Transfer Student Engagement: In Search of a Model Predictive of High GPA

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Engagement variables from the National Survey of Student Engagement (NSSE) were explored to determine the relationship between engagement constructs of undergraduate transfer students and high cumulative GPA. The design was a sequential, stepwise, linear, regression emanating from an Exploratory Factor Analysis (EFA). Four constructs labeled (a) Academic Dialoguing, (b) Examining Perspectives, (c) Collaborative Learning, and (d) Diverse Student Conversations emerged. A linear regression analysis conducted on the constructs, against cumulative GPA determined no statistically significant findings. However, a second regression analysis conducted on the19 item-levels of the four constructs determined two items to be statistically significant.

Keywords: higher education, transfer student, student engagement, the NSSE, baccalaureate completion

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Nationwide transfer students have had a 15% lower completion rate than nontransfer students (Astin, 1977, 1993; Pascarella & Terenzini, 1991). More recently, the National Student Clearinghouse Research Center (2014) reported that 76% of nontransfer students attained baccalaureate degrees whereas only 24% of transfer students attained baccalaureate degrees. The nearly 10% increase on transfer incompletion rates, over several decades, is cause for concern and for further study of transfer students. Pascarella and Terenzini (2005) determined that transferring between institutions may benefit some students but overall has a negative effect on baccalaureate completion rates. In a study of 38 Texas institutions spanning 11 years, students who transferred to other institutions were four times less likely to persist after 1 year than students who stayed at the same institution (Fauria & Slate, 2014).

The United States has become increasingly reliant on community colleges, and thus the need to improve national baccalaureate completion rates of these transfer students is imperative. The American Graduation Initiative (2009) was proposed to increase community college transfer rates to 4-year institutions. Despite Congress's rejecting funding for the initiative, the fact remains community colleges are an important vanguard to higher education (Berube, 2010). The American Association of Community Colleges (2014a; 2014b) claimed that almost half of undergraduate

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students start their careers in higher education at a community college. Statistics from the National Student Clearinghouse Research Center (2008) indicated transfer students who enrolled at 2-year institutions ranged from as few as 37% in the state of Virginia, to as many as 70% in the state of Wyoming, and to an even 50% in the state of Texas. Consequently, successful transfers to 4-year institutions and successful completions of those transfer students are important to the overall baccalaureate completion rates in the United States (Callan, 2008).

Of further note, states with larger minority populations (e.g., Black, Hispanic, American Indian, and Asian) are typically states most dependent on community colleges ("Affordability and Transfer", 2011). Almost 50% of certain ethnic groups in 2012 enrolled at 2-year institutions (National Center for Education Statistics, 2014). Low-income students comprised 44%, first-generation college goers 38%, Hispanics 50%, Blacks 31%, and Whites 28% (Community College Research Center, 2014). Fauria (2014) examined enrollment trends of ethnic and gender groupings of community college students in Texas from 2000 to 2011. Black enrollment increased by 3%, Hispanic student enrollment increased by 13%, and White student enrollment decreased by 19% (Fauria, 2014). Gandara, Alvarado, Driscoll, and Orfield (2012) stated that in California, 69% of Hispanics, and 65% of Blacks began their postsecondary education in community colleges as opposed to 60% of Whites, and 42% of Asian students. Therefore, the effective transfer of nontraditional and underrepresented minority students to 4-year institutions to obtain a baccalaureate degree is essential to closing a national achievement gap or what sometimes is referred to as the *transfer gap*.

According to the National Center for Education Statistics (2014), of 47 states with available community college enrollment information, the transfer rates of students moving from 2-year institutions to 4-year institutions diminished in 43 states. That is, of the students who graduated from a 2-year institution only four states retained or increased the number of students entering a 4-year institution by Year 3 (National Center for Education Statistics, 2014). These decreases further emphasize the need for successful baccalaureate attainment of transfer students.

Student engagement has been linked to academic achievement and completion (Astin, 1975, 1977, 1993; Chickering & Gamson, 1987; Cruce, Shoup, Kinzie, & Gonyea, 2008; Kuh, 2003; Pascarella & Terenzini 1991, 2005; Tinto, 1993). Astin (1984) in his involvement theory described the relationship between student engagement and academic performance. One tenet of his theory is that student gains in academic performance are directly proportional to the extent of student involvement. Another is that the effectiveness of educational policies be related directly to increased student involvement. Therefore, if engagement constructs of successful (e.g., high GPA) transfer students were determined to be predictive of GPA then institutional policies could be developed encouraging that engagement in order to increase transfer completion rates.

