

Evaluation of the PhD-program at The Norwegian School of Sport Sciences

Report from the Nordic expert committee

Final Report

Evaluation committee

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23. March 2018

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Executive Summary

In 2017, The Norwegian School of Sport Sciences decided to conduct an evaluation of the PhD-program at their institution. In light of the PhD-program goals and dividends in the qualification framework (KD 2014), NIH wished to conduct a comprehensive external evaluation of the content and quality of the PhD program. An external committee was appointed in June 2017 and the committee based its work on a consistent set of information (document analysis, statistics, interviews), against which it made its evaluation and reported its findings. This implies national guidelines and regulations for PhD-education, NIH's guidelines and regulations for the PhD program and interviews with several employer groups at NIH.

The committee found it natural to examine the relationship between the *formulation arena* and the *realization arena* (Lundgren and Lindensjö 2000), followed up by the focus arenas *educational quality* (institutional level), *study quality* (program level), and *teaching quality* (course level/individual level) (Skodvin 2013). The committee also applied national PhD-regulations as "lenses" in order to give NIH feedback and feed forward (Hattie and Timperley 2007) on where they succeed and where there could be room for improvement. To be able to examine these elements, a substantial amount of documents have been analyzed complemented by qualitative interview data with a focus on how different groups of employees experience the PhD program at NIH.

The committee finds that NIH performs very well on a number of research and PhD indicators in Norway. It is also positive that the institution's research council, KFU, has an ongoing quality assurance process within several educational PhD-areas. However, the committee finds that even if NIH succeeds in a number of research areas, there could be room for improvement – especially the need to narrow the gap between the formulation and realization arenas. The committee also reveals that there is room for improvement that concern education-, study-, and teaching quality at their PhD program. At the same time, it has to be underlined that the material used, the information gathered and the time frame applied, may not have provided a complete picture of the NIH's PhD program.

1. Introduction¹

1.1. Background to the evaluation

NIH has participated in several external evaluations the last fifteen years, and regarding doctoral education, the expert committee evaluation in 2004-2005 and partly the NOKUT's evaluation in 2012 seem to be of extra relevance. However, much has happened that concerns doctoral education in fifteen years both nationally and internationally. Norway has had, for example, a formidable increase in the number of doctoral candidates - from 4000 in 2002 to 10,000 doctoral candidates in 2016 (Reymert et al., 2017) and the Norwegian School of Sport Sciences (NIH) follows the same trends.

In 2012 the Norwegian Research Council (NRC) found that the PhD education in Norway has improved the last ten years concerning educational qualities and support structures for the PhD-candidates (NRC 2012). Norwegian doctoral candidates are (unlike in many other countries) employees, have regular wages and other good conditions during their doctorate in the 3-4 years of doctoral education. There is a very satisfactory gender balance nationally among doctoral (52% women and 48% men) (Reymert et al., 2017). In education and pedagogy, subject fields close to Sport Sciences, there are now up to 60 percent female doctoral fellowships nationwide (Damvad Analytics 2017). At the same time, Norway has a completion rate of only about 65 percent at doctoral level (KD 2017), and a new study shows that only six out of ten doctoral candidates plan to become researchers after graduation, mainly because they find the career path in academia too uncertain (Reymert et al., 2017). At present, only about 20 percent of those with doctor's degree work within the academia. The trends are also that more candidates take longer time to complete their doctoral thesis than they should. This may be due to the fact that four out of ten doctoral candidates believe that they do more duties than those set out in their work plan (Reymert, et al., 2017). Finally, there is an increasing awareness about the psychosocial challenges of taking a PhD in Norway (Krumsvik 2016), and a recent study published in *Nature Biotechnology* revealed that the incidence of anxiety and depression are six times higher among doctoral students than in the rest of the population (Evans , Bira , Gastelum , Weiss & Vanderford 2018).

During the last ten years, Norway has also established new universities with the right to make self-accreditation of PhD programs, and the majority of university colleges across Norway has recently merged together with "old" universities or established larger university colleges where new PhD-programs are established. However, NIH has chosen, in agreement with the Ministry of Education and NOKUT (the Norwegian Agency for Quality Assurance in Education), to continue as an independent state scientific university college in the years to

¹¹ The structure of the report will be as follows:

- In the first part of the report the focus is on a descriptive presentation of NIH
- In the second part the more specific focus is directed towards the different questions stated in f the mandate for the committee and it applies mainly a document analysis with contextual examples from the interviews.
- In the last part of the report we summarize our findings and communicate our recommendations to NIH.

come. This implies both possibilities and challenges for the PhD-program at NIH and this evaluation will examine some of this in light of the mandate.

In Norway there is also an increasing tendency that every institution with PhD-programs, together with the PhD candidates are members of regional or national graduate schools of research. In addition, during the last five years Norwegian authorities have revised national PhD-regulations and implemented some new guidelines and regulations which they expect the universities, state scientific university colleges and university colleges to follow. Even if universities and state scientific university colleges are authorized to accredit new study programs themselves at all levels, NOKUT is involved in various evaluations (“tilsyn”) and accreditation processes under the auspices of themselves² as a national quality assurance organization for higher education. Some of the recommendations from the NOKUT evaluation at NIH in 2012 are related to NOKUT’s regulations for quality assurance system in higher education in general and they state: “...it is expected that PhD education will be covered by the institution quality assurance system, comply with UHR's guidelines” (NOKUT 2012, p. 13).

Against this background, the focus of this evaluation is to illuminate how the conditions are at NIH regarding their own PhD-program. This will be examined in light of the committees’ mandate (see p. 7), documents and bibliometric data at NIH and the national policy documents and regulations concerning PhD-education in Norway (with a special relevance for doctoral education at NIH):

- *The National Regulations for study programs (KD 2017)*
- *The National Regulations for quality assurance and quality development in higher education (KD 2018)*
- *The National Guidelines for the degree philosophiae doctor (PhD) (UHR, 2015)*
- *National Qualifications Framework for Higher Education (KD 2014)*
- *Lov om universiteter og høyskoler (universitets- og høyskoleloven (2016)*
- *Forskrift for graden philosophiae doctor (ph.d.) med utfyllende bestemmelser for Norges idrettshøgskole (2017)*

In *Lov om universiteter og høyskoler (universitets- og høyskoleloven)* § 3-3 it is mentioned that “Institutions accredited as a scientific state university college have the authority to accredit study programs themselves at the lower level. Within disciplines where they can award a doctorate or equivalent, the institutions themselves can accredit the study offers they offer at the lower and higher grade level. For disciplines where the institutions cannot award a doctorate, they must apply NOKUT for accreditation of higher education degree programs”. This means that NIH can accredit their own PhD-program. To quality-assure the PhD-program it is nevertheless recommended from NOKUT’s evaluation at NIH in 2012 (NOKUT 2012) to have external evaluation from expert committees (and NOKUT) from time to time. Our mandate is attached to this kind of strategic quality assurance work at NIH.

² More information about NOKUT’s accreditation processes here: https://www.nokut.no/siteassets/om-nokut/nokut_academic_supervisions_regulations.pdf

1.2. The Norwegian School of Sport Sciences (NIH)

The predecessor of NIH was the "Statens Gymnastikkhøgskole" which was originally founded in 1870 as the "Den Gymnastiske Centralskole for Legemsøvelse og Våpenbruk". NIH was established in 1968 and it is a scientific state university college with a special national responsibility for research and higher education within the field of sport sciences. It has approximately 900 full time students, 800 part-time students and 1000 participants at in-service training every year and it offers five bachelor degrees and five master degrees. In 2018 NIH celebrates its 50 year anniversary as a relatively small organization with 250 employees, included a high number of PhD-candidates (app. 70). NIH has an elected Principal and a simple structure: Management at Level one (Rector and Director) and the rest of the Organization at Level two: five subject sections, two mainly external funded research centers and six administrative departments. As part of this organizational structure, the leaders of each of the five section are employed on fixed term and have the employers' responsibility for their section employees (including the PhD candidates).

The doctoral program is coordinated centrally and started up in 1986 (with the first disputation in 1990). The Board of Directors of NIH has delegated responsibility for doctoral education to the "Committee for Researcher Education" (KFU), which is supported administratively by the Department for Research and Library. PhD candidates are attached to a subject section, but must apply to NIH centrally for admission to the doctoral program which covers all the five sections.

NIH has an extensive research collaboration internationally³. It is ranked 3rd in a recent world ranking and 1st in the Nordic Countries⁴ within Sport Sciences and performs very well according to the National Publication Indicator (NPI)⁵. In this Norwegian NPI-indicator system (and Cristin⁶ system) NIH has performed very well since its start in 2006 and NIH has the highest publication rate in 2016⁷ among the scientific state university colleges in Norway. While Norway nationally has had an increase by 150 percent in the number of PhD candidates the last fifteen years, the respective increase at NIH has been approximately 250 percent, from 20 to approximately 70 candidates enrolled in NIH's PhD-program the last fourteen years. During the last five years there appear to be gradually more women than men in the PhD-program⁸. In NOKUT's quality assurance of NIH's PhD program in 2012 they comment: "...compared to NIH's total size, 70 candidates is a high number, and places the institution as one of the most research-intensive in Norway" (NOKUT 2012). A vast majority

³ This is based on the fact that NIH has quite high international co-authorship in their scientific publications, they have international collaboration among the research groups and centers at NIH and they have good exchange possibilities for PhD-candidates.

⁴ <http://www.shanghairanking.com/Special-Focus-Institution-Ranking/Sport-Science-Schools-and-Departments-2017.html>

⁵ <https://npi.nsd.no/fagfeltoversikt/fagfelt?id=1061>

⁶ <https://wo.cristin.no/as/WebObjects/cristin.woa/wa/registrering?la=no>

⁷ <http://dbh.nsd.uib.no/pub/?rapport=antall&aar=2016&niva=1&insttype=2&instkode=&avdkode=&seksjonskode=>

⁸ 2013: 61% women/39% men, 2014: 61% women/39% men, 2015: 58% women/42% men, 2016: 64% women-36% men,

of the PhD-candidates at NIH writes an article-based thesis⁹, they publish their scientific articles in international journals (also on level 2) and they have good exchange opportunities. Based on their own strategies and recommendations from the NOKUT's evaluation of the quality system at NIH in 2012 (NOKUT 2012), NIH has further developed the quality assurance system for their doctoral program. It includes five quality indicators that are examined every year in order to continuously monitor and improve the PhD-program. This external evaluation is a part of this quality assurance system at NIH. NOKUT focused on the quality assurance system at NIH in general, and our mandate is to examine the quality and the content of PhD-program at NIH. A special focus of the evaluation is to examine the alignment between the formulation arena and the realization arena (Lindström and Lundgren 2000) at NIH. Another focus is to identify areas that could be improved within the PhD-program from the employees' perspectives.

