Development dialogue research masters
Cognitive Neurosciences
(WO OZM Cog./Neurowet 1).

Date: 1 July 2020, 10.00-13.00 hrs

Location: digital (Zoom)

Attendees: Rob van Lier (RU, chair), Huib Mansvelder (VU), Madison Carr (VU), Bernadette Jansma (UM), Heidi Prevoo (UM), Elise Buitenhuis (EUR), Peter de Weerd (UM), Ype Elgersma (EUR), Marcel de Jeu (EUR), Marianne Blijleven (RU), Arno Koning (RU), Marissa Zwan (VU), Casper de Boer (VU), Frouke de Vries (EUR), Tobias Kalenscher (Heinrich Heine University Düsseldorf (Germany), panelmember), Susan te Pas (UU, panel member), Frans Verstraten (University of Sydney (Australia), panel member), Mesian Tilmatine (RU, student panel member), Eddy van der Zee (RUG, panel member), Rufin Vogels (KU Leuven (Belgium), panel member), Rudi d'Hooge (KU Leuven (Belgium), panel member), Christian Steinhäuser (Universität Bonn (Germany), panel member), Ekin Tünçok (UM, student panel member), Petra van den Hoorn (Qanu, secretary).

0. Introduction

As a final part of the Cognitive Neurosciences assessment (WO OZM Cog./Neurowet 1) and in accordance with the requirements of the NVAO assessment framework, representatives of the degree programmes within the assessment group held a development meeting with representatives of the assessment panel, including both chairs. They followed an agenda set in advance by the degree programmes. Each programme of the assessment cluster submitted questions for the panel. The institution asking the question is indicated behind each topic, but the questions generally apply to all degree programmes. The questions have been clustered into four different themes.

1) Admission

Admission (VU)
The student population of the research master programme's has a large variety in educational backgrounds. This ranges from students with a bachelor's in medicine, biotechnology, physics or artificial intelligence to psychology and liberal arts and sciences. Some programmes in the cluster admit talented students with an HBO (vocational) bachelor diploma. The programmes sometimes struggle with finding the right balance between bridging prior knowledge gaps and providing the students with new learning material. For example, some students find the statistics course too easy, whereas others are truly struggling to keep up. The four programmes in this cluster each handle this in their own way. The VU provides a set of courses in the first semester for all students, to make sure everyone obtains the same knowledge level. The EUR uses a baseline test at the start of the programme, to uncover any knowledge deficiencies. Based on the results of this test, students are offered extracurricular classes to obtain the desired level on the programme's main topics. At the RU, students can use their elective space to follow courses that remedy any deficiency. The UM offers introductory courses in biology and psychology to create a common language between the various students.

The programmes and the panel members agreed that repetition is inevitable, and that it needs not to be a bad thing to have a certain degree of duplication in the programme. However, all students should be able to keep up with the programme, without the programme having to break down the learning material at bachelor's level. For students who are more advanced in that particular area, that is a waste of time.

In order to achieve the right balance, the panel sees two main solutions.

First, each programme should maintain a proper admission procedure, which is mainly based on the students' previous results. Some programme's already have this in place, others can still work on this. Having a structured and systematic way of admission ensures students having an appropriate entry level.

Second, when students still struggle in courses regarding basic knowledge, please rely on methods that promote self-study. Extracurricular courses are a great way to help students getting up to speed. Usually, these non-mandatory and grade-free courses are very popular.

International students (UM)

Getting accepted into the research master programme takes time. Especially for international students, this can be a hurdle. There is a large time interval between the moment when international students fill in their application form, follow all the steps for admission, discover they got accepted and then, finally, start in September.

Many international students who are enrolled eventually decline after all. Probably, this large time interval makes students lose their interest in the programme, and they eventually begin shopping for their education elsewhere.

What are the best practices with regard to retaining (international) talent between registration, admission and the start of the academic year?

