

Learning Style Preferences and Acculturation of Multicultural Students of the U.S.

Howard Sisco

**New York City College of Technology
City University of New York**

Tina Kao

**New York City College of Technology
City University of New York**

Abstract

The continual increase of culturally diverse student populations within institutions of higher education of the U.S. has accelerated the need to understand the effects of acculturation and learning style preferences. This is especially important for multicultural individuals, or those having internalized values and beliefs of two or more cultures. The purpose of this study was to assess acculturation and learning style preferences of multicultural students enrolled in a college course in the United States. Our results suggest the degree of acculturation of multicultural students to the American culture, as self-identified by the students, relate to preferences of certain learning styles. Our results also suggest the preference for specific learning styles of these acculturated students may impact academic performance.

Introduction

According to the U.S. Census Bureau (2007), Latinos are the largest minority group in the United States with a population of 44.3 million, while blacks are the second largest minority group with a total of 40.2 million. Asians represent 14.9 million of the population, while 4.5 million of the American population consists of American Indians and Alaska Natives. These data strongly affect the shifts in the demographics of the student population in higher education in the U.S. Due to these shifts, there is an increasing need to understand and optimize the associated demands of educating various ethnic groups in higher education (Khan & Agnew, 2017; Leask & Bridge, 2013; Siczek, 2015).

The term “culture” has been defined as ‘motives, values, beliefs, identities, and interpretations or meanings of significant events that result from common experiences of members of collectives that are transmitted across generations’ (House, Hanges, Javidan, Dorfman & Gupta, 2004). The elements of this definition of culture may be very influential in the processing of information by students who are all part of the same

culture, as demonstrated by students enrolled in the higher education system in the U.S. (Dyer & McKean, 2016; Lund, Dean, & Jolly, 2012; Storey, 2017; Weinstein, Deci & Ryan, 2011). However, multi-cultural individuals that are all placed within a specific culture may have individual variabilities of acculturation. Acculturation encompasses the psychological and behavioral changes one may undergo as a consequence of long-term contact with a specific culture that may not their own (António & Monteiro, 2015; Cervantes & Cordova, 2011; Vela, Zamarripa, Balkin, Johnsonv & Smith, 2013).

What is currently lacking in the literature is whether the degree of acculturation may modulate students' learning style preferences in higher education (Chuang, 2012; Oudenhoven & Ward, 2013). Given the importance of understanding the degree of acculturation and learning style preferences, it is surprising that only a small number of empirical studies can be found on this subject (Tripp, 2011). This is especially critical for understanding and optimizing the associated and increased demands of educating various ethnic groups in the U.S. The purpose of this study was to examine the relationships of the degree of acculturation with learning style preferences of multicultural students enrolled in a college level course in the United States.

Experiential learning process is a cyclical process (Joy & Kolb, 2009). A well validated model of experiential learning suggests that learning derives from a combination of grasping (concrete experience or CE; abstract conceptualization or AC) and transforming (active experimentation or AE; reflective observation (RO) of information, and/or experience (Kolb, 1984). We predicted that students who identify more so with the American culture, compared with that of their native culture, prefer learning styles that rely on AC and RO, while those that weakly identify with American culture prefer learning styles that rely on the CE and AE. It was also predicted that those students who prefer learning styles that rely on the anchors AC and RO have increased academic performance.

Methods

One hundred and fifty-five students enrolled in a college level Psychology course in New York City participated in the study. Each student participant received a packet with the following documents: informed consent form, demographic information survey, Learning Style Inventory, and the Abbreviated Multidimensional Acculturation Scale. Participants were given 45 minutes to assess and complete the information required from the documents.

The average age of the participants was 22 years. Females comprised 46% of the participants. The ethnic background of these participants were as follows: Hispanic 28%, African 25%, West Indian 16%, Asian 13%, Euro 8%, Arab 2%, and Haitian 2%. The remaining failed to provide this information and was categorized as "other". 49% of the participants were born in the U.S. Additionally, 62% of the participants reported

English as their native or first language, while 76% reported English as their best language. In addition, 59% of the students reported that English was not the only language they spoke at home. Furthermore, 63% reported that they are the first in their family to attend college. All students provided informed consent to participate in this study, and the protocol was approved by the Institutional Review Board of New York City College of Technology, a senior college within the City University of New York.

