

Satisfaction Analysis of UMD 2014 NSSE Data

National Survey of Student Engagement (NSSE)

Report Highlights

The National Survey of Student Engagement (NSSE) was administered to first-year (freshman) and senior UMD students in spring 2014. The overall response rate was 41%. As described in the Data Processing section of this report, these responses were scrubbed in order to enhance the reliability of this study.

NSSE's two satisfaction questions are the focus of this study:

1. How would you evaluate your entire educational experience at this institution?
2. If you could start over again, would you go to the same institution you are now attending?

Three analyses were conducted utilizing responses to the satisfaction questions:

1. Initial analysis was conducted to determine the relationship between first-year retention and responses to the two satisfaction questions. Differences in freshman and senior satisfaction responses were also considered.
2. Correlation analysis was conducted to explore the relationships between the satisfaction responses and the NSSE engagement indicators.
3. Additional correlation analysis was conducted to determine the effect size of survey questions and demographic items in relationship to the satisfaction questions.

Key findings of this study include:

- For NSSE respondents, higher levels of satisfaction, as measured by responses to the two satisfaction questions, are positively associated with higher first-to-second-year retention rates (Table 1 & Table 2).
- Among all NSSE engagement indicators, quality of interactions, effective teaching practices, and a supportive environment were each significantly associated with the student satisfaction responses (Table 4 & Table 5). Significant items within these three areas include,
 - Quality of interactions: with students and with faculty;
 - Effective teaching practices: organized course sessions, examples or illustrations to explain difficult points, and clear course goals and requirements; items related to providing prompt and detailed feedback on tests/assignments and draft work were also significant for seniors;
 - A supportive environment: an emphasis on providing support to help students succeed academically, providing support for overall well-being, and providing opportunities to be involved socially; an emphasis on attending campus activities and events was also significant for freshmen.
- Additional correlation analysis found additional satisfaction associations (Table 6):
 - The two satisfaction questions have a very strong association with each other. This signifies that student perceptions of the quality of their undergraduate education plays

an important role as to whether the student would choose UMD again.

- Results indicate a stronger association with educational experience (evalexp) than with choosing UMD again (sameinst).
 - In addition to faculty and student interactions, the quality of interactions with an advisor is positively associated with the satisfaction of seniors, emphasizing the increasing importance of student-faculty connections.
 - Self-reported knowledge and skill gains are positively associated with satisfaction.
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1. Introduction

The National Survey of Student Engagement (NSSE) provides information about the quality of undergraduate education to assistant colleges and universities in improving student learning. In the 2014 U.S. version of NSSE, there are 10 engagement indicators. Each engagement indicator contains 3 to 8 questions, with 47 total questions. In addition to the engagement questions, the survey includes profile questions such as student self-reported age, gender, GPA, ethnicity groups, time spent on study/work /family, living conditions, first-generation status, academic major, etc. It also contains questions pertaining to students' perceived gain of knowledge, skills and personal development.¹

This study analyzes respondents' answers to two satisfaction questions: 1) an evaluation of students' entire educational experience at UMD and 2) whether they would choose UMD again if they could start over. Initial analysis was conducted to determine the relationship between first-year retention and responses to the two satisfaction questions, and a table was created to demonstrate how senior and freshmen answers differ. Next, canonical correlation analysis was conducted to explore relationships between the satisfaction responses and respondents' answers to the NSSE engagement questions when the two satisfaction questions were treated as a set of satisfaction measurements. Bivariate Spearman's correlation coefficients with engagement and profile questions are presented in the last section.

UMD has participated in the NSSE in 2005, 2007, 2008, 2010, 2012, and 2014. The primary focus of this analysis is on data collected through the 2014 survey administration.

2. Data Processing

A total of 1720 respondents are included in UMD's 2014 NSSE dataset. Of those, six percent spent three or less minutes completing the survey. Fifty percent of the respondents spent more than thirteen minutes on the survey. Consistent with benchmarks used by NSSE, it was concluded that three minutes was insufficient time to complete the survey and eliminated those responses from this analysis. This step was also conducted for other NSSE years. Respondents who did not answer the two satisfaction questions were also eliminated.

