Entering career in research and its barriers

research report

Charles University (Prague), 2023

The best research you can do is to talk to people.

Terry Pratchett

Introduction

Doctoral studies. For someone it is a life goal, for others it is just a waste of time. For researchers, it is the start of their career path.

The societal goal of doctoral studies is to produce professionals whose expertise contributes to research and innovation that can benefit society as a whole.

In the Czech Republic, only 1 in 2 doctoral students (1) successfully complete their doctoral studies. Does this mean that the system is working or not working? What exactly is working and what could be improved?

Similar questions are repeatedly raised in the public space, and answers are given - but there does not seem to be any shift. We have therefore tried to look at the question of doctoral studies in a different way, in the context of open science concepts (2).

The focus of our mapping was to uncover system gaps. We concentrated on considering to what extent it is possible for the current system to cover these gaps, and at which points in the system weak, or potentially dysfunctional connections are detected.

Our research is still at an early stage, with a number of things in progress. In this material, we therefore present interim findings, which give a basic framework of which paths we would like to take in the coming months..

What are the facts ?

The most comprehensive overview of doctoral studies in the Czech Republic is provided by the 2017 summary analysis of the **Association of Czech Doctoral Students** (3). More up-to-date data are published by the **Ministry of Education, Youth and Sports** - in the section focused on tertiary education - but unfortunately, in the case of doctoral studies, the data from the annual reports of universities are not complete (4). Statistical data published by the OECD is also a relevant source, when it comes to analysing and comparing terciary education systems namely the **Education at a Glance reports** (5).

Some of the findings of the Czech Association of Doctoral Students

1) The average pass rate for doctoral programmes is over 75% - higher than for undergraduate entrance exams (3).

2) The average time to complete a degree is about 5 years and 4 months - while the standard duration of a PhD is 3 or 4 years.

3) The overall percentage of PhD students in tertiary education was 6.5% - this was supposed to be an above average figure according to the previous national RIS3 (Research and Innovation Strategy for Smart Specialisation): 'PhD students accounted for 6.5% of the total number of students in 2011. This figure puts the Czech Republic at the top of the EU countries (...). However, taking into account the low completion rate of this level of education, the number of doctoral graduates is slightly below the OECD average." (3, 6).

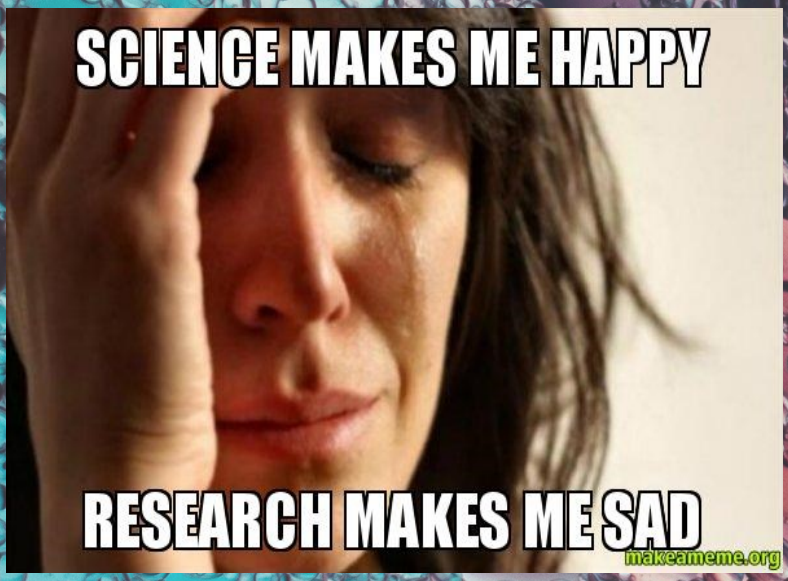
1) Are we really selecting the right candidates? The best of the best?