Learning Style Inventory. The Learning Style Inventory (LSI) is a self-description inventory designed to measure learning style preferences (Kolb AY & Kolb DA, 2005; Kolb DA, 1976). Each statement of this inventory includes self-ranking four response options, from most, to least that is descriptive of one's learning style preference. Preferences of learning styles can then be categorized into the following dimensions: Assimilating learning refers to those who transform information with reflective observation (RO), or observing and taking into account the meanings of their observations before acting on them, and grasp information with abstract conceptualization (AC), or generalizing the logistics of what they have observed (Auyeung & Sands, 1996). Converging learning encompasses anchors of grasping information using AC, and transforming information with active experimentation (AE), or into practical applications. Diverging learning refers to learners who grasp information with concrete experience (CE), or are more intuitive to their judgements and feelings, and transform the information with RO. Finally, accommodating learning refers to those who prefer transforming information with AE, and grasping information with CE. The coefficient alpha for the scale was $r = 0.89$.

Abbreviated Multidimensional Acculturation Scale. The Abbreviated Multidimensional Acculturation Scale (AMAS) is a 42-item scale designed to assess an individual's degree of acculturation to the United States (Zea, Asner-Self, Birman & Buki, 2003). This scale focuses on the degrees of three factors; Identity (American, as well as one's origin of heritage); Language Competence (mastery of the English language, along with mastery of one's native heritage language), and Cultural Competence (knowledge of the American culture along with one's culture of origin). The total score was calculated by averaging these subscales, with higher scores indicating greater acculturation to the U.S. For this study, Identity and English Language Competence subscale scores were analyzed independently for the purpose of hypothesis testing.

Academic Performance. Three multiple-choice tests administered throughout the students' enrollment in the college level Psychology course during one semester served as the operationally defined measure of academic performance. These means of these scores were then compared to students' scores on each of the learning style dimensions anchors.

Higher abstract conceptualization - concrete experience (AC - CE; this is derived from subtracting the cumulative rank of CE from the cumulative rank of AC scores) indicates a preference for AC over CE to help grasp concepts while learning. Lower AC - CE scores represent the opposite, a preference for CE over AC for the grasping of concepts while learning. Higher active experimentation - reflective observation (AE - RO; this is derived from subtracting the cumulative rank of CE from the cumulative rank of AC scores) indicates a preference for AE over RO to help transform concepts while learning. Lower AE - RO scores represent the opposite, a preference for RO over AE for the transforming of concepts while learning. A multivariate analysis was performed to examine the responses from the Learning Style Inventory and the Abbreviated Multidimensional Acculturation Scale.

Results

Analysis of the participant's AC - CE scores with their scores from acculturation with the American culture (AMAS) was significantly correlated: 8.40 ± 8.44 SD; 2.81 ± 9.43 SD, $F(1,109) = 10.55$, $p = 0.002$, partial eta squared = 0.09. As predicted, the students who identified greater to the American culture preferred using AC over CE as learning styles for grasping the material (Figure 1).

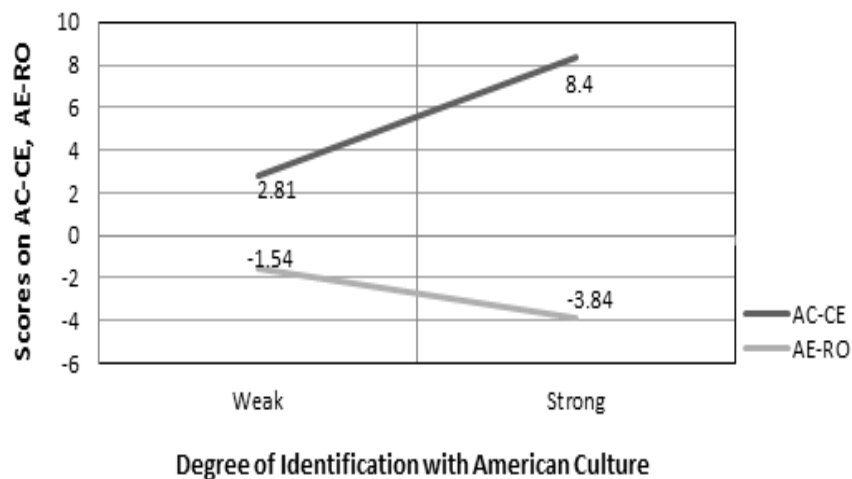


Figure 1. Degree of acculturation with means scores of AC-CE and AE-RO.

