



The PhD system, policies and infrastructure of the Netherlands

A critical analysis

Report for the EMUNI PhD Policy Group

Report by
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1 The PhD system in the Netherlands

Following the logic of the Bologna structure, the PhD system – or doctorate training – is considered as the third cycle in of the Dutch higher education system, like it is in most European countries. This means that PhD training is following after the initial bachelor and the master phase. This makes the PhD the highest degree that can be obtained in Dutch higher education.

1.1 Training for researchers and design engineers

Since the 1980s, PhD training was not really regarded as schooling but more like a job, which made the trainees being appointed as regular junior academic staff. That means that basically, after completing their degree, master graduates can apply for posts as research assistants (AIOs), research students (OIOs) or as grant-funded PhD students (Eurydice, 2009). AIOs and OIOs are appointed on a temporary basis by universities and the Netherlands Organisation for Scientific Research (NWO) respectively to conduct academic research and receive training with a view to becoming fully-fledged researchers or design engineers. Both AIOs and OIOs are public servants and as such have certain rights (holiday allowances, pension rights) and obligations (terms of contract). PhD students receive a four-year appointment or grant. The four-year research training concludes with the presentation and defense of a PhD thesis (dissertation), prepared with the help of one or more supervisors under the strict responsibility and supervision of a *promotor*. The promoter needs to be a professor with PhD awarding rights at one of the 13 traditional Dutch research universities.

1.1.1 Different PhD appointment models

As explained already above, the basic model for PhD training is that a PhD candidate (*promovendus*) is appointed as a research assistant (AIO) or research student (OIO) at a unit (department within a Faculty) within a university. This implies they become members of staff in the lowest academic rank, but earning a decent salary. This is the basic model as doing a PhD in most cases consists of only a very small part of course-work and predominantly carrying out an independent research project that is presented in a book, the dissertation. It gradually becomes more common to compose the book by at least five theme-related refereed journal articles (of which one may still be forthcoming) and an overall introduction and conclusions.

Next to that, regular teaching or research staff at universities can next to their regular job in teaching and/or research aim at writing a dissertation and obtain their PhD degree. This often means long term trajectories in which staff may be part-time exempted from regular duties in order to write their dissertation. Most of the work is then done in the candidate's private time. This has become a more popular model for teaching staff of Universities of

Applied Sciences (UAS) that seek to upgrade their qualifications and become experienced in conducting research.

This brings us to the third type of PhD candidates, being the *external promovendus* (in Dutch called a *buiten promovendus*) The external promovendi include all PhD candidates that come from organisations outside the university and aim at obtaining a PhD degree from a traditional research university. These are most often regarded as PhD students and can come from all kinds of organisations and in a multitude of forms. They can be company employees who do research in the interest of that company but combine it with the research programme of a university. It can also be students who come with a scholarship from “their” employer, from their government or from an external (international) scholarship fund to do their PhD research with a particular professor. Such scholarships also include a limited number of scholarships given out by the Dutch government (see below).

Institutions and different units have various policies on how they deal with external PhD candidates. It is important to know that the Dutch funding system for research at universities includes a substantial part that is based on the number of PhDs awarded. This means that universities earn money with awarding PhDs, but the premium (around €75.000) per PhD is way less than the gross salary of a PhD candidate (€50.000 per year including social levies). The premium covers more or less the costs of supervision and not the salary. This makes the external PhDs an interesting target group, particularly if they – or their employers – pay some kind of a tuition fee.

In addition, decades of financial reforms and cut-backs have made Dutch universities more look at international PhD models where in many cases PhD candidates are regarded as students that have to pay substantial fees or will have to work with substantial teaching load in order to earn a living. This has made the external promovendi model gaining attention.

