Universitetskanslersämbetets utbildningsutvärderingar på forskarnivå

Uppföljning av utbildning på forskarnivå - åtgärdsredovisning
Lärosäte: Göteborgs universitet
Forskarutbildningsämne: Naturvetenskap med inrikning kemi, fysikalisk kemi
Licentiatexamen: Ja
Doktorsexamen: Ja

Bedömningsområde: Utformning, genomförande och resultat

Redovisa analys av bristerna i utbildningen i relation till bedömningsområdet och redovisa åtgärder vidtagna för att avhjälpa bristerna. Analysera och redogör endast för åtgärder som relaterar till relevanta bedömningsgrunder eller delar av bedömningsgrunder. Tydliggör vad som är nytt i relation till tidigare självvärdering och vilka konkreta förändringar som har genomförts.

Bedömningsområdet Utformning, genomförande och resultat innehåller följande bedömningsgrunder:

The UKÄ assessment group found that our education does not enable and ensure that a broad knowledge in the postgraduate subject of physical chemistry is achieved and that it is also not clear how the university works to ensure that the doctoral students reach this goal. The UKÄ assessment group believes that this is something that the university needs to improve in the education so that the doctoral students, upon graduation, have received the broad knowledge and understanding as well as the scientific methodology they need. It appears that doctoral courses in physical chemistry are given internally when necessary at the university, but the assessment group believes that there is a lack of a clear strategy to achieve a good and reasonably comprehensive range of courses for subject-specific courses. Working to ensure that doctoral courses are given regularly and that doctoral students receive good support in finding suitable courses so that they gain broad knowledge within the doctoral education subject is an important area of development in education. The assessment group sees it as important that the management and the supervisors also actively give the doctoral students the opportunity for discussions with other doctoral students and more senior colleagues in the subject, in order to provide in-depth knowledge and understanding. This is particularly important when the PhD students are now spread across different campuses and within different divisions.

The UKÄ assessment group also sees as problematic how the individual study plans (ISPs) are used because their content varies greatly in the reporting of planned courses and how the courses are related to the learning objectives. This partly makes it difficult to have an overview of how the studies are planned, and partly the possibility of using the individual development plan to follow up the progression of the doctoral students. It also emerged that the value of several parts of today's ISP is not self-evident, and that it may even happen that supervisors avoid using its full potential due to its complexity. This needs to be addressed because the ISP is in practice the most important instrument for follow-up and feedback as well as formulating measures for the individual doctoral student.

At the same time, the assessors believe that there is a risk that too much responsibility for the ISP is placed on an individual. Instead, the ISP and its connection to the quality of education should be something

that engages the entire college. The assessment group believes that it is important that the university works to focus on the content of the doctoral student's ISP, so that it becomes a living instrument, with relevance for both planning and follow-up of the doctoral students' education, and that the work with this is something that is anchored in the entire college.

In conclusion, the key points that should be addressed are:
1) The institution should follow up on how doctoral students achieve breadth in the postgraduate subject.
2) The institution should follow up on how the ISP is used to help address problems and provide feedback.

Lärosätets redogörelse

Our department includes over 50 research groups divided into five divisions (the number of PIs and PhD students are indicated in parentheses): Atmospheric science (5; 6), Biochemistry and structural biology (14; 36), Cell and molecular biology (14; 22), organic and medicinal chemistry (10; 17), and Analytical, inorganic and physical chemistry (7; 10). We maintain a high standard in research education, and our students graduate with strong PhD theses containing multiple publications in peer-reviewed journals and go on to have successful careers building on their research experience. For the UKÄ evaluation, our chemistry program was divided into three subjects that do not quite align with the division structures: Analytical chemistry, Organic chemistry, and Physical chemistry. Of the three, only Physical chemistry received serious criticism from the UKÄ evaluators. In particular, two criticisms were raised, and these are individually addressed below.

1) The institution should follow up on how doctoral students achieve breadth in the postgraduate subject.

Analysis
In particular, the UKÄ assessment group identified a lack of opportunities to acquire broader knowledge in the postgraduate level of physical chemistry. We took to heart this assessment and propose concrete ways to ensure that PhD students in the subject of physical chemistry acquire broad knowledge in that subject.

Action plan
1) A member of our department (Karl Börjesson) is chair of the physical chemistry section at “Kemistsamfundet” and they have gathered all PhD-courses in physical chemistry available in Sweden: https://kemisamfundet.se/phd-courses-physical-chemistry/. Our PhD students now have access to this information on an internal departmental website, which includes several courses providing broad knowledge in the subject: https://medarbetarportalen.gu.se/internt-cmb/forskarutbildning/. All PhD students in our department can consult this website to find courses relevant for their education, and students with an orientation in physical chemistry will be particularly encouraged by their supervisors/examiners to attend courses listed at the “Kemistsamfundet” website.

2) Seminars from all five divisions of our department, and indeed from other departmens from the Faculty of Natural Sciences, will now be advertised to whole CMB. Attendance will be greatly facilitated by the co-localization of nearly the entire faculty in a new building (Natrium) from Aug 2023. This will provide opportunities for further broadening of

knowledge. PhD students receive credits for participation in these seminar series, up to a maxium of 8 HECs as per Faculty rules.

2) The institution should follow up on how the ISP is used to help assess problems and provide feedback.

Analysis
The ISP in its present digital form is still a rather novel instrument for many of the group leaders and its diligent use requires a change in culture that is happening gradually. We are actively and constantly working to make the ISP a living, useful instrument that helps both superviser and students keep track of progress, identify problems and provide a context for useful feedback. We understand from the UKÄ evaluation that we are still not using the ISP to its full potential and will take several steps to help redress this.

Action Plan
1) The examiner will play a more concrete role during the PhD education. Specifically, it will be made clear to each examiner that they must meet once a year with their students and provide feed-back based and through the ISP on: a) progress of the thesis, both activites and project, b) notebooks/data handling, c) presentations by the students (e.g. conferences, seminars).

2) Group leaders will be trained via courses on the meaning and purpose of the various ISP sections. This is ongoing, especially through Faculty-level mandatory courses on this exact topic.

3) An example of properly filled-in ISP will be provided with an example of what activities that can be addressed in various parts of an ISP to be able to follow progress for all parties. A working group has also been formed at the faculty to address this issue.