Degree Aspirations and Deep Approaches to Learning

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Purpose & Research Questions

The aim of this study is to investigate if plans for graduate school is dependent upon senior students' uses of deep approaches to learning as well as academic major. Specifically, the research questions guiding this study are as followed:

1. **Does academic discipline have an impact on seniors' decision to attend graduate school?**
2. **Does seniors' uses of deep approaches to learning have an impact on their plans to earn a graduate degree?**
3. **Does academic discipline moderate the effect of seniors' uses of deep approaches to learning on plans to attend graduate school?**

Background

Carter (2003) offers a theoretical model to illustrate the ways degree aspirations may be affected by students' pre-college characteristics; initial aspirations, academic and career goals; experiences and involvement in college; and academic achievement. The conceptual model pays particular attention to the role individual qualities shape students' educational aspirations. It also highlights the impact social environments within institutions may have on future academic plans.
Carter's conceptual model align with several studies that have found differences in degree aspirations by students' racial and ethnic background (Pascarella et al, 2004a; Perna, 2004), gender (Perna, 2004), socioeconomic status (Walpole, 2003; Paulsen & St. John, 2002), parental education (Pascarella et al, 2004b), and academic achievement (Walpole, 2008). Institutional context has also been found to influence students' decision to attend graduate school (Ethington & Smart, 1986; Pascarella & Terenzini, 2005).

An earlier study by Ethington and Smart (1986) exploring the pathways to graduate education, they found both institutional selectivity and enrollment size had direct effect on undergraduate students pursuing a graduate degree. Additionally, they revealed a positive relationship between the social and academic involvement and the likelihood of attending graduate school. From model results, they were able to conclude the importance of academic and social integration on persisting through the educational process. A later study by Pike and Kuh (2003) corroborated this finding by exploring educational aspirations and academic and social engagement patterns by parental education. They also concluded degree aspirations were related to social and academic engagement. As a measure of academic engagement, Kim and Sax (2009) reported a positive relationship with course-related student-faculty interactions and degree aspirations. They also concluded research-related interactions with faculty lead to an increase in educational aspirations.

It is clear from these studies that collectively institutional context, individual characteristics, and what students do in college, particular as it relates to academic engagement, can play an important role in shaping educational aspirations. Yet, what is less clear from these studies is the impact of context of major field of study on aspirations to earn a graduate degree as well as students' uses of deep approaches to learning as specific measure of academic engagement.

Studies have shown students who approach learning in a deep way tend to have higher grade point averages (Hall, Bolen, & Gupton,1995; Zeegers, 2004; Zhang, 2000), are less likely to fail or drop out of a course (Roswell, Dawson, & Pollard, 1993; Vermunt, 1992), retain course material (Svensson, 1977, 1984), apply critical thinking skills (Chapman, 2001; Nelson Laird et al., 2008), and engage in several other cognitive outcomes related to liberal learning (Pascarella, Seifert, & Blaich, 2008). Many of these positive relationships continue to exist even in the presence of other academic (e.g., prior academic ability and major field) and institutional level (e.g. selectivity and Carnegie type) controls.

To date, however, very little focus has been placed on the relationship between students' level of degree aspirations and their engagement in deep approaches to learning. Previous studies have found higher degree aspirations may have a positive effect on several student outcomes such as academic achievement and graduate school attendance (Epps, 1995; Camburn, 1990; Carter, 2002), particularly among students at four-year institutions (Pascarella & Terenzini, 2005). This study continues to investigate if deep approaches to learning among senior students are positively associated with higher degree aspirations. This study also explores the direct and moderating effect of academic major on seniors' plans to persist beyond undergraduate studies.

Sample and Variables

Using data from 2012 pilot study of the National Survey of Student Engagement, we examined response from over 17,000 seniors attending 53 four-year bachelor's degree-granting institutions.

Students were asked the highest level of education they expect to complete. Responses ranged from less than a bachelor's degree to doctoral or professional degrees. Responses were subsequently dichotomized into graduate degree aspirations or lower. The survey also asked students how often they engaged in reflective and integrative learning, and to what extent coursework emphasized higher-order learning. Mean scores of items in Table 1 were summed to calculate a composite measure to represent seniors' uses of DAL (Nelson Laird et al, 2006).

Table 1. Component Items for Deep Approaches to Learning ($\alpha = 0.89$)

During the current school year, about ho w often have you done the following ?
(Never, Sometimes, Quite a bit, Very much)
a) Connected your learning to societal problems or issues
b) Combined ideas from different courses when completing assignments
c) Included diverse perspectives in course discussions or course assignments
d) Examined the strengths and weaknesses of your own views on a topic or issue
e) Tried to better understand someone else's views by imagining how an issue loos from his or per perspective
f) Learned something that changed the way you understand an issue or concept
g) Connected ides from your courses to your prior experiences and knowledge

During the current school year, how much has your coursework emphasized the following?
(Very much, Quite a bit, Some, Very little)
a) Applying facts, theories, or models to practical problems or new situations
b) Analyzing an idea, experience, or line of reasoning in depth by examining its basic parts
c) Evaluating a point of view, decision, or information source
d) Forming a new idea or understanding from various pieces of information

Control variables included gender, race-ethnicity, age, enrollment status, residential status, transfer status, Greek participation, athletic participation, parental education, self-reported college grades, Carnegie classification, and selectivity.