Prominent researchers (Astin, 1977, 1993; Pascarella & Terenzini 1991, 2005) concluded that students who are more involved in academic and co-curricular activities gain more from their college experience than those students who are less involved in academic and co-curricular activities. Cruce et al. (2008) determined that engagement activities improved academic performance. Furthermore, educational praxis recommended by college development theorists Chickering and Gamson (1987) includes seven principles of good practice related to engagement: (a) interacting with students and faculty, (b) cooperating with students, (c) learning actively, (d) receiving prompt feedback, (e) spending time on tasks, (f) communicating high expectations, and (g) respecting diverse talents and ways of learning.

The problem under investigation for this study was that of diminished transfer students' rates of degree completion. In an effort to combat, the diminishing baccalaureate rates of transfer students, engagement variables were explored to relate to GPA. This study had two purposes. The first purpose

was to explore what student engagement constructs might be present for academically successful undergraduate senior transfer students of a 4-year institution. The second purpose was to determine if a relationship existed between those engagement constructs and cumulative GPA. Subsequently, two research questions followed:

> 1) What engagement constructs were present for undergraduate senior transfer students of a 4-year regional research and doctoral institution?
>
> 2) What was the relationship between undergraduate senior transfer students' engagement constructs and cumulative GPA?

Method

This study was a sequential, stepwise, linear, regression design emanating from an Exploratory Factor Analysis (EFA). The analysis consisted of two phases. In the first phase, an EFA was employed to determine a preliminary factor structure model of engagement for undergraduate transfer students at the study institution. In the second phase, a linear regression analysis examined the relationship of factor scores on transfer students' GPAs.

Participants

Undergraduate, senior, students from a southern regional 4-year institution matriculating at the study institution during the 2010–2011 academic year data were investigated. Senior students enrolled totaled 4,372. A student having 90 credit hours was classified a senior. Transfer students were distinguished from nontransfer students if a student had 12 hours of transferable academic coursework from an accredited college after high school (SHSU, 2014). Of the total sample of 585 senior participants, 504 or 86% were classified as either transfer or nontransfer students. Nontransfers consisted of 104 students or 20%. Transfer students totaled 400 or 80%. This resulted in a 5:1 ratio of transfer to nontransfer students.

Sampling Procedures and Instrumentation

Archived data from the academic year's 2010–2011 administration of the National Survey of Student Engagement were retrieved for analysis. Senior undergraduate students classified as transfer as well as senior undergraduate students classified as nontransfer were selected. Staff from the study institution used student identification numbers for matching student cumulative GPAs to the NSSE data. Student SAT scores in math and verbal sections were obtained to control for precollege academic ability. Institutional staff masked all student identifiers making the data anonymous.

Phase 1 Data Analysis, Procedures, and Results

Using Astin's theory of student involvement (1984) as a conceptual framework, analyses began by conducting descriptive statistics for 36 NSSE items that focused on student activities rather than institutional characteristics (see Table 1).

Table 1
Descriptive Statistics of the 36 NSSE Items

Variable	n	M	SD	Skewness	Kurtosis
Asked questions in class or contributed to class discussions	583	3.05	0.85	-0.30	-1.06
Made a class presentation	583	2.76	0.90	-0.12	-0.89

Variable	*n*	*M*	*SD*	Skewness	Kurtosis
Prepared two or more drafts of a paper or assignment before turning it in	578	2.56	1.01	0.00	-1.10
Worked on a paper or project that required integrating ideas or information from various sources	581	3.25	0.77	-0.60	-0.62
Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	583	2.82	0.93	-0.25	-0.90
Come to class without completing readings or assignments	582	2.11	0.80	0.73	0.42
Worked with students on projects during class	583	2.63	0.91	0.05	-0.88
Worked with classmates outside of class to prepare class assignment	584	2.80	0.92	-0.23	-0.85
Put together ideas of concepts from different courses when completing assignments or during class discussions	551	2.92	0.82	-0.31	-0.52
Tutored or taught other students (paid or voluntary	549	1.91	1.00	0.84	-0.40
Participated in a community-based project (e.g., service learning as part of a regular course	547	1.71	0.89	1.13	0.40
Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment	553	2.88	1.03	-0.41	-1.05
Used e-mail to communicate with an instructor	553	3.52	0.69	-1.22	0.53
Discussed grades or assignments with an instructor	553	2.92	0.90	-0.18	-1.10
Talked about career plans with a faculty member or advisor	552	2.48	1.00	0.10	-1.04

