

Doctoral Studies: the Siena Experience.

*Projects Related to the Bologna Process by Universities Austria
How to Assure Quality in New-Style Doctoral Studies?*

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The importance of academic disciplines.

- The complexity of modern research requires a pronounced specialization of scientific work. Research is organized in different disciplines and each discipline is often divided in different fields which are clearly distinguished from each other.
- Thanks to this sophisticated division of labour, different international communities of scholars communicate and evaluate their results across the globe.
- In this way, science can produce internationally evaluated knowledge and create a global civil society that spreads across nations and cultures, contributing to the co-operation among different countries

Should the boundaries of doctoral schools coincide with disciplines?

- The evaluation of doctoral studies is obviously easier and less parochial when the boundaries of the doctoral school coincide with those set by the international division of scientific research.
- International rankings become possible and offer criteria for the relative performance of the different disciplines within each single university.
- Universities may allocate resources in sectors where they perform better and the overall quality of doctoral studies may improve.

Disadvantages of disciplinary boundaries.

- In spite of its evident success, the internationally standardised division of scientific labour erects barriers which may impede useful flows of communication of scientific work.
- Disciplinary boundaries may, sometimes, be better explained by the search of monopoly rents than by the principles of an efficient division of labour. They define narrow fields where researchers are protected from the competition of other scientific communities. Research may become “academic” in the worst meaning of the word, making the language of research more complicated than useful.
- Even when the division of scientific work is done with the purpose of advancing research, the resulting development of science may make it obsolete and require a redefinition of academic disciplines.

An organizational dilemma of doctoral studies.

- Evaluation is easier when the boundaries of the doctoral schools coincide with the prevailing division of scientific labour and there is a lot to say in favour of movement in this direction.
- However, when the evaluation uses disciplinary lines, it pays even more for the researchers to be at the “centres” of the disciplines and to sacrifice the exploration of interdisciplinary fields.
- There is no easy solution to this dilemma and it is important that different solutions are experienced and evaluated. The University of Siena has tried one possible solution.....

Five steps of a possible solution.

- 1) aggregate doctorates at the disciplinary level (the large majority of Italian doctorates was more narrowly defined than disciplinary boundaries).
- 2) evaluate the scholars and, in particular, their relative performance in their own international community
- 3) terminate weak doctorates in the disciplinary fields where the scholars of the University are less established.
- 4) fund common projects and visiting chairs, overcoming the boundaries of different schools and disciplines.
- 5) organize interdisciplinary residential structures, stimulating informal contacts and discussions among doctorate students and other scholars of different fields.

Step 1: Aggregate doctorates (I).

Modern doctorates are recent institutional innovations.

German doctorates were the first to be established but they involved a one-to-one relationship between a professor and a research student.

In the U. S. the doctorates took a different shape, aggregating in one single institution professors and research students.

However when I was a doctorate student in England, most professors (including my supervisor) had no doctorate.....

In Italy doctorates were introduced in 1980 but in most cases it was a cosmetic change. In the majority of cases the one-to-one relationship between *professore* and *assistente* survived the change. Research students were divided among the professors and most doctorates became much narrower than the established international fields.

Step 1: Aggregate doctorates (II).

When in 1998 Italian Universities could autonomously organize their PhD studies, the aggregation of doctorates required a highly qualified scientific committee of external members. They should not simply evaluate established doctorates but also reshape their boundaries.

In Siena a four members committee of external referees was nominated: each member had high academic standing and a broad set of scientific competences in one of the four “macro-areas” of the University (bio-medics, social sciences and law, humanities, experimental sciences).

The boundaries of the doctorates were enlarged in most cases coinciding with those of international academic disciplines.

From 2003 to 2008 Siena was able to aggregate 60 doctorate into 32 doctorate schools.

Step 2: Evaluate doctorates.

- The decrease of doctorates from 60 to 32 was not only obtained by aggregating schools but also by evaluating them.
- The evaluation of their quality was made simpler by making the schools corresponding to internationally established disciplines.
- Doctorate were also evaluated to be part of Santa Chiara Graduate School. This membership gave the possibilities to have additional funds for multidisciplinary projects and chairs. This evaluation was tougher. In the first round, only 12 doctorate schools satisfied the necessary requirements.

Step 3: Terminate weak doctorates

- Terminating weak doctorates is notoriously difficult. The scientific committee of 4 external members made it only a bit easier.
- The termination decision should also go through the Senate. In the end only two doctorates were explicitly discontinued.
- However, the aggregation mechanism provided a kinder way of diminishing the size of the less qualified programmes.

Step 4: Fund common projects and visiting chairs (I)

- This step went together to step 5 (organize interdisciplinary residential structures). Both steps involved the foundation institution: Santa Chiara, the Graduate School of the University of Siena.
- Santa Chiara has funded interdisciplinary projects and visiting chairs associated to these projects. It has hosted a considerable number of research students and the holders of the visiting chairs. It has provided a place where all doctorate students could meet and have dinner.
- Thus, Santa Chiara has provided a fundamental support for both formal and informal interdisciplinary exchanges.

Step 4: Fund common projects and visiting chairs (II).

- The common inter-disciplinary projects have to be submitted by at least three doctorate schools admitted to S. Chiara.
- The four member scientific committee decides which projects can be funded.
- The project includes additional funding for the research students and must include the funding of a visiting chair on an emerging discipline at the boundaries of the disciplinary fields defining the doctorate schools.

Step 4: Fund common projects and visiting chairs (III).

Visiting chairs of Santa Chiara:

**Archaeology of Environment
Archaeometry.
Art and Science of Reflection.
Bio-Banking
Bio-Economics.
Cognitive Sciences
Contagions and Immunity.
Econ-Physics
Econom-Ethics.**

Environmental History and
Governance
Ethics of Science
Formal Tecquiques for
humanistic analysis.
Methaphorein
Modernization Model
Stem Cells.
Web-Community and Web
Citizenship.

Step 5: Organize interdisciplinary residential structures (I)



Santa Chiara
Building.
36 rooms



Step 5: Organize interdisciplinary residential structures (II)



Refugio Building
50 rooms



Step 5: Organize interdisciplinary residential structures (III)

We have all together 86 rooms where we can have 120 hosts.
Research students and the holders of the multidisciplinary
chairs have lodging priority.

The two buildings are located in the city centre and they are
very close to each other. This allows us to serve dinner in
one of the two buildings. Also non-lodging doctorate
students are welcome for dinner and other activities.

S. Chiara has created a multidisciplinary community that allows
researchers to look beyond the boundaries of their
disciplines.