1.3. KFU and NIH's PhD-program

In NIH's PhD Regulations (NIH 2017) the different areas of responsibilities and tasks are listed that apply for the subject sections/section leaders, the supervisors, the committee for research education (KFU), research administration and the Board. The Board has delegated the responsibility for doctoral education to the committee for research education, KFU, which consists of employees in teaching and research positions (mainly professors) from each of the five academic sections and two representatives of the PhD-fellows. KFU's responsibilities includes:

- Make decisions about admission to the PhD program, including to approve the project description and to appoint supervisors
- Appoint an expert committee that assesses the PhD-applicants
- To approve annual reports
- To decide if PhD-candidates should be excluded from the PhD-program
- To handle complaints regarding the approval of courses or other parts of the training program
- Appointing exam commissions for the PhD-course "Fag og metodeeksamen"
- To appoint a doctoral committees for doctoral thesis and disputation

KFU is responsible for initiating and implementing joint research training programs for PhD-candidates and permanent scientific staff, and professional development measures for doctoral supervisors.

The aim of NIH's doctoral education is that the education should qualify for research activities of high international quality and for other work in society where there are high demands on scientific insight and analytical thinking in accordance with good scientific practice and research ethical standards. NIH highlights that the doctoral education should

⁹ Article based dissertation or «PhD by publication» can be described as a thesis: "...where you can present a portfolio of several research papers you have written, on an identifiable theme, which have been published in peer-reviewed journals» (Kara 2015, p. 68–69).

provide the candidate with knowledge, skills and competence in line with the National Qualifications Framework for Higher Education (NQF) (KD 2014). *Employability*¹⁰ is therefore important since it proves how relevant the study program is for the working life outside NIH. Employability is therefore an explicit part of NQF. One aim of the PhD-program at NIH is to have a close relationship with the working life outside to continuously monitor the doctoral education to assure its relevance for society in general.

The PhD regulations at NIH (NIH 2017) describe the timeframe for the PhD-study program as a standardized study time of three years. This means that NIH both have PhD candidates with three years study time and no duty work, and PhD candidates with three years study time and one year duty work (altogether four years). The study consists of an organized training part (educational part) and independent research work within a special field. The educational part of the doctoral program consists of a total of 40 credits (SP) and consists of a course in philosophy of science and ethics (5 credits), courses in quantitative methods (2.5 credits) or qualitative methods (5 credits), evaluation of characteristics of tests/measurers (2,5 ECTS) and a professional and methodical specialization (30 credits). A total of 67 PhD-candidates were enrolled in the program in 2017, but the number varies slightly with an average of approximately 70 candidates the last five years.

1.4.Objectives and scope for the evaluation

1.4.1.Definitions and specification

One of the main focuses in this evaluation is to assess the *educational quality*. NOKUT defines educational quality "(...) as the quality of teaching classes and other facilities for learning, and students' learning outcomes after completion of education in terms of knowledge, skills and skills general competence» (Skodvin, 2013, p. 2). However, it is important to distinguish between *educational quality*, *study quality* and *teaching quality*: «The term education quality is more general and more comprehensive than the study quality concept. The former includes everything from what is happening at the subject/study program level and up to the government's education policy means of promoting education quality. The study quality concept is thus narrower and refers to what is going on at the educational institution itself " (Skodvin, 2013, p. 3). Furthermore, one can say that the teaching quality goes further to the micro level, that is, the quality of teachers' teaching in the specific courses.

In the evaluation assignment for the committee (NIH 2017) all of these three concepts are considered to fulfil the mandate. In the strategic quality systems for NIH's doctoral education, some of these aspects are described. NIH's quality system for research education aims at helping the candidates to achieve the goals for the PhD education. The system consists of different quality aspects: input quality (e.g. doctoral candidates), program quality (doctoral education program), frame quality (e.g. frame factors), performance (e.g. publishing) and relevance quality (e.g. employability) and quality control (e.g. quality

¹⁰ Employability: "the skills and abilities that allow you to be employed" (Cambridge Dictionary (2018), <https://dictionary.cambridge.org/dictionary/english/employability>

assurance). NIH has described a quality objective and defined this for every quality aspect. Further, the main goals will be achieved through underlying quality objectives and associated processes and procedures. Defined measurement methods and indicators should systematically gather information about the level of achievement of each quality aspect of the system. The information shall be gathered at the end of the year in an annual report to the Board. For the program quality, the main goal is to:

- NIH's doctoral program will ensure that all candidates at graduation reach the learning outcomes as defined in the National Qualifications Framework (KD 2014, p. 8)
- Among other things, the following quality goals will be built up and help to achieve the main goal.
 - The education component of the degree program will provide education at a high scientific level and contain topics that are relevant and consistent with the objectives of the program.
 - The research process and dissertation work must be at international level and carried out in line with the total work time for a PhD-scholarship.

The mandate for the committee (described below) attempts therefore to make it possible to give a feedback (and feed forward) to NIH and KFU regarding some of the main elements within the PhD program at NIH.

1.4.2.Mandate

In light of the PhD-program goals and dividends in the qualification framework, NIH wished to conduct a comprehensive evaluation of the program in PhD education in relation to content and quality, by seeking answers to the following questions:

- *Are NIH's admission criteria suitable for recruiting the best candidates?*
- *Does the Ph.D. Candidates have good (enough) professional guidance in terms of scope and quality?*
- *Does the education component in the degree program contain relevant topics and is the education at a sufficiently high scientific level?*
- *Is the work done at a good international level?*
- *Are the PhD-candidates adequately integrated into professional academic environments?*
- *Retains the PhD-program for international networking and participation in international research arenas?*
- *Is quality development of the supervisor's competence adequately safeguarded? What are the strong and weak aspects of NIH's PhD program in light of the National Qualifications Framework for Higher Education and Guidelines for corresponding PhD programs at other comparable institutions (University of Oslo, Norges Handelshøyskole)?*

The evaluation committee interpreted the mandate in relation to the timeframe for the evaluation.

1.5. How the evaluation was organized

NIH appointed the following expert committee 1st June 2017 to be responsible for this evaluation:

- Professor Mikael Fogelholm, University of Helsinki
- Professor Karin Redelius, Gymnastik- och idrottshögskolan i Stockholm
- Professor Rune Johan Krumsvik, Universitetet i Bergen (Head of the committee)

The committee has based the evaluation on a consistent set of information. These are:

- National guidelines and regulations for PhD-education
- NIH's guidelines and regulations for the PhD program
- Interviews with several employer groups at NIH

The committee received a letter of appointment and followed the mandate formulated by NIH in this evaluation. Within the timeframe given for the work, the committee:

- received documents, regulations, guidelines, annual reports from KFU and other kinds of internal evaluations concerning the PhD program from NIH
- examined national regulations, guidelines and bibliometrics with relevance for the mandate
- visited NIH during three days in January 2018 and interviewed ¹¹15 PhD-candidates, 6 supervisors, 5 section leaders, the head of KFU and the head of the PhD-candidate organization NIHSPØ¹²
- interviewed 3 external PhD-candidates via Skype
- had 7 SKYPE-meetings
- submitted a preliminary version of the final report to NIH on 19 March 2018 for fact checking.
- completed the evaluation report on 23 March 2018
- presented the evaluation report on 24 April 2018 at NIH.

The committee has tried to meet the instructions in the letter of appointment as well as the mandate stated for the evaluation. It should be noted, however, that the timeframe (a total of 300 working hours) gave certain limitations that concerns the scope of the evaluation.

1.6. Document data used

The data available for the committee was:

- Kvalitetsrapporter for perioden 2013 - 2016
- Dr. avhandlingar ved NIH pr. oktober 2017
- Evaluering av fag- og metode eksamen
- Forlenget tilsetting
- Rutinebeskrivelser for:

¹¹ The focus areas in these interviews are shown in Appendices, 1 (p. 58)

¹² <https://www.nih.no/forskning/ph.d-programmet/forskerutdanningslopet/nihspo/>

- o Gjennomføring av ph.d. utdanningen
- o Obligatorisk kurs ph.d. programmet
- o Fag- og metode eksamen ph.d. utdanningen
- o Bedømming avhandling
- o Gjennomføring av disputas

In addition, the following guidelines and regulations for the PhD-program at NIH and study plans, course plans and roles and responsibility were applied:

- Retningslinjer: NIHs ph.d. forskrift for doktorgradsutdanningen¹³
- Opptak v/predefinerte prosjekter
- Skifte av veileder
- Årsrapportering
- Oppnevning av bedømmelseskomité
- Informasjon i forbindelse med innlevering av avhandling
- Informasjon ved godkjent avhandling

Additional documents:

- Mandat Komité for forskerutdanning (KFU)
- Avtale ved opptak til ph.d. programmet
- Årsrapporteringsskjema
- NOKUT evaluering av NIH's kvalitetssikringssystem (2012)
- Bibliometriske data, PhD-kandidater ved NIH

It has to be underlined that the material used does not provide a complete picture of NIH's PhD program. There were several areas within the NIH organization that could have been examined thoroughly, but the committee has not considered those areas to be within the mandate.