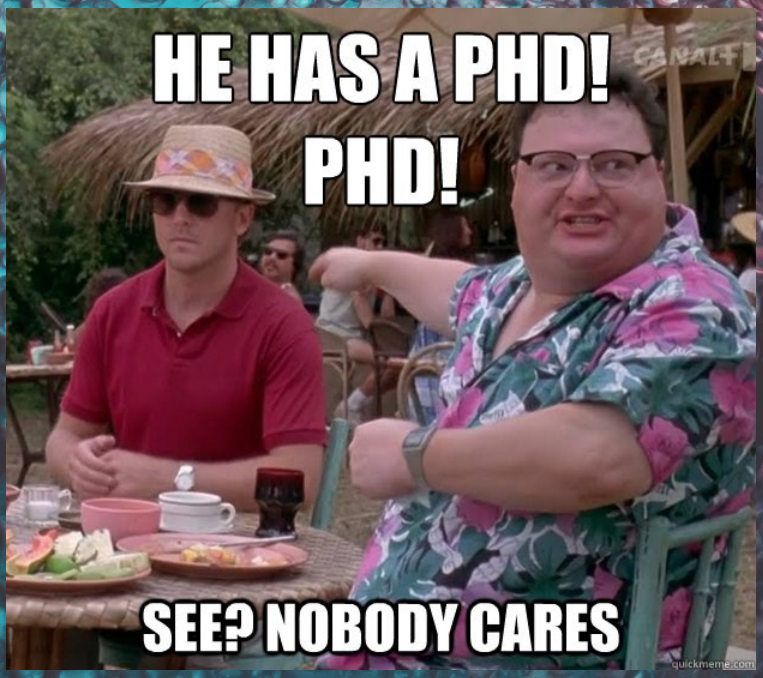
2) Why does it take them longer than the expected standard time to study? Should the standard time be reconsidered?

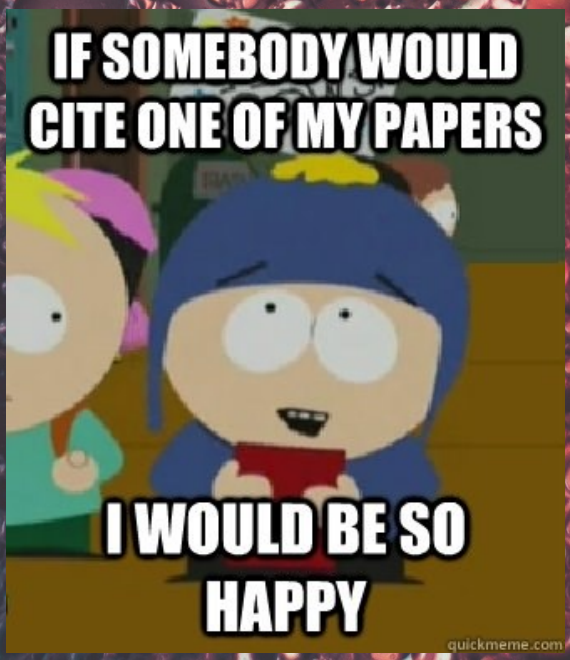
3) Do we have too many PhD students?

(Social) Media (re)presentation

Doctoral studies are the subject of many memes - many of them created by the students themselves. It is telling that some of the issues perceived by students are global in nature. If this is indeed the case, and the content of social networks suggests it is, it is possible that national specificities may not play as significant a role in the issues as is assumed.