Students need to feel welcome. Invite them in as many events as possible, to make sure they feel connected to your university right away. By organizing (online) events, they can perhaps talk to current students and familiarise themselves with the university's culture. Current students can talk about their research, by showing poster presentations for instance. During other events, the campus/main buildings can be shown, or one can explain about finding your way in the online learning environment (e.g. Brightspace, Blackboard, Canvas). Keep in mind that, when students are accepted by the programme of their first choice, they're gone anyway. But creating a tight connection, a bond, with the students by means of events and social talks will certainly help.

Second, always try to speak to the students who are declining and find out what the actual reason is for this decision.

At the University of Bonn, Germany, the programme asks students to pay a deposit, which they will receive back when they enrol, but lose when they decline. At the VU, students receive information about the programme, for instance about the content of the programme's courses, the possibility to enrol in extracurricular courses, information about the international office, etcetera. The RU sends the students a letter, to welcome them in advance. At the start of the programme, their study association organises a barbecue for the students to meet each other.

Another important factor for international students plays at the financial level. Most international students are unable to find a scholarship and decline the university's invitation to enrol because of money. If possible, find out if there are possibilities for financial arrangements to support international students (e.g. fellowships). For international students, it would also be very convenient if you would have information about finding a job in the Netherlands, to allow students to support themselves.

Intake (EUR)

The programme's long internship limits the intake to 25 students per year. Currently, the intake is less. Maybe the programme's demands are too high? Accepting more students must not be at the expense of the required knowledge level of the students, however.

There is always a chance that a programme's selection criteria are too strict. You can correlate the results of your admission test with the outcomes of the students that you did admit and see whether elements of the test show not to be very predictive. Perhaps, some of the declined candidates are actually perfectly capable of studying the programme (but were rejected because of these non-predictive elements). It might be interesting to see what your declined candidates end up studying. One could also consider deploying a different level of strictness per year. When the cohort is large in size, you can afford to pick only the excellent students. If you have a smaller cohort, you will have plenty of resources to support the 'weaker' students. This 'give-and-take ' philosophy will ensure more balanced cohorts.

2) Overarching Course/Internship Procedures

Guidelines (EUR)
Some students experience a much higher study load and workload, because tutors vary in their expectations. How do we set up student-tutor guidelines?

It is good to have a general document which states what is expected throughout the course. There are a number of things you can write down in such a document (the number of meetings per month, a detailed description of the tutor's tasks). Everyone agrees that it is not possible to ensure a course is perfectly identical for all students. For example, the content of the reading material should differ per student (depending on their research question) and students do not always need the same amount of guidance. So do not put too much effort in having detailed guidelines. However, it is wise to have a document everyone can fall back on, that provides a framework, a set of preconditions that applies to all students. The panel suggests these guidelines should at least state the work load, the student's and tutor's responsibilities, and elements or chapters that should be included in the finished research/report.

Quality check (EUR and RU)
The content of the master's theses is very specific. The examination board does not seem to have sufficient knowledge to estimate the quality of the theses in terms of content. We are looking for ways to properly have our theses checked externally.

The examination board does not have to do the reading themselves, they can mandate others, who are more knowledgeable in this specific area. In most cases, calibration sessions prove to be very helpful. Once in a while, invite a group of thesis supervisors. Rotate the theses they supervised and let them check a sample of those (in terms of overall quality, content, etcetera). Let them also give grades. Afterwards, the group can discuss general observations, and the assessment criteria and the assigned grade per thesis.

It might also be a good idea to organise these calibration sessions together with the other programmes in this cluster. It is interesting to see what other programmes' theses look like and how they are graded. For example, based on the site visits, the panel concluded that some programmes in the cluster are more generous, when it comes to grading the theses, than others. It is good to invest some time and effort in making the grades of theses within the cluster more or less comparable. These calibration activities should not take too much time; exchanging ten theses every two years will probably do the trick.

3) Modern teaching

Teaching methods (UM)
The field of neuroscience is developing rapidly. Computational neuroscience, digitalisation, virtual reality. How should we handle this? Our programme is already filled with relevant topics, how can we maintain to be future-proof?

Of course, it is important to keep your eyes open for emerging research methods, the latest scientific insights, new teaching methods or other hot topics relevant for the field. In order for the programme to stay up to date, it should be possible to include these matters in the curriculum.