Variable	*n*	*M*	*SD*	Skewness	Kurtosis
Discussed ideas from your readings or classes with faculty members outside of class	553	2.14	0.98	0.52	-0.72
Received prompt written or oral feedback from faculty on your academic performance	541	2.94	0.81	-0.25	-0.72
Worked harder than you thought you could to meet an instructor's standards or expectations	544	2.94	0.83	-0.26	-0.77
Worked with faculty members on activities other than coursework (committees, orientation, student life, activities, etc.)	540	1.91	1.00	0.78	-0.52
Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	540	2.91	0.85	-0.11	-1.05
Had serious conversations with students of a different race or ethnicity than your own	542	2.82	0.97	-0.29	-0.97
Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	543	2.78	0.99	-0.22	-1.07
Attended an art exhibit, play, dance, music, theater, or other performance	528	1.92	0.96	0.86	-0.20
Exercised or participated in physical fitness activities	524	2.59	1.02	0.04	-1.16
Participated in activities to enhance your spirituality (worship, meditation, prayer, etc.)	526	2.23	1.12	0.42	-1.19
Examined the strengths and weaknesses of your own views on a topic or issue	524	2.72	0.86	-0.10	-0.72
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	528	2.88	0.86	-0.25	-0.74

Variable	n	M	SD	Skewness	Kurtosis
Learned something that changed the way you understand an issue or concept	528	2.93	0.84	-0.26	-0.74
Practicum, internship, field experience, co-op experience, or clinical assignment	523	2.97	1.06	-0.56	-1.01
Community service or volunteer work	520	3.16	1.08	-0.86	-0.74
Participate in a learning community or some other formal program where groups of students take two or more classes together	517	2.44	0.99	0.53	-0.93
Work on a research project with a faculty member outside of course or program requirements	518	2.37	0.97	0.51	-0.76
Foreign (or additional) language coursework	523	2.51	1.00	0.43	-1.08
Study abroad	522	2.02	0.72	0.98	1.68
Independent study or self-designed major	519	2.21	0.89	0.80	0.01
Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)	523	2.40	0.95	0.29	-0.82

Note: NSSE items were taken from The College Student Report, National Survey of Student Engagement. Copyright 2001-15 by the Trustees of Indiana University.

Following Lomax's (2001) guidance, assumptions for factor analysis (i.e., normality of data, Q-Q plots, collinearity of data) were examined next and data were found to be within the boundaries of acceptable consideration for factor analysis and regression studies. Missing data were determined to be less than 10% and missing completely at random. As such, the Expectation Maximization procedure recommended by Peugh and Enders (2004) was utilized to impute data for the analyses.

As no a priori judgments were made about the structure of the model, a Principal Axis Factoring (PAF) was conducted according to Thompson's (2004) guidelines. Several rotation methods were explored with PAF to provide the most parsimonious model. A PAF using 11 iterations of Varimax rotation resulted in a best-fit model of 10 possible factors (see Table 2).

Table 2

Variances of 10 Factors Determined by Eigenvalues and Described by Factor Number, Total Variance, Percent of Variance, and Cumulative Percent of Variance

	Eigenvalues before rotation				Eigenvalues after rotation		
Factor	Total variance	% of variance	Cumulative %	Factor	Total variance	% of variance	Cumulative %
1	8.00	22.33	22.33	1	2.70	*7.49	7.49
2	2.39	6.64	28.86	2	2.22	*6.16	13.64
3	2.02	5.61	34.47	3	2.15	*5.98	19.63
4	1.54	4.28	38.75	4	1.78	*4.94	24.57
5	1.40	3.88	42.63	5	1.49	4.15	28.71
6	1.33	3.69	46.33	6	1.25	3.46	32.17
7	1.16	3.21	49.54	7	1.12	3.11	35.28
8	1.12	3.10	52.64	8	1.04	2.89	38.17
9	1.07	2.98	55.62	9	0.97	2.68	40.85
10	1.05	2.91	58.53	10	0.82	2.28	43.13

Note. Before rotation, the extracted four constructs comprised 38.75% of the variance, whereas after rotation the extracted four constructs comprised 24.57% of the variance. Items with * indicate the top four factors percentage of variance for the model.

