

STUDENT DIVERSITY AND HOW IT RELATES TO STUDENT SUCCESS

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ABSTRACT

Encouraging contact among students from different economic, social and racial or ethnic backgrounds could help provide the support students deem necessary to succeed at college. Evaluation of a 2011 Community College Survey of Student Engagement (CCSSE) dataset reveals an intriguing relationship between student diversity and students' feelings of support they need to succeed at college. Analysis of data implies that improving students' understanding of people of other racial and ethnic backgrounds could help encourage contact among students from different economic, social, and racial or ethnic backgrounds, and this in turn could help university and college students succeed in their studies. Logistic regression analysis shows the strongest predictor of support needed to help students succeed at college is "Encouraging contact among students from different economic, social and racial or ethnic backgrounds". Consequently, increasing student diversity, for example, may be an appropriate university or college strategy to help students understand people of other backgrounds. Greater awareness of people from different racial and ethnic backgrounds could promote contact among students with different backgrounds and this could improve the sense of support students think a college could provide them to succeed at school and in the job market.

JEL: I21, I22, I23, I24, O15

KEYWORDS: Student Engagement, Diversity, CCSSE, Support for Learners, Educational Intervention

INTRODUCTION

As reported by Junco, Heiberger, & Loken (2011), Astin (1984) defined student engagement as "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 297). He later defines involvement in a similar fashion (Astin, 1985). Therefore, a student's engagement is their involvement at university or college. The Community College Survey of Student Engagement (CCSSE) has provided assessment tools and improvement strategies since 2001. CCSSE's survey instrument, the Community College Student Report, emphasizes institutional practices and student behaviors that encourage student engagement. Good educational practices have been shown to be directly related to retention and other desired student outcomes (CCSSE, 2012a). Among the things the CCSSE survey asks students is their college experiences and how the college supports their learning. Findings show student engagement —involvement, integration, and quality of effort in social and academic collegiate experiences — is significantly related to student learning, persistence, and academic achievement. Hence, student engagement is undeniably linked to student success and it is an appropriate and useful proxy for desired outcomes of students' collegiate experience (CCSSE, 2012a).

This study attempts to understand factors that affect engagement levels which may result in more accurately measuring and promoting student engagement. The focus is on student diversity and students' feelings of support they need to succeed at university or college. The argument made is that support for learners and diversity among students are important contributors to student engagement. What follows in this research paper is a review of literature outlining the notion of support for learners, integration of experiences, and

student diversity. After this is the data and methodology, results of logistic regression analysis of key support variables, discussion of recommendations on institutional engagement initiatives for administrators, and conclusions.

LITERATURE REVIEW

The topic of student engagement is important because engaged students tend to be good students and continue to become better students over time (Tison, Bateman & Culver, 2011). Student engagement has become a much-studied topic in higher education because engagement is highly correlated with learning and personal development (Astin, 1993). Such studies show that students actively engaged with university or college faculty and staff, other students, and with the subject matter are more likely to learn, persist with their studies, and to attain their academic goals. Findings from the CCSSE concluded that student learning, persistence, and academic attainment is significantly related to student engagement, involvement, integration, and quality of effort in social and academic collegiate experiences (CCSSE, 2012b). Engagement has been shown to be highly correlated with learning and personal development (Astin, 1993). Elffers, Oort, & Karsten (2011) revealed that experiencing an academic connection is central to emotional engagement. Students connect with human beings and also with the very school and education itself. These researchers also restate that emotional engagement with school is an essential prerequisite for student effort, achievement, and persistence in school. Their results show that such engagement is closely related to school experiences. Such experiences help students perceive a sense of belonging and provide positive attitudes towards education so they value their education.

Kuh (2001a) suggested that a measure of institutional quality is reflected in student engagement. Therefore, better institutions are identified as those where students are more engaged. In addition, the level of educationally purposeful activities such as active and collaborative learning, and student–faculty interaction has been identified as an alternative measure of collegiate quality (Kuh, 2003). Engagement research can help direct college and university policy development; institutions may use student engagement results to help design interventions to create more effective learning environments (Hu and Kuh, 2002). However, Tison, Bateman & Culver (2011) report that the success of such initiatives depends on identifying and targeting those particular groups of students who will benefit most since the same learning environments are not equally effective for all people. Thus, to help improve the success of engagement initiatives and increase academic excellence, an institution should identify and target those student groups who will most benefit from the initiative.

