning for these ELs so 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 newcomers 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 the 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, students may conduct interviews with people in their school or community using formula questions, then write an I-search paper with illustrations (Macrorie, 1988).[1] In a social studies class they may act out the role of a historical figure such as Abraham Lincoln and give the Gettysburg Address or pretend to be a soldier in the American Civil War and write a letter home. Students may role-play story characters 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 math or science classes, teachers may use materials that will engage students' minds and bodies, such as content-related computer games or laboratory experiments that can be illustrated and written about. Also, hands-on activities, such as math manipulatives, 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, teachers should try to identify the learning styles of their students, match their teaching styles to students' learning styles for difficult tasks, and strengthen weaker students' learning styles through easier tasks and drills. Teachers should also try to diversify their teaching styles at all times because classrooms are very likely to consist of students of diverse backgrounds. In addition, teachers should try to teach students diverse and specific learning strategies to improve their academic performance.

Author

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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 detailed information, please see Chapter 3 of Huetinck and Munshin, 2000.

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