

Investigating Social Desirability Bias in Student Self-Report Surveys

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Issue of Social Desirability Bias (SDB)

- Idea that respondents do not answer survey questions truthfully because they are trying to provide socially appropriate responses
 - Traditionally only a major concern for surveys with sensitive topics, such as sexual behaviors or drug use
- Many scales have been developed to measure the tendency to respond in a socially desirable manner
- If instrument is free from SDB, scores should not be related to scores on a measure of SDB

SDB in Higher Education Research

- More recently, SDB is a concern for student responses in a variety of self-reported topics
- Significant relationships between SDB and:
 - Perceptions of institutional values (Ferrari & Cowan, 2004)
 - Goal orientation (Ferrari et al., 2009)
 - Value commitment (Ferrari et al., 2009)
 - Major satisfaction (Nauta, 2007)
 - Self-reported gains (Bowman & Hill, in press)

SDB in Higher Education Research

- Some research fails to find evidence for presence of SBD in student self-report surveys
- No significant relationship between SBD and:
 - Imposter tendencies (Ferrari, 2005)
 - Administration mode (Hancock & Flowers, 2001)
 - Paper vs. web or anonymous vs. non-anonymous
 - Self-reported GPA (Kelly, 2003)
 - Time use efficiency (Kelly, 2003)
 - Self-complexity (Luo et al., 2009)
 - Athletic identity (Nasco & Webb, 2006)

SDB in Higher Education Research

- Literature provides conflicting results for SDB in higher education, specifically with student self-report instruments
 - Some find evidence for bias, others fail to find evidence
- Important to consider whether SDB is having an impact on student responses to the National Survey of Student Engagement (NSSE)

NSSE Background

- NSSE is a widely used measure in higher education
 - 761 institutions are participating in 2011
 - 1,493 have participated since 2000
 - Very large data set: 393,630 students completed NSSE in 2010
- Assesses variety of behaviors related to student engagement with first-year and senior undergraduate students

NSSE Background

- Five “Benchmarks” of Effective Educational Practice
 - Level of Academic Challenge
 - Active & Collaborative Learning
 - Student-Faculty Interaction
 - Enriching Educational Experiences
 - Supportive Campus Environment
- Deep Learning subscales
 - Higher-Order Learning
 - Reflective Learning
 - Integrative Learning
- Gains subscales
 - Practical Competence
 - Personal & Social Development
 - General Education

Current Study

- Student engagement behaviors would not traditionally be considered a “sensitive” topic
- However, students might be aware that higher levels of engagement are desired by their institutions and want to appear to be “good” students
- Research Question: Are students’ responses on NSSE influenced by the tendency to respond in a socially desirable manner?

Methodology: Participants

- Spring 2010 NSSE online administration
- 2,352 students at 6 participating institutions were selected to receive a short social desirability scale (Ray, 1984) in addition to the NSSE core survey
- Institutions represented variety of NSSE participants (for Carnegie classification, size, and region)
- 38.4% first-year and 61.6% senior
- 43.9% male and 86.6% full-time enrollment status
- 63.6% Caucasian, 11.1% African American, 7.4% Asian/Pacific Islander, 5.6% foreign, 2.4% Hispanic, .3% American Indian, .3% multi-racial, and 9.4% unknown

Methodology: Measures

- Social desirability bias (Ray, 1984)
 - 8-item scale, response options of “Yes,” “Not sure,” or “No”
 - Higher scores mean more tendency to answer in socially desirable manner
 - Ray (1984) reports internal consistency of $\alpha = .77$, for this sample $\alpha = .696$

Methodology: Measures

- **Benchmarks:**
 - Level of Academic Challenge, 11 items, $\alpha = .718$
 - Active & Collaborative Learning, 7 items, $\alpha = .687$
 - Student-Faculty Interaction, 6 items, $\alpha = .745$
 - Enriching Educational Experiences, 12 items, $\alpha = .634$
 - Supportive Campus Environment, 6 items, $\alpha = .771$

Methodology: Measures

- Deep Learning subscales
 - Higher-Order Learning, 4 items, $\alpha = .843$
 - Reflective Learning, 3 items, $\alpha = .821$
 - Integrative Learning, 5 items, $\alpha = .723$
- Gains subscales
 - Practical Competence, 5 items, $\alpha = .836$
 - Personal & Social Development, 7 items, $\alpha = .869$
 - General Education, 4 items, $\alpha = .847$

Methodology: Measures

- Two additional NSSE items
 - Self-reported grades, with response options of “A,” “A-,” “B+,” “B,” “B-,” “C+,” “C,” and “C- or lower”
 - Overall institutional satisfaction on 4-point scale ranging from “Excellent” to “Poor”
 - Higher scores indicate higher grades/levels of satisfaction

Methodology: Analysis

- Bivariate correlations between SD and NSSE benchmarks, subscales, and individual items
- Regression analyses to explore whether SD is significant predictor of NSSE benchmarks, subscales, and individual items when controlling for other demographic variables
 - Separate analyses for FY and SR students
 - Bonferroni correction used, α set to .002 (.05/26)
 - Weighted by gender, enrollment status, and institution size

Results: Correlations

	First-Year			Senior		
	<i>r</i>	<i>R</i> ²	N	<i>r</i>	<i>R</i> ²	N
Level of Academic Challenge	.113*	.012	867	.033	.001	1632
Active and Collaborative Learning	.054	.003	860	.059	.003	1627
Student-Faculty Interaction	.057	.003	865	-.018	.000	1629
Enriching Educational Experiences	-.029	.001	866	-.067	.004	1629
Supportive Campus Environment	.028	.001	862	.129*	.017	1630