¹ The full question information can be found at, http://nsse.indiana.edu/2014_Institutional_Report/data_codebooks/NSSE%202014%20Codebook.pdf

The two satisfaction questions included in this analysis are: 1) How would you evaluate your entire educational experience at this institution and 2) If you could start over again, would you go to the same institution you are now attending. Abbreviated names were given to the two questions: *evalexp* and *sameinst*, respectively. The choices for answering *evalexp* are *poor*, *fair*, *good*, *excellent*, the choices for *sameinst* are *definitely no*, *probably no*, *probably yes*, *definitely yes*. Both sets were coded as 1, 2, 3 and 4, correspondingly. A higher score indicates a higher level of satisfaction.

Since canonical correlation analysis is sensitive to missing values and outliers, respondents who did not completely answer the engagement questions were also eliminated from the dataset. Outliers who answered all questions using a similar pattern were also removed from the dataset. After data cleanup, the 2014 NSSE data used for this analysis includes 1216 respondents with 665 seniors and 551 freshmen.

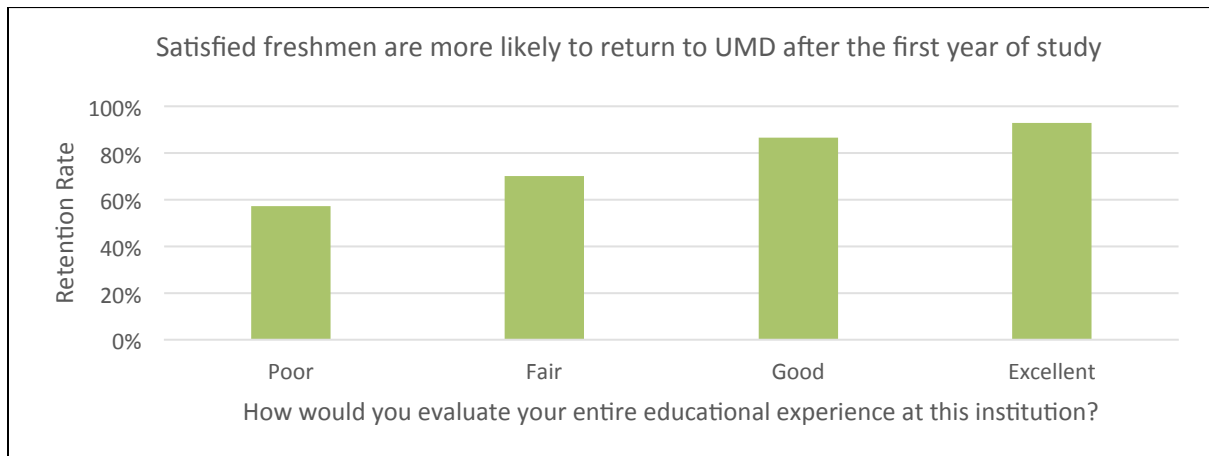
3. Results

3.1 Retention rate vs. their answers to the two satisfaction questions.

Table 1 shows the freshman headcounts and retention rates of NSSE respondents by the four categories of the *evalexp* rating scale. According to the headcount information, 1% evaluated their entire educational experience at UMD as poor, 13% as fair, 55% as good, and 31% as excellent. Retention rates increase from 57% to 93% as evaluation of their entire educational experience increases.

Table 1. Freshman responses to the NSSE 2014 question, “How would you evaluate your entire educational experience at this institution?” vs. if they enrolled in UMD in fall 2014.

