

Stressing Success: Examining Hmong Student Success in Career and Technical Education

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Hmong Studies Journal, 15(1): 1-22.

Abstract

This study examines factors affecting the academic performance of Hmong students at Chippewa Valley Technical College in Eau Claire, WI. Factors specifically analyzed for their impact upon student success are socioeconomic status, family support, the use of academic support programs, and the influence of agents of socialization. Through the use of archival institutional data, Hmong students were compared to white students at CVTC in terms of their relative grade point averages, course completion rates, and retention rates. Data revealed significant disparities in grade point average performance between Hmong and white students. The data also showed that eligibility for financial aid was significantly higher among Hmong students, and that this difference was commensurate with educational performance gaps between the two groups. Additionally, online surveys were used to assess family support while attending CVTC, the role of academic support programs, and influential agents of socialization. Gender differences in grade point average performance and socialization also were analyzed. Implications of the study's findings are discussed and recommendations for improving the performance of Hmong students are provided.

Keywords: Hmong Students, Educational Success, Career and Technical Education

Introduction/Background

The United States population continues to increase in diversity, making understanding racial, ethnic, and immigrant variation in educational achievement and attainment more essential than ever. Minority children and youth make up the fastest-growing group in United States schools (Fix & Passel, 2003). Latinos, Asians, and Caribbean and African Blacks are the largest immigrant groups pursuing education in the United States (Rong & Preissle, 1998). Wisconsin has seen significant increases in its minority and immigrant populations in the last decade (United States Census Bureau, 2010). These trends provide foresight into potential demographic changes career and technical education institutions will continue to experience as these children progress into adulthood and pursue higher education.

Historically, research on racial attainment gaps has focused on broad racial comparisons that obscure considerable heterogeneity within pan-ethnic groups (Jencks, 1972; Miller, 1995; Jencks & Phillips, 1998). Research has significantly documented educational achievement gaps among the Latino and Black populations. Asian populations, however, have largely been understudied and have been painted with the broad-brush stereotype of a "model minority," which obscures the extensive heterogeneity within this pan-ethnic grouping. Current research lacks permeation into certain ethnic groups, notably the Hmong and the educational attainment gap when disaggregated from the pan-ethnic classification of Asian.

To date, research on Hmong educational attainment and achievement is frequently found within larger studies focused on minority achievement collectively or within the broad grouping of "Asian." In Kao and Thompson's (2003) review synthesis of research on racial and ethnic gaps in educational achievement and attainment, particular attention was paid to ethnic and immigrant differences in educational achievement and attainment and current theories' attempts to explain racial and ethnic group differences. Grades, test scores, course taking, tracking, high school completion, transition to college, and college completion are the measures of educational achievement and attainment used as benchmarks in the Kao and Thompson study.

Although this article discusses racial and ethnic stratification of all minority groups, there is notable discussion of the "model minority" stereotype applied to the Asian racial category and the critical educational achievement and attainment difference found when this category is disaggregated. High school graduation rates show that among Asian Americans much variation exists, as Japanese, Chinese, and Asian Indians have much higher graduation rates than Laotians, Hmong, and Vietnamese (Miller, 1995). Similar differences were observed in the percentages of ethnic groups that had completed four or more years of college (Kao & Thompson, 2003).

Other research has also analyzed how aggregated racial labels have negative consequences for Asian ethnic groups. Lew (2005) discusses the issue and impact of the nomenclature "Asian" itself, contending that a monolithic interpretation of Asians, vis-à-vis educational attainment, is overly simplistic and parochial, camouflaging broad variance

within the group. In a report commissioned by the National Commission on Asian American and Pacific Islander Research in Education, researchers attempted to examine the culturally axiomatic role of Asian American and Pacific Islander (AAPI) students as the “model minority” in higher education. They did so through a concerted effort to expose spurious and erroneous assumptions made about AAPIs in education — misconceptions that the researchers contended are not merely misleading but actively harmful to both AAPI students and the post-secondary system. Research conducted by Woo (2007) further supports the need to disaggregate the Asian category and explains that aberrational South-East Asian data has created the need for independent study of specific groups, particularly groups whose lag in educational achievement and attainment is often obscured by the relative socioeconomic success of other disparate ethnic groups also classified under the broad heading of “Asian American.”