Eigenvalues greater than one were considered for further analysis. Moreover, Cattell's (1966) procedures for the use of a scree plot to determine plausible numbers of factors were employed to guide our thinking in development of this model. After review of the scree plots and commonalities, at least three factors were apparent and a potential for a fourth noted. Upon further reflection, a fourth factor was included because the item loadings (i.e., 804 and .783) were higher than any other item analyzed. A four-factor model presented itself as the parsimonious solution. The four constructs were labeled (a) Academic Dialoguing, (b) Examining Perspectives, (c) Collaborative Learning, and (d) Diverse Student Conversations in order to best identify the specific NSSE items within each factor (see Table 3).

Table 3

Four-Factor Model, Numbers, Items, Labels, and Loadings Derived From Principal Axis Factoring with Varimax Rotation

Factor Number	Item	Factor Label	Factor Loading
1	Discussed ideas from your readings or classes with faculty members outside of class	Academic Dialoguing	**.739**
1	Talked about career plans with a faculty member or advisor	Academic Dialoguing	**.634**
1	Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	Academic Dialoguing	**.555**
1	Asked questions in class or contributed to class discussions	Academic Dialoguing	.383
1	Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers etc.)	Academic Dialoguing	.375
1	Received prompt written or oral feedback from faculty on your academic performance	Academic Dialoguing	.373
1	Tutored or taught other students (paid or voluntary)	Academic Dialoguing	.361
1	Discussed grades or assignments with an instructor	Academic Dialoguing	.348
2	Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	Examining Perspectives	**.755**
2	Examined the strengths and weaknesses of your own views on a topic or issue	Examining Perspectives	**.745**
2	Learned something that changed the way you understand an issue or concept	Examining Perspectives	**.626**

Factor Number	Item	Factor Label	Factor Loading
3	Worked with other students on projects during class	Collaborative Learning	**.658**
3	Worked with classmates outside of class to prepare class assignments	Collaborative Learning	**.603**
3	Made a class presentation	Collaborative Learning	**.514**
3	Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	Collaborative Learning	.370
3	Put together ideas or concepts from different courses when completing assignments or during class discussions	Collaborative Learning	.369
3	Worked on a paper or project that required integrating ideas or information from various sources	Collaborative Learning	.334
4	Had serious conversations with students of a different race or ethnicity than your own	Diverse Student Conversations	**.804**
4	Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	Diverse Student Conversations	**.783**

Note. Factor loadings > .40 are in boldface. Factor loadings greater than .40 according to Field (2009) represent important relationships between variables and latent constructs.

Cronbach's alpha statistics of reliability were calculated for the four factors. The analysis determined that reliability coefficients of the four constructs were well above the generally agreed upon threshold of 0.7 (Cronbach, 1951; Nunnally & Bernstein, 1994). Thus, four strong latent constructs were discerned (see Table 4).

Table 4

Factor Number, Items, Cronbach's Alpha Statistic, Mean, and Standard Deviation for the Four-Component Model of Engagement

Factor	Items	Cronbach's alpha statistic	Mean	Standard deviation
1	8	**.813**	20.26	4.76
2	3	**.819**	8.52	2.10
3	6	**.754**	17.18	3.51
4	2	**.881**	5.59	1.80

Note. Cronbach's alpha statistics exceeding the .7 threshold in bold.

Finally, factor scores were calculated by averaging the scores for items associated with each factor. Factor scores then were obtained for every student on all four factors. Afterwards, the file was split between transfer and nontransfer students.

Phase 2 Data Analysis, Procedures, and Results

Assumptions for the sequential, stepwise, linear regression analysis were met in accordance to Lomax (2001). Descriptive statistics confirmed a normal distribution of data. Q-Q plots demonstrated linear relationships for predictor and outcome variables. Therefore, regression analysis could proceed. However, *t*-tests were conducted first to determine the equality of means between transfer and nontransfer student GPAs and the four constructs (see Table 5). No statistically significant differences between transfer and nontransfer student GPAs or the four constructs of the factor analysis were apparent.

