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J. Luke Wood
Sim Barhoum, San Diego Me

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Differences in Active and Collaborative Learning by Race for Community College Developmental Writing Students

Sim Barhoum
J. Luke Wood

Sim Barhoum is an Assistant Professor of English at San Diego Mesa College.
Dr. Wood is the Director of the Doctoral Program in Community College Leadership at San Diego State University.

The purpose of this study was to determine whether or not there were significant differences in the self-reported frequency of active and collaborative learning by racial/ethnic affiliation between students who have completed a developmental writing course and those that plan to take one. Drawing upon data from the Community College Survey of Student Engagement (CCSSE), this research examined a sub-sample of 34,148 community college students across 916 colleges. Data in this study were analyzed using two-way (2X7) factorial analysis of variance (Factorial ANOVA). Findings from this study indicated that students across all measured racial/ethnic affiliations had higher scores of self-reported frequency for active and collaborative learning after they took a developmental writing course. Also found was that Native Hawaiians had significantly higher mean scores than all other racial/ethnic groups. Implications for future research and practice are extended.

According to the American Association of Community Colleges, about 7.5 million undergraduate students are enrolled in community colleges. Approximately 4.5 million students were enrolled part-time, and 2.9 million students are enrolled full-time (2013, AACC). Of these 7.5 million students, current figures indicate that about 70 percent of community college students enrolled in at least one developmental course (NCES, 2013). Recently there has been a growing amount of research focused on developmental writing in community colleges (Bailey, 2009; Cohen & Brawer, 2003; Edgecombe, Cormier, Bickerstaff & Barragan, 2013). As a whole, this research indicates that the developmental education pathway is failing with respect to actualizing
enhanced outcomes for students (CCRC, 2014). Furthermore, the pathways could benefit from considerable reform as too many students are placed into developmental courses—often resulting in failing to achieve their academic goals with completion of a degree (CCRC, 2014).

There has also been extensive research focused on student engagement and how engagement positively affects student outcomes (Kinzie, Kuh, Schuh, & Whitt, 2011; Tinto, 1993). Theorists distinguish between various types of engagement (e.g., active and collaborative learning, participation in challenging academic work, involvement in diverse educational experiences) because there are subtle yet important differences between engagement types (Quaye & Harper, 2014). For example, engagement could refer to passive or active activities. While passive activities simply refer to being involved in an academic event, active activities include participating and engaging in an academic event (Quaye & Harper, 2014). Due to many community colleges history of perpetuating disproportionate impact for certain student groups (Dougherty, 1994; Mullin, 2012), recent research in this area focus on how students of various races and ethnicities, particularly students of color, need to be engaged with faculty and peers (Wood, Harris, & White, 2015). The next section explains the purpose and importance of this study.

Purpose of the Study

This study contributes to the increasing research that explores how active and collaborative learning affects developmental writing students at community colleges. More specifically, this research focused on how peer collaborative engagement in developmental writing courses differed when separated by race/ethnicity. The purpose of this study was to examine whether or not there were significant differences in active and collaborative learning by racial/ethnic affiliation between students who have completed a developmental writing course and those that plan to take one.

This study is critical since developmental education is one of the largest barriers to success for community college students, and there is a need to find more effective ways to help students successfully complete these non-credit sequences (CCRC, 2014). This particular study adds to the research on how to teach toward students in the developmental writing pathway by looking at more specific areas of divergence (active and collaborative techniques) and possibly helping find more successful ways to refine teaching practices. An additional intended outcome of this study is illuminating how active and collaborative learning affects students differently across race/ethnicity. Furthermore, this research shows a need for
educators to teach students in ways that more closely aligns with cultural norms for diverse students and as ways to further engage students in the educational environment. The next section provides an overview of the relevant literature.

**Brief Review of Literature**

This section briefly reviews developmental writing scholarship and explicates the theoretical framework of active and collaborative learning that was used for this study. Most community college composition/writing programs include two transfer-level college courses and a combination of one to five pre-transfer, non-credit courses (Coleman, 2014). The most common changes within colleges’ developmental education programs in the past few decades include the delivery of non-credit courses: how many units the courses are, how many hours they meet per day/week, and how many contact hours there are between student and teacher (Bailey, 2009; Coleman, 2014; Edgecombe, Cormier, Bickerstaff, & Barragan, 2013).

Unfortunately for students, recent research indicates that most students placed in developmental education pathways would succeed at the same rates as students initially placed into the first transfer-level English course (Bailey, 2009). The most recent reforms to these structures, like acceleration, have helped create a more equitable distribution of racial and ethnic success; however, the parts of acceleration (mainstreaming, co-requisite, high-challenge, high-expectations, non-cognitive focus) that are the most necessary for success are still unknown and further research is needed (Coleman, 2014).