1.7.The interviews and focus group discussions

1.7.1 Introduction

There are a few points we want to emphasize before reporting the results. One is that there are reasons to believe that the staff that we talked to, especially the candidates, were more inclined to bring up matters that they felt did not work and that they wanted to be improved, than the opposite. In other words, there was not the same incentive to point at all the things that were functioning well than the problematic ones. This is a natural situation in an evaluation setting, but the consequences are that the more negative aspects may dominate over the positive ones in the report. The same could be said about our task as evaluators. We look upon ourselves as critical friends and we take our assignment to be similar to that of reviewers. We are critical in the sense that our attention has mainly been

¹³ <https://www.nih.no/globalassets/blokker/afb/phd/phd-forskrift-nih---1.-juni-2017.pdf>

directed towards identifying areas that can be improved rather than commenting on aspects that does not call for any changes. We are friends in the sense that we see it as our mission to promote work that could increase the quality of the PhD program. Thereby we want to contribute the best we can in making NIH an even more successful university.

The second comment we want to make is that we, in the endeavor to present the candidates' and other staff members' views of how steering documents are applied, are inspired by a framework commonly used in research about curriculum implementation in schools. Linde (2016)¹⁴ uses three arenas to describe this process and to explain why it is so difficult to implement decisions in complex organizations. Research in schools shows that there is never a straight and linear relationship between what is decided on a central level (on the so called formulation arena), and what is finally concretized and practiced in the classrooms (on the so called realization arena). Things happen along the way. Curriculum and other steering documents need to be interpreted and applied by teachers and principals in schools (on the so called transformation arena). What is formulated centrally is therefore seldom what is realized locally. Those on the transformation arena may interpret the goals in different ways, and schools have diverse conditions and traditions that make it possible (or impossible) to realize high goals formulated on a central level.

If such a framework or perspective is applied when evaluating NIH's PhD program, it is not to be expected that all the PhD candidates will experience that all regulations and guidelines are implemented in full. Regulations and guidelines set up by for example NOKUT and KFU need to be transformed by five different sections leaders and by over thirty main supervisors. The section leaders, on the one hand, are head of departments of different sizes, with diverse traditions and resources. They have different numbers of candidates from different sub-disciplines within sport science as employees. Some of them are also supervisors for PhD candidates who belong to their section, others are not. The supervisors, on the other hand, naturally have different experiences and work under various conditions. Some have had many candidates and have been supervising for decades, others are beginners and at the moment they are supervising their first candidate ever. The PhD candidates are all enrolled in the same program but their conditions as candidates and employees are nevertheless different. Some, for example, are doing their daily work at NIH and have a supervisor who is working in an office close by who they regularly can discuss matters with in person. Others are also working at NIH but they have supervisors who are working somewhere else, sometimes far away or even in another country. Yet others are external candidates who conduct their work at other universities and visit NIH now and then.

When reporting how the candidates and the staff experience the PhD program, the focus is especially on illuminating the candidates' opinions. The reason for this is twofold. One is that PhD candidates are the ones directly affected by the structure and the quality of the program. The second reason is simply that they had more to say about matters related to the structure and the quality than the others had. The opinions of section leaders and

¹⁴ For a brief account, see for example Linde, Göran (2016) *Det ska ni veta! En introduktion till läroplansteori*, Lund: Studentlitteratur. Linde is inspired by the work of e.g. Lindensjö & Lundgren, 2000.

supervisors are nevertheless also important, and their views are also interwoven in the presentation.

1.7.2. A brief background presentation of the interviewed candidates

We aimed to talk to candidates representing all sections, different research approaches and the two attachment situations (internally working at NIH, vs. externally mainly elsewhere), and that was accomplished. The interviewed candidates were both women and men and they belonged to all sections at NIH. Three of them were external candidates who worked elsewhere and did not spend as much time as the 15 interviewed candidates at NIH. All of the candidates had completed at least half of the program. Their research projects span over different disciplines within sport science and they use multiple methods. Some were recruited to predefined projects, others had to spend quite a lot of time in the beginning of their studies to determine their research area and what methods to use. In that sense their situations were very different, but they still had much in common. All of them had written a master thesis at NIH and they seemed well acquainted with the school. Even though the candidates provided individual examples that seemed quite unique during the interview, in general their opinions of the program were more similar than different. We had expected that there would have been more disagreements within the group about matters related to the PhD program than it actually seemed to be.

1.8. Results from the evaluation

1.8.1 Introduction – the best in being a candidate and a supervisor

When presenting the results of the evaluation we will mix results based on documents and statistics with data derived from interviews. We start by giving a brief account of what the candidates as well as the supervisor thought was “the best” in being a candidate or a supervisor at NIH.

In general, the candidates we talked to were pleased with their situation. They perceived that they were very fortunate, and they especially brought up what a privilege it was to get the chance to concentrate on an interesting issue for a long time. They also appreciated their colleagues at the sections and fellow candidates as well. Their perception of the group cohesion was that it was friendly and good. In addition, they enjoyed the freedom they had in planning their workdays almost as they choose.

The candidates where asked the very open question “What is the best in being a PhD candidate at NIH?” Some examples of how they answered are:

I think it is great to be a PhD candidate at NIH. It is fantastic to be able to work with your greatest interests ... and the freedom one has.”

The best is the possibility to spend time on and to dig deep into an area that I find fascinating.

The best thing is to get paid to do what you like and the chance to develop and improve something you find important.

There are great colleagues and fun to be at a university but you get stuck in the office too much because there is always so much to do. There is freedom of course but it is restricted. I like to work during evenings and sometimes during nights but I do not feel that everyone understands this and they want me to be there at nine in the morning... Oops I guess I was supposed to say the good things... (laughter in the focus group).

The above excerpt is an example how easy it was for (some of) the candidates to bring up negative aspects once they got the chance. That is why we wanted to comment on this in before the result section started, as there is a risk that negative aspects will dominate in an unjust way.

The supervisors were asked a similar question: "What is the best in being a supervisor", and their answers mirrored the candidates':

The best is the possibility to work with young persons who are interested in finding out things within my research area.

There are two things really – you learn new things about your discipline and you get to know a new person.

It is very enriching... for example to follow a person's first simple ideas, and see those ideas being develop into research questions... being part of this, being able to contribute, that is very enriching to me as well.

The supervisors brought forward that it was a very inspiring part of their job to supervise. They also pointed out that they were in a privilege position but they also thought it was difficult and demanding and that lead us into the opposite question: What is the worst part in being a candidate or a supervisor? We start with the views of the candidates.

When asked "What is the worst thing in being a PhD candidate" the following statements are examples of what the candidates brought up:

One candidate said that the worst part is that it is difficult to find a job afterwards, which made another candidate ask surprisingly: "Are you worried? I do not give it a thought!" There were obviously some disagreements among the candidates although they all thought that it is a difficult career path in academia. Something else that many agreed on was the pressure one feels as a candidate, the pressure to perform. One candidate said:

I feel the pressure from everywhere and nowhere – what I do is never good enough. Things can always be better. When I get feedback, it is always on things that need to be improved, never the opposite.

The external candidates brought up that they sometimes felt isolated from NIH. "I am a satellite", as one said, and although the candidate understood that this might be inevitable when working far from NIH, some thought that much could be improved that concerns

information to external candidates. Sometimes they got the same information as the internal candidates, sometimes they did not. One candidate stated: “It is easy to forget us – it is as if we are not there, we do not exist”.

Many of the examples the candidates brought forward when discussing the worst things in being a candidate related to supervision and the way they were supervised. Since the quality of the supervision is a key factor of a PhD program as well as for the well-being of the candidates we will return to this issue later on under the heading “Supervision”. Then we also give an account of what the supervisors perceive as the worst in being a supervisor.

The next part in the reporting of the results concern the academic community at NIH.

1.8.2. The academic community at The Norwegian School of Sport Sciences’ PhD program

The national PhD regulations in Norway mentions a number of requirements that the institutions in higher education must fulfill. Some of these are the requirement for the academic staff’s competence, their research activity and their ability to international collaboration, etc. In the following part we will examine such issues at NIH.

The Norwegian School of Sport Sciences has position itself as a renowned academic institution in the Nordic countries as well as in a broader international context. As other PhD-programs in Norway, the requirement of a highly competent staff at NIH is important to achieve the goals of the program. NIH have the following permanent and temporary staff in 2018:

Table 1. The academic staff at NIH

| Professor | Professor II | Associate professor | Researchers | PhD-fellows | Assistant professor | Post. Doc | Scientific ass. |
|------------------|---------------------|----------------------------|--------------------|--------------------|----------------------------|------------------|------------------------|
| 27 | 13 | 26 | 12 | 39 | 13 | 6 | 7 |

In *The National Regulations for study programs § 2-3* ”, Requirements for the academic community” (KD 2017) it is mentioned that “For study programs at doctoral level, the academic environment associated with the program shall consist of employees with first-degree qualifications, of which at least 50 percent with professor or “docent” competence”¹⁵. With 84 percent of the staff with first-degree qualifications in permanent positions and 54 percent professors among those in permanent positions, and 13 professor II and 11 associate professor in temporary positions, the staff at NIH fulfils the national regulations for PhD-programs. In addition, it can be mentioned that among 39 institutions in higher education in Norway 2015, NIH had the 6th highest rate of first positions in their staff (professors or associate professors) (KD 2017, p. 65).¹⁶

In *The National Regulations for quality assurance and quality development in higher education § 3-3 “Accreditation of doctoral studies”* (KD 2018) it is mentioned that: “The subject environment must have depth and breadth within all essential parts of the doctoral program so that PhD candidates can participate actively in various academic relationships and get introduction in different perspectives”. At NIH these requirements are attempted to be met through Sports sciences (“Idrettsvitenskap”) which is a multidisciplinary field with roots in humanities, social sciences and natural sciences. The size of NIH as an institution makes it natural to only have one PhD program, which all five sections are attached to and which reflects multidisciplinary, breadth and depth of both research and teaching:

Seksjon for idrettsmedisinske fag (SIM) (Section of Sport Medicine)

Seksjon for kroppsøving og pedagogikk (SKP) (Section of Physical activity and pedagogy)

Seksjon for kultur og samfunn (SKS) (Section of Culture and Society)

Seksjon for coaching og psykologi (SCP) (Section of Coaching and psychology)

Seksjon for fysisk prestasjonsevne (SFP) (Section of Physical performance)

In addition, NIH has five bachelor- and master programs within these five subject areas which is in line with the requirement that “The institution will have graduates at the lower and higher degrees level of all study offers covering the academic profile of the doctorate” (§ 3-3, KD 2018). A substantial part of the PhD candidates at NIH’s PhD-program are recruited from their own former master students at NIH. This can be an advantage in light of continuity, but also a challenge in light of development of more international recruitment strategies.