Table 5

Mean Differences in Cumulative GPA and Four Constructs for Nontransfer and Transfer Student Groups

Variable	Nontransfers ($n = 117$)		Transfers ($n = 468$)	
	M	*SD*	*M*	*SD*
GPA	3.2	.533	3.18	.532
Component 1	.008	.832	-.002	.857
Component 2	.060	.902	-.015	.873
Component 3	.017	.782	-.004	.836

	Nontransfers ($n = 117$)		Transfers ($n = 468$)	
Variable	*M*	*SD*	*M*	*SD*
Component 4	.050	.871	-.013	.912

Note. No variable mean differences reached a statistical significance of $p < .05$.

Next, a regression analysis using factor scores of transfer and nontransfer students against cumulative GPAs was conducted. SAT data, used to control academic input, was incomplete. As in Phase 1, missing variables were replaced by using Expectation Maximization estimation as recommended by Peugh and Enders (2004). No missing GPAs or outcome data were apparent. An initial factor score regression analysis was conducted with no viable results due to insufficient resolution of the data.

A second regression analysis was conducted by item level. In this regression analysis, factor scores calculated for each participant's responses to the 19 items taken from the four-factor model were used as predictors of GPA. From the 19 items, several statistically significant covariates were uncovered. For nontransfer students, the item "Discussed grades or assignments with an instructor" was statistically significant at $p < .05$. A standardized beta statistic indicated that for every 1 unit increase of "Discussed grades or assignments with an instructor," a -0.253 decrease in GPA is expected. Table 6 lists the item level results for nontransfer students.

Table 6

Regression Results of 19 Engagement Items to GPA for Nontransfer Students

Variable	Standardized β	*t*- score	*p* value
Discussed ideas from your readings or classes with faculty members outside of class	-0.300	-1.97	.052
Talked about career plans with a faculty member or advisor	-0.077	-0.539	.591
Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	0.125	0.961	.339
Asked questions in class or contributed to class discussions	0.101	0.906	.367
Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers etc	-0.035	-0.253	.801
Received prompt written or oral feedback from faculty on your academic performance	-0.002	-0.020	.984

Variable	Standardized β	t- score	p value
Tutored or taught other students (paid or voluntary)	-0.024	-0.212	.833
Discussed grades or assignments with an instructor	-0.253	-2.095	**.039**
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	0.032	0.196	.845
Examined the strengths and weaknesses of your own views on a topic or issue	-0.105	-0.674	.502
Learned something that changed the way you understand an issue or concept	0.046	0.332	.741
Worked with other students on projects during class	-0.003	-0.022	.982
Worked with class mates outside of class to prepare class assignments	-0.008	-0.062	.950
Made a class presentation	0.065	0.478	.634
Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	0.014	0.112	.911
Put together ideas or concepts from different courses when completing assignments or during class discussions	-0.008	-0.073	.942
Worked on a paper or project that required integrating ideas or information from various sources	0.137	1.105	.272
Had serious conversations with students of a different race or ethnicity than your own	-0.078	-0.467	.642
Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values	0.186	1.123	.264

Variable	Standardized β	*t*- score	*p* value

Note. Values for *p* < .05 are shown in bold.

For transfer students, the item "Had serious conversations with students of a different race or ethnicity than your own" was statistically significant at *p* < .05. The standardized beta indicated that for every 1 unit increase for "Had serious conversations with students of a different race or ethnicity than your own," a 0.159 unit increase in GPA is expected. Another predictor for transfer students "Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values," reached statistical significance at *p* < .05. The standardized beta indicated that for every 1 unit increase for "Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values," a 0.163 decrease in GPA is expected. Multicollinearity for the regression analyses was evaluated using Variance Inflation Factor (VIF) statistics. The four constructs as well as the 19 items exhibited acceptable levels of collinearity. Acceptable limits according to Bowerman and O'Connell (1990) are when the average VIF is no greater than 1. The VIF collinearity statistics of this model were all close to 1 indicating no multicollinearity.

Phase 1 Factor Analysis Conclusions

A PAF analysis conducted on 36 items with Varimax orthogonal rotation was conducted. The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO = .88. Bartlett's test of sphericity, χ^2 (630) = 6417.46, *p* < .001, indicated that correlations between items were sufficiently large enough for PAF. An initial analysis was conducted to obtain Eigenvalues for each construct. Ten constructs had Eigenvalues over Kaiser's criterion of 1 and in combination explained 58.53% of the variance. The scree plot showed inflexions that would justify retaining four constructs for the regression analysis. After rotation, the combined four constructs explained 24.57% or almost 25% of the variance. Items that clustered with each construct were identified. Labels that best represented the essence of the items were formed. The construct labels were as follows: (a) Academic Dialoguing for Construct 1, (b) Examining Perspectives for Construct 2, (c) Collaborative Learning for Construct 3, and (d) Diverse Student Conversations for Construct 4.

