SERU Research Symposium
Exploring the Research University Advantage
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Graduate Education in International Perspective

Center for Innovation and Research in Graduate Education

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Overview

1. **Changes in Doctoral Education worldwide- Why? connection between globalization, national innovation policies and doctoral education**
2. **Macro-level and micros-level reforms in doctoral education worldwide**
3. **Taboos in doctoral education: in the global North or worldwide?**
4. **Cautions when designing an international survey of graduate students**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

3 CIRGE International Working Conferences

Forces and Forms of Change in Doctoral Education Worldwide (NSF funded)

2005 US, Seattle; 2007 Australia, Melbourne; 2009 Germany, Kassel

Goals:

- **Research synthesis of selected topics (see website + book publications)**
- **Development of an international network of experts in doctoral education**

Countries: 6 continents, 20 countries

Argentina, Australia, Brazil, Canada, China, Czech Republic, Denmark, Germany, Iceland, India, Ireland, Japan, Malaysia, Mexico, Pakistan, South Africa, UK, US

Participants: Graduate Deans, national funding agencies (i.e. NSF,), researchers of doctoral education, University provosts for research, early career researchers (ECR – 1/3)

Outcomes:

- ***Towards a Global PhD? (2008) UW Press***
- ***Globalization and the Impact on Quality of the PhD (2014) Sense Publishers***
- ***Diversity, Internationalization & Intellectual Risk Taking in PhD Education* (2016)**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

What is the Connection between Innovation Policies and Doctoral Education ? (Marco level)

- **Economic theory of the knowledge economy are embraced by governments worldwide (neoliberal).**
- **Innovations and technical changes are seen as means of economic growth (emphasis on STEM).**
- **Doctoral education is expected to educate innovators for many sectors of society.**
- **New knowledge has to be disseminated too.**
- **Governments want world-class research capacities in order to attract investment and create new jobs.**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

More is Asked from the Next Generation of Researchers

1. **Academic research skills**

   Skills developed in completing the PhD: critical thinking, research design + methods, data analysis/synthesis, writing, publishing), research ethics = responsible conduct in research.

2. **Professional competencies**

   Teaching, team-work, presenting, grant writing, managing people and budgets, working in multi-disciplinary teams, translational competencies, leadership skills.

3. **Inter-cultural competencies**

   Effective and appropriate interactions skills with those from different backgrounds, race/ethnicity, cultures, religions, perspectives

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Increase in PhD Production 1991-2008

Source: NSF Science Indicators 2012/13

Country	1991	2004	2008
Australia		5,000	6,500
Brazil			10,700
China	2,000	23,400	43,800
Germany	22,000	23,100	25,600
India *(2006)		17,850	18,700*
Japan* (2007)	10,000	16,900	17,300*
Russia		29,850	27,700
South Korea	1,000	7,950	9,400
Vietnam			9,500
UK	8,000	15,300	16,600
US	37,000	48,500	61,700
World Total			381,453

Expansion of Doctoral Education since 1990- 2005

Rate of increase in doctoral production (1991 -2005)

- **China 817%**
- **Taiwan 379%**
- **South Korea 166%**
- **Japan 57%**
- **UK 82%**
- **Australia 46%**
- **Germany 3%**

Recruiting /attracting International PhD doctoral candidates

"graying countries:" Scandinavian countries, Japan, Germany

Revenue generating: Australia, Canada, New Zealand, UK,

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Innovation Policies' Effects: Trends in *Reform/Change* Efforts (1-3)

1. **A bifurcation of doctoral education: Flagship governmental programs←→run-of the mill programs**

Common characteristics:

a. **Imbedded in national research grant schemes - well funded**
b. **Well-funded stipends for 3 years + extra research allowance including international conferences**
c. **Connection to outside world (internship, secondment, international research visits)**
d. **Ample professional competencies development**
e. **Rich networks (national+ international) established within programs**
f. **Small seminars, special attention by university adminstration**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Examples of National/Regional Flagship PhD Programs

a. European Union funded, Marie- Curie, EU/ITN International Training Programs
b. Germany- Excellence Initiative DFG/ Excellence Graduate Schools
c. Netherlands
d. Australia- Government funded CRC- Cooperate Research
e. U.S. - NSF/IGERT/NRT= National Research Training Programs, PIRE = Partnership in Internat. Research Education
f. Japan - MEXT –Ministry Leading Graduate Schools
g. Chile - BECAS-Chile -Conicyt- National Fellowship (Brazil, Columbia, etc.)