In *The National Regulations for quality assurance and quality development in higher education § 3-3. “Accreditation of doctoral studies”* (KD 2018) it is mentioned that “The PhD program must have a stable and professional environment, consisting of sufficient numbers of professors and associate professorships throughout the entire range of study programs. An overall assessment shall be made of whether the academic community has sufficient staff to cover subjects and courses, and the supervision the study consists of. The academic

¹⁵ https://lovdata.no/dokument/SF/forskrift/2017-02-07-137#KAPITTEL_2

¹⁶ https://www.regjeringen.no/contentassets/d13d5235bbfd42f68b1795112fdb5e1a/tilstandsrapport-hovedrapport-2017_nettpdf

environment shall consist of employees with relevant competence. The institution's assessments must be documented so that NOKUT can use them in their work". As mentioned above and as we can see in Table 1, the professional environment at NIH in general and in the five sections fulfil the requirements from the national policy documents. However, we will comment further on the requirement on supervisors and supervision later in this report.

We can observe in Table 2 below that the number of professors varies between the sections where e.g. section for Sports medicine (SIM) has twice as many professors than two other sections (SCP and SKP). In light of such tendencies, we recommend NIH to examine and consider if the opportunities of career development towards professorship could be improved in some sections, to analyze if there are any gender differences to be aware of and if career development programs for young researchers (young associate professors) could be a part of NIH' strategic plan in the years to come¹⁷. Such analysis might prevent further "Matthew effect" (Merton 1968) between the five sections at NIH. Further, we will focus more on the PhD programs' capacity and its sustainability.

Table 2. The academic community at NIH (attached to the sections).

| | prof. | prof II /midlertidig. | 1.aman. | 1.aman midl. | forsker | forsker midl. | stipendiat | univ. Lektor | univ.lektor midlert. | Amanuensis | postdoc | vit. ass. |
|------------|-------|-----------------------|---------|--------------|---------|---------------|------------|--------------|----------------------|------------|---------|-----------|
| SIM | 8 | 4 | | | 1 | 4 | 12 | | | | 1 | 3 |
| SCP | 4 | 3 | 2 | 4 | | 3 | 6 | 1 | | 2 | 1 | |
| SFP | 6 | 1 | 5 | 2 | | 2 | 8 | 3 | | | 2 | 2 |
| SKP | 3 | 1 | 7 | 2 | | 2 | 6 | 2 | 4 | | 1 | |
| SS | 6 | 4 | 1 | 3 | | | 7 | 1 | | | 1 | 2 |

In *The National Regulations for quality assurance and quality development in higher education § 3-3. Accreditation of doctoral studies* (KD 2018) it is mentioned that "The institution must document that it has the capacity and recruitment potential to take up at least 15 fellows to the doctorate within five years after start up. In addition, the institution is likely to maintain a doctoral environment with at least 15 fellows over time (...) At least eight of the fellows will have a main job at the institution. In addition, the institution can pick up doctoral candidates with other external funding".

As we can see in Table 3 NIH fulfils these requirements¹⁸. One of the reasons for this might be that NIH started up their PhD program in 1986 and thus have over 30 years of experience which makes their PhD program more stable, sustainable and less vulnerable for recruitment problems than newly started PhD programs (at other institutions). With a 250 percent increase of PhD-candidates in the last 14 years, NIH has positioned itself as the main PhD-

¹⁷ An important part of such career development is the opportunities for supervision which will be examined more thoroughly later in this report.

¹⁸ The data from NIH annual report from KUF differs slightly from the DBH-data in Table 3 and there might be a number of reasons for that. However, the most important is that NIH has a relatively high number of PhD candidates in their PhD-program in relation to other state university colleges and in relation to NIH's total amount of employees (250).

institution in Norway within sport sciences and in many ways it has had the ability to “foresee” the importance of positioning itself in relation to the large scale merging of universities that has been a trend in Norway the last years. With 70 PhD candidates in their PhD program, NIH has positioned itself as the second largest scientific state university college within PhD education in Norway¹⁹. Moreover, compared to some PhD programs of the newly merged university colleges in Norway, NIH is surpassing several when it comes to size and capacity in 2018.

Table 3. Doctoral contracts at NIH 2013-2016²⁰

Start ▶ Statlige vitenskapelige høyskoler ▶ Norges idrettshøgskole

| Fakultetsnavn | 2013 | 2014 | 2015 | 2016 |
|---------------------------------------|-----------|-----------|-----------|-----------|
| | Avtaler | Avtaler | Avtaler | Avtaler |
| Seksjon for coaching og psykologi | 15 | 13 | 15 | 13 |
| Seksjon for fysisk prestasjonsevne | 16 | 17 | 15 | 15 |
| Seksjon for idrettsmedisinske fag | 27 | 27 | 27 | 22 |
| Seksjon for kroppsøving og pedagogikk | 13 | 11 | 10 | 13 |
| Seksjon for kultur og samfunn | 12 | 10 | 13 | 11 |
| Sum | 83 | 78 | 80 | 74 |

We can also observe in Table 3 that all sections are involved in the PhD-program with PhD-candidates and have supervision responsibility. This is important for several reasons, not least in relation to the national requirements where it states: “A substantial part of the institution's study offers, research or artistic development work and professional development work shall be within the academic area of the doctoral program” (§ 3-3, KD 2018). This is important since the educational trends at some institutions on PhD level in Norway goes the other way around focusing mainly on size (number of candidates), and perhaps not enough on the academic staff’s competence within the doctoral programs subject profile. The committee finds that NIH has a clear coherence between the academic staff and the sections competence, the PhD program and the PhD candidates’ research areas presented in their thesis. This might be one (of several reasons) for the excellent student throughput and high completion rate among PhD candidates at NIH.

However, from a critical point of view one could ask if NIH has examined the reasons for why some sections have twice as many PhD candidates, compared to some other sections. A higher number of PhD candidates means more supervision opportunities, increased publication rate, increased disputation rate and increased reward funds. At the same time it also increases the work load for the employees at such sections of course. This variation seems to be based on some section’s ability to get external funding from the Norwegian Research Council, etc. Within this area, NIH could consider to use staff members with high

¹⁹ The Norwegian School of Economics has the largest PhD education among the scientific state university colleges in Norway.

²⁰ The committee can’t find any Dr.philos-candidates or guidelines for this degree at NIH. This is another track to the doctoral degree at Norwegian universities and university colleges for candidates who have not followed a defined research education program.

success rate of getting external funding as “mentors” for those sections with lower success. Such “frontrunners” are strategically important for NIH in improving the conditions for all sections and centers to succeed in receiving external funding with continuity.

Another measure to avoid too large differences between the sections is to implement a long lasting plan for the employees’ professional development on PhD level – especially attached to PhD-recruitment, career development and supervision. Moreover, NIH might consider whether a closer collaboration between different sections when applying for funding would bring some benefits. For instance, collaboration may both improve the multidisciplinary approaches of the applications and simultaneously help all sections to improve their quality of research planning and grant application.

If we use Table 3 as a background, we can observe that when it comes to gender equality at NIH, of the 67 PhD-candidates in the PhD program (per. 31.12.2016), 43 were women (64%) and 24 men (36%)²¹. This is a sign of a positive development since men has dominated the PhD program at NIH since the start in 1986. At the same time, one can observe that some sections have a challenge with an uneven gender balance (both for PhD candidates and among employees) in their subject field. The Ministry of Education annual report of 2017 states that “NIH is the only state institution in which women's share in first positions has fallen since 2007” (KD 2017, p. 70). NIH is aware of this situation and in the KFU report of 2016 it is stated that they will keep track of development. A recommendation is not only to keep track, but also take action to try to change the unequal situation.

Further, 29 candidates had external PhD-funding in 2016 and these included both employees from other university colleges, health institutions, NCR funded PhD’s, etc. This means that in 2016, around 43 percent of the PhD-candidates at NIH were externally funded. It is reasonable to assume that the large expansion of PhD-candidates at NIH – from 20 to 77 candidates over ten years (2004-2014) – is mainly due to an increase in external funded PhD-candidates. This situation appear to have had several important contributions to NIH: a larger PhD-community, more employees involved in PhD-supervision, increased publication rate at NIH, more collaboration/networks, more doctoral disputations and increased reward funds from completed PhD’s²². Moreover, as NOKUT commented in their report from NIH in 2012: “It is especially beneficial for the institution to have many external fellows, e.g. PhD-candidates who have their daily workplace elsewhere than at NIH” (NOKUT 2012, p. 12). In 2018 the reward funds from the Ministry of Education per disputation is 377 000 kr. It is therefore reasonable to say that since these external PhD-candidates generate important network and competence to NIH, and also reward funds from disputations and publications and thereby they make a significant financial contribution to NIH.

²¹ As of 31 December 2016, a total of 157 candidates had doctoral degrees from NIH, 64 women (41%) and 93 (59%) men. KUF states that it is considered positive that there will be a gender equalization for doctoral degrees. Against this background, it is favorable that there now is a period of overweight of women in the program.

²² In 2018 NIH receives 302 000 and the employers institution 75 000 per disputation for external candidates. On the other hand it is of course expenses attached to such external candidates’ education, supervision and disputations which NIH cover.

When it comes to employability and relevance it is interesting to note that the NOKUT evaluation at NIH in 2012 stated that: “The committee realized that there is a good job market for NIH's doctoral candidates” (NOKUT 2012, p. 12). The situation seems to be the same in 2018 since NIH has the largest and renowned PhD program in Norway. However, our recommendation is that NIH should monitor the employability issues on PhD level in the years to come and attempt to more systematically map where the PhD-candidates at NIH get working opportunities after completing their PhD.

At the same time it is reasonable to ask if the increasing number of PhD-candidates is at the expense of the quality of doctoral education. One can also ask if there is sufficient administrative staff for the PhD program to handle this large expansion of PhD candidates. As part of NIH’s strategic plan for the doctoral education this should be examined further so that all pros and cons are considered. A preliminary recommendation from the committee it to try to maintain the current number of PhD candidates since it is strategically essential for a number of reasons: It positions NIH nationally as the largest PhD program within sport sciences, it generates more research at NIH as well as more reward funding to NIH, it involves a higher proportion of the permanent staff in doctoral supervision and co-authorship, and it is good for the PhD candidates to belong to a large and sustainable PhD program.