The answer to the first research question, "What engagement constructs were present for undergraduate senior transfer students from a 4-year southeastern regional research and doctoral university?" emerged as four constructs extracted from the Factor Analysis. The four-factor model of Transfer Student Engagement then was employed to answer the second research question, "What is the relationship between undergraduate senior transfer students' engagement constructs and cumulative GPA?" The regression analysis conducted in Phase 2 attempted to answer the second research question.

Phase 2 Regression Analysis Conclusions

In answering the second research question, "What is the relationship between undergraduate senior transfer students' engagement constructs and cumulative GPA?" none of the constructs

extracted from the factor analysis were statistically significant predictors of GPA. However, of the 19 item levels that made up the constructs three were statistically significant.

The one engagement predictor for nontransfer students "Discussed grades or assignments with an instructor" reached statistical significance $p = -.39$, t (196), $= -2.095$ and a standardized beta of -0.253, showing a mild effect. Two engagement predictors for transfer students reached statistical significance. The first predictor of transfer student GPAs "Had serious conversations with students of a different race or ethnicity than your own" obtained $p = .036$, t (446), $= 2.105$ and a standardized beta of 0.159, with a mild effect. A standardized beta statistic indicated that for every 1 unit of "Had serious conversations with students of a different race or ethnicity than your own" a 0.159 increase is expected. The second predictor of transfer student GPAs, "Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions or personal values" obtained p = .037, t (446) = -2.094 and a standardized beta of -0.163 with a mild effect. A standardized beta statistic indicated that for every 1 unit of "Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions or personal values" a 0.163 decrease is expected. Both made mild contributions for predicting cumulative GPA of transfer students.

Discussion

Phase 1 of the factor analysis successfully segregated specific NSSE items relevant to transfer student engagement. The 36 NSSE items dispersed into four major constructs utilizing 19 of the items. However, only two items making up the Diverse Student Conversations factor later emerged as predictor variables of cumulative GPA. An initial linear multiple regression analysis yielded no statistically significant p values for the four constructs derived from factor analysis. A second regression analysis conducted on the 19 NSSE items derived from the factor analysis had three items emerge as predictors. One positively statistically significant variable for nontransfers was "Discussed grades or assignments with an instructor." Two positively statistically significant variables for transfers were "Had serious conversations with students of a different race or ethnicity than your own," and "Had serious conversations with students who are very different from you in terms of their religious beliefs, political opinions, or personal values." Interestingly, the two items making up the fourth factor reached statistical significance only when analyzed by item level. Additionally, each of these items' respective positive and negative betas cancelled out any effect of the covariates.

The two engagement items positively statistically related to transfers described by the Diverse Student Conversations construct are of interest. Researchers (Gurin, Dey, Hurtado, & Gurin, 2002; Kuh, 2003; Laird, 2005) point to the value of having diverse student groups co-mingling together because discussions with opposing viewpoints often build higher level, critical thinking skills. Contrary to those findings, Fauria and Fuller (2015) discovered a negative statistical significance of transfer students who had serious conversations with students of a race different from their own and no statistical significance to the item of serious conversation with students who had different political, religious, and personal values (Fauria & Fuller, 2015).

Why would serious conversations with students of a different race produce a positive effect in one group of transfer students and not the other? At first glance, a one-size-fit benchmark model propagated by the NSSE might be less valid than a form-fitting institutional model based on its own student groupings. However, the dataset of the current study, as well as Fauria and Fuller's (2015) study, was from the same study institution and even more, the same academic year. The only differences between studies were the organization of items and the number of items. The present study

identified factor constructs that reached relevance only when analyzed item by item. Fauria and Fuller (2015) analyzed 19 items identified as educationally purposeful activities by prior researchers (Astin, 1993; Kuh, 2001; Pascarella & Terenzini, 1991) and seven were statistically significant. Therefore, differences in statistical significance could be attributed to item clustering as well as to the number of items analyzed. Longitudinal research of the NSSE from the same study institution would be beneficial.