1.1.2 Research schools

Research schools are inter-university collaborative centres for high quality research in one particular field of study or in a multidisciplinary context. They offer talented research assistants (AIOs) research posts including an intensive four-year course at the end of which they will be capable of carrying out independent research (Eurydice, 2009). AIOs are expected to obtain a doctorate at the end of their training. The research schools are national and international centres of excellence and provide a guaranteed level of supervision and tuition. They are responsible for their own budgets and carry out regular evaluations. There are 86 officially recognised research schools in the Netherlands (2008).

1.1.3 Top research schools

The concept of top research schools was introduced to give an extra impetus to top-level academic research in the Netherlands (Eurydice, 2009). The institutions bearing this title must meet stringent quality criteria and are eligible for extra funding. They are selected by

the general board of the Netherlands Organisation for Scientific Research (NWO), on the basis of the recommendations of an independent committee. Six institutions were designated by the Minister as top research schools in 1998. The performance of these institutions was evaluated at the end of 2003. Based on this evaluation, it was decided to continue extra funding until 2008. The performance of these institutions was evaluated at the end of 2006 and it was decided to continue extra funding until 2013, with an interim evaluation in 2009 or 2010.

1.1.4 University graduate schools

A relatively new phenomenon in Dutch higher education is the establishment of graduate schools. These graduate schools are meant to increase efficiency, transparency, cohesiveness and international recognition of PhD trajectories. With larger groups and particularly more diverse groups of PhD candidates applying for a PhD position, the trajectories needed to be better streamlined and organised. Because of the wide variety in educational backgrounds of the PhD candidates, there is a stronger need for a variety of postgraduate course in order to get candidates to the required levels of research skills that fit with the Dutch (disciplinary) standards of writing a PhD. In order to do so, many graduate schools integrate the master and PhD trajectories in order to more efficiently arrange the training (and selection) of candidates. Better and more focused researcher oriented teaching programmes for all postgraduate students also better legitimate a tuition structure.

2 Facts and Figures on PhD training in the Netherlands

Data on PhD training and candidates are not well collected. Universities may keep track of their employees, but not so much external PhD candidates. Therefore statistics on numbers of PhD candidates are hardly available and the national statistics on PhDs do not require any data on nationality. There have also been only rare studies in this area. One of the most recent study dates from 2005 and looked at the mobility of "knowledge workers" (Nuffic/Research voor Beleid, 2005).

2.1 International mobility of knowledge workers

The composition of the staff at Dutch universities is becoming increasingly international. It was estimated that in 2004 about 20% of the teachers and researchers was international (Nuffic/Research voor Beleid, 2005). Foreign academics are most common in technical universities (Delft, Eindhoven and Twente) and most of them are working as a PhD candidates as AIO or OIO. At the three technical universities it is estimated that about 50% of their PhD candidates are foreign. Most of them (61%) come from Europe, 25% from Asia and Oceania and almost 10% from North America. At Wageningen University (Agriculture) more than 40% of the awarded PhD degrees were given to foreign candidates. At the Technical University Delft this was even over 50%.

With regard to statistics it is very difficult to estimate how many PhD students study/work at Dutch research universities. Only data are available for PhD candidates that receive Dutch scholarships. This can be through the Huygens Programme or the Netherlands Fellowship Programmes (NFP). The NFP programme scholarships are open for PhD candidates from 60 countries, including only a limited number of Euro Mediterranean countries. There are only 60 scholarships per year available and before 2008 this was only 30.

In the Huygens Programme there are only very few scholarships available, for a very limited number of countries, including Croatia, Macedonia and Turkey. The number of allocated scholarships was 19 in 2008, 17 in 2009 and 12 in 2010. Table 1 provides an overview of the number of Dutch scholarships for PhD candidates awarded to students from Europe-Mediterranean countries.

Table 1: Number of Dutch scholarships for PhD candidates awarded to students from Europe-Mediterranean countries.

NFP-PhD scholarships	2007	2008	2009	2010	2011
Albania					1
Autonomous Palestinian Territories			1	1	
Bosnia-Herzegovina			0	1	
Egypt			0	0	2
Huygens PhD scholarships					
Croatia			1	1	5
Turkey			13	16	4
					?