Student engagement affects success. A study of Student Behaviors, Activities, and Experiences Associated with Student Success in 2007, states that assuming a student is adequately prepared through high school; the best predictor of university or college success is student engagement, or the extent to which they take part in educationally effective practices. Chickering & Gamson (1987) listed several categories of effective educational practices that directly influence student learning and the quality of their educational experiences. As students engage in these kinds of activities they learn more and they are more likely to persist and graduate from college. The 2007 study of Student Behaviors, Activities, and Experiences echoes that student engagement represents two critical components. The first is the amount of time and effort students put into their studies and other educationally purposeful activities. The second component of student engagement is how the institution organizes the curriculum, other learning opportunities and support services, and deploys its resources to encourage students' participation in activities that lead to the experiences and desired outcomes such as satisfaction, learning, persistence, and eventual graduation (Kuh, 2001a). Thus, it could be argued that the effectiveness of any educational practice is gauged by its ability to increase student engagement.

Student satisfaction with university or college ultimately influences engagement. An analysis of the NSSE data reveals that the single best predictor of student satisfaction with college is the extent to which students

perceive the institutional environment to be supportive of their academic and social needs (Student Behaviors, Activities, and Experiences Associated with Student Success, 2007). The way students feel about their school does not necessarily directly influence how much they learn. Nonetheless, their perceptions directly affect student satisfaction and how much effort they will spend on educationally purposeful activities, which subsequently have direct impacts on their learning and personal development (Hu and Kuh, 2002, Kuh 2001a, 2001b).

The study of Student Behaviors, Activities, and Experiences Associated with Student Success in 2007 reiterates that student satisfaction is derived when the student feels he or she belongs at, and is loyal to, the institution (Tinto, 1988), and is highly correlated with engagement (National Survey of Student Engagement, 2005), persistence (Tinto, 1988), and academic performance (Bean and Vesper, 1994). Furthermore, the student's degree of satisfaction with the university or college experience is prone to influence from the college environment (Astin, 1993). Generally, the more interaction students have with their peers and with faculty, the more satisfied they are overall with the post-secondary experience (Astin, 1993; Kuh, 2003; National Survey of Student Engagement, 2005).

Significance of Support

In a similar fashion to the CCSSE, the National Survey of Student Engagement (NSSE) instrument assesses engagement in effective educational practices within benchmarks that include: 1) level of academic challenge, 2) student interactions with faculty, 3) active and collaborative learning, 4) enriching educational experiences, and 5) supportive campus environments (Kuh, 2001a). The NSSE measures outcomes of engagement as general gains in communication, intellectual and interpersonal skills, and self-reported grades. Engagement is only one factor that contributes to these outcomes (Chambers, 2010). Moreover, students' perceptions of their college and assessments of advising and counseling services provided have a significant impact on persistence (CCSSE, 2012b). Both the CCSSE and the NSSE include the notion of support for learners as a key component of the student engagement construct and this becomes the focus of this study. This research paper argues that support for learners, and diversity among students are important contributors to student engagement.

Significance of Integration of Experiences

Pike & Kuh (2005) developed a conceptual model that stresses two aspects of the college experience: integration of experiences and student engagement. What's meant by integration is the extent to which students were able to incorporate information from their courses and other learning activities in their conversations with peers and others. Chickering (1974) reasoned that learning requires both active participation in a range of social and academic activities and integration of these varied experiences into a meaningful whole. Numerous researchers have established the positive impact that student engagement in educationally purposeful activities has on learning (Astin, 1993; Terenzini & Pascarella, 1990). Pike & Kuh's model demonstrated the relationships among the engagement variables, perceptions of the college environment, integration of diverse experiences, learning, and improvements in intellectual development. Gains in student learning were directly associated with perceptions of the college environment and integration of diverse experiences. In contrast, academic and social engagement were indirectly related to gains in learning through their effects on integration.

