Undergraduate Academic Engagement & Disengagement in the University: the Brint-Cantwell Studies

Steven Brint
Sociology, Human Capital Theory & Newman

Sociologists have held a skeptical view of higher education in American society emphasizing social reproduction & legitimation of inequality, credentials as status signals, and cultivation of “modern” personhood.

Most Americans, by contrast, are instinctive human capital theorists.

We gravitate in the latter direction and even more to Cardinal Newman’s view that the university is intended to create “more intelligent members of society.”
Before Boyer: The Research University & Undergraduate Education

- T. Caplow and R. McGee (1958): the goal of professors is to minimize teaching, maximize research, and improve their position in the academic marketplace.

- C. Kerr (1962): a superior faculty leads to an inferior concern with undergraduate education.

Our Research Questions

- What are the primary cultures of academic engagement on campus?
- How do disciplines differ in their connection to students’ work ethics, conscientiousness, and thinking skills?
- How does student time use relate to key academic outcomes?
- What are the characteristics of disengaged student populations?
The SERU/UCUES Surveys

- University of California Undergraduate Experiences Survey (UCUES) 2006-2010. (Now part of the SERU Consortium.)

- Biannual census survey of the 9 UC undergraduate campuses. Response rates ranged from over 50% to 31%.

- Response bias toward higher GPA students.

- Parameter estimates likely to be unbiased, however, due to very large sample size (60,000 plus).

- Because of the large sample sizes, we focus on p values for coefficients that are quite low (p < .001)
Our Primary Independent Variables

**Disciplines**
- * Engineering
- * Physical Science
- * Life Science
- * Social Science
- * Humanities
- * Arts

**Social Background**
- * Gender
- * Ethnicity
- * Immigration Status
- * Self-reported Social Class

**Academic Background**
- * UC GPA
- * SAT Math & Verbal

**UC Campus** (Merced excluded for lack of N)
Appealing Elements in UC Student Culture
A Diverse and Inclusive Generation

- Three-quarters have at least one parent born outside the U.S.; more than one-quarter are themselves immigrants to the U.S.

- Only 35% are from European backgrounds.

- Large majorities (more than 70%) say that they have gained new perspectives from talking with students from different ethnic, religious, political, and socio-economic backgrounds.
A Community-Minded Generation

Nearly half (46%) of UCUES 2008 respondents said they participated in community service activities.

Range of involvements:

- K-12 schools = 22%
- Clinics/hospitals = 13%
- Environmental groups = 8%
- Religious orgs = 8%
- Youth services = 6%
- Homeless shelters = 5%
An Ambitious Generation

- Three-quarters UCUES 2008 respondents said they planned to pursue a degree beyond the baccalaureate.
- Nearly half said they planned to pursue first-professional degrees beyond the academic MA:

  - Ph.D. = 18%
  - M.D./Other Medical = 13%
  - M.B.A. = 11%
  - J.D. = 8%
  - Multiple degrees (e.g. M.D./Ph.D.) = 3%
Two Cultures of Academic Engagement

## “Two Cultures” of Undergraduate Academic Engagement

<table>
<thead>
<tr>
<th>“HUMSOC”</th>
<th>Factor Loading</th>
<th>“SCIENG”</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributed to discussion</td>
<td>.896</td>
<td>Desired proficiency:</td>
<td></td>
</tr>
<tr>
<td>Asked insightful question</td>
<td>.868</td>
<td>quantitative skills</td>
<td>.627</td>
</tr>
<tr>
<td>Brought up ideas from</td>
<td></td>
<td>Reason for major:</td>
<td></td>
</tr>
<tr>
<td>other class</td>
<td>.856</td>
<td>high-paying job</td>
<td>.582</td>
</tr>
<tr>
<td>Interacted during lecture</td>
<td>.809</td>
<td>Reason for major:</td>
<td></td>
</tr>
<tr>
<td>Talked w/faculty about course</td>
<td>.579</td>
<td>prestige</td>
<td>.479</td>
</tr>
<tr>
<td>materials</td>
<td></td>
<td>Helped classmate</td>
<td>.453</td>
</tr>
<tr>
<td>Communicated w/faculty</td>
<td>.534</td>
<td>Worked with group</td>
<td>.443</td>
</tr>
<tr>
<td>by email or in person</td>
<td></td>
<td>Desired proficiency:</td>
<td></td>
</tr>
<tr>
<td>Did more work due to interest in</td>
<td>.492</td>
<td>computer skills</td>
<td>.415</td>
</tr>
<tr>
<td>class</td>
<td></td>
<td>Looked for courses that</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>explain/solve problems</td>
<td>.405</td>
</tr>
</tbody>
</table>
The Primary Form of Academic Engagement Varies by Field

