

The Relationship between Ethnicity and Academic Success in Online Education Courses

Lori Kupczynski

Texas A&M University-Kingsville
Department of Educational Leadership and Counseling
700 University Blvd., MSC223
Kingsville, TX 78363
USA

Michelle Brown

Walden University
The Richard W. Riley College of Education and Leadership
100 Washington Avenue South, Suite 900
Minneapolis, MN 55401
USA

Abstract

This study examined the relationship between student ethnicity and success in a distance learning course. Grounded in social identity theory, this study examined differences in online achievement by ethnicity for 959 education majors at a Hispanic Serving Institution (HSI). Simple main effect tests were conducted after assumption tests for the ANCOVA were not met. Findings indicated that for students with lower overall GPAs, there were differences in online course achievement among ethnicity groups.

Key Words: Online learning, Distance learning, Technology, Online course achievement, Social identity theory, Education

1. Introduction

Past research has demonstrated that distance learning is different from traditional learning in ways that affect student satisfaction and success (Shachar & Neumann, 2003). However, the exact factors that create these differences remain inadequately identified and researched (Yukselturk & Bulut, 2007). Features specific and inherent to each individual course such as instructional design, course structure, instructional support system, and the instructors themselves have been identified as playing a role in student success and satisfaction (Council for Higher Education Accreditation, 2002). Additionally, many factors specific to each individual student, such as race, age, gender, overall GPA, and learning style have been identified as factors for student success in the online classroom (Council for Higher Education Accreditation, 2002). Simply identifying what factors may or may not influence student participation and success in online classrooms is not enough. How such factors may operate in concert with one another must be determined (Yukselturk & Bulut, 2007).

2. Purpose of the Study

The purpose of the current study was to compare the academic success of education majors in an online course among ethnicity groups (Hispanic, White, and Other). The study was conducted at a regional, Hispanic-serving institution in South Texas, which serves approximately 6,200 students. Grounded in identity theory, this study examined differences in online course achievement among ethnicity groups for 959 education majors at the university.

3. Theoretical Framework

Culture and ethnicity are large components of social identity for many individuals. Social identity theory is a social psychological theory first described by Tajfel and Turner in the later 1970s and early 1980s.

Social identity was defined by Tajfel (1981) as "that part of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership" (p. 255). Social identity is based on self-identification, feelings of belonging and commitment, the sense of shared values and attitudes as well as cultural aspects of ethnic identity such as language, behavior, values, and knowledge of ethnic group history (Phinney, 1990). Ethnic identity is important as individuals need a good sense of group identification to maintain a sense of well being as the simple construct of belonging may contribute to a positive construction of self (Phinney, 1990).

Ethnic identity is an aspect of acculturation. Acculturation concerns itself with changes in attitudes, values, and behaviors which are the result of direct contact between two different and distinct cultures (Phinney, 1990). Strong identification with two groups including the ethnic group is considered bi-culturalism, while strong identification with only the ethnic group is defined by separation. Strong identification with the majority culture indicates assimilation and rejection of both groups is considered marginality. Majority culture's disparaging view of ethnic minorities may have negative impacts on an individual's psychological well being (Phinney, 1990).

According to identity theory, individual behavior is influenced by an individual's identification with larger societal groups and organizations in that this identification drives internal processes and structures (Padilla & Perez, 2003). Latino culture is associated with familial relationships, child socialization, spirituality, social support and adjustment, and gender roles (Carter, Yeh, & Mazzula, 2008). Latinos demonstrate a preference for seeking help, especially through social networks and familial ties. Racial identity theory may also account for within-group variability.

Furthermore, it has been noted that components of identity are instrumental in educational achievement and must be engaged by various aspects of the course, including a course's internal culture (Schachter & Rich, 2011). This particular study examined the relationship between education student ethnicity and achievement in an online course.

4. Review of the Literature

Student ethnicity has been identified as a likely influencing factor for student success in the online classroom (Richardson, 2012). Ethnicity, like age and gender, is a fundamental category of social identity that defines society; and therefore, may serve as an influencing and/or interacting factor in distance learning achievement.

Across a number of countries, education inequalities tend to make success in higher education more difficult for ethnic minorities. Students may enter colleges and universities lagging behind the skills knowledge of their cohorts. Latino families may even receive biased or discouraging messages regarding higher education (Gonzalez, Stein, & Huq, 2012; Richardson, 2012). Traditionally, at predominately white colleges in the U.S., ethnic minority students often receive lower grades, take longer to graduate, and generally struggle with course work. This achievement disparity has been demonstrated to exist in equal measures in both traditional education and online education (Richardson, 2012).