Of further interest was the item "Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)" After factor rotation, the item was extracted to the Academic Dialoguing factor, as well as to the Diverse Student Conversations factor. This item had a factor rotation score of .375 in Academic Dialoguing and a .367 factor rotation score in Diverse Student Conversations. We decided to retain the item in Academic Dialoguing because it seemed to flow better with academic dialoguing than with diversity. Upon closer examination, however, Academic Dialoguing's essence was primarily about discussing academically relevant material with *others*. In the item, "Discussed ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.,)" others were qualified generally as classmates, faculty, advisors, family, and co-workers with no specification regarding the diversity of others. Therefore, an assumption of diversity or no diversity could be determined. Perhaps, if the item had been moved from Academic Dialoguing to Diverse Student Conversations, assuming diversity exists for others, a predictive value of Diverse Student Conversations might have reached statistical significance.

The NSSE item statistically positively significant for nontransfer students and producing a mild effect was "Discussed grades or assignments with an instructor." Logically, students struggling in a class would be actively engaged in discussing their grades with an instructor. Students who are doing well in a course generally do not need to talk to instructors about their grades. Therefore, the greater the number of nontransfer students who discussed grades with an instructor, the lower their grades, and the lower their cumulative GPAs.

Of the variables deemed student-directed engagement activities, only two were statistically significant for transfers and only one was statistically significant for nontransfers. What happened to the remaining NSSE engagement items? At least two possibilities serve as explanation. First, the institutionally initiated engagement activities might be substantially more impactful than student self-regulated engagement activities. Second, students by senior year could be so diverse, particularly with the senior cohort having the highest number of possible transfer students, that no commonality of engagement activities exists to predict cumulative GPA specific to transfer students. This homogeneousness was evidenced by the lack of statistically significant differences between transfer and nontransfer students by both GPA and by the four-construct model of engagement. Perhaps the high number of transfers (i.e., 468) compared to nontransfers (i.e., 117) of a mostly nontraditional senior student group contributed to the statistical significance of the Diverse Student Conversations factor items and might even explain the cancelling out effect mentioned earlier.

A duplication of this study's results for transfer students from another senior undergraduate class at the study institution or another institution is recommended to provide validity that transfer student success is not necessarily impingent on engagement. More information about the four, highly reliable, factor analyzed, constructs is indicated. Furthermore, questions as to whether the 36 NSSE items would evolve into similar constructs and whether those constructs would be successful or unsuccessful predictors of GPA are of interest.

The results of this study question the logic of administrative reactions to policymakers in Washington. For example, the accountability surge impinged upon educators by bureaucrats may not

add up to acquiring more NSSE data. This study seems to counter the increasing popularity of the NSSE (2015) in that individual student engagement or involvement did not influence a traditional measure (e.g., GPA) of student success. Furthermore, the NSSE failed as a valid instrument to discriminate important student groups (i.e., nontransfer, transfer) and to predict cumulative GPAs between those two groups.

Based on this study's findings, we would suggest that the Diverse Student Conversations factor be explored further as a potential variable that could greatly enhance transfer student success. The word *explored* is used cautiously because previous research (Fauria & Fuller, 2015) indicated an inverse statistical relationship between transfer students and cumulative GPA (i.e., the more interactions with diverse students, the lower was cumulative GPA).

As authors, we further recommend that institutions of higher education provide discussion forums specific to senior transfer students. It is possible that transfer students react to their environment much like first-year undergraduates coming from high school. There might be a tendency to gravitate toward people of similar race, gender, or familiarity from previous schools. Perhaps the first semester discussion forums might allow the students to form groups according to each student's comfort level. However, in the second semester, perhaps a more purposeful effort imposed by the institution to promote diversity in the discussion forums might be beneficial. Psychological research refers to group polarity, the phenomenon that similar thinking groups will become stronger in their convictions when exposed to similar thinking minds (Myers & Lamm, 1976). Perhaps convening with students similar to themselves could be encouraged by administrative policies during a transfer seminar or discussion forum first semester. Comfort and confidence levels could develop and any possible ill effect of co-mingling with students different from themselves negated. Later, students who presumably are more comfortable with their surroundings could be then encouraged through administrative policies during the second semester to participate in diverse conversations with students different from themselves and attain the benefits of such discussions.

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