Analyses weighted by gender, enrollment status, and institution size

**p*<.002

Results: Correlations

	First-Year			Senior		
	<i>r</i>	<i>R</i> ²	N	<i>r</i>	<i>R</i> ²	N
Higher-Order Learning	.051	.003	867	.030	.001	1629
Reflective Learning	.140*	.019	867	.101*	.010	1635
Integrative Learning	.097	.009	867	.074	.005	1630

Analyses weighted by gender, enrollment status, and institution size

* $p < .002$

Results: Correlations

	First-Year			Senior		
	<i>r</i>	<i>R</i> ²	N	<i>r</i>	<i>R</i> ²	N
Gains in Practical Competence	.061	.004	862	.062	.004	1630
Gains in Personal & Social Development	.079	.006	860	.141*	.020	1624
Gains in General Education	.083	.007	862	.089*	.008	1631
Self-reported grades	-.080	.006	866	-.045	.002	1635
Overall institutional experience	.050	.003	869	.008	.000	1627

Analyses weighted by gender, enrollment status, and institution size

**p*<.002

Results: Regression

- It is known from previous research with NSSE that many demographic variables are related to scores on benchmarks and subscales
- Regressions used to explore whether SD was a significant predictor of benchmarks and subscales when controlling for:
 - Gender, enrollment status, first generation status, transfer status, athlete status, living on campus, Greek status, international status, ethnicity, self-reported grades, and overall institutional satisfaction
 - Control variables entered as Step 1, SD as Step 2

Results: Step 2 Regression Summary

<i>Dependent Variable</i>	First-Year				Senior			
	<i>b</i>	<i>SE b</i>	β	ΔR^2	<i>b</i>	<i>SE b</i>	β	ΔR^2
Level of Academic Challenge	.447	.151	.107	.010	.082	.105	.020	.000
Active & Collaborative Learning	.427	.207	.076	.005	.248	.119	.051	.002
Student-Faculty Interaction	.242	.238	.038	.001	.057	.149	.010	.000
Enriching Educational Experiences	.099	.158	.023	.000	.023	.117	.005	.000
Supportive Campus Environment	.092	.207	.014	.000	.623	.126	.113*	.011

Analyses weighted by gender, enrollment status, and institution size

* $p < .002$

Results: Step 2 Regression Summary

<i>Dependent Variable</i>	First-Year				Senior			
	<i>b</i>	<i>SE b</i>	β	ΔR^2	<i>b</i>	<i>SE b</i>	β	ΔR^2
Higher-Order Learning	.395	.264	.056	.003	.024	.161	.004	.000
Reflective Learning	.786	.297	.099	.009	.479	.177	.070	.004
Integrative Learning	.466	.227	.073	.005	.290	.141	.051	.002

Analyses weighted by gender, enrollment status, and institution size

* $p < .002$

Results: Step 2 Regression Summary

<i>Dependent Variable</i>	First-Year				Senior			
	<i>b</i>	<i>SE b</i>	β	ΔR^2	<i>b</i>	<i>SE b</i>	β	ΔR^2
Gains in Practical Competence	.298	.255	.038	.001	.399	.147	.062	.003
Gains in Personal & Social Development	.180	.277	.022	.000	.672	.181	.089*	.007
Gains in General Education	.174	.255	.022	.000	.345	.156	.051	.002
Self-reported grades	-.304	.021	-.057	.003	-.008	.011	-.018	.000
Overall institutional experience	.021	.010	.079	.006	.014	.006	.064	.004

Analyses weighted by gender, enrollment status, and institution size

* $p < .002$

Discussion

- Bivariate correlations found weak but significant relationships between SD and:
 - Level of Academic Challenge and Reflective Learning for first-year students
 - Supportive Campus Environment, Reflective Learning, Gains in Personal & Social Development, and Gains in General Education for seniors
- The magnitude is very small (Cohen, 1992), explaining only .8 to 2.0% of the variance

Discussion

- After using regression to control for demographic variables, SD was only a significant predictor of:
 - Supportive Campus Environment and Gains in Personal & Social Development for senior students
- Other significant correlations no longer significant when included in regression model
- Weak beta coefficients and very small changes in R^2 , contributing only .7 and 1.1% of explained variance

Discussion

- Reflective Learning items rely more on reporting frequency of cognitive activities (as opposed to more outward observable behaviors)
 - Different types of behaviors may be more influenced by SD
- First-year students may feel social obligation to report that “college is hard”
 - Have received this message from high school teachers, during orientation, etc.
- Senior students may feel more social obligation to appear to have gained skills and have positive feelings about their campus
 - Is desired by their institutions
 - May also want to justify the cost of attending college

Discussion

- Majority of the correlations are not significant
- Majority of Step 2 regression coefficients are not significant
- Very small effect sizes (in terms of explained variance) for the few that are significant
- Social desirability bias is having very little, if any, practical impact on responses to NSSE

Limitations

- May not represent ALL college students
 - Only have data for those students at institutions participating in NSSE, who responded to both NSSE core survey and additional social desirability scale
- Data from only 6 institutions did not allow for examinations of influences of institutional characteristics (i.e. Carnegie classification, public vs. private, etc.)
- Acceptable but lower than desirable Cronbach's alphas for some measures

Future Research

- Further investigate data for differences in SDB among various student characteristics
 - Gender, enrollment status, on-campus, transfer status, ethnicity, etc.
- Examine potential influence of SDB in other types of student self-report data
 - Course evaluations, social activities, etc.



Questions? Feedback?

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Updated NSSE to Launch in 2013

nsse.iub.edu/nsse2013



NSSE 2.0: Item testing and pilots 2011-2012

- ✓ Refinements of existing measures, including benchmarks
- ✓ New measures
- ✓ Improved clarity and applicability of survey language, including terms related to online instruction
- ✓ Updated terminology, primarily related to technology