However, some researchers have suggested that Hispanic and African American students may prefer face-to-face instruction due to cultural influences which place emphasis on community; especially since there is an emphasis on community and social ties within these ethnic identities (Ashong & Commander, 2012; Schneider & Ward, 2003). Furthermore, a majority of African American students have cited not enjoying using computers for schoolwork and low confidence levels in the online classroom as reasons for preferring traditional learning (Ashong & Commander, 2012).

Additionally, whether or not culture and ethnic identity play a role in cognitive learning styles that may affect how minorities interact within the virtual classroom has been hotly contested (Graff, Davies, & McNorton, 2012). Cultural differences in ethnic identities and cognitive learning may be directly related to studying norms within a specific culture (Graff, Davies & McNorton, 2012). It should be noted that African Americans and Hispanics excel at traditionally Black colleges; suggesting that education may be affected by ethnicity identity and culture (Richardson, 2012). Perceived familial support and peer support have been noted as factors for Latino student success (Schneider & Ward, 2003). This suggestion can be extended to examine the culture set within a particular online course by other interacting factors such as course design and the course hosting software.

5. Methods and Procedures

5.1 Research Question

The research study was guided by the following question:

- For Education majors, what is the relationship between student ethnicity and achievement in an online course, holding constant the cumulative GPA?

5.2 Population and Sample

A sample of 959 students was drawn from a population of just over 1,000 education majors at a Hispanic-serving institution in South Texas. Of the total sample, 64% were Hispanic, 28% were White, and 8% were classified as Other in terms of student ethnicity. The sample was comprised of 69% female and 31% male students. Ethnically, the education college reflects the demographics of the surrounding area. All students in the sample were education majors who had taken an online course the semester the study was conducted. All available participants were used in the study sample.

5.3 Research Design

This quantitative study utilized a comparative design in which groups were compared based on the variable of interest. For this study, student ethnicity was the variable of interest, and ethnicity groups were compared based on the academic success achieved in an online course. The planned data analysis included descriptive statistics and analysis of covariance (ANCOVA) to examine the relationship between student ethnicity and online course grades, holding constant the cumulative GPA of the student.

5.4 Data Collection and Analysis

After approval to collect data was received from the institution, the online course grades, cumulative GPAs, and self-reported ethnicity information were collected for 959 education majors at the university. A one-way analysis of covariance (ANCOVA) was planned to examine the question under study. The independent variable, ethnicity, included 3 levels: Hispanic, White, and Other. The dependent variable was the course grade received in the online course (F = 1; D = 2; C = 3; B = 4; A = 5). Again, cumulative GPA served as the covariate in order to partial out the effects of students' overall achievement.

6. Results

6.1 Descriptive Statistics and ANCOVA Assumption Test Results

For the overall sample, White students had slightly higher online course grades ($M = 4.76$, $SD = .791$) than Hispanic students ($M = 4.49$, $SD = 1.02$) and those categorized as Other ($M = 4.66$, $SD = .774$). A preliminary analysis was conducted to test the homogeneity of slopes between the covariate and the dependent variable across groups, which is an assumption underlying ANCOVA. The assumption test indicated that the relationship between cumulative GPA and the online course grade differed significantly as a function of ethnicity, $F(2, 953) = 9.85$, $MSE = .535$, $p = .000$, partial $\eta^2 = .020$. Therefore, the assumption of homogeneity-of-slopes was not met, meaning the interaction effect was significant. Based on the results of the assumption test, the ANCOVA was not conducted, and instead, simple main effect tests were conducted that allow for heterogeneity of slopes. The simple main effect tests were conducted to assess differences among ethnicity groups at low (25th percentile), medium (50th percentile), and high (75th percentile) values on the covariate (overall GPA). A p value of .017 (.05/3) was required for significance for each of the tests.

6.2 Results of Simple Main Effect Tests

Mean estimates were conducted for the low overall GPA group. Table 1 presents the means, standard errors, and 95% confidence intervals for online course grade by ethnic group.

Table 1: Estimates for Low GPA Group (Dependent Variable: Official Grade)

Ethnic Group Membership	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Hispanic	4.084 ^a	.035	4.015	4.154
White	3.678 ^a	.096	3.491	3.866
Other	3.926 ^a	.161	3.611	4.242

Note. a. Covariates appearing in the model are evaluated at the following values: Cumulative GPA = 3.00.

The simple main effects test was significant for the low GPA group, $F(2, 953) = 8.14, p = .000$, partial $\eta^2 = .017$. The univariate test results, presented in Table 2, indicated that for students with lower overall GPAs, there was a significant difference in online course achievement among the ethnicity groups.

Table 2: Univariate Tests for Low GPA Group (Dependent Variable: Official Grade)

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	8.710	2	4.355	8.136	.000	.017
Error	510.121	953	.535			

Note. The *F* tests the effect of Ethnic Group Membership. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Pairwise comparisons were conducted and evaluated at the same level of significance (.017) as the simple main effects tests, following the LSD procedure. There were significant differences between Hispanic student ($M = 4.08$) and White student ($M = 3.68$) online course achievement, but not for those classified as Other ($M = 3.93$).

