

The Impact of First-Year Seminars on College Students' Need for Cognition

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Background

“The freshman seminar is a course intended to enhance the academic and/or social integration of first-year students by introducing them:

- to a variety of specific topics, which vary by seminar type [*6 types*],
- to essential skills for college success, and
- to selected processes, the most common of which is the creation of a peer support group.”

(Barefoot, 1992)



Background

- Evidence of first-year seminars (FYS) can be found as early as 1880s but experienced a “renaissance” in 1970s around retention
- National data indicate pervasive use (Policy Center on the First Year of College, 2002; Tobolowsky & Associates, 2008)
 - 94% of 4-year institutions offer a FYS
 - Half offer a FYS to 90% of more first-year students
 - Growing use among 2-year colleges
- Evolution in type, structural characteristics, & content



Previous Research: Findings

- Positive impact on retention to second year, persistence to graduation, and academic performance
 - Consistent across gender, residential status, race/ethnicity, and major
- Positive effect on behavioral outcomes
 - Involvement in campus activities
 - Interaction with faculty & peers
 - Student engagement
- FYS faculty development also linked to improved teaching performance



Previous Research: Limitations

- **Little research on the relationship between FYS and more complex developmental outcomes**
- Reliance upon single-institution studies
- Few controls of potentially-biasing background characteristics
- Pathways of influence have not yet been fully explored



Research Questions

- What is the total effect of first-year seminars on first-year students' need for cognition net of precollege and background characteristics?
- What are the direct and indirect effects of first-year seminars on first-year students' need for cognition net of precollege and background characteristics?



Wabash National Study of Liberal Arts Education

- A longitudinal study investigating the effects of the liberal arts experience on a series of cognitive and psychosocial outcomes associated with undergraduate education
 - Student-level data from 48 college and universities that participated in the WNS in 2006, 2007, and 2008
 - We restricted our analytic sample to four-year institutions (n = 45)
 - First-year, full-time undergraduates



Data Collection

- Initial data collection in early fall (T1)
 - Precollege survey & cognitive, psychosocial, and personal development instruments
- Follow-up collection in late spring (T2)
 - NSSE student survey and the WNS Student Experiences Survey
 - Cognitive, psychosocial, and personal development instruments



Dependent Measure

- The Need for Cognition (NFC) instrument is an 18-item scale that measures an individual's desire to engage and seek-out cognitive activity (Cacioppo, Petty, Feinstein, & Jarvis, 1996; Cacioppo, Petty, & Kao, 1984).
- Individuals who measure high on NFC are more likely to seek, acquire, and reflect on information and processes in order to make sense of behaviors, relationships, and experiences in their daily lives (Cacioppo et al., 1996).



Independent Measures

<i>Background Characteristics / Precollege Experiences</i>	<i>Institutional Characteristics</i>
Male	Institutional Type - Regional College
Race - Black	Institutional Type - Research University
Race - Hispanic	
Race - Asian	<i>College Experiences</i>
Parents' Total Education	College Grades
Total Income	Live On-Campus
ACT Composite Score	Hours Worked per Week in College
Teacher Interaction in High School	Courses Taken in the Liberal Arts
Studied with Friends in High School	Participated in First-Year Seminar
Academic Motivation	
Degree Aspirations	<i>Good Practices</i>
Pretest Need for Cognition	Frequency of Interactions with Faculty
	Degree of Positive Peer Interactions
	Integrated Ideas, Information, and Experiences
	Academic Challenge
	Diversity Experiences



Analysis and Design Effect

- A series of ordinary least squares (OLS) regressions
- Follow-up data was weighted up to each institution's first-year undergraduate population by sex, race, and ACT score
- Accounted for the nested nature of the data
- Did not utilize propensity score matching
 - Weighted, multivariate OLS that control for a pretest measure and the clustering effect provide a more conservative and accurate measure of the selection variable compared to propensity score matching



Significant Results - NFC

Variables	Total Effect	SE	Direct Effect	SE
Participated in First-Year Seminar	0.08**	0.03	0.03	0.03
<i>College Experiences</i>				
College Grades			0.07***	0.01
Courses Taken in the Liberal Arts			0.02*	0.01
<i>Good Practices</i>				
Frequency of Interactions with Faculty			-0.03	0.02
Degree of Positive Peer Interactions			-0.01	0.02
Integrated Ideas, Information, and Experiences			0.13***	0.02
Academic Challenge			0.05**	0.02
Diversity Experiences			0.04	0.02
R ²	0.56		0.59	
* p < 0.05, ** p < 0.01, *** p < 0.001				



Results cont.

Effect Mediated Through	Estimated Indirect Effect
Integrated Ideas, Information, and Experiences	0.025***
	(0.006)
Academic Challenge and Effort	0.008*
	(0.004)
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (Sobel test)	



Discussion and Implications

- First-year seminars enhance students' development of overall motivation to inquire
 - Moves beyond retention and academic achievement
 - Can be an intentional educational practice to advance inquiry learning
- Potential to create buy-in and increase involvement from faculty in first-year seminars, attract new students into seminars, and enhance the fit of these courses with institutional, college, or departmental goals



Discussion and Implications

- Legitimization of first-year seminars as a vehicle for enhancing students' integration of ideas, information, and experiences & academic challenge and effort
- First-year seminars may be affecting student development across additional cognitive and psychosocial measures
- Pathway of influence may be indirect, which helps identify reasonable program outcomes



Future Directions

- Research on relationship of FYS with other developmental outcomes
- Further examine indirect effects of FYS
- Disaggregation of student populations
- Inclusion of programmatic variables
 - Seminar type & characteristics
 - Pedagogical practices
 - Learning outcomes



Questions? Comments?

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