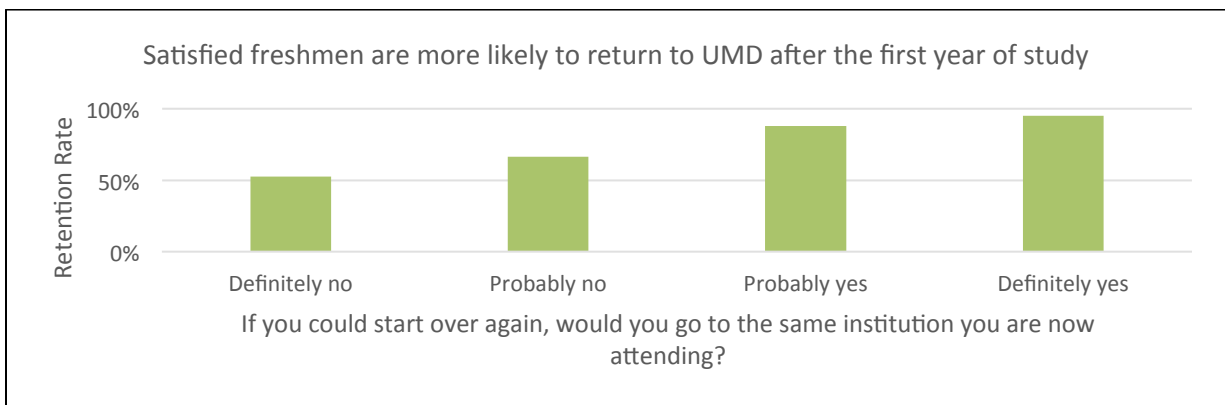
Survey question: How would you evaluate your entire educational experience at this institution?				
NSSE 2014 (Freshmen)	Poor (1%)	Fair (13%)	Good (55%)	Excellent (31%)
Left UMD	3	21	41	12
Returned to UMD	4	49	264	157
Retention Rate	57%	70%	87%	93%



Similarly, Table 2 shows freshman headcounts and retention rates by the four categories of the sameinst scale. The retention rate increases from 53% to 95% as students' satisfaction increases.

Table 2. Freshman responses to the NSSE 2014 question, "If you could start over again, would you go to the same institution you are now attending?" vs. if they enrolled in UMD at fall 2014.

Survey question: If you could start over again, would you go to the same institution you are now attending?				
NSSE 2014 (Freshmen)	Definitely no (3%)	Probably no (15%)	Probably yes (48%)	Definitely yes (34%)
Left UMD	9	27	32	9
Returned to UMD	10	53	232	179
Retention Rate	53%	66%	88%	95%



3.2 Average scores of the two NSSE satisfaction questions at different years.

Table 3 shows the average scores of freshmen and seniors to the two satisfaction questions for each year UMD has implemented the survey. The scores for both evalexp and sameinst increased beginning in 2010.

Table 3. Average score of the NSSE survey questions, "How would you evaluate the entire education in this institution?" and "If you could start over again, would you go to the current institution you are now attending?" from freshmen or seniors at different years.

How would you evaluation the entire education in this institution?^a						
Year	2005	2007	2008	2010	2012	2014
Average score	3.05	3.04	3.04	3.13	3.11	3.15
Freshmen	3.01	3.03	3.03	3.14	3.09	3.16
Seniors	3.07	3.05	3.04	3.12	3.14	3.15
If you could start over again, would you go to the current institution you are now attending?^b						
Average score	3.04	3.09	3.06	3.12	3.13	3.11
Freshmen	3.04	3.09	3.12	3.17	3.16	3.14
Seniors	3.04	3.08	3.01	3.08	3.11	3.09

a: 1='poor', 2='fair', 3='good', 4='excellent';
 b: 1='definitely no', 2='probably no', 3='probably yes', 4='definitely yes'.

Figure 1 shows UMD retention rates for the freshman cohorts entering in 2004-2013. Related to Table 3, although the average NSSE satisfaction scores increased on and after 2010, the first year retention rates did not show a similar increase. Figure 1 indicates that UMD's first year retention rate fluctuates from 74% to 78% with an average value at 76% during 2004 to 2013. The result implies that further study is needed to determine the relationship between NSSE responses and the first year retention rate of the entire population.