Student throughput and completion rate at PhD level are important in relation to a number of factors and give a clear indication of the stability, sustainability and continuity of the program. The Ministry of Educations mentions that “The institution must document that, on average, it has graduated at least five PhD students in the doctoral program or equivalent fellowship program per year over a three-year period. The PhD program must have taken on average at least 15 fellows over a period of five years” (KD 2018). In Table 4 we can see that for example in 2016 NIH had 7 PhD-graduations (as well as 11 in 2015, 9 in 2014 and 11 in 2013²³).

Table 4. Completed doctoral degrees in 2016 at NIH (only in Norwegian in DBH).

Start ▶ Statlige vitenskapelige høyskoler ▶ Norges idrettshøgskole

| Fakultetsnavn | 2016 | | | | | |
|--|----------------------|---|--|------------------------------|---|--|
| | Avlagte doktorgrader | Avlagte doktorgrader, brutto årsverk (gj.snitt) | Avlagte doktorgrader, netto årsverk (gj.snitt) | Doktorgradsavtaler, avbrutte | Doktorgradsavtaler, eldre enn 5 år (høst) | Doktorgradsavtaler, eldre enn 5 år (vår) |
| Seksjon for coaching og psykologi | 1 | 4,93 | 3,17 | 0 | | 1 |
| Seksjon for fysisk prestasjonsevne | 2 | 4,21 | 4,08 | 0 | 0 | 2 |
| Seksjon for idrettsmedisinske fag | 1 | 3,95 | 2,96 | 0 | 0 | 2 |
| Seksjon for kroppsvøving og pedagogikk | 1 | 5,81 | 4,7 | 0 | 0 | 4 |
| Seksjon for kultur og samfunn | 2 | 7,65 | 6,04 | 1 | 0 | 1 |
| Sum | 7 | 5,49 | 4,44 | 1 | 0 | 10 |

²³ [DBH's database of completed PhD's at NIH](#)

Average completion time for internally admitted candidates who graduated from the doctorate in 2016 was 3.95 years (which in Norway is considered as quite good). By 2015, the corresponding figure was 4.1 years²⁴. In 2016, 13 out of the 17 candidates who had been admitted to the PhD program six years earlier had graduated (76%)²⁵. The national average is just over 65 percent so NIH position itself with quite a good student throughput and completion rate²⁶. If NIH would like to decrease the average completion time, the possibility for a 4-year contract with 25 percent working obligation could be abandoned. However, the committee does not recommend this, since teaching and other working opportunities can be considered as a valuable part of PhD training. Moreover, a very short PhD completing is not necessarily a value in itself in light of a broader employability perspective. In summary, the committee is impressed over the average time to complete a PhD degree at NIH.

In *The National Regulations for quality assurance and quality development in higher education § 3-3 "Accreditation of doctoral studies"* (KD 2018), it is mentioned that "The doctoral degree program must have a professional environment with high competence in education and research. The academic community should be able to demonstrate documented research results, including publication, at a high international level, and results from cooperation with other academic communities nationally and internationally"²⁷.

1.8.3 Scientific publishing at NIH

In NOKUT's national evaluation of study quality NIH is ranked 5th (45,2) among 31 educational institutions in Norway²⁸ (NOKUT 2018) and NIH publishes very well compared to other universities, state university colleges and university colleges²⁹. In Figure 1. In the NVI-statistics NIH have the 12th highest number of scientific publications (248) among higher education institutions in Norway in 2016 which is interesting with only 250 employees (where 70 of these are PhD candidates).

²⁴ 5 candidates have completed at normal time (average net execution time 2.9 years). 1 candidate completed 4 years or less (net implementation time 3.6 years). 2 candidates had throughput for more than 4 years (average net execution time 4, 7 years), where 1 candidate had completion time over 5 years (execution time 8.7 years) which cuts up.

²⁵ See KD (2017, p. 38) for more information:

https://www.regjeringen.no/contentassets/d13d5235bbfd42f68b1795112fdb5e1a/tilstandsrapport-hovedrapport-2017_nett.pdf

²⁶ Only one candidate has terminated the program due to lack of motivation.

²⁷ https://lovdata.no/dokument/SF/forskrift/2010-02-01-96#KAPITTEL_3

²⁸ <http://dbh.nsd.uib.no/nokutportal/index.action;jsessionid=GmIYg8As1LrTG8ourG7dfCv5.undefined>

²⁹ <http://dbh.nsd.uib.no/pub/?aar=2016&rapport=avdeling>

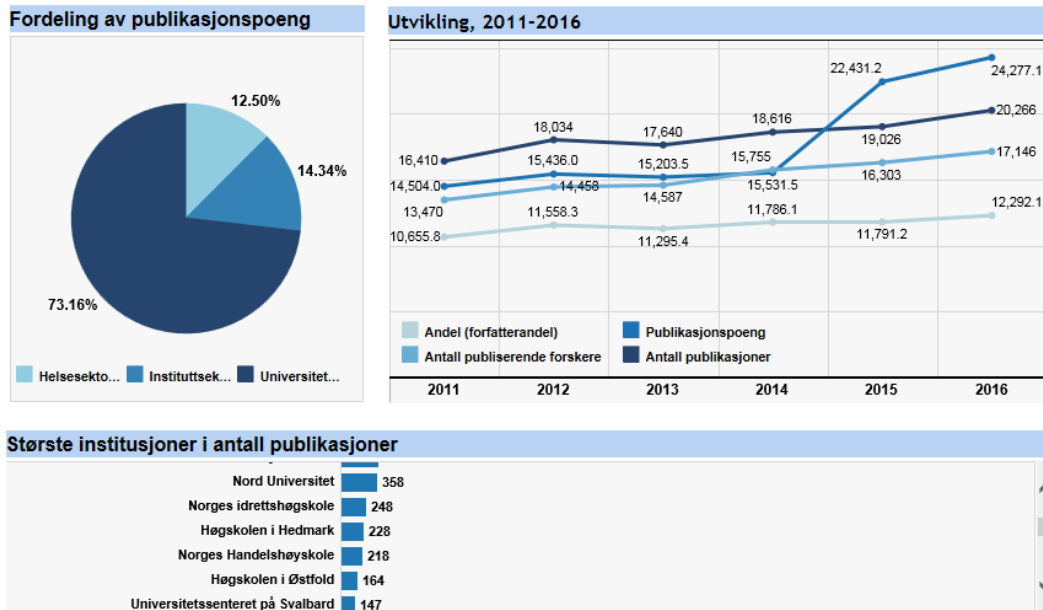


Figure 1. NVI publication statistics 2016 in Norway³⁰

It is remarkable in this statistics showing the number of publications that NIH outperforms both The Norwegian School of Economics and a number of university colleges in Norway (with several thousands of students and over 1000 employees). We also see that the marked increase in publications in the period 2011-2016 goes “hand in hand” with the number of publication points (seen in figure 2.). Another development pattern is the high number of PhD candidates and article based theses at NIH in this period, which of course generated a substantial number of publications/publication points. This may be a consequence of the fact that NIH is an institution that prioritizes research over time, for example it is between 40-50 percent research parts in permanent professor/associate professor positions, NIH has strong research centers and there seems to be a “research culture” among the majority of the employees at NIH.

Figure 2 shows the publications statistics at NIH in the period 2011-2016. It can be observed that NIH has had a very high increase in publications and publication points in this period.

³⁰ Source: <https://www.cristin.no/statistikk-og-rapporter/nvi-rapportering/nvi.html>

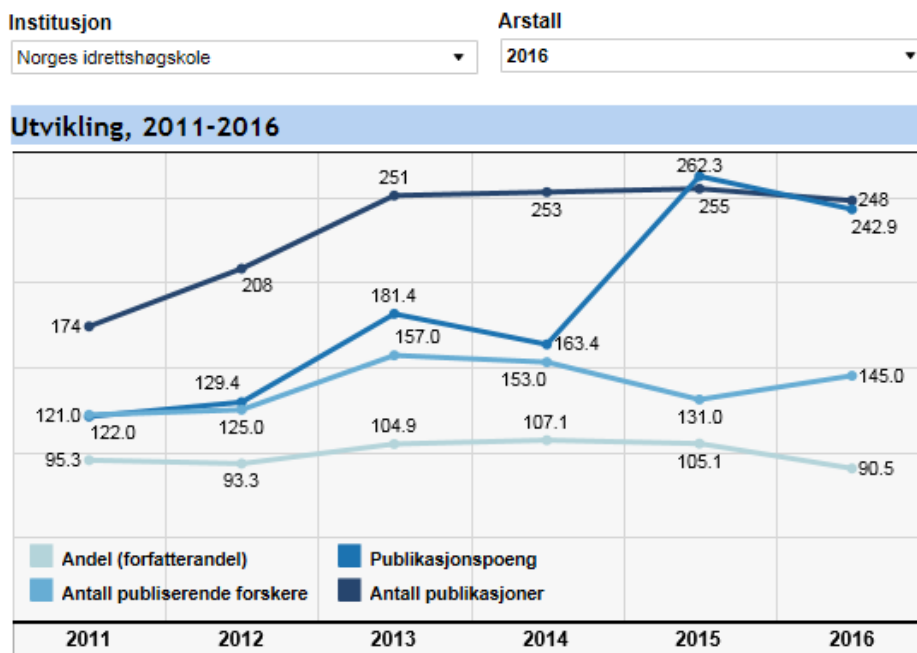


Figure 2. NVI publication statistics 2016 at NIH 2011-2016 ³¹

Figure 2 also shows that NIH has had an especially large increase in publication point from 2014-2016. A number of factors may have influenced this increase and it is therefore difficult to suggest what the main reasons are. An important one could of course be the permanent employed achievements where NIH had the highest publication rate per employee in Norway both in 2015 (2,15) and in 2016 (2,2) (KD 2017, p. 42)³². Another reason can be that the highest number of PhD's at NIH was reached in 2014 (77) which might have generated more publications in 2015-2016. Despite this, we can observe that between 121 and 145 of NIH's 250 employees and PhD candidates were publishing during this time period. Therefore there is a potential at NIH to produce even more publications if an even higher proportion of the staff got more engaged in publishing.