These data show that the international PhD collaboration at least from a national perspective is very limited. Of course these statistics leave out all Euro-Mediterranean PhD students who either on their own expense or through an employment contract conduct their PhD at a Dutch university.

3 Support infrastructure to attract foreign PhDs

Dutch society has always been a relative open society with a strong intercultural population due to a high degree of mobility and migration of people, employees and students. Links with former colonies have helped in this sense, though the Dutch language has been a major obstacle for international students to seek a Dutch higher education degree. In addition, the Netherlands has quite a reputation if it is about development work and support of developing countries. In that framework, it may not be surprising that the Netherlands has developed a number of scholarship programmes that support foreign students to come study in the Netherlands and on the other hand a number of Netherlands Education Support Offices (NESOs) in countries where our internationalisation experts sense a potential for collaboration and recruitment of students (at all higher education degree levels) (Nuffic, 2011).

3.1 The Netherlands Education Support Offices (NESOs)

The Netherlands organisation for international cooperation in higher education is called Nuffic. Nuffic's head office is situated in The Hague, the seat of government of the Netherlands. But Nuffic's also has a network of Nuffic Netherlands Education Support Offices (Nuffic Nesos) operates in locations strategically important for Dutch higher education: Brazil, China, India, Indonesia, Mexico, Russia, South Korea, Taipei, Thailand and Vietnam (Nuffic, 2011).

The Nuffic Nesos are part of the Education Promotion Department, under the Communication Directorate of the Head offices in The Hague. The Nuffic Nesos operate in locations that are strategically important for Dutch higher education. The main task of a Nuffic Neso is to promote Dutch higher education and foster international institutional cooperation in order to increase student and staff mobility and related activities. The offices also serve as a channel for information and provide support and liaison for the academic communities of the Netherlands and of the country they are situated in. They provide information and guidance regarding the choice of an international course or programme of education or training. Neso core activities are:

- Generic promotion and student counselling (desk function, fairs, language tests, etc.)
- Institutional cooperation, linking academics, research groups and teaching partners from Dutch higher education institution to those in the destination countries
- Market information and analysis
- Holland Alumni networks

These functions are to a very limited extent conducted in other than the Neso countries through educational attaché's at the Dutch Economic Representation Offices.

From the list of activities and list of countries with Nuffic Nesos it can be seen that, until now, the Netherlands has not included any Euro-Mediterranean countries in its core internationalisation strategies to recruit mobile students and staff. This implies that those countries have to be targeted by individual institutions and/or programmes themselves. This also implies that we have no basic information flows and infrastructures available for institutions that have intentions to collaborate with universities in the (Euro-) Mediterranean area.

3.2 The Huygens Programme

The prestigious Huygens Scholarship Programme is open to excellent students from all countries. It is aimed at talented students who want to come to the Netherlands in the final phase of their bachelor's studies or during their master's and PhD studies. The Dutch government has allocated €7 million for excellent students coming to the Netherlands under the Huygens Scholarship Programme. There is no fixed number of available scholarships. The actual number is determined by the total cost of the variable components of the scholarships.

PhD applications can only be accepted from excellent students with the Icelandic, Macedonian, Chinese, Croatian or Turkish nationality. Furthermore, the minister has allocated part of the total budget for excellent students following programmes in Dutch language and literature, or Neerlandistiek.

The Huygens Scholarship Programme is highly competitive. To illustrate this: for the 2011 scholarship round it is expected that out of approximately 1,700 applications only 150 candidates will be awarded a scholarship. The most important criterium is that one has performed above average, being one of the top students at ones institution.

The total budget allocated for PhD scholarships is € 500,000. In 2011, it is estimated that six PhD scholarships will be awarded. Applicants for a full PhD period (48 months) in the Netherlands are favoured.