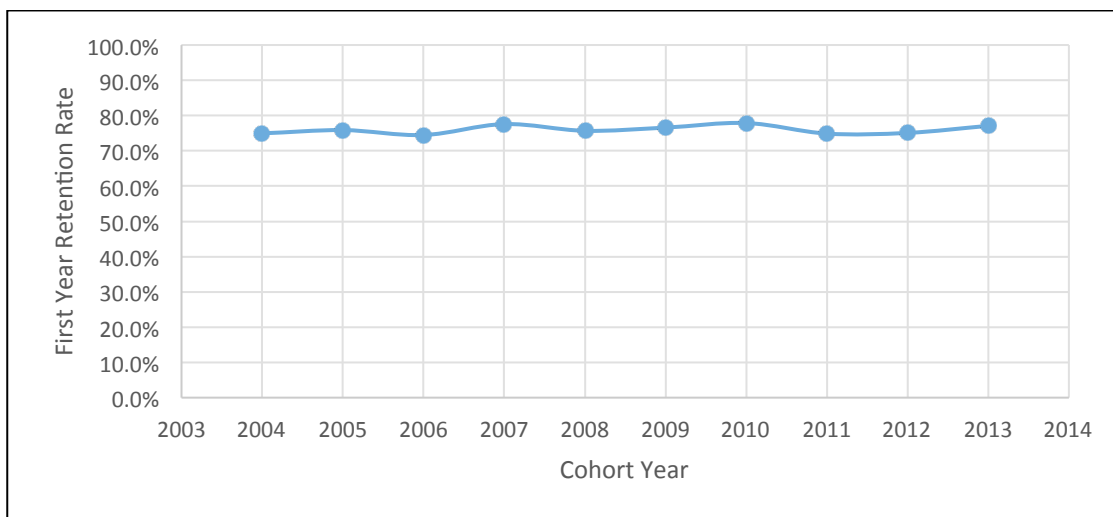


Figure 1. According to the official new entering freshman student retention reports for the Duluth campus, the first year retention rate were plotted vs. different cohort years. First year retention rate are obtained from http://www.oir.umn.edu/student/grad_retention/report. The students who transferred to another UMN campus are not included in the UMD retention rate.

3.3 Canonical Correlation Analysis (CCA)

3.3.1 Methodology

The two satisfaction questions were treated as a set of variables to indicate students' overall satisfaction and to explore their relationship to the 2014 NSSE engagement questions. Canonical correlation analysis (CCA) was used to examine the relationships between two variable sets.

The 2014 NSSE includes 47 engagement questions named as a predictor variable set (X), and two satisfaction variables named as a dependent variable set (Y). The two sets of variables can be viewed as a matrix with 47 rows and 2 columns with a total of 94 cells. In order to run the CCA, each cell must contain a sample size of 10 or more. Preliminary analysis found insufficient sample sizes if CCA was run separately for seniors and freshmen, i.e. the sample size did not meet the 10 or more per cell threshold.

In order to overcome this sample size issue, the CCA was developed in two steps. As indicated in the introduction, the 2014 NSSE contains 10 engagement indicators, and each engagement indicator has 3-8 questions. For the first step, the 10 engagement indicators were used as a predictor set (X_1) to assess which engagement indicators are most associated with the dependent variable set (Y). These results are shown in Table 4. For the second step, the questions that are strongly associated with the dependent variable set, i.e. results from step one, were selectively used as a predictor variable set (X_2). Results are shown in Table 5.

The role of CCA is to identify different sets of weights to form synthesized variables X and Y, meanwhile maximizing the association between them. The weights are denoted as structure coefficients (r_s) in Table 4 and Table 5, which is also the bivariate Pearson correlation coefficient between the individual variables, i.e. an engagement indicator, and its corresponding synthesized variable (X_1 or X_2). The Pearson correlation coefficients are also called the effect size. Normally the effect size is divided into 0-0.3 as a small effect size, 0.3-0.5 as a medium effect size and 0.5-1 as a large effect size. In this analysis, $r_s=0.5$ was used as the threshold of the effect size for selecting engagement questions which are significantly related to the satisfaction set.

The standardized coefficients are listed in Table 4 and Table 5. The sequence of importance of the predictor variables is ordered by the absolute value of their standardized coefficients.

Table 4 highlights the three engagement indicators significantly associated with the satisfaction variables: Effective Teaching practices (ET), Quality of Interactions (QI), and Supportive Environment (SE). Among the three indicators, QI indicators are most strongly associated with dependent variable set Y for both freshmen and seniors. ET is more associated than SE is for seniors, and SE is more associated with satisfaction variables than ET for freshmen.