Research specifically addressing Hmong educational experiences began to emerge during the 1980s; however, it is still quite limited. Hutchison (1997), on behalf of the Wisconsin Policy Research Institute, conducted research examining the educational performance of Hmong students throughout Wisconsin. In 1997, Hmong students in six Wisconsin school districts — districts in which Hmong students were the largest minority — were examined for their educational attainment markers in the K-12 system as well as for their post-secondary educational activity. Successful completion of secondary education is a critical predictor for entering post-secondary education. In this research, Hutchinson concludes that Hmong students will be more successful in their educational careers than any other immigrant or refugee group ever to come to the United States. Students in the study showed scores above the national norms in standardized tests, in graduation rates, in entering post-secondary institutions, and in retention rates within the University of Wisconsin system, albeit with the prevalence of risk factors, including poverty, welfare dependency, and teen pregnancy. However, the success indicated in Hutchinson’s research stands in stark contrast to most other research on Hmong educational attainment and achievement.

In a study examining the post-secondary educational attainment of South-East Asian Americans — specifically Cambodians, Laotians, Vietnamese, and Hmong second-wave Americans — researchers found clear achievement deficiencies in these groups vis-à-vis white students (Woo, 2007). The authors specifically studied second-generation South-East Asian students for comparison, thus controlling for immigrant-specific exogenous variables. The authors concluded there is wide variance in educational gaps, even within the South-East Asian grouping. Vietnamese immigrants outpace their Cambodian, Laotian, and Hmong counterparts. Similarly, the authors determined that gender and socioeconomic status also are significant determinants of educational attainment, with women often faring worse than their male counterparts (Woo, 2007).

Y. Xiong’s (2012) examination of Hmong American educational attainment using US Census data from 1990 to 2010 revealed notable improvements in multiple educational outcome measures. Between 2000 and 2010, the number of Hmong college students (undergraduate, graduate and professional) doubled, as did the proportion of Hmong Americans who possess a bachelor’s degree or higher. Additionally, this timespan yielded a

narrowing in the gender gap in educational attainment and at some levels (associate's degree and bachelor's), with Hmong females surpassing Hmong males (Y. Xiong, 2012). Although, these improvements are promising, Hmong Americans still significantly lag behind many other ethnic/racial groups in educational attainment.

The focus for these gaps in educational attainment has tended to linger on antecedent variables such as gender, socioeconomic status, and the role of culture. Research by Lee and Madyun (2008) showed a lack of connection between socioeconomic status and academic achievement. This, they concluded, pointed to the critical role of culture and the impact of the socialization process related to education of Hmong people. When Hmong participation in higher education is analyzed, the role of culture has been used to explain gender achievement and attainment gaps of Hmong women vis-à-vis Hmong men (S. Lee, 1997). In qualitative research addressing the key life experiences contributing to Hmong students' matriculation, retention, and graduation from college, culture and socioeconomic status were also the focus (Lor, 2008). A single cause for this educational stratification is unlikely; however, the influence of each of these factors is unclear and will require further investigation.

According to the 2010 U.S. Census, Hmong people are a significant minority group throughout Wisconsin and the largest ethnic group within the Asian category; as well, Hmong students comprise the largest minority group at Chippewa Valley Technical College (CVTC). The academic success of Hmong people has serious ramifications throughout the state. Not only does it pose an interesting challenge for the Wisconsin Technical College System, but it has broader implications for statewide race relations.

Statement of the Problem

The majority of studies concerning educational attainment and the factors that influence educational success use aggregated racial labels, resulting in the masking of the heterogeneity of groups such as "Asian." Additionally, a problem exists in the dearth of information specially focusing on Hmong educational attainment and factors that influence this particular group's educational success.

Purpose of the Study

As stated in the background of the problem, numerous Hmong immigrants and refugees settled in Wisconsin, including west-central Wisconsin. CVTC serves a significant and growing Hmong population. To date, there has been a deficiency in research conducted to measure the educational attainment of Hmong students in career and technical college education programs. The purpose of this investigation is to analyze educational attainment among Hmong students at CVTC and the factors that influence the educational success of this group. Secondary analysis was conducted on enrollment, grade point average (GPA), and retention data of students at CVTC. Additionally, online surveys were used to address research questions surrounding socialization.

Assumptions of the Study

The aggregation and creation of the pan-ethnic label “Asian” masks extensive differences in educational experiences and success within the group. It is with this in mind that the following assumption is put forth — disaggregating the racial category “Asian” and studying Hmong students as a specific ethnic group would be beneficial for understanding educational attainment. It is further assumed that Hmong students have unique cultural influences and experiences that influence their educational success.

Research Questions

The primary focus of this investigation is to identify variables that influence the educational success of Hmong students and to create a profile of a successful Hmong student.

1. Are there significant differences in educational success between Hmong and non-Hmong students at CVTC?
2. What function does family serve in the educational process of successful Hmong students?
3. What function do academic support programs serve in the educational process of successful Hmong students?
4. Which agents are instrumental in the educational socialization process for successful Hmong students?
5. What types of messages do successful Hmong students receive from key agents of socialization regarding education and its importance in determining success in adulthood?
6. Are there gender differences in the educational success and the socialization process for Hmong students?
 - a. If so, what are those differences?
 - b. What are the ramifications of those differences?