To assess whether this observation was not due to a lack of competence of the English language, two groups of participants composed a median split of the 9-item scale designed to assess Language Competence of English (AMAS) were correlated with the anchors. Results yielded no significance between the means of low/high language competence scores, and AC-CE: -5.71 ± 9.50 SD; -6.25 ± 9.11 SD; AE-RO: -1.41 ± 8.80 SD; -4.20 ± 9.60 SD. This was validated by further analyses: -76.52 ± 11.69 SD; -76.57 ± 11.70 SD.

Additionally, the degree of mastery of the English language was not a confounding factor for academic performance.

The scores for AC ($r = 0.27, p < 0.00$) and RO ($r = -0.06$) were positively related to the measure used for academic performance, whereas those for CE ($r = -0.16, p < 0.05$) and AE ($r = -0.03$) were negatively related. The coefficient alpha for the scale was $r = 0.96$.

For the transforming of concepts to help with learning, we had predicted the students who indicated weak acculturations have a preference for AE as compared with RO, and those who indicated greater acculturation prefer RO as compared with AE, thought this was not statistically significant (mean -1.54 ± 9.05 and strong: mean = -3.84 ± 9.44 , Figure 1).

Discussion

The few studies that have addressed whether cultural factors affect learning style preferences suggest that these are factors are influential (Chang et al., 2011; Holtbrugge & Mohr, 2010; Omidvar & Tan 2012; Sugahara & Boland, 2010). However, the diverse elements associated with defining “culture” warrant a need for better understanding of multicultural individuals within a specific culture. Our work has taken this into account. We addressed whether the degrees of acculturation, as self-identified by multicultural students, may modulate their self-identified learning style preferences. Our data suggest that the more acculturated the multicultural students were to the specific culture of the U.S., the preference for the learning style of grasping information was abstract conceptualization (AC), or the generalizing of logistics of what they are learning. Our data also suggest that there is a greater likelihood that academic performance is enhanced for these multicultural students utilizing AC for the grasping of information, and RO for transforming of information during learning. We believe these findings are imperative given the growing number of multicultural students in the United States.

In the Western culture, group work is normally a place of confronting and searching for solutions, where individual opinions of the group may prevail by the actions of leaders, and by the creation of a competitive consensus. This manifests in the roles and responsibilities between teacher and students, as well as between bosses and employees, governments and citizens, etc. On the contrary, collectivist or high-context societies are highly dependent on maintaining harmony among the group (House et al., 2004). Reciprocity and equality tend to be established as obligatory, long-term, and matching, within the inner group in the collectivist culture. Therefore, in an educational setting, the process of grouping and re-grouping students has a tendency to be more difficult in collectivist, as compared with individualistic cultures (Valiente, 2008).

In our study, the more acculturated the multicultural students were to the specific culture of the U.S., the preference for the learning style of grasping information was abstract conceptualization (AC), or the generalizing of logistics of what they are learning. In addition, minimal or no effects of acculturation on the style of transforming information during learning was observed. That is, for our cohort of students, their degrees of acculturation and the learning preferences associated with using practical and applicable methods to help understand the meaning of the information being learned were not related, while the degree of acculturation to the U.S. culture, and the learning preference associated with applying logic and analytical methods to seek generalizations while learning, was related.

Our findings agree with previously held beliefs that within a less collective or more individualistic culture, the guidance of grasping information for learning may lean towards AC. We further these findings by suggesting that this guidance is effectively utilized by those multicultural students that are more acculturated to an individualistic culture. This effectiveness was evident by the enhancement of academic performance for those who prefer AC. Our findings suggest that the guidance of transforming information for learning does not lean towards AE, but more so to RO, for multicultural students in the U.S. Though not statistically significant, this was a trend that was observed, and does not agree with the previously held belief that there is a greater reliance on AE in individualistic cultures. Furthermore, enhanced academic performance was observed for those who prefer RO over AE in transforming information while learning. Our explanation for this is that our data was derived from a high percentage of multicultural students, hence contributing to the uniqueness of the findings.

Taken together, our work supports that for multicultural students enrolled in a class of higher education within the U.S., the dimension known as Assimilating is more relied upon by those with greater acculturation to the U.S. culture. Assimilators are learners who tend to organize what they are learning into logical forms, therefore, value the generalizations of what they are learning versus people contact or dependence on others to help them learn (Sywelem, Al-Harbi, Fathema, & Witte, 2012). This dimension may also contribute to greater academic performance.