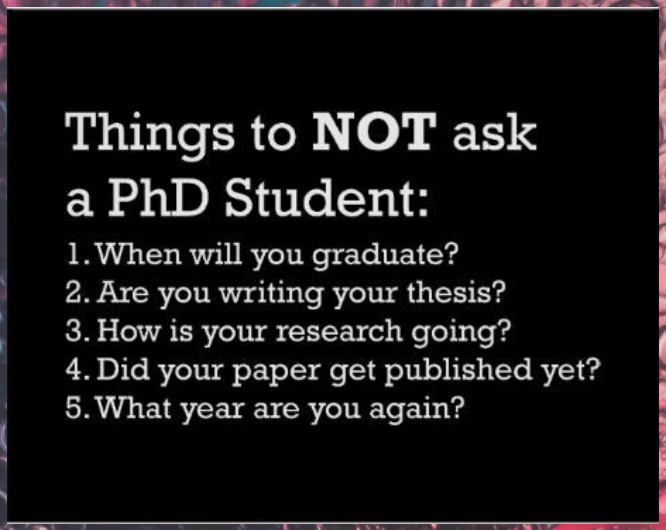


What questions should be posed?

In our research into the situation of doctoral students, we came across a number of recurring issues. Most of them are relevant, but do not always provide insight into the context. Thus, the classic questions focus on doctoral students' financial situation, stress management, wellbeing, time-management, social life, and workplace relationships (7).

In parallel with this monitoring of available data, we also conducted random data collection, i.e. recording information and messages that appeared, for example, during public debates devoted to the topic of postgraduate and doctoral students or debates devoted to the situation of Czech science.

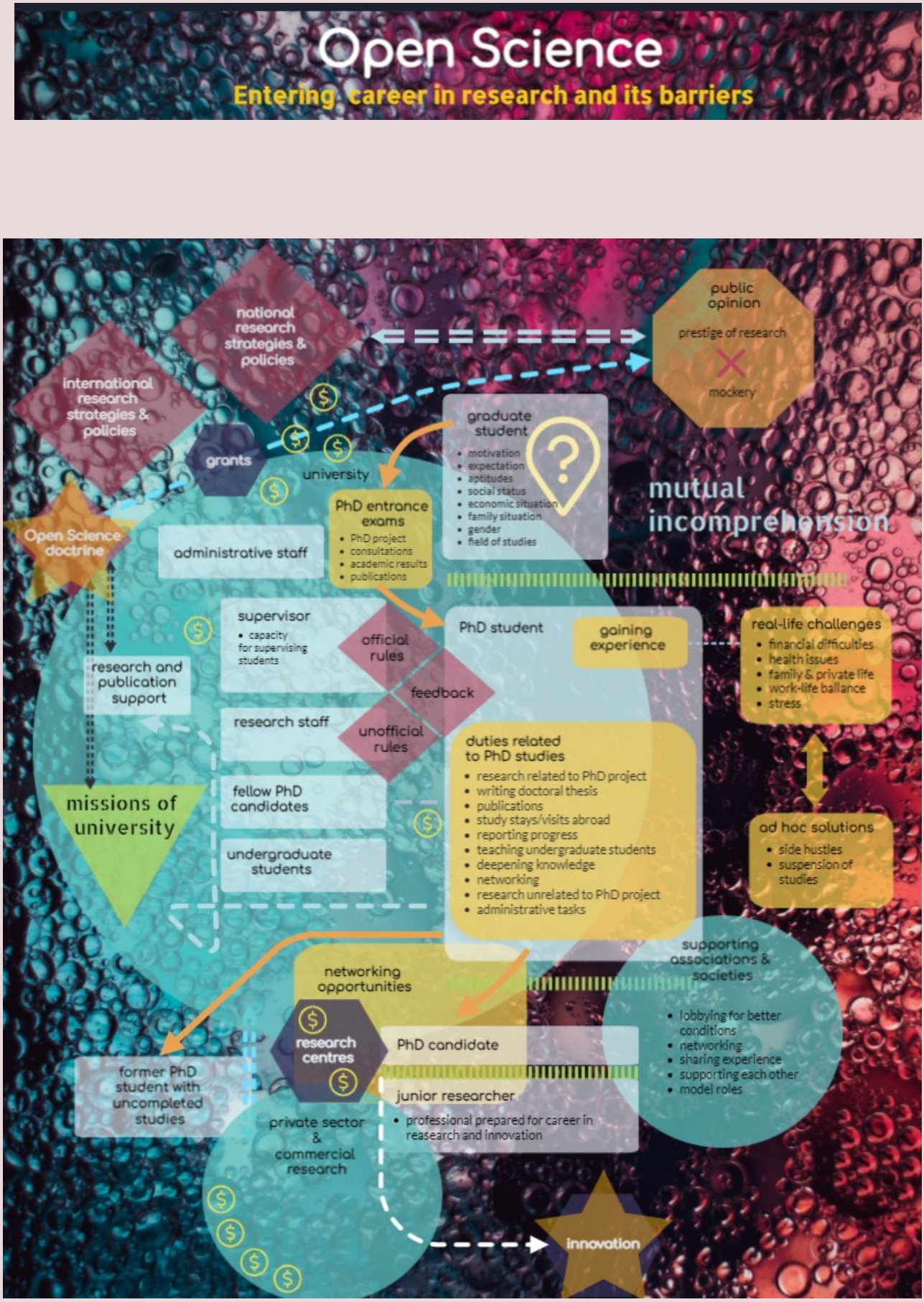
These ad hoc empirical surveys were valuable to us because we realized that although we were investigating a societal problem, its effects were not only societal but also and especially individual - which is quite challenging when trying to map the system.