Table 3: Pairwise Comparisons for Low GPA Group (Dependent Variable: Official Grade)

(I) Ethnic Membership	Group (J) Ethnic Membership	Mean Difference (I-J)	Std. Error	Sig.	95% C.I. for Difference Lower Bound	Upper Bound
Hispanic	White	.406*	.102	.000	.206	.606
	Other	.158	.164	.337	-.165	.481
White	Hispanic	-.406*	.102	.000	-.606	-.206
	Other	-.248	.187	.185	-.615	.119
Other	Hispanic	-.158	.164	.337	-.481	.165
	White	.248	.187	.185	-.119	.615

In contrast, the simple main effect tests failed to be significant for the mid-level GPA group, $F(2, 953) = 1.95, p = .143$, partial $\eta^2 = .004$ or for the highest GPA group, $F(2, 953) = 1.06, p = .346$, partial $\eta^2 = .002$. For students at the central level for overall GPA, White students received slightly lower online course grades (White $M = 4.47$; Hispanic $M = 4.59$; Other $M = 4.54$), but the differences among the groups were not enough to be statistically significant. For the high GPA group, the White ethnicity group appeared to receive higher online course grades (White $M = 5.02$; Hispanic $M = 4.93$; Other $M = 4.96$), but similar to the middle group, the differences among the groups were not significant.

In summary, for students with lower overall GPAs, a significant difference in online course achievement exists among Hispanic, White, and Other education majors, with White students scoring significantly lower than Hispanic students in the online course. For students with mid-level and higher overall GPAs, no difference exists in online course achievement among the ethnicity groups. The interaction effect can be seen in Figure 1, with the slope lines for ethnicity groups crossing between the middle and higher GPA ranges.

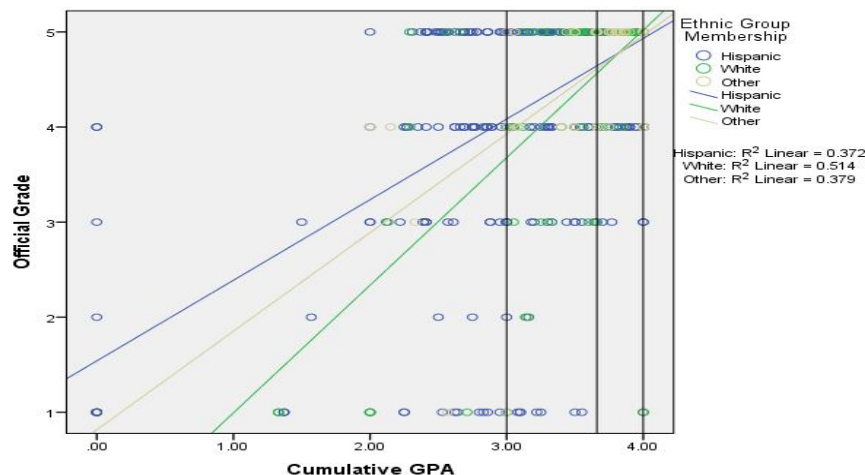


Figure 1.The Interaction Effect between Student Ethnicity and Cumulative GPA.

7. Discussion and Conclusions

In this study, simple main effects testing revealed that for the low GPA category, Hispanic students performed significantly better than White students. Students identifying as ethnically Hispanic are supported and nurtured by social interaction and peer support (Schneider & Ward, 2003). As online pedagogy is more suited to collaboration and interaction, Hispanic students may find that online education, which affords more opportunities peer support, is beneficial to their educational goals (Blum, 1999). Furthermore, as this study was conducted at a HSI, it is possible that the institutional culture is supportive of Latino ethnic identity and student success in a manner similar to that seen at historically Black colleges which nurture education and learning through respect for ethnic identity (Richardson, 2012).

Within Hispanic ethnic identities, help seeking from family and peers is encouraged (Carter, Yeh, & Mazzula, 2008). Within low-level GPA groups, learning differences, such as help seeking behaviors linked to ethnic identity, may account for success variability. However, at mid and higher level GPAs, interacting factors may influence online course success, such as the personal factors of motivation and self-efficacy, and other factors such as course design, instruction style, and the course hosting software. It appears as though varying factors may level out any advantages or disadvantages offered by identity labels such as ethnicity.

It is recommended to continue exploring the many interactions among personal factors, course-related features, and the ethnic identity of students. To ensure the success of all students, it is important to investigate how the pieces fit together and interrelate (Yukselturk & Bulut, 2007). The role of ethnic identity in distance learning should continue to be examined, to guarantee all students have the same opportunities for online success.

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