Figure 3 shows the NVI publication statistics at NIH in 2016 which is quite good (even if there is a slight decrease from 2015). With around 63 percent international co-publishing this is a remarkable result nationally and quite essential considering the importance of international collaboration within research.

³¹ Source: <https://www.cristin.no/statistikk-og-rapporter/nvi-rapportering/nvi.html>

³² Source: https://www.regjeringen.no/contentassets/d13d5235bbfd42f68b1795112fdb5e1a/tilstandsrapport-hovedrapport-2017_nettpdf



Figure 3. NVI publication statistics at NIH in 2016³³

The international publication patterns are also important regarding the new calculation of publishing points which gives extra credits to international co-publications in the DBH-system. In addition we can see that over 33 percent of the publications are on level 2 and almost 90 percent of the publications are journal articles which are also a good result from national perspective.

However, the publications rate varies between the different sections at NIH as shown in Table 5.

Table 5. Publishing among all employees at NIH (DBH statistics 2016, only in Norwegian)

Norges idrettshøgskole

| Enhet | Publikasjons-poeng | Poeng kvinner | Endring poeng | Andel poeng | Forfatter-andeler | Publiseringsnivå | | Publikaasjonsform | | |
|---------------------------------------|--------------------|---------------|---------------|-------------|-------------------|------------------|--------|--------------------|-------------------|--------------|
| | | | | | | Nivå 1 | Nivå 2 | Periodika artikler | Antologi-artikler | Mono-grafier |
| Totalt: | 242,9 | 82,5 | -7,4 % | 100,0 % | 90,5 | 69,9 % | 30,1 % | 81,7 % | 18,3 % | 0,0 % |
| <i>Norges idrettshøgskole</i> | 242,9 | 82,5 | -7,4 % | 100,0 % | 90,5 | 69,9 % | 30,1 % | 81,7 % | 18,3 % | 0,0 % |
| Seksjon for kultur og samfunn | 37,1 | 20,4 | -17,2 % | 15,3 % | 21,6 | 76,1 % | 23,9 % | 66,8 % | 33,2 % | 0,0 % |
| Seksjon for kroppseving og pedagogikk | 16,0 | 6,3 | -50,1 % | 6,6 % | 10,3 | 75,4 % | 24,6 % | 70,8 % | 29,2 % | 0,0 % |
| Seksjon for idrettsmedisinske fag | 130,3 | 41,9 | 12,3 % | 53,6 % | 28,7 | 48,4 % | 51,6 % | 94,3 % | 5,7 % | 0,0 % |
| Seksjon for fysisk prestasjonsevne | 30,2 | 3,7 | -30,7 % | 12,4 % | 14,5 | 89,5 % | 10,5 % | 100,0 % | 0,0 % | 0,0 % |
| Seksjon for coaching og psykologi | 29,3 | 10,2 | 40,0 % | 12,0 % | 15,5 | 79,1 % | 20,9 % | 69,4 % | 30,6 % | 0,0 % |

³³ Source: <https://www.cristin.no/statistikk-og-rapporter/nvi-rapportering/nvi.html>

From table 5 it can also be observed that the section for sport medicine has a much higher number of publication points than other sections and this can partly be explained by the size of the section. However, it also has a higher proportion of level 2 publications compared to other sections. Although this may partly demonstrate excellent scientific quality of that section, comparing journal quality between very different scientific fields should always be done with great caution. Nevertheless, this section stands out in several research parameters at NIH.

Another important part of research in higher education is to succeed with research applications to the Norwegian Research Council, EU, etc. In the Ministry of Education's annual report of 2017 it is mentioned that "...in the state sector, NIH had the highest BOA³⁴ revenues per professional man-years with 256 800 kroner. NIH is among those who have had the highest revenue from BOA per academic year in the last three years" (KD 2017, p. 52). This is also an important indicator for NIH's ability to succeed with their research strategy and where especially the research centers at NIH seems to be in front.

In the coming parts of the report we will examine the mandate more thoroughly and cover the different questions in the mandate step by step. We will start with the question that concerns the recruitment of PhD candidates.

1.8.4 Are NIH's admission criteria suitable for recruiting the best candidates?

Document data

On a general basis, NIH has positioned itself as one of the most popular institutions among students in higher education in Norway. And in the Ministry of Education's annual report of 2017 they mention that "The lowest number of student applications is found at the institutions in Northern Norway, some of the state colleges and many of the private institutions, while the Norwegian School of Sport Sciences and Norwegian School of Economics is on top as before" (KD 2017, p. 18). Below we will examine this more specifically in relation to NIH's PhD program.

In the Regulations for the PhD (NIH 2017) it is stated that to be admitted to the doctoral program at NIH, the applicant must normally have obtained a two-year master's degree (120 credits) in sports science. It is also possible to be admitted to the doctoral program with a master's degree in another field of study with relevance for the sporting field. Further, applicants for the doctoral degree program must have obtained a minimum average grade B /2.5 or better in the master's degree.

In the applications, the applicants must document their formal education, their publications in addition to the master thesis and a ten pages long project description for their PhD. The further procedures are especially attached to the evaluation of the scientific committees who evaluate the overall quality of the candidates in general, but especially the quality of the project description.

³⁴ BOA: Bidrags-og oppdragsfinansiert aktivitet (Contribution and mission-funded activity).

For PhD positions advertised by NIH, the process implies a letter from the expert committees with a ranking list of the candidates who have applied for the PhD positions. The highest ranked candidates will then be invited to interviews for the PhD positions, and based on these, a final ranking list will be sent from the sections leader to the Appointments Committee which makes the final decision about employment. KFU then considers the candidate(s) for admission to the PhD program.

Throughout this admission process NIH aims to quality assure that they recruit the best candidates. From our point of view (based on accessible documentation) they succeed in recruiting candidates with excellent potentials, even though it is difficult to decide whether it is *the* best ones. However, there are many “gatekeepers” along the way to recruitment and high quality criteria set up, so our interpretation is that the “right” candidates are selected. We find it especially positive that KFU has set up a separate committee to assess each applicant. This is reassuring and a strong indication that the scientific committees carry out a thorough job when assessing the applicants.

However, even if the candidates are the best among the applicants, perhaps NIH can do more to prepare the candidates about the expectations. In light of a general debate in the Nordic countries regarding how to increase the student throughput and raise the completion rate on PhD-level, NIH could consider carrying out more in-depth interviews as a selection criteria. Not so much to select candidates but to inform them and check their awareness about what taking a PhD requires (in many ways it is like an “academic marathon” with a lot of hard work, uncertainties, stress and patience and perseverance are traits needed). NIH could also consider to restrict external time consuming work activities outside NIH during the PhD scholarship period (to avoid delays because of such circumstances which very often is one of the main reasons for longer completion time and lower completion rate internationally) (Peelo 2011).

Interviews and focus groups

By analyzing the regulations and how the recruitments are supposed to be carried out, we find the process rigorous and the candidates appear to be carefully chosen. When asked about the recruitments process, the candidates mainly remembered that they had to write a research application in one month that was assessed by an external committee. They felt that it was quite a demanding task to write such an application or research plan. They also found it quite stressful since they had the impression they could be let down and not get accepted if the plan did not meet the requirements. An interesting observation, though, was that several informants said that initially the ambition to become a PhD candidate was not a conscious career based choice – many felt that it was more of a coincidence. However, a general impression was that the PhD candidates had liked working on their Master thesis, hence showing interest of scientific work and larger projects.

While talking about the recruitment process, the candidates and also some supervisors brought up the unequal conditions they thought the candidates had. Some had predefined projects that they went right into and “could start to write articles the first week”, as one

said, while others had to start from scratch. They had to spend a year on deciding what to do and how. What was unfair was that they all in the end had to produce the same number of articles. Therefore the conditions were very different. One candidate knew that the national guideline for a PhD in Norway is three publications, and when the others in one focus group heard this they shook their head and said: "That's typically NIH... they think, ok, all the others have three but we are such a great university so we should have four..." The candidates did not understand the reasons behind this (and we have commented on this issue earlier).

Conclusions and recommendations

NIH could also consider a consequent residence obligation for the PhD positions advertised to secure a sound and stable PhD community at NIH at all times (this has become more or less common "rule" in Norway in general to set as a requirement in the advertisement of PhD-positions). In addition, this will make it easier to integrate the PhD-candidates in the daily routines and as part of the employee community at NIH.

Moreover, NIH might consider if external funded PhD candidates from other university colleges taking their PhD at NIH should get the opportunity to have temporary office facilities at NIH during their PhD period (e.g. 3-6 months periods). In this way they would be better included in the PhD community at NIH, they would meet their supervisors at NIH more frequently and these candidates would also get daily access to top expertise and infrastructure at NIH.

Based on the limited documentation of how many PhD's apply and the background of the applicants who apply for PhD positions at NIH, it is, as stated above, difficult to answer if NIH recruits the best candidates. However, the fact that 91 candidates recently applied for 8 announced NIH funded fellowship is a good quality indicator. These applicants has to have at least the grade B on the master degree to apply and to be considered for the further assessment process. A fruitful collaboration for the NIH administration could be with the Norwegian School of Economics (NHH) regarding recruitment strategies, since NHH has a more explicit strategy of the importance of international recruitment than NIH has today.

Overall, NIH's admission criteria appear suitable for recruiting good candidates. Our future suggestion, however, is that these admission criteria should be complemented by a systematic gathering of information that could directly provide KFU and NIH with knowledge of the quality of the PhD candidates, which in turn could form the basis for analysis, assessment and action. Therefore, NIH should consider a systematic mapping over a period of time to find out what kind of applicants apply for PhD-positions at NIH, where they publish, what other achievements they accomplish during the PhD-period and where they get jobs after they have completed their PhD³⁵. When such employability issues are examined more in depth, there is more data to analyze if NIH recruits the best candidates.