Learning styles is an umbrella concept bringing together various schools of thought that lie on a continuum, and not necessarily based on one specific strategy. Individuals who benefit the most from a high degree of structure and independent learning are in fact Euro-Americans, followed by Mexican-Americans, and African-Americans (Heredia, 1999). Within the U.S., less emphasis is placed on the Kinesthetic Modality students for the appropriate classroom strategy (Sywelem, Al-Harbi, Fathema & Witte, 2012). Tripp (2011) did not demonstrate a relationship between students in the U.S. that identified as either 1) Hispanic or 2) Non-Hispanic on learning style preferences. The preferences for transforming information during learning by the

cohorts of African-Americans and Hispanics parallel the AE anchor on Kolb's information evaluating category dimension, suggestive of a tendency toward accommodating and/or converging learning style preference(s). The strategy associated with American Indians (Hopi and Navajo) tend toward the CE anchor or pole of the dimension, rather than that of AC (Rhodes, 1990).

McShannon and Derlin (1999) reported that success rates of students studying engineering in the U.S., as assessed by rates of retention and graduation, prefer Assimilating learning. However, there is ample evidence to suggest that culturally diverse within the U.S. prefer and succeed with student-on-student (i.e. accommodating) learning style. There is thus ample evidence that cooperation between students seems to be particularly beneficial for this cohort of students (Palma-Rivas, 2000; Sanchez, 2000).

Though our work is novel in that it addresses the degrees of acculturation, there are limitations. Our data was only collected from students enrolled in a college level Psychology course in New York City. The areas of study that these students were pursuing were not taken into consideration. We do not know the amount of time our students had spent in the U.S. at the time of data collection, as students who identify as Asian have cognitive tendencies that shift toward the Euro-American direction after one generation of residing in the U.S. (Nisbett, Peng, Choi & Norenzayan, 2001). We did, however, take into consideration our cohort of students' competency in the English language.

The degree of acculturation may moderate preferences in one's learning style. This is especially important for multicultural individuals, or those that have internalized values and beliefs of two or more cultures (Tweed & Lehman, 2002). Our findings support that within the U.S. culture, multicultural students prefer Assimilating learning. The implications of our findings suggest that there may be a fair degree of flexibility in methods of processing information. Further works on acculturation, and the impact of acculturation on the flexibility of adopting methods of learning, need to be addressed.

References

- António, J.H.C., & Monteiro, M.B. (2015). Minorities' acculturation and social adjustment: The moderator role of meta-perceptions of majority's acculturation attitudes. *International Journal of Psychology*, 50(6), 422-430.
- Auyeung, P., & Sands, J. (1996). A cross cultural study of the learning style of accounting students. *Accounting & Finance*, 36(2), 261-274.

- Cervantes, R.C., & Cordova, D. (2011). Life Experiences of Hispanic Adolescents: Developmental and Language Considerations in Acculturation Stress. *Journal of Community Psychology*, 39(3), 336-352.
- Chang, L., Mak, M.C. K., Li T., Wu, B.P., Chen, B.B., & Lu, H.J. (2011). Cultural Adaptations to Environmental Variability: An Evolutionary Account of East-West Differences. *Educational Psychology Review*, 23(1), 99-129.
- Chuang, S.F. (2012). The Relationship between Cultural Values and Learning Preference: The Impact of Acculturation Experiences upon East Asians. *International Journal of Training and Development*, 16(1), 1-22.
- Dyer, W.G., & McKean, A.E. (2016). Learning to "Know Oneself" Through an Intellectual Genogram: A New Approach to Analyzing Academic Careers. *Academy of Management Learning & Education*, 15(3), 569-587.
- Heredia, A. (1999). *Cultural learning styles*. Washington, DC: ERIC Clearinghouse on Teaching and Teacher Education.
- Holtbrugge D., & Mohr AT. (2010). Cultural Determinants of Learning Style Preferences. *Academy of Management Learning & Education*, 9(4), 622-637.
- House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W., & Gupta, V. (2004). *Culture, leadership and organizations: The GLOBE study of 62 Societies*. Sage Publications.
- Joy, S., & Kolb, D.A. (2009). Are there cultural differences in learning style? *International Journal of Intercultural Relations*. 33(1), 69-85.
- Kahn, H.E., & Agnew, M. (2017). Global Learning Through Difference: Considerations for Teaching, Learning, and the Internationalization of Higher Education. *Journal of Studies in International Education*, 21(1), 52-64.
- Kolb, A.Y., & Kolb, D.A. (2005). *The Kolb Learning Style Inventory-Version 3.1: Technical specifications*. Boston, MA: Hay Resources Direct.
- Kolb, D.A. (1984). *Experiential Learning – Experience as the Source of Learning and Development*. New Jersey: Prentice Hall.
- Kolb, D.A. (1976). *The Learning Style Inventory: Technical Manual*, Boston, Ma.
- Leask, B. & Bridge, C. (2013). Comparing internationalisation of the curriculum in action across disciplines: theoretical and practical perspectives. *Compare: A Journal of Comparative and International Education*, 43(1), 79-101.
- Lund Dean, K., & Jolly, J.P. (2012). Student Identity, Disengagement, and Learning. *Academy of Management Learning & Education*, 11(2), 228-243.