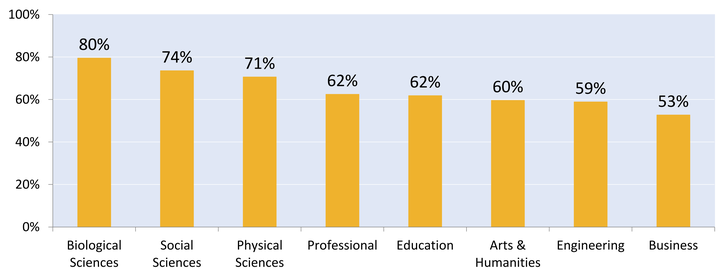
Methods

Logistic regression procedures were utilized to examine the influence deep approaches to learning had on seniors' graduate degree aspirations controlling for student and institutional characteristics. Interactions effects by discipline and deep approaches to learning were also examined in order to investigate whether the impact of deep approaches to learning on degree aspiration depends on academic discipline.

Results Q1

Figure 1 presents the proportion of students in each disciplinary category with graduate degree aspirations. As can be seen, students majoring in biological sciences and social sciences have the highest percentage of students with graduate degree aspirations while business and engineering majors have the lowest.

Figure 1: Percent of Seniors with Graduate Degree Aspirations by Discipline



Results Q2 and Q3

Logistic regression results are presented in Table 2. Results indicate that the students who use deep approaches to learning have 47% greater odds of graduate degree aspirations. Moreover, this effect was moderated by discipline. Main effects for discipline indicate that students majoring in biological science, social sciences, and physical sciences have 2 to 3 times greater odds of aspiring to achieve a graduate degree than their business major counterparts.

Examining the interaction effects we see statistically significant interaction effects for deep approaches to learning for students majoring in arts and humanities, professional fields, and education compared with business majors. For instance, the impact of deep approaches to learning on degree aspirations is greater for arts and humanities students than otherwise similar business students. On the other hand, the impact of deep approaches to learning on degree aspirations is greater for business majors than students majoring in education or a professional field.

In regards to the other variables in the model, males are more likely to have graduate degree aspirations than females. Whites are more likely to have graduate degree aspirations than students of another race-ethnicity. Full-time students and students whose parents have graduate degree have 50% greater odds of graduate degree aspirations than their counterparts. Students who reported grades of mostly A's or mostly B's have 3 and 2 times, respectively, greater odds of graduate degree aspirations than those who report grades of C or lower. Finally, students attending more selective schools tend to have higher degree aspirations.

Table 2: Logistic Regression Results

		95% C.I.	
	Odds Ratio[a]	Lower	Upper
DAL	1.47***	1.38	1.56
Social Sciences	2.13***	1.92	2.38
Arts & Humanities	1.11*	1.00	1.24
Professional	1.40***	1.25	1.58
Education	1.21*	1.07	1.37
Biological Sciences	3.22***	2.79	3.72
Physical Sciences	2.05***	1.70	2.47
Engineering	1.18	0.99	1.39
DAL*Social Sciences	0.98	0.81	1.19
DAL*Arts & Humanities	1.45***	1.20	1.75
DAL*Professional	0.79* (1.27)	0.64 (1.03)	0.97 (1.56)
DAL*Education	0.78* (1.28)	0.63 (1.02)	0.98 (1.60)
DAL*Biological Sciences	0.87	0.67	1.12
DAL*Physical Sciences	1.01	0.73	1.39
DAL*Engineering	0.86	0.64	1.16
Female	0.82*** (1.22)	0.76 (1.14)	0.88 (1.32)
Asian	0.81* (1.23)	0.71 (1.08)	0.93 (1.41)
Black	1.60***	1.39	1.84
Latino	1.71***	1.50	1.95
Other race-ethnicity	1.34*	1.07	1.68
Multiracial	1.39***	1.20	1.61
International	1.35*	1.10	1.65
Age (<24 years)	1.15*	1.06	1.26
Full-time	1.52***	1.38	1.66
Transfer student	0.95	0.88	1.02
Parent attended college	1.14*	1.03	1.25
Parent has bac. Degree	1.04	0.94	1.14
Parent has grad. Degree	1.53***	1.38	1.70
Live on-campus	1.02	0.94	1.10
Greek affiliation	1.16*	1.04	1.30
Athletic affiliation	1.04	0.86	1.26
Grades: Mostly A's	2.94***	2.52	3.44
Grades: Mostly B's	1.71***	1.47	1.99
Research/Doc. Univ.	1.10*	1.02	1.19
Baccalaureate A&S	0.95	0.77	1.16
Baccalaureate Diverse	0.84	0.67	1.05
Barrons selectivity	1.26***	1.12	1.40

[a]Inverse odds rations give in parentheses
Reference group for discipline is Business, race is White, parental education is no college, grades are C's or lower, and Carnegie type is master's institutions.
*p<.05; p<.01; p<.001

Discussion and Next Steps

Overall, findings from this study suggest academic engagement in form of deep approaches to learning has a positive impact on degree aspirations. Yet, this relationship is moderated by academic discipline. This study extends the conversation about the impact of institutional context on degree aspirations to include the environmental cultures of academic fields. What is unclear from this study, however, is if disciplinary cultures, like biological sciences, implicitly or explicitly promote graduate studies or whether students who have early plans to attend medical school, for example, seek out these majors to fulfill prerequisite.

Nonetheless, findings suggest we should pay close attention to academic major when studying degree aspirations particularly how the disciplinary context moderates the positive effect of students' uses of deep approaches to learning on plans to attend graduate school. Future research should explore why deep approaches has less of an impact on degree aspirations in comparison to other fields.

Our poster can be found at nsse.iub.edu/html/pubs.cfm