³⁵ KFU could get some help with such development projects by e.g. considering this as a master degree topic for master students interested in the area.

1.8.5. Quality of supervision of PhD candidates

Document data

Doctoral candidates in Norway can receive feedback and small scale supervision through doctoral courses, annual reports, mid-term evaluation, research schools, research groups, PhD-fellow groups, in conferences, from reviewers in scientific journals, etc. All of these are important support structures for the doctoral candidates. Nevertheless, it is the supervisors who have the main responsibility for the doctoral thesis and the candidate's overall guidance. The section leaders, on the other hand, have the employer responsibility for the supervision being in line with all PhD regulations at NIH. At the same time, it is an institutional responsibility that the supervisors have working hours enshrined in their working plans for their supervision obligations and that they are given the opportunity for professional development to ensure the quality of the pedagogy of doctoral supervision.

How is the condition within doctoral supervision in Norway? When the Norwegian Research Council evaluated the PhD-education in Norway in 2012 they found that "Supervision remains a crucial issue. Even though there have been positive developments over the last decade, the quality and access to supervision for PhD candidates are not satisfactory for a certain amount of PhD candidates. Efforts to increase the professional development and training of supervisors are recommended" (Thune et al. 2012, p. 10). However, a more recent Norwegian report, "Doktorgradskandidater i Norge" revealed that a clear majority of PhD's were quite satisfied with their supervision, while there still was a minority who were dissatisfied (Reymert et al. 2017).

How are the conditions for doctoral supervision at NIH? In the KFU's reports 2013-2016 we find some information about the PhD's views and experiences with doctoral supervision. A general impression from these annual KFU reports is that the PhD candidates in general are satisfied with their supervision. However, later in this section we will highlight some interview-based aspects of doctoral supervision at NIH that can complement the annual reports from KFU.

If we look closer at the procedures and the quality assurance system at NIH, each candidate must submit an annual report on his/her own study progress. The supervisor must approve the report before it is processed and approved by the KFU. KFU is responsible for detecting lack of work progress, lack of quality supervision and to take corrective action measures if needed. Once the KFU has approved the annual reports, the result of the approval goes back to the candidate, the supervisor and the section leader. The section leaders are responsible for further follow-up together with the supervisors and PhD-candidates. In cases where the reports show a deficient progression, the KFU may even decide that the candidate should stop the PhD-study.

In the *National Guidelines for the degree philosophiae doctor (PhD)* (UHR, 2015), it is stated in Section 7 that doctoral candidates are entitled to supervision and that it is normal for the candidate to have two competent supervisors. The supervisors shall ensure that there is regular contact, follow up on the candidate's professional development, provide systematic

progress reporting, and that the candidates get involved in an active research environment at the workplace.

In NIH's annual report we find that the number of candidates per supervisor has remained at about the same level in the period 2013 to 2016. By the end of 2016, 67 candidates were enrolled in NIH's PhD program. Six candidates had an external main supervisor. Thirty-two of NIH's scientific staff were appointed as main supervisors for PhD candidates in the doctoral program. This corresponds to an average of 2.1 candidates per year per supervisor. A few supervisors have a higher number than the average number of candidates per supervisor. Five supervisors had three candidates and one supervisor has the main responsibility for five candidates. Many of NIH's supervisors also supervise PhD candidates at other institutions in Norway and abroad.

On the one hand, NIH's has many PhD candidates in relation to the size of the institution which might generate both pros and cons. On the other hand, supervision is very often described by supervisors internationally as the most enriching part of the academic life. And this seems to be the same at NIH (based on the interviews with supervisors at NIH; see later part). However, to avoid a too high working load for some of the academic staff at NIH, an active recruitment process of young associate professors could be one measure to involve more of the staff in supervision. These could serve as co-supervisors in the beginning and through professional development (e.g. "Young researcher leaders program"³⁶) before they gradually could enter the main supervisor's role after some years.

In the guidelines "Roller og ansvar veileder"³⁷ and "Veiledning"³⁸ at NIH the responsibility of the supervisors is regulated. In these guidelines and in the *Forskrift for graden philosophiae doctor (ph.d.) med utfyllende bestemmelser for Norges idrettshøgskole (2017)* it is stated that "As a general rule, the PhD candidate has two supervisors, one being appointed as the main supervisor". In 31th December 2017, the number of supervisors per candidate were as follows:

- 1 supervisor: 16 candidates
- 2 supervisors: 37 candidates
- 3 supervisors: 11 candidates

As we can observe, there is a discrepancy between the policy documents at national level, as well as in the PhD regulations at NIH, versus the practice at NIH (with 16 candidates with only one supervisors). It is, however, important to underline that having one supervisor can sometimes be an excellent solution and function very well. In the interviews with the PhD-candidates, however, various experiences and an awareness around this topic were mentioned: Several candidates expressed that if they only have one supervisor they felt

³⁶ Several universities in Norway have established such programs, especially for young associate professors where at last 50 percent of the places every year are earmarked for female employees. See e.g.: <http://www.uib.no/en/psyfa/96674/program-young-research-leaders>

³⁷ <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/roller-og-ansvar2/rolle-og-ansvar-veileder/>

³⁸ <https://www.nih.no/forskning/ph.d-programmet/forskerutdanningslopet/veiledning/>

more vulnerable, in case the supervisor went on sabbatical, sick leave, paternity/maternity leave etc. Internationally, according to Peelo, a one-to-one supervision model can give unexpected side effects: «(...) the worst scenarios when they go wrong are those where students and supervisors have been trapped in a tight, highly personalized apprenticeship, a one-to-one relationship that has gone wrong (Peelo 2011, p. 1233–1234). However, in the annual report from KFU (2016) at NIH eight out of ten candidates said they were satisfied or very satisfied with the professional guidance from the main supervisor (from the candidates' final evaluation).

In the guidelines “Rolle og ansvar seksjonsleder”³⁹ at NIH we found that the section leaders should “Make sure that the supervisor works according to the intentions and uncover supervisor conditions that are not working” (p. 1). This seems to be especially important since the “Årsrapport – Dr.gradsstudiet ved NIH”⁴⁰ do not have any special focus on the psychosocial relationships between the candidate and the supervisor(s). NIH and KFU are recommended to discuss if such aspects of the supervision should be implemented as part of this annual report and how this should be related to the Privacy Act and other regulations.

Being a supervisor is a great responsibility at PhD-level and normally it includes a high work load. How is this reflected in the employees' work plans? Is doctoral supervision mainly attached to research or education? Or both? NIH has chosen both, and the main supervisor has 50 working hours per semester allocated for supervision in their working plans (25 to the teaching part and 25 to the research part). It is unclear how the co-supervisors⁴¹ allocate supervision in their working plans. Given the big work load and responsibility of doctoral supervision, a higher time for working hours could be allocated particularly to the teaching part of the supervisors working plans, compared to today. Educational leadership and supervisors at NIH should keep in mind that «(...) if research is seen as more important than teaching and supervision is the outcome of success in one's research identity, then there can be resistance to seeing supervision as a form of teaching» (Peelo 2011, p. 222–223). The new White Paper about higher education in Norway (KD 2017) is quite clear about such issues and that teaching (including supervision) at the Universities should be given a higher status in the years to come in Norway. This has implications for higher education institutions, such as NIH, in terms of how supervision is perceived among the educational leadership, supervisors and the PhD candidates.

Annual progress report and supervision

In the *Recommended Guidelines for the Doctor of Philosophy Degree (PhD)* Recommended by the Board of the Norwegian Association of Higher Education Institutions (UHR 2015) it is mentioned that “The institution's system for the quality assurance of doctoral education must include measures to uncover insufficient progress on the doctoral thesis and coursework, inadequacies in supervision, and routines for handling any such deficiencies that might arise. This system will normally include the submission of annual,

³⁹ <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/roller-og-ansvar2/rolle-og-ansvar-seksjonsleder/>

⁴⁰ <https://www.nih.no/globalassets/blokker/afb/phd/soknaden/gjennomforing/rapporteringskjema.pdf>

⁴¹ At some universities in Norway the co-supervisors get some of the reward funds the institution receives after the PhD candidates have completed their doctoral thesis (instead of working hours in their working plan).

individual reports by the PhD candidate and the academic supervisor, and be designed to avoid dual reporting” (p. 6).

In the PhD regulation at NIH (NIH 2017) it is mentioned that “The individual candidate shall, after each year, draw up a report according to established guidelines describing the study progression. The report must be submitted and discussed with the supervisor who will approve it. The report must then be signed by the section leader” (p. 11).

Even if the annual progress report for PhD candidates at NIH gives some important information both for KFU and the section leaders, the report scheme seems to have a potential for improvement. First of all, it is quite common in Norway that the PhD candidate(s) and the supervisor(s) submits separate annual progress reports. This makes it easier both for the PhD candidate and the supervisors to report both “ups and downs” in the supervision relationship. Secondly, because the annual report scheme at NIH today consist of parts that deals with privacy concerns (e.g. sick leave), which are accessed by KFU members, the scheme should be revised in order to secure such privacy concerns. Thirdly, we think the annual progress report scheme should be revised and updated in line with national policy documents. That way it can be more actively used to retrieve information for the quality assurance system at NIH (see examples below of such annual progress reports⁴² for PhD candidates and for supervisors⁴³). Finally, annual reports must be seen as part of the formative assessment process in the PhD period, and it is quite common today in other PhD programs that these are complemented by midterm evaluation and “master class” in the final part of the PhD period when the candidate is close to the completion and disputation.

Midterm evaluation and supervision

In the *Recommended Guidelines for the Doctor of Philosophy Degree (PhD) Recommended by the Board of the Norwegian Association of Higher Education Institutions* (UHR 2015) it is mentioned that “A midterm evaluation of the research project should normally be carried out in the third or fourth semester. The candidate must present his/her work and will be evaluated by a group of at least two persons appointed by the institution. The evaluation group must give its opinion of the academic status and progress of the research project and provide feedback to the candidate, supervisor and institution. If the evaluation group finds major weaknesses in the research project, measures to rectify the situation must be implemented” (p. 7).