Methods

This section will explain the methods used to determine if achievement gaps exist between white and Hmong students and to better understand why they might. It will begin by examining the subjects of the studies conducted, then explore the instruments used to study them and the procedures used in data collection. It will conclude by acknowledging the limitations of this approach.

Subject Selection and Description

The most efficient method for measuring the academic success of Hmong students was through secondary data analysis of all current and former students enrolled at CVTC who chose to self-identify as “Hmong” in the Race/Ethnicity section of college enrollment forms. CVTC only began to disaggregate the Hmong category from other Asian students in

Summer 2011, so available data only reflect the academic period of Summer 2011 through Fall 2012.

With an N of 181, there were 107 female Hmong students and 74 male; all non-reporting were removed from the population. A plurality of students in the population (25) was enrolled in the liberal arts program as of the most recent semester.

In terms of economic status, a notable 92.8 percent (168) of students in the population were eligible to receive some sort of financial aid assistance (grants, scholarships, or work-study funds) at some point during their enrollment. This stands in stark contrast to the 64 percent of white students enrolled during the same period who qualified for some sort of financial aid assistance. While it's dangerous to extrapolate too much from these numbers in terms of financial need (given possible differences in qualifications for scholarships and other assistance on the basis of race/ethnicity), the data still provide some interesting insight into the possible allocation of these scarce resources.

This data set does not, however, provide some much-needed context for the numbers. For example, we may see a significant difference in grade point averages or completion rates of classes, but the numbers alone don't provide insight as to why these discrepancies exist. To better understand the contextual antecedents that impact these numbers, a survey must be conducted to explore the impact of agents of socialization, personal challenges, immigration status, and other variables affecting academic success.

The survey, which was administered between January 22 and February 5, 2013, drew from the population of students enrolled for the Fall 2012 and/or Spring 2013 semesters. The reason for this narrower N was logistical in nature, namely these students have current CVTC email addresses and could, therefore, be surveyed via email. To broaden the pool and control for self-identification differences, the survey was sent to all students self-identifying as "Asian" in their enrollment paperwork, and a control question was implemented to "weed out" non-Hmong Asian students.

Utilizing these methods, a survey questionnaire was sent to the 257 student population. One hundred and twenty-one surveys were completed, with 91 Hmong respondents, 60 of those being female and 31 male. Health Sciences was the most ubiquitous academic area represented, with 30 students. As a side note, students responded positively to the offer of a donation to the Eau Claire Area Hmong Mutual Assistance Association for each survey completed, which may have contributed to the unusually high response rate.

Instrumentation

CVTC provided archival data, which allowed for analysis and comparison of Hmong student success versus the retention of white students. This did not, however, provide the needed information to evaluate the possible variables that might impact student success. After an extensive review of literature, a voluntary online survey was developed and

deployed to gather descriptive demographic information about the sample and to address key research elements. Details of that survey are discussed in the following sections.

Data Collection Procedures and Analyzing Archival Data

Archival data used in this study was obtained from pre-existing records made available to the researcher through CVTC's computerized record-keeping system known as "Banner." All white and Hmong credit students' semester grade point averages for the academic periods Summer 2011, Fall 2011, Spring 2012, and Fall 2012, and their cumulative GPAs were used to analyze differences in academic performance between the two groups. These same data also were used to identify possible gender differences and to determine the students' eligibility for financial aid. Additionally, course retention and successful course completion data were accessed for white and Hmong students over this same time period.

The researcher utilized a number of statistical analyses through Statistical Program for Social Sciences version 21.00 (SPSS, 2012), Microsoft Excel (Microsoft, 2010), and the chi-square test (Preacher, 2001). All of these were used to determine if a significant relationship existed between students' grade point averages, course retention, and successful course completion and their race/ethnicity, gender, and financial aid eligibility. Independent t-test analyses were conducted to determine if a statistically significant difference existed between the independent categorical variable race/ethnicity (white and Hmong) and the dependent continuous variable grade point average (cumulative and semester). Based on the categorical nature of the variables, chi-squared analyses were conducted to determine if a statistically significant difference existed between white and Hmong students in course completion rates and course success rates. To analyze the quantitative outcome (cumulative grade point average) and two categorical explanatory variables (race/ethnicity and eligibility for financial aid), ANOVA was conducted, with the use of SPSS.

Data Collection Procedures and Online Survey Analysis

To provide further context to the quantitative archival data, a 31-question online survey was administered with the use of Qualtrics survey software. The survey gathered descriptive demographic information about the sample, including gender, age, race/ethnicity, immigration status, program of study, cumulative grade point average, and financial support. This information was used to create a profile of the Hmong students who completed the survey. Questions were developed to address key research elements. The respondents were questioned about their participation in academic or peer-support programs and were allowed to rate the efficacy of those programs utilizing a Likert scale.

