Graduate Education and its Changes in the U.S.: an Evolving Process

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Overview

1. The context: globalization in doctoral education
2. Characteristics of US graduate education
3. Selected national issues in US doctoral education
   1. Quality assurance mechanisms: input/throughput/output
   2. Professional skills development
   3. Responsible conduct in research
   4. Increase participation of underrepresented students
   5. Interdisciplinarity and socially relevant research
4. Outdated assumptions about US doctoral education
5. Commonly accepted definition of what is a PhD
Characteristics of U.S. Graduate Education

1. Decentralized

2. Market-driven

3. Structured process with a developmental curriculum

4. Many quality assurance mechanisms

Basic Structure of US PhD Programs in Physical, Life Sc.+ Engineering

- Selective Admission
  - GRE
  - GPA
  - 3 letters

- Course Work (core courses)

- Prelim. Exam (end of 1st year)

- Diss. Proposal development

- General Exam (end of 2nd-3rd year)

- Dissertation Research

- Final Exam (5-7th year)

- PhD

- Postdoc 2-4 yrs
Quality Assurance in US doctoral education:

an engine for change and a potential for 'risk' aversion
Why are we assessing the quality of doctoral education? From a US perspective

Extrinsic reasons
1. Accountability towards funders
2. Effective and efficient use of resources
3. Comparison with other universities
4. Establishment of institutional reputation

Intrinsic reasons
Impression of quality
for new program planning
and to give feedback to programs, faculty, students
Who is undertaking the assessment? Who is asked to assess?

Assessment agencies
(Non-governmental accreditation agencies assess the institution NOT doctoral programs)
1. Governmental agencies
2. Disciplinary professional associations
3. National Research Council
4. University faculty committee (Graduate Council)
5. Research Centers (such as CIRGE), individual researchers

Evaluators
1. Professors/ academic staff
2. current doctoral students
3. PhD recipients (past students)
What are we assessing?
What is the level of analysis?

1. The individual student
2. The PhD program effectiveness
3. Professional development activities
4. Overall university scholarly infrastructure
What exactly are we assessing?
When are we assessing?

1. Assessing individual student accomplishments and learning experiences
   a. INPUT: competitive admission GPA, GRE, letters of references, speak English test, essay, c.v., career goal
   b. THROUGHPUT: example: pilot study, written general exam, orals, dissertation, dissertation defense, conference presentations, publications, fellowships, socialization into the field
   c. OUTPUT: quality of the dissertation, time-to-degree, completion rates, # of publications, presentations, placement in post-doctoral position or academic or non-academic job
   d. 5 - 10 YEARS OUT: career outcomes in all employment sectors, publications/patents, job satisfaction, usefulness of PhD in life, retrospective program evaluation in light of application
What exactly are we assessing?

2. The PhD program

(by the Graduate Council-faculty peers coordinator through the Graduate School)

- Curriculum
- Teaching by Faculty/academic staff
- Advice, guidance, mentoring of academic staff
- Research experience by students
- Research methodology
- % Student funded by TA, RA, fellowship
- Opportunities for interdisciplinary research & instruction
- Exam preparation
- Dissertation support
- Diversity of faculty and student
What exactly are we assessing?

3. Availability and Quality of Professional Development Activities of Graduate Students
   - Teaching
   - Grant writing
   - Presentation
   - Publishing
   - Leadership (time management, organizational understanding, etc.)
   - Working in teams, collaborating
   - Working in inter/multi/trans-disciplinary groups
   - Working with diverse people
   - Career development, placement support
   - Preparing for global citizenship
What exactly are we assessing?

4. University Scholarly Infrastructure

- Library holdings
- Laboratory equipment
- Computer laboratory
- Research and office space for students
- Diversity of people (professors, students, staff)
- Childcare facilities
- Health Insurance
Doctoral program evaluation
– essential program elements
– mentoring

Example” Social Science PhDs—Five+ Years Out (CIRGE, 2008)
## AN EXAMPLE
### Social Science PhDs Five+ Years Out
#### Survey Sample

Survey: April 2005-March 2006, Response Rate 45%
PhD Cohorts: 1995 to 1999
65 US universities (accounted for 63% of PhDs in years surveyed)

<table>
<thead>
<tr>
<th>Field</th>
<th>N</th>
<th>(% women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>432</td>
<td>(56.5)</td>
</tr>
<tr>
<td>Communication</td>
<td>343</td>
<td>(52.2)</td>
</tr>
<tr>
<td>Geography</td>
<td>164</td>
<td>(32.3)</td>
</tr>
<tr>
<td>History</td>
<td>839</td>
<td>(43.4)</td>
</tr>
<tr>
<td>Political Science</td>
<td>701</td>
<td>(35.9)</td>
</tr>
<tr>
<td>Sociology</td>
<td>546</td>
<td>(59.2)</td>
</tr>
</tbody>
</table>

