# *ProDoc – A Progress Tracking System for Graduate Students*

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A recent report of the Dutch 'Rathenau Institute'[1] is devoted to academic careers and measures taken to influence those careers. In this report the percentage of graduate students who – ultimately – obtain a PhD degree is found to vary between 72 and 76% in recent years. The mean time it takes these students to finish a thesis ranges from 4.5 to 6.2 years – depending on their research domain – with 5.5 years being the average. Moreover, it was found that only 57% of our graduate student population originates from the Netherlands itself and that 70% of the graduate students pursue a career outside academia after completing their PhDs (de Goede, Belder, and Jonge, 2013).

From these numbers we conclude that graduate education in the Netherlands is highly international – which is good – but suffers from relatively high drop-out rates of typically 25%, and the time needed to degree completion overshoots the nominally available four years by almost 40%. With more and more PhD positions funded through the EU, which provides three-year fellowships, the problem of exceeding nominal degree completion times becomes apparent. In order not to frustrate young researchers, or – even worse – cause them to shy away from graduate education altogether because long periods without a salary (and no degree) may loom ahead of them, measures need to be taken.

At the University of Twente, a new online doctoral monitoring system is being developed – ProDoc – that is aimed at mitigating these problems. The first aim of the system is *to get the numbers right*. Historically, every professor in the Netherlands has the so-called "ius promovendi," the right to act as supervisor of graduate students he/she finds suitable to pursue a piece of research that may lead to a doctorate. In the past, this led to vague non-recorded agreements between PhD students and supervisors. On the basis of such agreements, it is not even possible to evaluate numbers as quoted in the first paragraph of this paper. Hence, by insisting that all PhD students, whether they are university employees or are supported by a funding agency or industry, whether they receive a fellowship or not, or whether they conduct research for their own curiosity (and at their own cost) or on the basis of a well-described project, they all should be treated equally, and be registered and monitored properly. Only by getting the numbers right can we start to optimize them!

The second purpose of the ProDoc system is to assist in and improve upon the supervision of graduate students and hence contribute to the quality assurance of the third (PhD) cycle. Once the PhD student has been registered in ProDoc, the supervisor and student are invited to write a *Training and Supervision Plan.* In this plan, an outline is given of the research that will form the basis of the PhD thesis and a preliminary list of courses and workshops is given that will be followed by the student to increase his/her in-depth knowledge of the subject and develop the global skills he/she needs to acquire. Each graduate student is asked to include 30 ECTS (European Credit Transfer System points) of educational activities in his/her Training and Supervision Plan.

It rarely happens that the research plan made at the beginning of a PhD project remains unchanged. Hence, the ProDoc system allows for (and asks for) a yearly update of the Training and Supervision Plan in annual assessment meetings. In this way, the progress of the student – both in terms of research output and educational activities – is frequently monitored and measures can be taken if progress is lacking. At the same time, the global skills courses selected by student and supervisor can help in addressing problems the student

might experience while conducting his/her research. Examples include courses in academic writing, presentation techniques, and research management.

In the Netherlands, it is customary to first complete a master's degree (in Science) before starting a four-year PhD program. Given the growing importance of EU-funded projects, international competition for students, and the fact that 70% of our graduate students proceed with a career in industry for which it is desirable to be less than 30 years old, the University of Twente is now also offering 2+3 programs for a combined MSc and PhD track. The ProDoc system is also supporting such programs, although, it should be noted that for practical reasons courses taken during the MSc phase are registered in the large university-wide bachelor-master educational support system (OSIRIS).

Whether a student is enrolled in such a combined 2+3 program or as a four-year PhD student, in both cases, an essential assessment is organized before the end of the first year of the PhD program. Every PhD student is asked to present his/her initial results and plans for the future during a *Qualifier Exam*, the result of which – in the form of a go/no-go decision with an optional three months improvement period – is registered in ProDoc. The Qualifier Exam may initially lead to an increase of the drop-out rate in the first PhD year, but will certainly prevent extremely frustrating cases (for both student and supervisor) where after three to four years it is concluded that a PhD thesis is not feasible.

The implementation of the ProDoc system[2] at the University of Twente is presently in progress. While preparing the implementation, it was realized that it is insufficient to develop an online registration and monitoring system while not – at the same time – also changing the official regulations for PhD students at the university. For the historical reasons mentioned above, the legal basis for a PhD defense in the Netherlands was largely limited to a set of rules describing the procedure that needs to be followed once a concept manuscript for a PhD thesis is available. This is in sharp contrast to the bachelor's and master's programs, which are regulated both by law and internal university regulations to a fairly large extent. The importance of such regulations stems from the need to create a level playing field for all students, the desire to avoid law suits in case educational decisions are disputed, and the wish to improve the overall quality of third cycle university education. While rolling out ProDoc, we found out that it is crucial that there be full consistency between the regulations for PhD students and the way that these rules are implemented in the system. For that reason, a simultaneous plan was initiated to write – and get approved – a so-called PhD Charter, a document describing the rules and obligations of all PhD students and supervisors. Moreover, the previously existing Doctorate Regulations – describing the set of rules applying to the PhD thesis and the PhD defense – needed to be modified as well in order to ensure that a consistent set of regulations became available. Both the new PhD Charter and the modified Doctorate Regulations were just recently approved by the Executive Board of our university and were made effective as of 1 January 2014.

It is too early to be able to assess the effect of the introduction of ProDoc at the University of Twente and all associated measures described in this paper. Still, at the qualitative level we can observe individual groups experimenting with the registration of educational activities, 2+3 MSc-PhD programs, non-official qualifiers, etc. For that reason, we are hopeful that the first effects on the time needed for degree completion will become visible in the coming years.

# References

Goede, M., Belder, R., & de Jonge, G. (2013). *Feiten & Cijfers: Academische carrières en loopbaanbeleid*. [*Facts and Figures: Academic Careers and Career*]. Retrieved from http://www.rathenau.nl/uploads/tx_tferathenau/Feiten_en_Cijfers_Academische_Carrieres_2013.pdf

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[1] The Rathenau Institute was founded in 1986 by the Ministry of Education, Culture and Science with the purpose of carrying out assessments of the science system in the Netherlands.

[2] ProDoc is a custom-made application of a generic educational information system developed by PeopleXS.