Student Diversity

With regards to student diversity and student engagement, Kuh (2003) reports that students develop a valued set of skills and competencies when they understand and learn how to work effectively with people from different backgrounds. The NSSE asks four questions about students' exposure to and experiences with diversity. Kuh revealed that students who indicate more experience with diversity are more involved

in other effective educational practices. Also, with more exposure to diversity, students are more likely to be involved in active and collaborative learning and are more satisfied with their university or college experience. Pike, Kuh & Gonyea (2007) make the point that NSSE's survey indicates student-body diversity was indirectly related to gains in understanding people of diverse backgrounds. Their study showed that greater diversity in the student population is associated with higher levels of interaction among students from different backgrounds. More intercultural awareness and appreciation is welcomed in higher education and campus activities can make a contribution (Klak and Martin, 2003). Intercultural understanding plays an important role as organizations operate globally where cross-cultural relationships and understanding are needed (Croese, 2011). Therefore, Croese points out the role faculty play in establishing a classroom environment that fosters intercultural learning so that both international students and host students would benefit. Appreciation and awareness of cultural differences will help all students prepare for jobs and careers as the world becomes more globalized and interactions between cultures increases.

DATA AND METHODOLOGY

Hundreds of colleges across North America choose to participate in the CCSSE from year to year. This study made use of a 2011 CCSSE dataset featuring a local institution, Okanagan College where over 700 students completed the survey. Among the dozens of questions on the survey, respondents were asked a variety of related questions about their impression of the support for learners provided by their institution. The question posed was "How much does this college emphasize each of the following?" Five items measuring support for learners immediately followed this question. These were: 1) variable ENVSUPRT - "Providing the support you need to help you succeed at this college", 2) variable ENVDIVRS - "Encouraging contact among students from different economic, social, and racial or ethnic backgrounds", 3) variable ENVNACAD - "Helping you cope with your non-academic responsibilities (work, family, etc.)", 4) variable ENVSOCAL - "Providing the support you need to thrive socially", 5) variable FINSUPP - "Providing the financial support you need to afford your education." Four levels or categories of response were used in each of the items, 1= very little, 2 = some, 3 = quite a bit, and 4 = very much.

This researcher's opinion was that the variable ENVSUPRT was quite broad and all-encompassing and as a result the thought occurred to determine whether the other more specific items listed above influenced this variable in any way. Logistic regression was used to examine this relationship; it is a suitable regression approach when dealing with categorical variables. To test this would mean converting ENVSUPRT into a dependent variable. Furthermore, logistic regression requires a dichotomous response variable. Of the 717 survey responses to the question ENVSUPRT, 34 respondents selected category 1, 180 chose 2, 323 marked option 3 and 172 selected 4. There were 8 respondents who didn't indicate a choice. Creating a dichotomous variable involved recoding response categories 1 and 2 to dummy code 0, and categories 3 and 4 to dummy code 1. Therefore, a dichotomous response variable was created having two variables consisting of 214 values with a 0 and 495 with a value of 1. The variable having a value of 0 would be deemed to indicate having no support for learners and a value of 1 would indicate providing support. Thus, the variable ENVSUPRT was used to create dichotomous variables 0 and 1 and these were assigned as the response or outcome variables for the purposes of the study.

Variables ENVDIVRS, ENVNACAD, ENVSOCAL, and FINSUPP were designated as independent or predictor variables in the study. Multivariate normality was not evident with the predictor variables but this is not needed for logistic regression analysis. One category of the variable ENVNACAD was merged due to the low number of responses in that category. Merging categories is sometimes done to more evenly distribute data so that it reflects a meaningful distinction between categories in practical terms. Categories in the other variables were unchanged. Univariate logistic regression tests using a level of significance of 0.05 were performed to determine if each of the independent variables were significantly related to the outcome variable ENVSUPRT. Lastly, a model predicting support for learners was built, using a stepwise

method with a level of significance of 0.05, and selecting predictor variables as listed above for multivariable analysis. The model building process involved determining which variables best predict support for learners with ENVSUPRT designated as the response variable.

RESULTS AND DISCUSSION

Logistic regression uses a maximum likelihood method which maximizes the probability of getting the observed results given the fitted regression coefficients. Univariate logistic regression tests were first performed on each predictor to determine if each of the independent variables were useful in predicting the response variable ENVSUPRT. All of the variables were good predictors and were kept primarily based on the likelihood test. Results could be seen in Table 1.