Table 4. In order to run canonical correlation analysis on seniors and freshmen separately, first the engagement indicators that are significantly associated with the two satisfaction variables: entire educational experience and choose UMD again, were identified and highlighted in green.

	All			Freshmen			Seniors		
	Std.coef	r_s	r_s^2	Std.coef	r_s	r_s^2	Std.coef	r_s	r_s^2
evalexp	0.91	0.99	99%	0.85	0.98	96%	0.97	1.00	100%
sameinst	0.14	0.68	46%	0.23	0.72	51%	0.05	0.65	42%
r_c^2			31%			27%			36%
HO: Higher-order learning	0.15	0.47	22%	0.15	0.46	22%	0.16	0.48	23%
RI: Reflective and integrative learning	0.04	0.37	13%	0.06	0.39	15%	0.03	0.37	13%
LS: Learning strategies	-0.01	0.33	11%	0.06	0.41	17%	-0.05	0.27	7%
QR: Quantitative reasoning	-0.07	0.23	5%	-0.07	0.24	6%	-0.08	0.22	5%
CL: Collaborative learning	0.06	0.30	9%	0.04	0.35	12%	0.08	0.27	7%
DD: Discussions with diverse others	-0.04	0.19	4%	-0.03	0.19	3%	-0.06	0.18	3%
SF: Student-faculty interaction	0.00	0.32	10%	-0.08	0.26	7%	0.03	0.36	13%
ET: Effective teaching practices	0.36	0.74	55%	0.33	0.73	54%	0.38	0.73	54%
QI: Quality of interactions	0.49	0.78	62%	0.47	0.75	56%	0.51	0.82	67%
SE: Supportive Environment	0.37	0.74	54%	0.42	0.78	60%	0.31	0.72	51%

Table 4 Notes:

Structure coefficients: r_s . $|r_s| \geq 0.50$ are colored in green to indicate large association.

Dependent set (Y) contains variables:

evalexp: How would you evaluate your entire educational experience at this institution?

sameinst: If you could start over again, would you go to the SAME INSTITUTION you are now attending?

Predictor set (X_1) contains variables:

HO: Higher-order learning

RI: Reflective and integrative learning

LS: Learning strategies

QR: Quantitative reasoning

CL: Collaborative learning

DD: Discussions with diverse others

SF: Student-faculty interaction

ET: Effective teaching practices

QI: Quality of interactions

SE: Supportive Environment

In the second step of CCA, only the 18 questions belonging to the three engagement indicators: QI, ET, and SE (highlighted in green in Table 4) were chosen to form a predictor variable set (X_2). Table 5 shows only the questions that are significantly associated with Y with $|r_s| \geq 0.5$.

Table 5. Canonical correlation analysis of satisfaction using UMD 2014 NSSE freshman (left) and senior data (right). All variables with $|r_s| > 0.5$ have been selected to indicate a large association with the two satisfaction variables: entire educational experience (evalexp) and choose UMD again (sameinst).

Freshmen	Std.coef	r_s	r_s^2
evalexp	0.82	0.97	95%
sameinst	0.28	0.74	54%
r_c^2			33%
Quality of interactions with students (QI)	0.37	0.64	40%
Quality of interactions with faculty (QI)	0.35	0.63	40%
Instructors: Taught course sessions in an organized way (ET)	0.25	0.59	35%
Institutional emphasis: Providing support to help students succeed academically (SE)	0.20	0.63	40%
Institutional emphasis: Providing opportunities to be involved socially (SE)	0.15	0.57	33%
Institutional emphasis: Providing support for your overall well-being (recreation, health care, counseling, etc.) (SE)	0.13	0.59	35%
Institutional emphasis: Attending campus activities and events (performing arts, athletic events, etc.) (SE)	0.13	0.54	29%
Instructors: Used examples or illustrations to explain difficult points (ET)	0.11	0.56	32%
Instructors: Clearly explained course goals and requirements (ET)	0.09	0.57	33%