Please note that, according to the panel: including something means excluding something else. So, it should be done 'instead of', not 'on top of'. Therefore, think about courses, or topics within these courses, that can be removed or trimmed down. According to the panel, the future will probably bring more virtual animal models, instead of animal labs. Consequently, computational neuroscience will demand more attention in the future. The EUR is known for its expertise in animal research, the UM pays less attention to this domain. Each programme has its own expertise in the field of neuroscience.

The programmes agree they want to have a follow-up meeting to share their knowledge (for instance by delivering guest speakers). This provides an opportunity for the programmes to help each other and give advice on key issues they are struggling with.

Methods for teaching/assessment (RU)
The programme aims to rethink the way courses are taught and assessed and is curious to hear suggestions.

There are a lot of ways to assess a student's skills. A good way to test these is to ask a student to perform a certain skill in front of an expert. That makes much more sense than, for instance, a paper exam. In addition, skills do not have to be graded per se. It might be a good idea to only have a pass/fail system in place, to lighten the load of having to make several grading procedures for one course. Furthermore, exchange ideas and experiences with other programmes (in- or outside your own institution). Because of the current COVID-19 crisis, many other programmes were urged to rethink their assessment and teaching procedures. Maybe you discover new and original methods you can fit in your own programme.

Regarding teaching methods, the programmes could consider asking senior students to be the tutor for the new students in the first few modules/courses (instead of the teaching staff being tutors). This form of teaching is usually very much appreciated by the students. Because senior students only recently grasped the content of the courses, they are in a good position to teach the junior students. In addition, this form of teaching is more informal, which lowers the threshold to ask questions.

The programmes are open to share their teaching and assessment methods with each other. They agree on organising some sort of *Innovation Day* for all participating programmes, to exchange information about the way their courses are structured and assessed and to discuss best practices.

Skills (VU)
The programme is thinking about ways to incorporate the assessment of skills throughout the programme. The main dilemma is choosing between integrating the assessments in regular courses versus separate assessments during isolated courses per skill.

According to the panel, devoting a couple of days or a week to teaching and assessing the more basic skills is a good option. At the University of Sydney, there is a one week introduction where many skills are taught and assessed. In some programmes, skills are not a fixed part of the programme, but are provided through electives. The cluster agrees to discuss the preferred role of skills in the programme, during the previously mentioned *Innovation Day*.

4) Career

Preparing students for a career (RU and EUR)
The programmes are interested in ways to prepare students for a career outside academia. This is an important topic, and so the panel made several suggestions.

Once a year, programmes could organise a student meeting where new students meet with former students to talk about their career after graduation. Alumni can share information about finding a job, the expectations from the professional field and other interesting experiences they might have had. Students can organise this event themselves, which will provide them with programme management skills.
Also speed dating sessions between students and people working in the field might help give students an idea of the full scope of job opportunities after graduation.
Furthermore, throughout the programme, guest speakers can come to give (informal or formal) lectures about job opportunities inside and outside academia. In addition to researchers, particularly people working for the government or in industry could be invited for this. Organising these events online will make it even more easily accessible for everyone.

Getting in touch with your alumni is a good starting point. Also, stay informed about where your alumni end up. Regarding alumni who end up outside academia, ask them which skills showed to be relevant for their career. Invite all your alumni for your events and try to find out if they missed certain skills in the programme. Alumni can share the expectations from the working field outside and inside academia and indicate what they missed and would like to have learned through their education. The panel suggests making a long term investment to build up an alumni-community and thus maintaining a closer connection.

Follow-up: action points
  ➢ The four programmes conclude they want to intensify their collaboration. They also wish the other cluster of Cognitive Neurosciences (WO OZM Cogn/Neurowet 2; assessed in 2023) to join.
  ➢ The four programmes agree on organising some sort of *Innovation Day* for all programmes. During this day, everyone is invited to share how their programme is structured and to discuss best practices.
  ➢ The four programmes decided to have a follow-up meeting to share their knowledge (for instance by providing guest speakers). This provides an opportunity for the cluster to help each other, and to give each other advice on key issues they are struggling with.