Table 1: Univariate Logistic Regression Tests of Predictor Variables

Variable	Keep/Drop	LR chi2	Prob > chi2	Log likelihood
ENVDIVRS	Keep	68.84	0.0000	-388.99
ENVNACAD	Keep	67.47	0.0000	-393.51
ENVSOCAL	Keep	62.94	0.0000	-395.06
FINSUPP	Keep	38.80	0.0000	-404.01

This table shows the decision to keep predictor variables made primarily based on the likelihood test.

Stepwise ordinal logistic regression was then performed to assess the impact of factors namely ENVDIVRS, ENVNACAD, ENVSOCAL, and FINSUPP on the likelihood that respondents would feel their college emphasized providing the support they need to succeed. The full model containing all predictors was statistically significant, $\chi^2(11, N=677) = 113.15, p < 0.001$, indicating that the model was able to distinguish between respondents who felt the college emphasized the support they need to succeed and those who did not. The predictors accounted for about 14% of the variability in the outcome variable. As shown in Table 2, all predictors make a uniquely statistically significant contribution to the model. The strongest predictor of support for learners – ENVSUPRT was “Encouraging contact among students from different economic, social, and racial or ethnic backgrounds” – ENVDIVRS, recording odd ratios of 1.68, 2.66 and 4.75.

Also, the p-values and odds ratios of variable ENVDIVRS relative to the other predictors make it arguably the strongest predictor. With categorical variables Stata creates k indicator variable sets. The procedure is to omit the first group of variables so it acts as a baseline for other categories to help understand their odds ratios. For example, in Table 2, the odds ratio for ‘envdivrs_2’ is 1.68. With relations to the response variable ENVSUPRT, it is the odds that their university or college provides some emphasis on “Encouraging contact among students from different backgrounds” divided by the odds their college provides very little emphasis on “Encouraging contact among students from different backgrounds”. The variable very little is the omitted category used as a baseline. Interpreting odds ratios among categories of such predictor variables implies that when a respondent believes their university or college encourages contact among students from different economic, social, and racial or ethnic backgrounds there is a greater probability the student feels the college is providing the support they need to help them succeed at this college. As Hilbe (2009) indicates, the proportional odds model assumes equality of slopes among response levels or categories. The same interpretation applies to other predictor variables of ENVNACAD, ENVSOCAL, and FINSUPP. The importance of each variable included in the model was verified through an examination of the Wald test statistic. The model yields the largest Log likelihood and largest R-squared value of all other models that didn’t include all predictors.

Table 2: Best Fitting Model for Response Variable ENVSUPRT

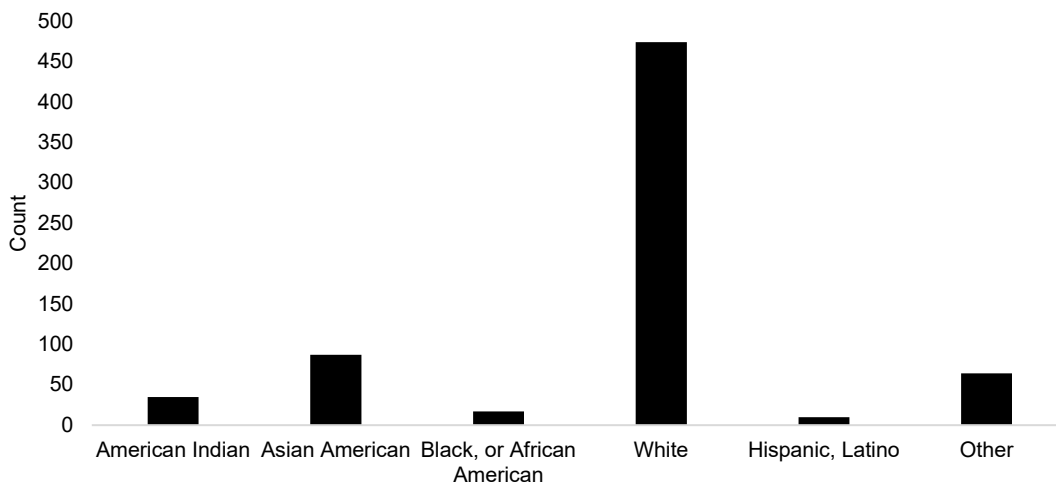
Envsuprt	Odds Ratio	Std. Err.	Z	P> Z	[95% Conf. Interval]**	
envdivrs_2	1.686	0.3942	2.24	0.025	1.066	2.666
envdivrs_3	2.666	0.7140	3.66	0	1.577	4.506
envdivrs_4	4.756	1.828	4.06	0	2.238	10.103
envnacad_2	1.581	0.3504	2.07	0.039	1.024	2.441
envnacad_3	3.098	1.293	2.71	0.007	1.367	7.021
envsocial_2	1.097	0.2312	0.44	0.659	0.7261	1.658
envsocial_3	2.310	0.8529	2.27	0.023	1.120	4.763
envsocial_4	5.668	6.091	1.61	0.106	0.6900	46.571
finsupp_2	1.658	0.3432	2.45	0.014	1.105	2.488
finsupp_3	1.667	0.5026	1.7	0.09	0.9234	3.010
finsupp_4	0.8866	0.4540	-0.23	0.814	0.3249	2.419
/cut1	0.4799	0.1998			0.0882	0.8717