Other survey questions explored the students' familial educational expectations; familial assistance during their time at CVTC; and how family members discussed the importance of education for adulthood success, both during childhood and over the last year before the study.

Questions also addressed other key agents of socialization, specifically friends and teachers, including the messages about education received from these agents and the importance of these agents in influencing students' views about their education. Cross-tabulation was used to summarize the categorical data and create contingency tables, and to provide a picture of the interrelation and interactions between variables.

Results

The locus of this research was to explore differences in educational success between Hmong and white students at CVTC. The research investigation identified factors that influence the success of Hmong students, examined how Hmong students were socialized about education, and created a profile of a successful Hmong student. Two different research methods were used to answer these questions: Archived institutional data provided access for quantitative analyses and primary data was collected using an online survey.

Descriptive Information — Hmong Credit Students at CVTC

There were two data sets drawn for this research. The first was obtained using archival data and reflects the population of all credit students at CVTC who self-identified as "Hmong" in the Race/Ethnicity section of the college forms from Summer 2011 through Fall 2012. The resulting N of 181 included 107 female Hmong students and 74 male, with all non-reporting removed from data set. The second data set was drawn from an online survey that was administered between January 22 and February 5, 2013. The online survey was emailed to 257 students which was all students self-identifying as "Asian" in their enrollment paperwork and were enrolled for Fall 2012 and/or Spring 2013 semesters with a control question implemented to "weed-out" non-Hmong Asian students. One hundred and thirty-eight students began the survey and 121 surveys were completed; among the 91 Hmong respondents, 60 were females and 31 were males.

The average age of Hmong students in the enrollment data sample was 23 years old, with the oldest being 46 and the youngest 18. The gender breakdown saw little variance in age range, with the average male being 24 and the average female 23. The mode age range for both males and females in the online survey was 20-25. Students in both samples came from the enrollments of nearly all of CVTC's 62 academic majors, with a plurality of students enrolled in health sciences programs. In terms of economic status, a staggering 92.8 percent (168) of students in the sample were eligible to receive some sort of financial assistance (financial aid, grants, scholarships or work-study funding) at some point during their enrollment.

The archival institutional data yielded a cumulative GPA range for Hmong students from .125 to 4.00, with a mean of 2.73, a median of 2.96, and a mode of 4.00. The educational performance of students was grouped into the ranges and frequencies shown in Table 1 below. Archival cumulative GPA data was regrouped, for comparison purposes, into the same ranges that were developed for the online survey in which respondents self-reported their cumulative GPAs. Frequencies for both are shown in Table 1.

Table 1
Grade Point Averages of Participants

	Frequency Enrollment Data	Percentage Enrollment Data	Frequency Online Survey Data	Percentage Online Survey Data
4.00-3.5	38	21%	14	18%
3.49-3.00	51	28%	47	52%
2.99-2.50	37	20%	17	19%
2.49-2.00	17	9%	11	12%
Under 1.99	38	21%	2	2%
Total	181	100%	91	100%

Research Question 1. Are there significant differences in educational success between Hmong and non-Hmong students at CVTC? Educational success was examined through various loci of analysis. An independent-samples t-test was run to determine if there were differences in cumulative GPAs between Hmong and white students; an alpha of $p < .05$ was set for the test. There were no outliers in the data, as assessed by inspection of a boxplot. The cumulative GPA for white students was higher ($M = 2.939$, $SD = 0.763$) than Hmong students ($M = 2.731$, $SD = 0.803$), a statistically significant difference of $M = 0.208$, $t(8890) = -3.168$, $p = .002$.

Table 2
t-Test of Cumulative GPA
t-Test: Two-Sample Assuming Equal Variances
Cumulative GPA

	<i>Hmong</i>	<i>White</i>
Mean	2.731	2.939
Variance	0.803	0.763
Observations	181	8711
Hypothesized Mean Difference	0	
Df	8890	
t Stat	-3.178	
P(T<=t) two-tail	0.002	

An independent-samples t-test was run to determine if there were differences in cumulative GPAs between Hmong female and white female students and Hmong male and white male students; an alpha of $p < .05$ was set for the test. There were no outliers in the data, as assessed by inspection of a boxplot. The cumulative GPA for white female students was higher ($M = 2.992$, $SD = 0.823$) than Hmong female students ($M = 2.771$, $SD = 0.897$), a statistically significant difference, $M = 0.221$, $t(5029) = 2.742$, $p = .006$. The cumulative

GPA for white male students was higher ($M = 2.870$, $SD = 0.930$) than Hmong male students ($M = 2.673$, $SD = 0.898$); however, this difference was not statistically significant $M = 0.197$, $t(2859) = 1.802$, $p = .072$.