Besides recent scholarship on acceleration and developmental writing reform, research indicates that additional changes need to occur, and it will be worthwhile to look at how andragogical practices affect student engagement (Coleman, 2014). Broad investigations have concluded that academic interactions from student to student, both inside and outside the academic setting, have beneficial effects on achievement (Astin, 1993; Kinzie, Kuh, Schuh, & Whitt, 2011; Tinto, 1993; Ullah & Wilson, 2007). Looking at student engagement and active and collaborative learning practices are critical components in helping developmental students succeed (McCleeney, 2007). In addition, differences in collaborative learning between ethnicities is important. For example, CCSSE found higher levels of engagement by minority and other at-risk students (McCleeney, 2007).
Theoretical Framework

The theoretical model in this study uses part of Kuh’s (2011) Student Engagement Theory that addresses the positive connection to achievement when students interact in academic settings with other students and faculty. In particular, this study will focus on Kuh’s model of Active and Collaborative Learning, which suggests that students who are “intensely involved” in these educational experiences and are able to apply that in various situations in a collaborative environment with other students will succeed (Kinzie, Kuh, Schuh, & Whitt, 2011). Kuh’s model (2011) hypothesizes that students in collaborative learning environments will develop expertise that will help them succeed in and out of college settings. According to Kuh, the active and collaborative framework includes contributing to classroom discussions, giving class presentations, working with other students on projects, tutoring or teaching other students, participating in community-based projects as part of a course, and discussing readings or classes with other students (Kinzie, Kuh, Schuh, & Whitt, 2011). The next section will discuss the methodology used in this investigation.

Methodology

Data from this study were derived from the Community College Survey of Student Engagement (CCSSE). The CCSSE is an institutional-level assessment instrument used at community colleges directed at educational practices related to student engagement, student learning, and student retention (CCSSE, 2014). CCSSE is an instrument that has been rigorously validated over long periods of time for this and other engagement scales, demonstrating strong construct validity and reliability (Angell, 2009; Marti, 2004; McClennen, Marti, & Adkins, 2012). CCSSE has been distributed to 916 colleges and over 100,000 students. To achieve the purpose of this study, this dataset was delimited to 34,148 students from 2001 until 2015 who had planned to take and had taken developmental writing courses. This study looked at the differences between those two groups to see if active and collaborative learning techniques had any effect.

This study used a frequency scale from 1 (never) to 4 (very often) in regards to seven self-reported collaborative learning questions where the respondent: (1) asked questions in class or contributed to class discussions; (2) made a class presentation; (3) worked with other students on projects during class; (4) worked with other classmates outside of class to prepare class assignments; (5) tutored or taught other students (paid
or voluntary); (6) participated in a community-based project as part of a regular course; (7) and discussed ideas from readings or classes with others outside of class (students, family members, coworkers, etc.). All items were averaged, the Cronbach’s alpha reliability coefficient was 0.68, which was approaching acceptable (Gliem & Gliem, 2003). This study used a factorial analysis of variance (factorial ANOVA) that consisted of two independent variables and one or more dependent variable (Mertler & Vannatta, 2010). In particular, this study employed a 2 x 7 factorial ANOVA, with effect sizes being computed using $n^2$ (.01=small, .06=medium, .14=large). Post hoc analyses were conducted using the Bonferroni correction to reduce the likelihood of a Type I error. Due to the large sample size all main effects were tested for significance at the 0.01 level. The following section will outline the findings of the study.

**Results**

Active and collaborative learning scores were subjected to a two-way analysis of variance having two levels for developmental writing (I plan to do, I have done) and seven levels of race (Native American, Asian, Native Hawaiian, Black, White, Hispanic, and Other). The main effect for developmental writing was significant $F(1, 34148) = 18.48, p<.001$. In addition, so was the main effect for race $F(6, 34148) = 32.817, p<.001$. However, there was no significant interaction between race and developmental writing, $F=0.1293, p=n.s$. The main effect for developmental writing accounted for a small percentage of the variance in the outcome, as assessed by the $\eta^2$. Similarly the main effect for race was also small.

The mean score for active and collaborative learning for those that planned to take developmental writing was 15.66 while the mean score for those that had already done so was 16.08 (see Figure 1).
Estimated Marginal Means of COLLABLEARN

Figure I: Profile plot showing student active and collaborative learning among students who completed developmental writing and those who plan to take it.