- McShannon, J.R., & Derlin, R. (1999). Interactive learning styles of undergraduate students in New Mexico: A new model. *Proceedings of the ASEE Gulf-Southwest*.
- Nisbett, R.E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and Systems of Thought: Holistic Versus Analytic Cognition. *Psychological Review*, 108(2), 291-310.
- Omidvar, P., & Tan, B.H. (2012). Cultural Variations in Learning and Learning Styles. *Turkish Online Journal of Distance Education*, 13(4), 269-286.
- Oudenhove, J.P., & Ward, C. (2013). Fading Majority Cultures: The Implications of Transnationalism and Demographic Changes for Immigrant Acculturation. *Journal of Community & Applied Social Psychology*, 23(2), 81-97.
- Palma-Rivas, N. (2000). Using technology to facilitate learning for minority students. In S.A. Aragon (Ed.), *Beyond Access: Methods and Models for Increasing Retention and Learning Among Minority Students. New Directions for Community Colleges* (pp. 73-83).
- Rhodes, R.W. (1990). Measurement of Navajo and Hopi brain dominance and learning styles. *Journal of American Indian Education*, 29(3), 29-40.
- Sanchez, I.M. (2000). Motivating and maximizing learning in minority classrooms. In S.A. Aragon (Ed.), *Beyond Access: Methods and Models for Increasing Retention and Learning Among Minority Students. New Directions for Community Colleges* (pp. 35-44).
- Siczek, M.M. (2015). Developing Global Competency in U.S. Higher Education: Contributions of International Students. *CATESOL Journal*, 27(2), 5-21.
- Storey, L.D. (2017). Language, Culture, Identity and Citizenship in College Classrooms and Communities. *Composition Studies*, 45(1), 225-229.
- Sugahara, S., & Boland, G. (2010). The Role of Cultural Factors in the Learning Style Preferences of Accounting Students: A Comparative Study between Japan and Australia. *Accounting Education*, 19(3), 235-255.
- Sywelem, M., Al-Harbi, Q., Fathema, N., & Witte, J.E. (2012). Learning Style Preferences of Student Teachers: A Cross-Cultural Perspective. *Institute for Learning Styles Journal*, 1, 10-24.
- Tripp, R. (2011). *Learning Style Differentiation between Hispanic and Non-Hispanic College Students in Selected Institutions in the North Carolina Public University System*. University of Nebraska-Lincoln.
- Tweed, R.G., & Lehman, D.R. (2002). Learning considered within a cultural context: Confucian and Socratic approaches. *American Psychologist*, 57(2), 89-99.

- Valiente, C. (2008). Are students using the 'wrong' style of learning? A multicultural scrutiny for helping teachers to appreciate differences. *Active Learning in Higher Education*, 9(1), 73-91.
- Vela, J.C., Zamarripa, M., Balkin, R., Johnson, M., & Smith, R. (2013). Understanding Latina/O Students' Perceptions of High School Counselors and Acculturation as Predictors of Enrollment in AP Courses. *Professional School Counseling*, 17(1), 142-152.
- Weinstein, N., Deci, E.L., & Ryan, R.M. (2011). Motivational determinants of integrating positive and negative past identities. *Journal of Personality and Social Psychology*, 100(3), 527-544.
- Zea, M.C., Asner-Self, K.K., Birman D., & Buki L.P. (2003). The abbreviated multidimensional acculturation scale: empirical validation with two Latino/Latina samples. *Cultural Diversity and Ethnic Minority Psychology*, 9(2), 107-26.

Author's Note

Howard Sisco, Department of Social Science, New York City College of Technology. Correspondence concerning this article should be addressed to Howard Sisco, Department of Social Science, New York City College of Technology, Brooklyn, NY 11201. Contact: hsisco@citytech.cuny.edu

Tina Kao, Department of Social Science, New York City College of Technology.