**Total** 3025 (46.8)
### Social Science PhDs Five+ Years Out

**Evaluation of Program Elements**

<table>
<thead>
<tr>
<th>% Rating the item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic rigor</td>
<td>66%</td>
</tr>
<tr>
<td>Clear requirements</td>
<td>54%</td>
</tr>
<tr>
<td>Overall quality</td>
<td>49%</td>
</tr>
<tr>
<td>Support/guide dissertation writing</td>
<td>42%</td>
</tr>
<tr>
<td>Preparation for Qual. Exam</td>
<td>37%</td>
</tr>
<tr>
<td>Students encouraged to take initiative in academic activities</td>
<td>36%</td>
</tr>
</tbody>
</table>
**Social Science PhDs Five+ Years Out**

**Evaluation of Program Elements**

<table>
<thead>
<tr>
<th>% Rating the item</th>
<th>( \text{Excellent} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial support</td>
<td>35%</td>
</tr>
<tr>
<td>Socializing students into academic community</td>
<td>32%</td>
</tr>
<tr>
<td>Feedback on student progress</td>
<td>32%</td>
</tr>
<tr>
<td>Academic career preparation</td>
<td>32%</td>
</tr>
<tr>
<td>Having a diverse student population</td>
<td>28%</td>
</tr>
<tr>
<td>Non-academic career preparation</td>
<td>6%</td>
</tr>
</tbody>
</table>
## Social Science PhDs’ Five+ Years Out

### Quality of Mentoring by Thesis Advisor

<table>
<thead>
<tr>
<th>Area</th>
<th>% 'Very Satisfied'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advice with PhD Topic</td>
<td>55%</td>
</tr>
<tr>
<td>Guidance to finish</td>
<td>55%</td>
</tr>
<tr>
<td>Overall mentoring</td>
<td>48%</td>
</tr>
<tr>
<td>Support in career decisions</td>
<td>51%</td>
</tr>
<tr>
<td>Support in job search</td>
<td>43%</td>
</tr>
<tr>
<td>Help in publishing</td>
<td>27%</td>
</tr>
</tbody>
</table>
Social Science PhDs **Use** Their PhD Education 5+ Years Out

<table>
<thead>
<tr>
<th>Used Social Sc. Knowledge 'often~ or 'sometimes~ in Current Job (vs. rarely/never)</th>
<th>PhD Field</th>
<th>Thesis Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ten./TT</strong></td>
<td>97%</td>
<td>87%</td>
</tr>
<tr>
<td><strong>Academic Other</strong></td>
<td>83%</td>
<td>64%</td>
</tr>
<tr>
<td><strong>BGN</strong></td>
<td>76%</td>
<td>49%</td>
</tr>
</tbody>
</table>
PhD Completion Project (CGS)

Cumulative Ten-Year PhD Completion Rates by Citizenship and Broad Field

PhD Completion Project: Analysis of Baseline Demographic Data.  
*Source: Communicator, Council of Graduate Schools, July 2008*
Importance of Professional skills training

From *Social Science PhDs’ Five+ Years Out*
Importance of Skill at Current Job versus Quality of Training in this Skill During PhD Studies

- Critical Thinking
- Data Analysis/Synthesis
- Write, Publish
- Research Design
- Grant Writing

Percent Respondents

Center for Innovation and Research in Graduate Education (CIRGE), Graduate School & College of Education, University of Washington, Seattle, http://depts.washington.edu/coe/cirge/ 6-25-2008
Importance of Skill at Current Job versus Quality of Training in this Skill During PhD Studies

- Presenting
- Working with Diverse Groups
- Working in Interdisciplinary Contexts
- Collaborating in a Team
- Managing People and Money

Percent Respondents
Recent and On-going National Projects Aimed at Change in Graduate Education

1. National Science Foundation:
   1. Integrated Graduate Research and Traineeship program (IGERT) interdisciplinary and socially relevant research
   2. Alliance for Graduate Education and the Professoriate in STEM fields (AGEP) — underrepresented groups

2. Council of Graduate Schools
   1. Professional Master’s Program
   2. Preparing the Future Professors/Professionals
   3. PhD Completion Project
   4. Responsible Conduct of Research (research ethics)

3. Carnegie Foundation for the Advancement of Teaching
   Carnegie Initiative on the Doctorate
Recent and On-going National Projects Aimed at Change in Graduate Education

4. Re-envisioning the PhD - Pew Foundation Charitable Trust

5. The Responsive PhD – Woodrow Wilson National Fellowship Foundation

6. Center for Innovation and Research in Graduate Education – Ford Foundation/ NSF/ Sloan
   1. National PhD career path and retrospective program evaluation
   2. Evaluation of Doctoral Innovations (IGERTs)
   3. Fostering international collaboration and research network – International research synthesis workshops
Characteristics of IGERT Programs

1. Theme based
2. Student funding is tied to the program NOT to the professor
3. Trans- or interdisciplinary and team-based
4. Access to professionals in the field
5. Professional skill development
6. Emphasis on the learning environment
7. Foster diversity of students
8. International component
9. Become a catalyst for change on campus
Outdated Assumptions about US PhDs - Employment

1. All PhD students want to become professors.
2. The ‘best’ PhD students do become professors.
3. PhD recipients’ academic career paths are linear and smooth.
4. Everybody can take the ‘best’ job offered.
5. Professors enjoy the highest job satisfaction.
## Career Goal at PhD Completion and % Tenured or Tenure-Track 5+ Years Later