Seniors	Std.coef	r_s	r_s^2
evalexp	0.93	1.00	99%
sameinst	0.11	0.69	47%
r_c^2			38%
Quality of interactions with faculty (QI)	0.32	0.77	59%
Quality of interactions with students (QI)	0.24	0.56	31%
Instructors: Taught course sessions in an organized way (ET)	0.13	0.56	31%
Instructors: Used examples or illustrations to explain difficult points (ET)	0.13	0.57	32%
Instructors: Provided prompt and detailed feedback on tests or completed assignments (ET)	0.12	0.57	32%
Institutional emphasis: Providing support to help students succeed academically (SE)	0.12	0.62	38%
Institutional emphasis: Providing support for your overall well-being (recreation, health care, counseling, etc.) (SE)	0.11	0.64	40%
Institutional emphasis: Attending campus activities and events (performing arts, athletic events, etc.) (SE)	0.05	0.55	30%
Instructors: Provided feedback on a draft or work in progress (ET)	0.04	0.50	25%
Instructors: Clearly explained course goals and requirements (ET)	0.02	0.53	28%

Table 5 Notes:

Items under QI, ET, and SE indicators not meeting $|r_s| > 0.5$:

Qladvisor: Quality of interactions with advisors

Qlstaff: Quality of interactions with student services staff

Qladmin: Quality of interactions with academic advisors

ETfeedback: Instructors: Provided prompt and detailed feedback on tests or completed assignments

SElearnsup: Institutional emphasis: Using learning support services (tutoring services, writing center, etc.)

SEdiverse: Institutional emphasis: Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)

SEnonacad: Institutional emphasis: Helping you manage your non-academic responsibilities (work, family, etc.)

SEevents: Institutional emphasis: Attending events that address important social, economic, or political issues

3.3.2 Results of CCA

For both freshmen and seniors,

- (1) The r_c^2 scores in Table 5 indicate the percentage of variation in the satisfaction questions that can be explained by each engagement item. According to Table 5, for seniors and freshmen, the r_c^2 are 38% and 33%, respectively. The r_c^2 difference between seniors and freshmen indicate that the senior engagement question responses are more strongly associated with the satisfaction measurement than freshman survey responses.
- (2) Among all engagement questions, the quality of interactions with students and with faculty, instructors teaching course sessions in an organized way, using examples or illustrations to explain difficult points, clearly explaining course goals and requirements, an institutional emphasis on providing support to help students succeed academically, providing opportunities to be involved socially, and providing support for students overall well-being were found to be strongly associated with the satisfaction indicators.
 - a) Among all engagement factors, quality of interactions with faculty, quality of interactions with students, and instructors teaching course in an organized way are most strongly associated with satisfaction.
 - b) Among the quality of interactions items, quality of interactions with students and with faculty are more strongly associated with satisfaction than the quality of other types of interactions.
 - c) Among the effective teaching practices items, instructors teaching course sessions in an organized way is most significantly related to satisfaction followed by the items provided examples or illustrations to explain difficult points and clearly explained course goals and requirements.

- d) Among supportive environment items, an institutional emphasis on providing support to help students succeed academically, providing support for overall well-being, and providing opportunities to be involved socially are positively associated with the satisfaction questions.

(3) Seniors:

- a) Quality of interactions with faculty has the strongest relationship to satisfaction.
- b) Instructors providing prompt and detailed feedback on tests or completed assignments and on a draft or work in progress are more strongly associated with satisfaction in the senior year than in the freshman year.

(4) Freshmen:

- a) Institutional emphasis on attending campus activities and events (performing arts, athletic events, etc.) also contribute to freshman satisfaction.

3.4. Effect size analysis on individual satisfaction questions.

In order to determine the association of the two satisfaction questions with additional survey questions, nonparametric correlation coefficient analysis was performed on freshman and senior data. The results are listed in Table 6. The first column lists variables used in this analysis.

Besides the engagement questions, the association between satisfaction questions with high impact practices, time spent on specific activities, first-generation status, age, living conditions, gender, etc. were also analyzed. In this bivariate analysis, the same effect size benchmarks were used: 0-0.3 as small effect size, 0.3-0.5 as medium effect size and 0.5 to 1 as large effect size. Significant association indicates that the association passed the statistical test at 0.01 level indicated by **, and at 0.05 level by *. In general, statistical significance indicates non-zero association. Effect size denotes the magnitude and replicability.