<table>
<thead>
<tr>
<th>Major</th>
<th>HUMSOC</th>
<th>SCIENG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(selected betas)</td>
<td>(selected betas)</td>
</tr>
<tr>
<td>Arts/Communication</td>
<td>.40***</td>
<td>-.81***</td>
</tr>
<tr>
<td>Humanities</td>
<td>.47***</td>
<td>-1.09***</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>.31***</td>
<td>-.78***</td>
</tr>
<tr>
<td>Psychology</td>
<td>-----</td>
<td>-.60***</td>
</tr>
<tr>
<td>Business</td>
<td>Reference</td>
<td>Reference</td>
</tr>
<tr>
<td>Bio Sciences</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>-----</td>
<td>.26***</td>
</tr>
<tr>
<td>Engineering</td>
<td>-----</td>
<td>.53***</td>
</tr>
</tbody>
</table>

*** = p < .001
Cultures of Engagement Have Consequences

High scores on either HUMSOC or SCIENG were related to higher grades. (Causality obviously unclear.)

High grades, majors, and high scores on HUMSOC or SCIENG were associated with aspirations for graduate degrees:

- High scores on HUMSOC were associated with aspirations for J.D. and Ph.D. degrees.
- High scores on SCIENG were associated with aspirations for M.D. and M.B.A. degrees.
The Disciplines & Academic Outcomes

The Disciplines & Time on Academics

- Net of covariates, physical science, life science, engineering, and arts students were significantly more likely to spend time studying and in class than social science or humanities students.

- All specific science and engineering majors were also higher in study time (with borderline exceptions: CS & Environ Science)

- Other net associations: GPA (positive), Asian American (positive), participation frequency (positive), SAT verbal (negative)

- Discipline $R^2=.13$ (N=17,845); Major $R^2=.14$ (N=16,162)
## Academic Conscientiousness

### Factor Loadings for Academic Conscientiousness Scale

<table>
<thead>
<tr>
<th>Activity</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raised own standard due to high standards of faculty</td>
<td>0.46</td>
</tr>
<tr>
<td>Extensively revised a paper at least once</td>
<td>0.55</td>
</tr>
<tr>
<td>Sought help from instructor or tutor</td>
<td>0.70</td>
</tr>
<tr>
<td>Worked on class projects of studied as a group outside of class</td>
<td>0.62</td>
</tr>
<tr>
<td>Helped a classmate better understand course material</td>
<td>0.72</td>
</tr>
</tbody>
</table>

**Alpha = 0.75**

**Minimum = -2.71 Maximum = 2.46**

**Range 1 (never) to 6 (very often)**
The Disciplines & Academic Conscientiousness

- Net of covariates, physical science, life science, and engineering students scored significantly higher than social science students on the academic conscientiousness scale. Arts and humanities students scored significantly lower.

- Relative to economics students, engineering students scored significantly higher. Students in all other social science, as well as all humanities & arts scored significantly lower.

- Other net associations: GPA (positive), participation frequency (positive), SAT verbal (negative), male (negative)

- Discipline $R^2=.28$ (N=17,845); Major $R^2=.29$ (N=16,162)
Analytical/Critical Thinking

Factor Loadings for Analytical/Critical Thinking Experiences Scale

Evaluate Conclusions  .77
Examine and Assess Methods  .75
Analyze Arguments  .72
Generate New Ideas or Products  .68
Incorporate Ideas from Other Courses  .68
Use Facts and Examples to Support Position  .65
Recall Facts, Terms, Concepts  .56

Alpha = .87
Minimum = -4.13  Maximum =1.60
Range 1 (never) to 6 (very often)
The Disciplines & Analytical/Critical Thinking

- Net of covariates, arts students scored significantly lower on analytical and critical thinking scale than social science students. No other significant differences by disciplinary category (with borderline exceptions: life science and engineering students)

- Other significant net associations: participation frequency (positive), male (negative)

- Discipline $R^2=.16$ (N=17,845); Major $R^2=.17$ (N=16,162)
Undergraduate Time Use