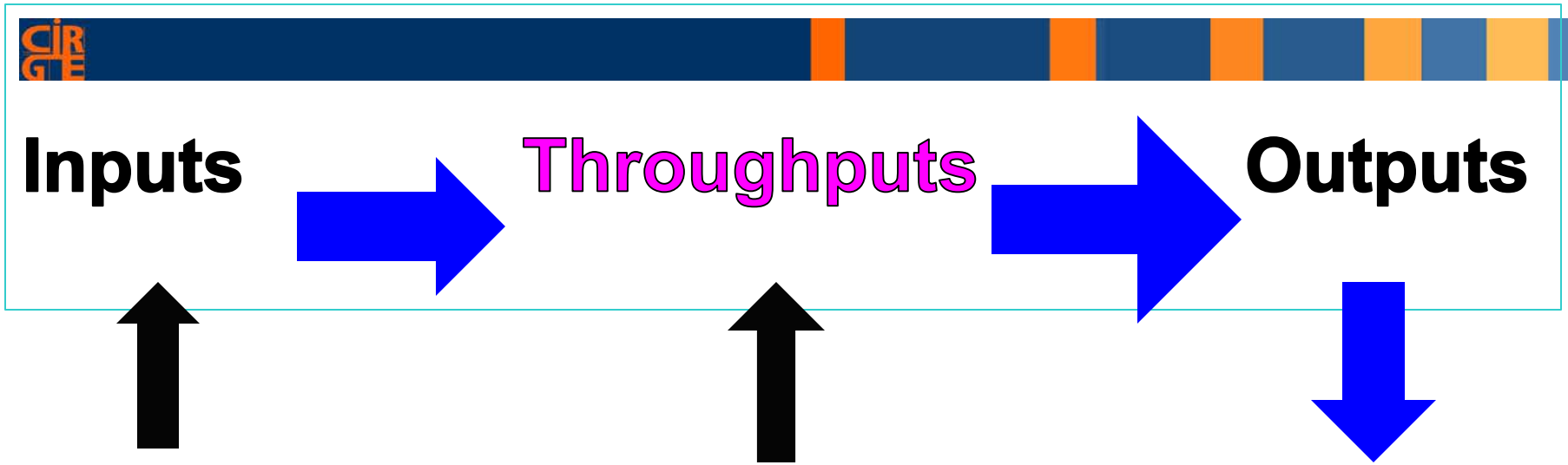
Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Innovation Policies' Effects: Trends in *Reform/Change* Efforts

2. **Selected co-operative agreements for research and dual/joint degrees (perceived peer institutions)**
3. **Aiming to become world-class universities**
   - **Excellence Initiative – Germany**
   - **APEX university selection – Malaysia**
   - **Centers of Excellence –GS US, Japan**
   - **Project 985 – China (9 universities -now 40)**
4. **Implementing international quality standards**
   - **1990 - Australia/ New Zealand/ UK**
   - **1995 – US, 2000 Canada**
   - **Latin America - Brazil**
   - **Europe**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Most Common Quality Assurance Model in Doctoral Education



Applicants
Professors
Infrastructure
Political context

- Advising/supervision (contract, training, not automatically chair)
- Course work& General Exam
- Professional skills
- External Doctoral Program Reviews
- External examiners

Independent Scholars, PhD Degree Dissertation Research

Outcome

Difference made by output,

Careers tracking

Societal Impact

Source: M. Nerad,

Changes in micro-level Practices in Doctoral Education Worldwide (1-4)

A. Selection and Admission

1. English has become the language of doctoral education (in order to attract international students)
2. Some Access to PhDs after Bachelor (fast track)
3. Admission process - defined, formalize, competitive.
4. Countries/universities offer several years of funding (3 years) with benchmarks and performance evaluation.
5. Funding of campus visits for admitted students before they make decisions

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Practices in Doctoral Education Worldwide micro-level (2-4)

B. Program Elements

5. **Students work with more than 1 supervisor**
6. **Many countries expect a 3-year doctoral completion**
7. **Introduction of oral exams where not existent (Australia)**
8. **Dissertation panels (3-5 persons) on all exams & dissertation review,**
9. **External (to university or country) dissertation reviewers**
10. **Choice between traditional dissertation or compilation of several peer reviewed articles (Econ, Bio sciences)**
11. **Ethics training integral in all fields.**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Practices in Doctoral Education Worldwide - micro-level (2-3)