Table 3

t-Test Cumulative GPA Female

t-Test: Two-Sample Assuming Equal Variances

Cumulative GPA

	<i>Hmong Female</i>	<i>White Female</i>
Mean	2.771	2.992
Variance	0.897	0.823
Observations	107	4924
Hypothesized Mean Difference	0	
Df	5029	
t Stat	2.742	
P(T<=t) two-tail	0.006	

Further analysis of grade point averages was conducted, including the influence of financial aid eligibility, with students ineligible for financial aid due to academic performance removed from the sample. A two-way ANOVA test was conducted to examine the effect of the independent variables of race/ethnicity (Hmong and white) and eligibility for financial aid on the dependent variable (cumulative GPA). There was no significant interaction between the effects of race and financial aid eligibility on cumulative GPA, $F(1, 7627) = .002$, $p = .962$. However, the simple main effect analysis showed that eligibility for financial aid significantly negatively impacted the GPAs of both white and Hmong students ($p=.049$).

Table 4

Means and Standard Deviations for Cumulative GPA by Race and Eligibility for Financial Aid

	White			Hmong		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
Financial Aid						
No	3.331	0.58	2757	3.304	0.631	8
Yes	3.139	0.547	4731	3.102	0.49	135
Total	3.21	0.567	7488	3.112	0.498	143

Finally, Chi-square tests were utilized to determine what, if any, relationship exists between race/ethnicity (Hmong and white), successful course completion (as defined by the CVTC criteria for completing a course with a C- or higher) and semester-to-semester

retention (as defined by the CVTC criteria of course completion with a D- or higher and continued enrollment). A Chi-square test for association was conducted between race/ethnicity and successful course completion for four semesters (Summer 2011, Fall 2011, Spring 2012, and Fall 2012). All expected cell frequencies were greater than five. There was no statistically significant association between race/ethnicity and successful course completion for the following semesters: Summer 2011 $\chi^2(1) = 1.133$, $p = .287$; Fall 2011 $\chi^2(1) = .655$, $p = .418$; and Spring 2012 $\chi^2(1) = .655$, $p = .418$. There was a statistically significant association between race/ethnicity and successful course completion for Fall 2012 $\chi^2(1) = 5.19$, $p = .023$; however, at the time data were collected, incomplete grades still were outstanding.

A Chi-square test for association also was conducted between race/ethnicity and semester-to-semester retention for the same four semesters. All expected cell frequencies were greater than five. There was no statistically significant association between race/ethnicity and semester-to-semester retention for the following semesters: Summer 2011 $\chi^2(1) = 2.491$, $p = .115$; Fall 2011 $\chi^2(1) = .027$, $p = .869$; and Spring 2012 $\chi^2(1) = .144$, $p = .704$. There was a statistically significant association between race/ethnicity semester-to-semester retention for Fall 2012 $\chi^2(1) = 6.957$, $p = .008$; however, at the time data were collected, incomplete grades still were outstanding.

Question 2. What function does family serve in the educational process of successful Hmong students? The survey results were used to address this research question. Of students who completed the online survey, only two reported their GPA as under 1.99; therefore, their responses were not used to address this question. Respondents were asked to respond (yes/no) to a list of ways in which family provided them support while they pursued their education at CVTC. Verbal encouragement (84%), food, housing or other material support (79%), emotional support (77%) and spiritual support (71%) were the most common ways respondents reported that their families provided support. Additionally, a combined total of 99% of respondents reported that while they attended CVTC their families were somewhat supportive, supportive, or very supportive; only 1% of respondents reported that their families were not supportive. Furthermore, 83% of respondents reported that their families asked them about the subject or material of courses in which they were enrolled at least once per semester, 82% of respondents reported that their families asked them about their grades or course progress at least once per semester, 90% of respondents reported that their families asked them about their future educational plans at least once per year, and 88% of respondents reported that their families asked them about their future career goals at least once per year.

Question 3. What function do academic-support programs serve in the educational process of successful Hmong students? The survey results were used to address this research question. Of the 89 successful Hmong students who completed the online survey, 27 (30%) reported using at least one academic-support program and 62 (70%) did not use any academic-support programs. Respondents were asked (and were allowed to select multiple answers) which factors prevented them from participating in academic-support or peer-support programs. Results were as follows: did not have time to

participate in programs, 50 (60%); not interested in participating, 27 (33%); not aware of the programs, 21 (25%); and programs available did not meet my needs, 8 (10%). Of those respondents who did participate in academic-support or peer-support programs, analysis indicates they found the programs to be overwhelmingly supportive.