3.3 The Netherlands Fellowship Programmes (NFP)

The NFP programme is a Dutch programme established to increase skilled manpower in a wide range of governmental and private organisations in 60 NFP countries by offering fellowships to mid-career professionals. Employees must be nominated by their employers. 50% of the available fellowships are for women and 50% for candidates from Sub-Saharan countries. Fellowships are given for short courses, master's degree programmes and PhD studies (<http://www.nuffic.nl/international-students/scholarships/>).

The PhDs can be conducted at 21 Dutch universities and institutes for international education. The maximum duration of a PhD scholarship is 4 years with a maximum budget of €85,000 to cover costs of living, travel, visas, insurance etc. Not tuition fees. Candidates need to have sufficient English language proficiency and be accepted by the

receiving higher education institution. Candidates apply individually at an institution (and programme) of their choice. The NFP fellowships cannot be used for purposes of groups of students in collaborative programmes.

To be eligible for an NFP fellowship, applicants must be a national of one of the following countries. This list included only a limited number of Euro-Mediterranean countries and students from those countries have no priority like Sub-Saharan countries:

Euro-Mediterranean	Other
Albania	Afghanistan
Autonomous Palestinian Authorities	Armenia
Bosnia-Herzegovina	Bangladesh
Egypt	Benin
Jordan	Bhutan
Kosovo	Bolivia
Macedonia	Brazil
Moldova	Burkina Faso
	Burundi
	Cambodia
	Cape Verde
	Colombia
	Costa Rica
	Cuba
	DR Congo
	Ecuador
	El Salvador
	Eritrea
	Ethiopia
	Georgia
	Ghana
	Guatemala
	Guinea-Bissau
	Honduras
	India
	Indonesia
	Iran
	Ivory Coast *
	Kenya
	Mali
	Mongolia
	Mozambique
	Namibia
	Nepal
	Nicaragua
	Nigeria
	Pakistan
	Peru
	Philippines
	Rwanda
	Senegal
	South Africa
	Sri Lanka
	Sudan
	Surinam
	Tanzania
	Thailand
	Uganda
	Vietnam
	Yemen
	Zambia
	Zimbabwe

3.4 The MENA Scholarship Programme

This is a scholarships programme that aims to contribute to capacity building in organisation in six countries: Algeria, Iraq, Lebanon, Morocco, Oman and Syria, thus including a few Mediterranean countries. However, this programme only offers scholarships for mobile students (employees) that come to specific Dutch institutions for short courses of a couple of weeks (2 to 17, but mostly 3 weeks) leading to certificates mostly at diploma or master level. These courses are offered a Wageningen University,

Maastricht School of Management or the Geographical Information Studies at the ITC of the University of Twente.

3.5 The Erasmus Mundus Programme

Within the Erasmus Mundus Programme 3 or more European universities can set up prestigious joint master or doctorate programmes. Joint programmes have not been possible in the Netherlands until recently.

All in all the scholarship infrastructure is not such that intensive PhD collaboration between Dutch higher education institutions and foreign universities is optimally supported.

4 Interuniversity collaboration in PhD trajectories

In 2009 a working group of main stakeholders in university and PhD education and research investigated whether interuniversity collaboration in research training in disciplines is useful (Tripartite Werkgroep Onderzoekersopleidingen, 2009). Main points of attention with regard to PhD collaborations are:

- Quality and coherence of the education programme and supervision
- Collaboration in research as a framework for PhD training programmes
- Diversity related to characteristics of various disciplines
- Connection between (research) master and PhD programmes
- Funding of various organisational forms
- Quality assurance, recognition and accreditation of research schools and PhD trajectories.

Interuniversity collaboration is important in science to create focus and mass. Collaboration can increase quality. PhD trajectories are one of the least exploited areas of interuniversity collaboration. With regard to PhDs promovendi and universities have 3 major goals: to successfully complete within a limited period of time, a qualitative good contribution to science and proper career perspectives.