- (1) Responses to *evalexp* and *sameinst* have a very strong association with each other. Analysis found that a 34% of variance of *sameinst* can be explained by *evalexp*, which means quality of undergraduate education plays an important role in deciding if the student would choose UMD again. However, this also means that more than 60% of variance in *sameinst* can be explained by other factors. These factors may or may not be represented in the NSSE questions.
- (2) Results indicate a stronger association with *evalexp* (educational experience) than *sameinst* (same institution) evidenced by more item responses showing a significant association with *evalexp* than with *sameinst*.
- (3) For engagement questions, the results are consistent with canonical correlation analysis results. Quality of Interactions (QI) has a medium effect size association with both *evalexp* and *sameinst*; Effective Teaching Practice (ET), and Supportive Environment (SE) have medium effect size associations with *evalexp* and smaller associations with *sameinst*.

- (4) All perceived gain questions have significant associations with evalexp and sameinst for both freshmen and seniors; nine of which exceeded the 0.3 effect size threshold.
- (5) High impact practice items do not meet the effect size threshold for either freshmen or seniors.
- (6) Additional demographic analysis found that female seniors have slightly higher scores for evalexp.

Table 6. Bivariate correlation analysis (effect size) of individual satisfaction question with survey questions related to engagement, perceived gain, high impact practice, time spent on specific activities, first generation status, living situation, etc. Correlation coefficient unlikely to be zero at significant level of 0.01 and 0.05 levels are labeled with ** and *, respectively. Correlation coefficient greater than 0.3 are colored in green for freshmen and in orange for seniors.

NSSE 2014 - Spearman's rho effect size	Freshmen		Seniors	
	evalexp	sameinst	evalexp	sameinst
Evalexp: How would you evaluate your entire educational experience at this institution?	1.000	.561**	1.000	.583**
Sameinst: If you could start over again, would you go to the same institution you are now attending?	.561**	1.000	.583**	1.000
Claskhlp	.128**	.039	.071	.021
ILexplain	.175**	.067	.143**	.059
Clstudy	.108*	.039	.130**	.024
Clproject	.201**	.124**	.172**	.074
Rlintegrate	.132**	.134**	.169**	.034
Rlsocietal	.115**	.075	.153**	.045
Rldiverse	.116**	.071	.156**	.066
Rlownview	.094*	.072	.115**	.038
Rlperspect	.110*	.090*	.099*	.024
Rlnewview	.240**	.171**	.236**	.097*
Rlconnect	.160**	.120**	.239**	.132**
SFcareer	.129**	.062	.254**	.187**
SFotherwork	.165**	.101*	.148**	.105**
SFdiscuss	.097*	.056	.186**	.137**
SFperform	.070	.024	.089*	.039
HOapply	.172**	.122**	.251**	.143**
HOanalyze	.202**	.130**	.273**	.114**
HOevaluate	.162**	.068	.192**	.046
HOform	.183**	.119**	.233**	.097*
ETgoals: Clearly explained course goals and requirements	.317**	.211**	.317**	.211**
ETorganize: Taught course sessions in an organized way	.357**	.229**	.326**	.200**
ETexample: Used examples or illustrations to explain difficult points	.306**	.228**	.335**	.191**
ETdraftfb: Provided feedback on a draft or work in progress	.223**	.137**	.313**	.205**
ETfeedback: Provided prompt and detailed feedback on tests or completed assignments	.241**	.190**	.334**	.208**
QRconclude	.068	.099*	.095*	.051
QRproblem	.135**	.054	.110**	.023
QRevaluate	.115**	.089*	.132**	.092*
DDrace	.069	.064	.098*	.070
DDeconomic	.100*	.048	.106**	.104**
DDreligion	.091*	.051	.092*	.102**
DDpolitical	.107*	.022	.094*	.053