UC Students Use Relatively Little of their Time for Academics…

<table>
<thead>
<tr>
<th>Activity</th>
<th>Mean Hrs/Wk</th>
<th>(S.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending Class</td>
<td>15.5</td>
<td>(6.1)</td>
</tr>
<tr>
<td>Preparation for Class</td>
<td>12.8</td>
<td>(8.3)</td>
</tr>
<tr>
<td>Work for Pay</td>
<td>7.6</td>
<td>(8.9)</td>
</tr>
<tr>
<td>Family Interactions</td>
<td>4.7</td>
<td>(7.0)</td>
</tr>
</tbody>
</table>

**Social/Leisure Activities** 41.1 ---

(includes non-academic computer use, watching TV, socializing w/friends, attending entertainment events, & exercise)
Time Use Regressions:
Academic Conscientiousness ($R^2=.20$)

**Selected Betas (+)**
- UC GPA: $0.13^{***}$
- Time Use: Class/Study: $0.23^{***}$

**Selected Betas (-)**
- SAT Score: $-0.19^{***}$
- Obstacle: Depression: $-0.10^{***}$
- Social Science Major: $-0.09^{***}$

$***$ $p < .001$
## Time Use Regressions: UC GPA ($R^2 = .38$)

<table>
<thead>
<tr>
<th>Selected Betas (+)</th>
<th></th>
<th>Selected Betas (-)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT Scores</td>
<td>.35***</td>
<td>Engineering Major</td>
<td>-.13***</td>
</tr>
<tr>
<td>HS GPA</td>
<td>.28***</td>
<td>Biology Major</td>
<td>-.12***</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>.10***</td>
<td>Time Use:</td>
<td></td>
</tr>
<tr>
<td>Class/Study</td>
<td>.10***</td>
<td>Work for Pay</td>
<td>-.13***</td>
</tr>
</tbody>
</table>

*** p < .001
Time Use Periphery

Groups determined by one standard deviation above the mean on relevant time use investments. Time use periphery composed of “Socials,” “Passives,” & “Workers”

“Socials” significantly less likely to be Asian American, first generation, and physical science or engineering majors. Borderline negative net association with grades.

“Passives” significantly more likely to be males and Asian Americans, and to have low conscientiousness and low grades.

“Workers” significantly less likely to be Asian Americans and engineering majors, and more likely to have low conscientiousness and low grades.
Disengaged Students

Size of Disengaged Populations

- Work as competing involvement: 5%
- High on academic irresponsibility: 12%
- Low on educational values: 12%
- High on social time: 13%
- High on passive time: 15%
- Low on study time: 19%
- Low on reading completion: 22%
- Low on academic interactions: 24%
Characteristics of Academically Disengaged Populations

Social/Academic Bases of Disengagement:

1) Low college grades
2) High SAT scores
3) Gender (men more often disengaged)
4) Arts, Humanities & Social Science majors
5) Upper-division students

Weak/Non-Predictors of Disengagement:

1) Ethnicity
2) Self-reported social class
Analysis and Conclusions
Is the Current System Rational?

- Perhaps 1-3% of jobs are “elite” jobs – executive and high-level professional. Most students seeking elite jobs are “scholars” or “scholar-actives.”

- Approximately 15-20% of jobs are other “professional” and “managerial” -- rewarding higher level degrees with good incomes.

- The remainder of jobs available to graduates are relatively routine, less well paying white collar jobs.

- These proportions correspond roughly to work effort and engagement profiles among UC students.
The Online Challenge

- Cost pressures are encouraging institutions to move introductory undergraduate courses online.

- Introductory courses are the bread and butter of the university.

- The physical campus experience in selective institutions will continue based on prestige, social networks, and campus social life, but for less selective institutions/majors the value-added of the face-to-face classroom will likely become an issue.

- If learning experiences are equal (or better) online, online migration will almost certainly continue with negative consequences for the size and vitality of the disciplines and intellectual life.
Reforming UG Education in the Research University

- Uses of sophisticated technology-mediated instruction to increase interaction and learning
- Requirements of a few intense, seminar-style experiences
- Project-based and research-based learning experiences
- Frequent presentation and interaction opportunities in all classes
- Teacher preparation and rubic-based peer review of teaching
- Grades accurately reflect student performance
- Rethinking the meaning of “student success” not only as retention and graduation, but as enriched and effective learning experiences