Question 4. Which agents were instrumental in the educational socialization process for successful Hmong students? The online survey asked respondents to rate how important a list of factors were in influencing their views on education. All factors are considered to be important agents of socialization. Frequencies are reported in Table 5 below. Respondents reported family and teachers to be the two agents that most influenced their opinions on the importance of education. Friends were rated below teachers, but above religious leaders and the media.

Table 5
Agents of Socialization and Opinions on the Importance of Education

Agent of socialization	Extremely Important	Very Important	Somewhat Important	Neither Important nor Unimportant	Somewhat Unimportant	Very Unimportant	Not at all Important
Family	59	21	2	2	1	0	1
Friends	17	26	25	12	2	1	2
Media (television, movies, magazines, etc.)	3	14	22	31	5	2	9
Teachers	24	31	16	11	2	0	1
Religious leaders	12	11	18	29	0	0	16

Question 5. What types of messages did successful Hmong students receive from key agents of socialization regarding education and its importance in determining success in adulthood?

Online survey respondents were asked to reflect on the messages they received about the importance of education during their childhoods and during the year prior to this study. In childhood, the plurality of successful Hmong respondents (85%) reported that their families discussed education as being important or necessary for success in adulthood. The discussions among friends in childhood yielded different messages, however, with only 50% of respondents reporting childhood conversations with friends stressing the importance or necessity of education for success in adulthood. Conversely, 26% of respondents reported childhood discussions of education being unimportant or

only somewhat important for success in adulthood, 9% reported they did not discuss education with friends, and 15% reported inconsistent messages from friends about the importance of education for success in adulthood.

Respondents reported less consistency in the messages they received from elementary, middle, and high school teachers. Sixty-six percent reported that most teachers encouraged them to pursue education beyond high school; however, 12% reported that most teachers encouraged them to focus solely on completing high school, 8% reported no discussion about future education plans from teachers, and 3% indicated that teachers did not encourage them to attend college at all. Ten percent reported hearing inconsistent messages from teachers about the importance of continuing their education.

Respondents were then asked to reflect on messages they received from friends and family on the importance of education within the year prior to this study. Respondents reported an increased emphasis on the importance of education by both family and friends during the year prior to this study vis-à-vis childhood — with friends moving from 50% in childhood to 75% in the last year, and family moving from 85% to 88%.

Question 6. Are there significant gender differences in educational success and the socialization process for Hmong students? An independent-samples t-test was run to determine if there were differences in cumulative GPAs between male and female Hmong students at CVTC; an alpha of $p < .05$ was set for the test. There were no outliers in the data, as assessed by inspection of a boxplot. The cumulative GPA for Hmong female students was higher ($M = 2.771$, $SD = 0.897$) than Hmong male students ($M = 2.673$, $SD = 0.898$); however, this difference was not statistically significant ($M = 0.098$, $t(179) = .722$, $p = .471$).

The online survey results were regrouped by gender, allowing for analysis of socialization process by gender; there were 58 female and 32 male respondents. Respondents' results showed some differences in family educational expectations by gender. Eighty-four percent of females and 80% of males indicated family expectations of completing some form of post-secondary education. If post-secondary training were to be disaggregated into different levels of academic achievement (associate, bachelor, and post-graduate), some difference between genders would be seen. In terms of graduating from a CTE program, the percentages were quite similar: 40.63% (male) and 43.10% (female). Differences were seen, however, at the four-year college completion and post-graduate levels. Only 17.24% of Hmong females reported their families expected them to graduate from a four-year college, compared to 34.38% of Hmong males. Conversely, a higher percentage (24.14%) of Hmong females than Hmong males (6.25%) reported family expectations of completion of graduate-level education.

Although both male and female Hmong students reported high levels of support from family while attending CVTC, males reported receiving a higher level of support from family: 48.28% of males and 37.93% of females reported that their families were very supportive and 24.14% of females and 13.79% of males reported that their families were somewhat supportive. Female Hmong respondents reported receiving stronger messages

from their families about the importance of education, both during childhood (89.66%) and in the year prior to this study (91.38%) compared to male Hmong students (78.13% and 84.38% respectively). Both genders reported similar discussions during childhood and in the year prior to this study with their friends about the importance of education. Messages received from teachers throughout elementary, middle, and high school yielded notable gender difference; 72.41% of females and only 56.25% of males reported that most of their teachers encouraged them to pursue education beyond high school.