This table shows response variable ENVSUPRT and predictors ENVDIVRS, ENVNACAD, ENVSOCAL and FINSUPP. Most p-values of the predictor variables are below 0.05 indicating a good fit. The importance of each variable included in the model was verified through an examination of the Wald test statistic for each variable following ML, and a comparison of each estimated coefficient with the coefficient from the model containing only that variable. Interpreting odds ratios among categories of predictor variables implies that when a respondent believes their college encourages contact among students from different economic, social, and racial or ethnic backgrounds there is a greater probability the student feels the college is providing the support they need to help them succeed at this college. Ordered logistic regression. Number of obs = 677, LR chi2(11) = 113.15, Prob > chi2 = 0.0000, Log likelihood = -355.18, Pseudo R2 = 0.1374.

Since the strongest predictor is ENVDIVRS – “Encouraging contact among students from different economic, social and racial or ethnic backgrounds,” increasing student diversity, for example, may be an appropriate university or college strategy to help students understand people of other racial and ethnic backgrounds. Greater awareness of people from different racial and ethnic backgrounds could promote contact among students with different backgrounds and this could improve the sense of support students think a college could provide them to succeed at school. In the CCSSE dataset there was no question dealing specifically with economic and social background, but encouraging students' understanding of people with diverse backgrounds of this type could presumably improve the sense of support students think a college could provide them to succeed at school as well.

Key findings on the overall dataset of all member colleges that chose to participate in the CCSSE shows the majority of students feel that their colleges emphasize providing the support they need to help them succeed, i.e. they provide support for learners. Nearly three-quarters (73%) of students say that their college puts quite a bit or very much emphasis on providing the support they need to help them succeed. Half (51%) say that their college puts quite a bit or very much emphasis on encouraging contact among student from different economic, social, and racial or ethnic backgrounds (CCSSE, 2012c). On a related note, Figure 1 shows the racial identification indicated by Okanagan College student respondents on the CCSSE survey. White Non-Hispanics comprised the largest group by far. Clearly there is little diversity in racial or ethnic backgrounds. Given the sparse distribution of people from other racial and ethnic backgrounds, the College could undertake efforts to enable students to make positive connections with those of other backgrounds. This is imperative since students seem to be indicating that this will provide the support they need to help them succeed at college, and by extension, the job marketplace.

Figure 1: Distribution of Racial Identification



This figure shows the racial identification indicated by Okanagan College respondents on the CCSSE survey. White Non-Hispanic students comprised the largest group and there is little diversity in racial or ethnic backgrounds.