In order to successfully complete the PhD trajectory in a limited period one requires:

- Clear selection procedures and –criteria
- Clarity about the feasibility of the research project
- A clear supervision structure
- Sufficient progress monitoring

For a good scientific contribution to science and good career perspectives one requires:

- Thorough knowledge of one's topic / theme
- Broad education in the disciplinary content as well as obligatory skills
- Interaction with colleague promovendi and other scientists within the subject area at national and international level
- Access to relevant conference participation

In order to receive the required knowledge, supervision and experience one needs to interact with relevant colleague scientists. One needs critical mass and critical expertise. This means a promovendus needs a number of experts in his subject area to interact with. Because this is not always available, interuniversity collaboration can be a solution to this.

The aforementioned Research Schools and Top Research Schools are examples of these. At institutional level Graduate Schools try to create more critical mass and critical expertise for PhD students. The research schools are generally organised in particular subject field where promovendi from a number of universities are trained in their (bit wider) subject area and to interact with each other. Graduate schools are more directed towards an efficient organisation, support and (interdisciplinary) interaction of postgraduate students

at one university. These graduate schools have become an answer to the often intransparent distribution of responsibilities and tasks among the participating universities and institutes in Research Schools. Graduate schools also cover all promovendi of one institution or faculty, whereas the Research Schools only were organised in a limited number of areas (81) with not all PhD granting institutions participating. As such, not all promovendi could benefit from more critical mass.

Experience tells that graduate schools and Research Schools can coexist and add value as the Research Schools can still widen the scope, expertise, critical mass and career opportunities of PhD candidates. But problems arise in the area of the coordination of the training programmes offered and the fact that it is expensive to have two such structures in which promovendi may operate. Finally, the recognition of Research Schools or other joint initiatives appears to be administratively challenging.

Translating these experiences to international interuniversity PhD training collaboration one arrives at the following conclusions:

- Interaction between larger groups of PhD candidates and their supervisors on closely related topics is valuable.
- Such collaboration is also highly valued by the PhD candidates, other researchers and governance boards.
- But financing the infrastructure and logistics can be problematic, particularly if other organisational forms exist at national or institutional level.
- International collaboration requires travelling and other logistical issues related to the programme schedule, or basic facilities for students like housing, etc.
- International collaboration assigns language requirements to students and teachers/researchers.
- The recognition of training components is crucial to students taking parts of their training programme elsewhere.
- In case of international interuniversity collaboration, it is not only the universities need to agree but also the various national accreditation bodies should approve the training programmes and parts of it. Because of national differences in accreditation procedures and criteria this easily leads to problems.
- In order to overcome financial, quality and logistical issues, the value added of the collaboration initiative has to be made clear and transparent to all stakeholders.

4.1 General obstacles to PhD mobility (mobstacles)

- Visas (expensive, often related to working permit/status or to capacity to pay living costs)
- Limited number of scholarships
- Keeping a job at home and not being able to finalise in time
- Language barriers and tough language tests
- Housing (availability and price)
- All kinds of administrative barriers, drivers licence
- University (non) information provision

- Different academic culture (other preparation, research methodologies, academic writing, Dutch critical attitude, ...)

4.2 Joint task force

Recently the Universities Association (VSNU) has initiated a task force to design the criteria for well-functioning joint programmes between Dutch and foreign universities in the hope that more collaborative initiatives will be established at bachelor, master and PhD level. These criteria include many issues regarding:

- Responsibilities of partners
- The curriculum
- The workload for students
- Examination committees
- Logistical issues
- Accreditation
- Macro-efficiency and registration
- Selection
- Admission
- Tuition fees
- Public funding
- Student financing
- Degree level definitions
- Certification
- Juridical position of students
- And position of not-publicly funded higher education

References

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- Nuffic (2011), www.nuffic.nl (including descriptions of various scholarship programmes and Dutch internationalisation policies).
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