As noted, this represented a significant difference (MD=0.426, p<.001). The total model, in consideration of the two main effects and interaction effect, accounted for 2.5% of the variance in the outcome as indicated by the R2.

With respect to multiple comparisons by race, Native Hawaiians had significantly higher mean scores than all other racial/ethnic groups (see Figure 2). These differences were as follows: American Indian (MD=1.524, p<0.001), Asian (MD=1.822, p<0.001), Black (MD=1.357, p<0.001), White (MD=1.988, p<0.001), Hispanic (MD=1.994, p<0.001), and Other (MD=1.361, p<0.001).
Black students had significantly higher mean scores than three other racial/ethnic groups, including: Asian (MD=0.465, p<0.001), White (MD=0.631, p<0.001), and Hispanic (MD=0.637, p<0.001). Students that identified as Other had significantly higher mean scores than Asian (MD=0.461, p<0.002), White (MD=0.626, p<0.001), and Hispanic (MD=0.633, p<0.001) students. American Indians had significantly higher mean scores than both Whites (MD=0.463, p<0.006) and Hispanics (MD=0.470, p<0.008). None of the other race/ethnicities (White, Hispanic, Asian) had significant differences.

Implications for Practice and Research

This study found that there was a significant difference in self-reported frequency of active and collaborative learning experiences for Native Hawaiians compared with all other racial/ethnic groups. Specifically, this student population comes into and leaves developmental writing courses with significantly higher active and collaborative learning levels. Not all teachers use active and collaborative learning techniques, but this study looked at students that reported these techniques were used in their de-
developmental writing classes. Therefore, this research points to how practitioners should apply more active and collaborative techniques to all student populations because the outcomes of this study show that all reported racial/ethnic groups observed a higher frequency of experiences with active and collaborative learning after taking developmental writing. This study also shows that practitioners should use different active and collaborative strategies with different racial/ethnic groups. It is possible that the most commonly used strategies work for certain groups more so than others. Trying different active and collaborative techniques would include a more targeted and individualized approach toward teaching.

Native Hawaiians

Research needs to be done to better understand the outcomes identified in this study. Further research should be done on the cultural attributes of the Native Hawaiian population that contribute to student-to-student engagement. Because the active and collaborative learning levels of Native Hawaiians were significantly higher than all other races, it may be interesting to first validate, then study what social norms may contribute to the collective engagement of this culture within an academic setting. A study that focused on 2,516 Native Hawaiian college students found that family support, among other factors, were significant determinates in bachelor's degree attainment for the ones that first started at the community college level (Hagedorn, Lester, Moon Tibbetts, 2006). Researchers could investigate if active and collaborative experiences in college are aligned with family support and how that helps Native Hawaiian students succeed and persist.

Students of color

Research additionally needs to be done so that practitioners can replicate and foster these attributes across all populations. Due to the concentration of these students in Hawaii and the western United States, possibly, the variation identified is a by-product of regional and cultural assets. Interestingly, students that identified as Black and Other had significantly higher levels of active and collaborative learning outcomes than White, Hispanic, and Asian populations. Further research needs to be done to better determine why this is. However, this finding is in line with a recent report from CCCSE (2014), which found that men of color report high levels of engagement. This may be a by-product of different cultural interpretations of the items or actual engagement differences. Further research is needed to determine the actual nature of these differences.
Developmental and transfer-level writing

Researchers should also take a look at how active and collaborative learning is connected to student persistence (Tinto, 1997) in more than a one-semester developmental writing class. Researchers of developmental writing may want to examine potential applications of this study to students who take transfer-level writing classes as well. Comparing the outcomes of transfer-level writing students active and collaborative levels may reveal much about how the writing pathway affects students. Also, the outcomes of the transfer-level writing students study may reveal more significant differences across racial/ethnic groups. Once research validates why some racial/ethnic outcomes are significantly higher, practitioners will be able to replicate these practices to other populations. Previous research has found that involvement matters most during the first year of college (Tinto, 1997). It would be interesting to see how different the effects are for students beyond the first year.

Conclusion

As stated previously, this study examined whether or not there were significant differences in active and collaborative learning by racial/ethnic affiliation between students who have completed a developmental writing course and those that plan to take one. Findings of this study indicated that students across all races/ethnicities increased with levels of active and collaborative learning after they took a developmental writing course. Also indicated was that Native Hawaiians had significantly higher mean scores than all other racial/ethnic groups. This study expands on the previous research because it looks at different race/ethnicity types and developmental writing completion and how that affects active and collaborative learning levels.
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Differences in Active and Collaborative Learning  27