C. Doctoral Education for Career Preparation

13. Doctoral students prepare for a variety of careers (non-academic and academic)
14. Career planning and development as part of doctoral studies. Development of 'road map' at beginning of doctorate (Doctoral/Career development plan -UK).
15. Increase in offering of professional/~~transferable~~/ translational competencies.
16. Many countries have few doctoral student service units
17. Increase in professional practice doctorates
18. Countries/institutions start PhD career tracking (ESF, CGS)

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Practices in Doctoral Education Worldwide- micro-level (4-4)

D. Attracting and Serving International Students

19. Recruiting of International doctoral students at international fairs
20. Some countries charge no tuition+ minimal fees for out-of-state students (Norway, Germany)
21. Welcome centers for international students
22. Introductory class to graduate education
23. Writing Centers for international students
24. Choice of language for the dissertation

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Taboos in Doctoral Education
in many countries (examples US + Japan)

1. **Between super/advisors + doctoral students**
2. **Among doctoral students**

Hidden Issues in Doctoral Education
cultural differences manifested in the relationship to advisor

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Taboos in Doctoral Education

Between super/advisors + doctoral students

Things which doctoral students would not tell their advisors

1. **That they do not want to become professors**

   US: at top research universities in many fields, not engineering& business, particularly in social sciences + humanities

   Japan: All fields, except engineering

2. **That they want to become pregnant or being pregnant**

WHY:

- **To protect from stereotypical perceptions**
- **Fear of being treated as second class citizen**
- **Being not taking seriously, and not getting financial support (RA/TA)**
- **Being perceived as not smart enough**
- **Being seen as a failure (Japan)**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Taboos in Doctoral Education

Between super/advisors + doctoral students

Things which doctoral students would not tell their advisors

Japan

3. **To contradict one's advisor**
4. **To discuss private matters**
5. **To change supervisor**

WHY:

- **Fear to break cultural etiquettes**
  - **Age**
  - **Hierarchy**
  - **High status of professor, need to show high respect**

=➔ Different advising cultures!

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Cautions when designing an International Survey

1. How to capture interdisciplinary doctoral program?
2. Master's degrees have many functions
   - Preparation for research training
   - For highly skilled professional
   - Recurrent education for adult learners
   - Temporary place holders in times of recession
   - Fee-based 1-year master's degree geared to international students
3. Terminology
   - mentor = a person outside the university,
   - advisor/ supervisor – strict academic guidance
4. Cultural differences in advising

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Pitfalls
in comparing international data on doctoral education

Example: time-to-degree

1. **Nature of undergraduate program:** ***more or less specialized***
2. **Structure of doctoral program:** ***more or less coursework***
3. **% students completing a master's prior to PhD:** ***no MA/MS have shortest time***
4. **Presence or absence of continuing registration:** ***institutional policy affect counting of time***
5. **Financial support – governmental context**
6. **Definition of full-time study:** ***defined by hours of work per week versus # of credits enrolled***
7. **% of part-time study**
8. **International student definition-national visa/immigration policy: when are they defined "international"** ***preferable use of entrance cohort***
9. **National job market**

Source: M. Nerad, UC Berkeley, CSHE, June 9- 2015

Thank you!

Center for Innovation and Research in Graduate Education

CIRGE website

http://www.cirge.washington.edu

Three U.S. National Surveys of PhDs 10+ and 5+ Years Later

1. **PhDs—Ten Years Later** ***(surveyed 1997)***

   MELLON FOUNDATION AND NSF funded

   61 US universities, 6 disciplines

   Survey population: 5,864 response rate: 66%

   Biochemistry - Computer Science - Electrical Engin.
   English – Mathematics - Political Science

2. **PhDs in Art History – Over a Decade Later** ***(surveyed in 2002)***

   GETTY GRANT FOUNDATION funded

   54 US universities, all art history PhD programs

   survey population: 746 response rate: 68%

3. **Social Science PhDs- Five+ Years Out (surveyed 2005/06)**

   FORD FOUNDATION funded

   65 universities, 6 disciplines, Population: 6,670, response rate 45%

   Anthropology, Communication, Geography, History, Sociology, Political Science

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