But what is the role of Open Science?

"Open Science has the potential of making the scientific process more transparent, inclusive and democratic. It is increasingly recognized as a critical accelerator for the achievement of the United Nations Sustainable Development Goals and a true game changer in bridging the science, technology and innovation gaps and fulfilling the human right to science."

UNESCO


Open Science
Entering career in research and its barriers
national research strategies & policies
international research strategies & policies
grants
university
public opinion
prestige of research
mockery
graduate student
motivation
expectation
aptitudes
social status
economic situation
family situation
gender
field of studies
mutual incomprehension
Open Science doctrine
administrative staff
PhD entrance exams
PhD project
consultations
academic results
publications
supervisor
capacity for supervising students
official rules
feedback
unofficial rules
research staff
fellow PhD candidates
undergraduate students
research and publication support
missions of university
PhD student
gaining experience
real-life challenges
financial difficulties
health issues
family & private life
work-life ballance
stress
duties related to PhD studies
research related to PhD project
writing doctoral thesis
publications
study stays/visits abroad
reporting progress
teaching undergraduate students
deepening knowledge
networking
research unrelated to PhD project
administrative tasks
ad hoc solutions
side hustles
suspension of studies
supporting associations & societies
lobbying for better conditions
networking
sharing experience
supporting each other
model roles
networking opportunities
research centres
PhD candidate
junior researcher
professional prepared for career in reasearch and innovation
former PhD student with uncompleted studies
private sector & commercial research
innovation

Lessons learned

// based on a pilot research (non-formalized sample) //

1. **Most respondents understand open science in the sense of individual tools, not in a broader sense (ie. making science more accessible, inclusive and equitable for the benefit of all).** This results in in-the-box thinking and a focus on details instead of the whole.

2. **Interviewees (researchers, supervisors) tend to assume that current students face the same problems as they do.** This is somewhat misleading as the situation is changing very rapidly - many of the problems of the previous generation have already been solved (e.g. better conditions for students having family).

3. **Students who did not completed their PhD studies have been sidelined by most of the researchs** - yet this is a relevant group whose experience can speak very well about the real situation and reasons for non-completion of the studies.

4. **The lack of promotion of results and scientific outputs may contribute to the public not having a tangible idea of what it means to be a scientist or researcher, or a PhD student.** This could be helped by a functional application of the open science concept.

5. **The long term high percentage of incompleted studies has the effect of normalising this situation** - this may affect the motivation and will of students to complete their studies.

6. **The repeatedly mentioned financial reasons, or lack of funding, may not play as significant role as it may appear.** Although the situation is not optimal, students have more and more options to compensate for low income quite effectively (grant projects, programmes to involve junior researchers, etc.).