The rating of agents of socialization that influenced male and female Hmong students' views of education showed similarities and differences. Both male and female Hmong students reported family and teachers to be the two agents that most greatly influenced their opinions on the importance of education. The importance of friends was also similar between both groups. Conversely, the importance of religious leaders and media yielded differences between genders, with 28.13% of male Hmong students reporting that the media was extremely important or very important in influencing their ideas about the importance of education and only 13.79% of female Hmong students reporting this same level of influence. However, religious leaders appeared to be more influential among female Hmong students than among male Hmong students, with 37.93% of females and 9.38% of males reporting that this group was extremely important or very important in influencing their ideas about the importance of education.

Discussion

The locus of this research was to explore educational success differences between Hmong and white students at CVTC. The academic success of Hmong students has serious ramifications in Wisconsin, which has the third-largest Hmong population in the United States (Pfeifer, Sullivan, Yang & Yang, 2012). While poverty rates among Hmong-Americans have decreased in recent years, they remained double those of the general United States population in 2010 (Vang, 2012). It is axiomatic that education is one of the best methods for reducing poverty, especially in groups with statistically lower rates of educational attainment.

This research investigation posed six research questions, beginning with the analysis of educational success differences between Hmong and whites, then identifying the role of family and academic support programs for successful Hmong students. This study also examined influential agents of socialization and the messages inculcated in successful Hmong students and, finally, determined if there were gender differences.

Limitations

While interesting conclusions may have been drawn from this study, there are, as with any study, shortcomings and limitations to the research. Primary among these are issues with the sample; its size, diversity, and temporal range were limited. A total of 91 students enrolled at CVTC participated in this study. This is a rather large sample compared to many studies of Hmong students, but it is still small enough that sample

errors are likely to occur, especially when analysis is extrapolated and applied to a broader population.

Similarly, the sample incorporates only students at one technical college over one four-semester time period. It is unknown if Hmong students at CVTC are widely representative of Hmong students in other career and technical education institutions. Additionally, these findings provide a snapshot of this particular cohort of students versus insight into previous or future cohorts at CVTC. These data do not reveal the answers to such questions, and further study would need to be employed to determine the impact of these exogenous variables.

There were also a few minor flaws with the instrumentation. It would be better, for example, to be able to compare raw GPA data to the survey results, rather than having students choose an estimated range of grade point average in the survey itself. Not only would this allow for more precision, it would take the element of human error out of this association. By and large, however, the survey was accurate and the data it produced were valuable.

Summary of Key Findings

The analysis of data in this study revealed several findings, including the following:

- (a) There was a statistically significant difference in cumulative GPA performance between Hmong and white students as an aggregate, with Hmong students performing at a lower level. That difference manifested itself in a statistically significant manner when comparing Hmong female with white female students, but not when comparing Hmong male with white male students.

The educational performances gaps in CTE between Hmong and whites revealed in this study are consistent with earlier research that disaggregates Hmong students from the "Asian" category in studying post-secondary educational performance (Escueta & O'Brien, 1991; Kao & Thompson, 2003; Miller, 1995; Woo, 2007). The findings of this study further expose the danger of the "model minority" stereotype frequently applied to Asian Americans. As discussed in earlier research, there are consequences to using the nomenclature "Asian" itself and aggregating groups when studying educational success. Lew (2005) contended that a monolithic interpretation of Asians, vis-à-vis educational attainment, is overly simplistic and parochial, camouflaging broad variance within the group.

- (b) The eligibility to receive financial aid negatively influenced GPA performance for both racial/ethnic groups.

Financial aid eligibility is directly correlated to the socioeconomic status (SES) of a student's family. Research has long established that parents' SES has a strong and positive correlation with children's achievement. Thus, differences in SES of Hmong-Americans compared to whites constitute a plausible explanation for the gaps in educational

performance. In Wisconsin, the poverty rate among Hmong people is nearly two and half times the rate among the general population —19% versus 8% (Vang, 2012). This study's findings are consistent with the majority of earlier research indicating that economic barriers influence student success and educational performance (DePouw, 2006; S. Lee, 1997; Lee & Xiong, 2011; Lew, 2005; Lor, 2008, Root, Rudawski, Taylor, & Rochon, 2003; Woo, 2007; M. Xiong, 1996).

(c) The families of successful Hmong students were supportive during their education at CVTC and served as the most critical agent in socializing them to believe that education is important or necessary for success in adulthood.

The family support for education found in this study is consistent with scholars who postulate that Hmong culture positively influences educational achievement. As Hutchinson and McNall (1994) noted, the Hmong community belief that education is a key pathway out of poverty is a clear illustration that education is supported by the group. Similarly, Timm (1994) found that "Hmong parents reported that they believe getting a good education is the way for their children to attain personal success and a good life" (p. 39). Hmong families embracing the importance of education and supporting their children throughout the process is also found in more recent research (Lee & Madyun, 2008; Lor, 2008).