The implications of increasing student engagement by addressing student diversity initiatives reaffirm Bowman and Denson’s (2011) conclusions. University or college faculty, and student affairs practitioners understanding the role of emotion in promoting student growth, should promote interracial emotional connections in their courses, workshops, and programming. They point out numerous ways of accomplishing this. Small changes can be easily implemented. Such small-scale interventions could be opportunities for meaningful interactions among diverse students through assigning students into small-group discussions and group projects, allowing students to share their experiences and feelings with one another in ice-breaker activities, and hosting events that allow for important dialogue. Crose (2011) points to other techniques and strategies faculty may use to create an inviting classroom for diverse student groups including using limiting time spent lecturing, providing outlines of lectures, creating pairs of international students and host students, or other cross-cultural groups.

In addition, Bowman and Denson explain how large-scale, university-wide efforts could be undertaken but they require substantial effort with institutional support and commitment. Widespread university-level interventions could be fashioned after Michigan State University's Multi-Racial Unity Living Experience (MRULE). MRULE builds an integrated, multiracial community of students by way of community service, community building trips, round table discussions, and monthly socials (Multi-Racial Unity Living Experience, n.d.). MRULE provides students from all backgrounds a unique forum to come together through open and frank discussions on controversial issues, informative presentations, interactive exercises and a variety of experiences. This allows them to become familiar with one another through positive connections that help remove barriers that often impede multiracial unity.

Chickering and Gamson (1987) suggested seven principles for institutional improvement based on years of evidence on educational effectiveness. The realization of these principles depends largely on the management of campus environments by educators and administrators. Besides, the authors upheld that the seven principles, when combined, activate six powerful forces in education: activity, expectations, cooperation, interaction, diversity, and responsibility. Pontius & Harper (2006) state these seven principles act as guidelines for defining institutional effectiveness and have influenced the creation of good practice principles in areas such as student affairs. Lastly, universities and colleges could design institutional engagement initiatives to identify student groups needing more support such as students from low-income families and first-generation students (Pascarella, Pierson, Wolniak, & Terenzini, 2004). The impact of support can help students from low-income families and students who lack strong academic skills to

succeed (Hoffman, 2010). Admissions officers could design presentations for first-generation students that highlight the behaviors common to successful first-generation students who have graduated from college.

CONCLUSION

Student engagement is a product of a number of elements including: level of academic challenge, student effort, involvement in co-curricular activities, student interactions with faculty and peers, active and collaborative learning, enriching educational experiences, support for learners and supportive campus environments. Researchers such as Kuh (2009) conceptualize student engagement as the time and effort students invest in educational activities that are linked to desired university or college outcomes. Outcomes of engagement include improvements in communication, and development of intellectual and interpersonal skills. Research on student engagement is important because students who are engaged in their studies tend to be good students. Moreover, some would argue that the effectiveness of any educational intervention is directly related to its ability to increase student engagement.

This research attempts to understand factors that affect engagement levels which may result in more accurately measuring and promoting student engagement. The focus is on student diversity and students' feelings of support they need to succeed at university or college. The argument made is that support for learners and diversity among students appear to be important contributors to student engagement. In this study when four variables measuring support for learners were examined as predictors and ENVSUPRT is set as dichotomous response variables, the one variable that appears to be the strongest predictor is ENVDIVRS – “Encouraging contact among students from different economic, social and racial or ethnic backgrounds. Greater awareness of people from different racial and ethnic backgrounds helps encourage contact among students with different backgrounds and this could improve the sense of support students think a university or college could provide them to succeed at school. Moreover, as students become more aware of cultural differences and learn to appreciate them, they will be better prepared for jobs and careers in an increasingly globalized marketplace.

Institutions may use the findings of student engagement research to design interventions that enhance support for learners and create more effective learning environments. Interventions could range from faculty members promoting interracial connections among students in their courses, to administrators building an integrated, multiracial community of students so students could understand each other. Limitations in the study are that the 2011 CCSSE dataset featured a local institution, Okanagan College and about 700 students who completed the survey. Results may not necessarily reflect student sentiments at other institutions. Also, students at the College are undergraduates only and it is possible that graduate and post-graduate students at other institutions have different feelings about the notion of support. Future research could include making linkages between student diversity at College with workplace diversity, innovation, competitive advantage, and improved bottom line results in the business world. It could examine whether student diversity in an academic setting not only helps students prepare for a diverse workplace but if businesses with a diverse workforce experience greater levels of innovation. Lastly, research could refine the measurement of student engagement and develop a critique of student engagement in policy, research, and administration.

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