NSSE 2014 - Spearman's rho effect size	Freshmen		Seniors	
	evalexp	sameinst	evalexp	sameinst
LSreading	.200**	.104*	.202**	.117**
LSnotes	.154**	.098*	.098*	.053
LSsummary	.167**	.081	.100**	.035
Qlstudent: Quality of interactions with students	.362**	.300**	.306**	.235**
Qladvisor: Quality of interactions with advisor	.241**	.175**	.305**	.189**
Qlfaculty: Quality of interactions with faculty	.377**	.251**	.428**	.278**
Qlstaff	.259**	.213**	.253**	.174**
Qladmin	.208**	.147**	.285**	.219**
SEacademic: Providing support to help students succeed academically	.354**	.232**	.375**	.230**
SElearnsup	.299**	.234**	.256**	.160**
SEdiverse	.215**	.140**	.260**	.196**
SEsocial: Providing opportunities to be involved socially	.307**	.252**	.324**	.236**
SEwellness: Providing support for your overall well-being (recreation, health care, counseling, etc.)	.335**	.245**	.355**	.241**
SEnonacad	.267**	.187**	.267**	.236**
SEactivities	.299**	.230**	.276**	.206**
SEevents	.277**	.195**	.282**	.218**
Challenge	.250**	.174**	.234**	.110**
HIPsumFreshmen/Seniors	.044	-.016	.148**	.025
Intern	.050	.031	.138**	.091*
Leader	.035	.046	.125**	.074
learncom	-.060	-.020	.038	.055
abroad	-.066	-.005	.071	.001
research	-.046	-.026	.084*	.024
capstone	.013	.009	.025	-.065
servcourse	.029	-.002	.032	-.060
empstudy	.152**	.106*	.132**	.112**
tmprep	.077	.108*	.110**	.063
tmcocurr	.013	.087*	.118**	.048
tmworkon	-.036	-.020	.018	.006
tmworkoff	-.074	-.035	-.002	.029
tmSERVICE	-.043	.052	-.002	.004
tmrelax	.063	.070	.034	-.015
tmcare	-.121**	-.042	-.084*	-.065
tmcommute	-.088*	-.058	-.110**	-.061
tmreadinghrs	.046	.065	.082*	.017
Pgwrite: Writing clearly and effectively	.317**	.123**	.336**	.191**
Pgspeak: Speaking clearly and effectively	.355**	.157**	.382**	.261**
Pgthink: Thinking critically and analytically	.412**	.292**	.391**	.239**
pganalyze	.240**	.159**	.228**	.139**
Pgwork: Acquiring job- or work-related knowledge and skills	.371**	.245**	.379**	.227**
Pgothers: Working effectively with others	.414**	.248**	.409**	.254**
Pgvalues: Developing or clarifying a personal code of values and ethics	.351**	.169**	.368**	.205**
Pgdiverse: Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)	.278**	.162**	.332**	.172**
Pgprobsolve: Solving complex real-world problems	.377**	.252**	.388**	.210**
Pgcitizen: Being an informed and active citizen	.381**	.231**	.357**	.190**
firstgen	.004	-.016	-.071	-.005
agecat	.018	.016	-.112**	-.037
greek	-.016	.001	-.034	-.008

NSSE 2014 - Spearman's rho effect size	Freshmen		Seniors	
	evalexp	sameinst	evalexp	sameinst
living	-.001	-.034	-.004	.011
IRsex	.010	-.041	-.109**	-.021
HO	.229**	.134**	.290**	.126**
RI	.181**	.133**	.217**	.085*
LS	.208**	.115**	.166**	.081*
QR	.128**	.091*	.121**	.062
CL	.187**	.079	.161**	.056
DD	.109*	.056	.125**	.104**
SF	.165**	.104*	.216**	.156**
ET: Effective Teaching Practices: Amount instructors emphasized student comprehension and learning with clear explanations and organization, use of illustrative examples, and providing formative and effective feedback.	.374**	.253**	.419**	.262**
QI: Quality of Interactions: How students rated their interactions with important people in their learning environment, including other students, advisors, faculty, student services, and other administrative staff members.	.382**	.289**	.466**	.320**
SE: Supportive Environment: Amount the institution emphasized help for students to persist and learn through academic support programs, encouraged diverse interactions, and provided social opportunities, campus activities, health and wellness, and support for non-academic responsibilities.	.396**	.288**	.415**	.284**

** . Correlation is significant at 0.01 level (two tailed).

* . Correlation is significant at 0.05 level (two tailed).

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