Research has supported the belief that significant others serve as direct and mediating factors in forming students' educational ambitions and that these ambitions profoundly impact educational attainment (Cheng & Starks, 2002). Asian Americans, as an aggregate, have been shown to hold higher educational aspirations for their children than do white parents (Cheng & Starks). Results of online student surveys conducted as part of this research also indicated that high educational aspirations by family were present. Considering the existing and current research together, family behavior and the importance of family may positively affect the educational aspirations of Hmong students (Cheng & Starks; Hutchinson & McNall, 1994; Lee & Madyun, 2008; Lor, 2008; Supple, McCoy, & Wang, 2010; Timm, 1994).

(d) In this study there were not statistically significant differences between genders in regard to cumulative GPA performance among Hmong students. There were, however, gender-based differences in the importance of various agents of socialization and the messages they conveyed.

Research from the mid-1980s showed lower educational performance for Hmong females compared to Hmong males (Downing, Olney, Mason, & Hendricks, 1984). Since the 1990s, research has shown marked improvement by Hmong females, yet gender differences persist (American Community Survey, 2011; Hutchison, 1997; United States Census, 2010). The findings in this study are not consistent with earlier research, showing Hmong males performing better than Hmong females.

S. Lee (1997) examined the participation of Hmong women in higher education, specifically looking at how Hmong culture could explain the stratification between genders.

This study found that the educational expectations held by teachers and family differed by gender. Furthermore, although both male and female Hmong students in this study reported high levels of support from their families while attending CVTC, males reported receiving a higher level of support from their families than did females.

Research specifically addressing teachers' aspirations and messages for Hmong students differs from that of Asian students as an aggregate. Taken together, these responses indicate lower educational aspirations from teachers for their Hmong students; this can negatively impact those students' educational aspirations, attainment, and achievement (Cheng & Starks, 2002; S. Lee, 2001; S. Lee, 2005; G. Lee, 2007; Noguera, 2004; Thao, 1999). Additionally, messages received from teachers throughout elementary, middle, and high school yielded notable gender differences; 72.41% of Hmong females and only 56.25% of Hmong males reported that most of their teachers encouraged them to pursue education beyond high school. The more positive messages from teachers to Hmong females versus Hmong males are consistent with S. Lee's (2001) study, which reported that Hmong males were likely to be stereotyped as "gang-bangers."

Recommendations for Further Study

After examining these data, the following recommendations are offered for further study of Hmong student success in career and technical education and the role of various agents of socialization:

1. **Hmong students must continue to be disaggregated from the "Asian" category.** The dearth of data relating to Hmong students in CTE programs was perhaps the most limiting factor in this study. To examine issues surrounding their educational performance, we must first disaggregate Hmong students from their disparate peers in the "Asian" category. In doing so, the educational attainment and achievement discrepancies that are obfuscated by the "model minority" stereotype may be highlighted; variance within the broader "Asian" category can no longer be ignored.
2. **Further study should be conducted into gender gaps between Hmong male and female educational achievement in CTE.** The results of this study muddy the waters in regard to performance differences between male and female Hmong students. The study indicated no statistically significant difference in cumulative GPA between genders. This stands in contradiction to the preponderance of research on the topic, which shows males outperforming females. The reasons for this discrepancy may be manifold and complicated. It is possible, for example, that Hmong females are catching up to their male peers. It is also possible, however, that the gender gaps reported were peculiar to four-year institutions and that CTE has not experienced commensurate achievement stratification. Either way, further research is needed to determine longer-term trends in gender gaps and to offer greater insight into what may cause them.

- 3. More data needs to be collected from at-risk and unsuccessful Hmong students.** One of the shortcomings of this study is the lack of data from unsuccessful Hmong students. To extrapolate conclusions about the impact of socialization on Hmong student success, comparisons are necessary. While this study produced a panoply of information about which agents of socialization significantly impacted successful Hmong students, little is known about how these same agents did or did not impact unsuccessful Hmong students.

Continued analysis of Hmong educational performance should be conducted to more accurately explain racial/ethnic and gender educational attainment gaps for Hmong students. It is also critical to examine the role of poverty and agents of socialization in these performance differences and to develop strategies to improve the success of Hmong students.

Over the last twenty years, significant headway has been made in reducing the poverty rate and increasing the educational success and attainment of Hmong people; still there is significantly more that needs to be accomplished. Improvements in educational success and attainment rates are likely to manifest themselves in reducing the poverty rates for Hmong-Americans. CTE and other post-secondary institutions are poised to play a critical role in these continued successes. But if they do not fulfill that role, there will be very real economic consequences for Hmong-Americans and society as a whole.

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Stressing Success: Examining Hmong Student Success in Career and Technical Education by Carmen M. Iannarelli. *Hmong Studies Journal*, 15(1): 1-22.

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