<table>
<thead>
<tr>
<th>Subject</th>
<th>(1) % Wanted to Be Professor</th>
<th>(2) % Tenured + TT of (1)</th>
<th>(3) % Tenured+T-T of All PhDs</th>
<th>N of All PhDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>72</td>
<td>64</td>
<td>52</td>
<td>(407)</td>
</tr>
<tr>
<td>Communication</td>
<td>75</td>
<td>84</td>
<td>71</td>
<td>(319)</td>
</tr>
<tr>
<td>Geography</td>
<td>65</td>
<td>74</td>
<td>53</td>
<td>(155)</td>
</tr>
<tr>
<td>History</td>
<td>84</td>
<td>76</td>
<td>66</td>
<td>(789)</td>
</tr>
<tr>
<td>Political Sc.</td>
<td>76</td>
<td>80</td>
<td>66</td>
<td>(674)</td>
</tr>
<tr>
<td>Sociology</td>
<td>75</td>
<td>78</td>
<td>63</td>
<td>(521)</td>
</tr>
</tbody>
</table>
Social Science PhDs Five+ Years Out Jobs at Survey by Gender (2005/2006)
Social Science PhDs Five+ Years Out

Time to stable, full-time Job
% whose First Job was Tenure Track, and % whose Last Job was Tenured/Tenure Track

Center for Innovation and Research in Graduate Education (CIRGE), Graduate School & College of Education, University of Washington, Seattle, http://depts.washington.edu/coe/cirge/ 6-25-2008
Women Make More Compromises Related to Family and Career

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Partner has PhD/JD/MD</strong></td>
<td>32%</td>
<td>18%</td>
</tr>
<tr>
<td>(among those partnered at survey)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Partner never worked full-time</strong></td>
<td>13%</td>
<td>26%</td>
</tr>
<tr>
<td>(among ever married or partnered from start of PhD program to survey)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Moved or changed jobs because of partner’s career</strong></td>
<td>27%</td>
<td>16%</td>
</tr>
<tr>
<td>(of ever married or partnered)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Postponed or did not have child because of own career</strong></td>
<td>48%</td>
<td>23%</td>
</tr>
<tr>
<td>(of those wanting children)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Common Definition of a Research Doctorate

1. Should contribute to knowledge through original research
2. Expected to have a substantial knowledge in their area of study
3. Training should include development of transferable skills and competencies
Thank you!

CIRGE website
http://www.cirge.washington.edu
## Time to Degree by Job Sector at First Job

### Does Time-to-Degree Matter?

<table>
<thead>
<tr>
<th>Job Sector at First Job</th>
<th>TTD (median years)</th>
<th>P Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ladder Faculty</td>
<td>6.50</td>
<td>Ref. Group</td>
</tr>
<tr>
<td>Non-Tenure Track</td>
<td>6.75</td>
<td>.207</td>
</tr>
<tr>
<td>Academic Other</td>
<td>7.54</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>BGN</td>
<td>6.75</td>
<td>.018</td>
</tr>
</tbody>
</table>

*Analysis conducted using ordinary least squares regression*
Graduate School Performance by Job Type at Survey, SS5: *Political Science*

<table>
<thead>
<tr>
<th></th>
<th>Ladder Faculty</th>
<th>NTT faculty</th>
<th>Academic other</th>
<th>BGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median time-to-degree</td>
<td>6.7</td>
<td>7.6</td>
<td>6.8</td>
<td>6.8</td>
</tr>
<tr>
<td>3+ presentations at national meetings</td>
<td>67%</td>
<td>52%</td>
<td>53%</td>
<td>61%</td>
</tr>
<tr>
<td>1+ peer reviewed articles (1\textsuperscript{st} or co-author)</td>
<td>50%</td>
<td>37%</td>
<td>30%</td>
<td>43%</td>
</tr>
<tr>
<td>Prestige of department (median NRC rank)</td>
<td>17</td>
<td>19</td>
<td>23</td>
<td>18</td>
</tr>
</tbody>
</table>

Center for Innovation and Research in Graduate Education (CIRGE), Graduate School & College of Education, University of Washington, Seattle, http://depts.washington.edu/coe/cirge/ 6-25-2008
Median Salary at Time of Survey (2005/2006) among Full-time and Self-employed PhDs: Social Sciences

Excluded: Not in the workforce, part time, working outside US.

Thousands

<table>
<thead>
<tr>
<th>Disciplines</th>
<th>Academic</th>
<th>BGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthro.</td>
<td>$30k</td>
<td>$50k</td>
</tr>
<tr>
<td>Comm.</td>
<td>$35k</td>
<td>$70k</td>
</tr>
<tr>
<td>Geogr.</td>
<td>$40k</td>
<td>$60k</td>
</tr>
<tr>
<td>History</td>
<td>$35k</td>
<td>$55k</td>
</tr>
<tr>
<td>PoliSci.</td>
<td>$45k</td>
<td>$80k</td>
</tr>
<tr>
<td>Sociology</td>
<td>$40k</td>
<td>$65k</td>
</tr>
</tbody>
</table>