When NOKUT evaluated the quality assurance system at NIH in 2012, they comment that: “(...) the committee saw few signs of this mid-term evaluation; neither the PhD-fellows nor the internal supervisors knew about it, nor among the KFU. It was some uncertainty about what this evaluation consisted of or should be. It looks like mid-term evaluation is less

⁴² For example:

http://www.uib.no/sites/w3.uib.no/files/attachments/fremdrift_kandidater_2017_en_20171002.pdf

⁴³ For example:

http://www.uib.no/sites/w3.uib.no/files/attachments/fremdrift_veiledere_2017_en_20171002.pdf

implemented in the organization than what is expressed in the document "Quality assurance of research education - status and challenges" (NOKUT 2012, p. 8).

According to the analysis of the documents at NIH and the interviews in January 2018, there are no indications of an implementation of a midterm evaluation as compulsory for all PhD candidates at NIH. Since the doctoral program at NIH has not implemented midterm evaluation yet it is our recommendation that NIH consider to make this a compulsory part for all PhD candidates as soon as possible. Our recommendation is also that NIH consider the possibility to implement "master class" or "90%-evaluation" ("sluttlesning") at the final part of the PhD's period.

Interviews and focus groups

The fact that you are quite independent and can influence your situation is good if you have good supervisors, but it can also be the other way around.

The above excerpt from a candidate is representative for how many of the candidates experienced the situation when asked about supervision. To generalize the candidates' views one could say: If the supervision is good and if the "chemistry" between the supervisor and the candidate is satisfactory, life as a PhD candidate is good. But the opposite is obviously also the case: If the supervision and the relationship between the supervisor and the candidate are not working well, nothing is working. Before commenting on this in more depth, we will give some examples of situations that the interviewed candidates thought were problematic:

My supervisor never gives me feedback. It takes ages before I get a response on things I send. Once it took several months before I heard anything... he is working abroad this year. When I couldn't take it anymore, I demanded a second supervisor... but I had to do this all by myself.

My supervisors are good... I actually have three... but all of us have only met in person once since I started two years ago.

My project is very big and especially the collection of data was extensive. I got a work related injury when I did the data collection because I had to sit in an awkward and static position doing demanding work ten to twelve hours a day for several weeks. Now when I look back I can see that we were all very eager to do a large study that could render good publications. That was more in focus than my work load ... the fact that this is part of my education. I was naïve and optimistic and wanted to do everything right, but I could not oversee the consequences, someone more experienced should have.

My supervisor is not very experienced... sometimes I find myself supervising my supervisor.

My section leader and my supervisor are old colleagues and good friends. I think (s)he found it difficult to say that the supervisor is not doing a good job.

I want to work with what is absolutely necessary in order to complete my thesis, (s)he wants perfection.

The candidates brought up some specific critic and questions. They called for more systematic regulations about how the supervision of PhD candidates should be conducted. They had several questions: What are the obligations for supervisors? What are the requirements for becoming a supervisor? How is the supervision being followed-up or reported back to section leaders or KFU?

The candidates especially paid attention to the power relations that exist between a candidate and a supervisor and the vulnerable and subordinate position many candidates are in. Therefore it is important with some form of back-up if things do not work the way they should. The regulation that stipulate that a candidate should always have two supervisors is, as already mentioned, not implemented in full at NIH. In addition, some candidates who did have two brought up that their second supervisor was situated somewhere else and mostly commented through e-mails. Even this situation may, in worst cases, lead to a lack of face-to-face contacts, or possibilities for spontaneous questions and answers, etc.

One supervisor interviewed did not think it was a good idea to be two supervisors. (S)he thought the time allocated was tight anyway, and did not want to split the hours. Another supervisor had a different opinion about being two. (S)he said: "I insist that we should be two – it is better for the candidate and it is better for me".

The supervision situation may be regarded as particularly problematic if a candidate's supervisor is also the section leader. In that case the candidate has no one close to turn to should things go wrong. Contacting the vice-chancellor may not be considered an option to all candidates.

It is important also to give voice to what the supervisors we talked to had to say about their situation. The supervisors we interviewed were experienced and very dedicated. They were well aware of the importance of developing a good relationship with the candidates and providing support. When asked about what was the worst thing in being a supervisor, below are some examples:

It is the pressure and the demands I feel from NIH to produce another candidate within the stipulated time... that is the worst, to make sure the candidate completes the thesis in four years.

The worst... or not the worst but the most demanding thing is to stand the insecurity that is part of the process... to learn to live with that feeling. I mean, when supervising, you are always wondering... will this work? Is this the best thing to do? My job is to make the candidate feel comfortable... to give comfort... despite all this.

A difficult part is when the candidate pulls back, is hard to communicate with and does not deliver what we have mutually decided.

Sometimes a candidate think this [writing a thesis] is a much easier task than it actually is. Some are so into practicing sport and friluftsliv, and what is status in the existing culture at NIH might be to go on a tour in Jotunheimen rather than spending necessary time to get aquatinted with theory.

The supervisors discussed the need for more in-service training and education, and they thought it was a good idea that they all should attend at least one course. They seemed aware that the way supervision was carried out could differ, and although they were not as upset about these differences as the candidates were, they thought it would be beneficial if all supervisors at NIH had a seminar and met at least once a year to discuss mutual matters.

Conclusions and recommendations

When considering the quality development of the supervisor's competence on PhD-program, we have to examine the opportunities for professional development for supervisors at NIH. There is a reason to conclude that supervisors at NIH have a high research competence since this is the main quality indicator when receiving a permanent position at NIH (and elsewhere in higher education in Norway). Research competence is a good starting point since doctoral supervision deals mainly with research (conducting, analyzing and reporting a study). Within some subject fields we know that the PhD candidates work together on a daily basis in the laboratory where the supervision goes hand in hand (inspired by "bedside supervision", "telling and showing" within medicine, etc.) with the research activities. However, not many PhD candidates seem to work together with their supervisors on daily basis at NIH (as in other universities) and therefore it is important to raise the awareness around the pedagogy of supervision in light of the "silent revolution" within doctoral education internationally. This means to reflect upon how new transferable skills, new models of supervision, digitalization, formative assessment (annual reports/mid-term evaluation/master class), etc. influence the roles as supervisors and PhD candidates in doctoral supervision. Halse og Malfroy (2009) find that: «The pedagogy of doctoral supervision has been described as poorly articulated and under-theorized (p. 80) and this is partly based on the fact that this area has under communicated that the "PhD-landscape" has changed dramatically the last 10-15 years, while the supervision traditions has remained stable (very often relying on "tacit knowledge" and master-novices models). This "silent revolution" calls for an updated awareness around doctoral supervision of today with e.g. a number of new requirements to handle the supervisor role. This situation also requires an awareness among PhD candidates of their obligations in the supervision relationship and this also implies a certain role understanding of what it means to be employed as a PhD candidate.

How are the conditions at NIH? During the year 2016 a supervision course for doctoral supervisors was conducted. The course received very good feedback, but few attended the course. The professional development of the supervisor's competence has a potential to be developed and a course, such as the one described above, could be obligatory for all supervisors at NIH.

We have not been able to find any written documentation of how NIH assures the supervision in practice, secures that there are two supervisors per candidate, recruits young supervisors, assesses new supervisors, etc. Does NIH offer the more experienced supervisors additional training or follow-up systematically or is this casual?

A more systematic sharing of knowledge between supervisors is recommended, especially from senior supervisors to young and less experienced supervisors could be done systematically and under the direction of the KFU or the section leaders. We see this as a necessary measure to be able to handle the high number of PhD candidates today (70) and in the years to come.

In terms of professional development for the supervisors, the one supervision seminar arranged so far, does not seem to be a sufficient part of a systematic quality assurance and development of the supervisor role at NIH. At present this is not an obligatory course for supervisors, the participation is low, it has only been arranged one time and it is a little bit unclear what the content of this course is.

Another aspect at NIH is that there does not appear to be any specific competence requirements to become a main supervisor (other than having an associate professorship and having published independent scientific work in approved publishing channels after completing one's doctoral thesis). The awareness of the importance of the pedagogy of supervision has been underlined by the NOKUT evaluation at NIH (NOKUT 2012) and in several policy documents from the Ministry of Education recently.

From our point of view here could be room for improvement and it is important that KFU quality assures supervisor's professional competence through obligatory supervision courses and systematic in-service training. First of all this is important for the supervisors and PhD-candidates and the quality of the pedagogy of doctoral supervision. Moreover, an obligatory course would be an essential part of promoting applications for associate professors regarding both the traditional professorship track, but also the new "teaching excellence" track implemented in the new White Paper for Higher Education (KD 2017)⁴⁴.

If we consider what the strong and weak aspects of NIH's PhD program are in light of the National Qualifications Framework for Higher Education (NQFH 2014), our impression that the quality work is done mainly at the PhD-candidate level and less at the PhD-program level. NQFH clearly states that the quality assurance of PhD education must be attached to the program level and focus on the PhD-program as a whole, employability and as education. In order to achieve this, NIH is encouraged to develop existing routines for evaluation and other information retrieval also about their doctoral program, including supervision, and report it systematically to the KFU and the Board at NIH. This process should focus strongly on employability and evaluate the relevance of the courses offered in relation to employers outside NIH.

⁴⁴ See Bråthen & Helseth (2017) for more information.

In KFU's annual report of 2016 it states that seven out of ten candidates were satisfied with the offer in the supervision. The committees' interviews with PhD-candidates at NIH in January 2018 also revealed that the candidates mostly had positive experiences with the supervision at NIH. However, the candidates also mentioned a number of challenges and aspects that could be improved concerning the supervision at NIH. There should be more opportunities for the PhD candidates to give feedback to their supervisors and also anonymously about supervision). If the situation is not working, the candidate must have knowledge about his or her rights and duties, and where to turn to, especially if a section leader is also a supervisor.

1.8.6. Work allocation (“teaching obligation” or “duty work”)

Document data

Taking a PhD implies hard work for the PhD candidates and it is quite common in Norway to have 25 percent work allocation (mainly teaching) as part of the PhD scholarship. The PhD candidate then will have four year to complete their doctoral thesis. This might have clear advantages, compared to a three year PhD program without a work allocation: firstly, teaching and other academic duties may clearly be seen as a part of academic training for a PhD candidate; second, four years give more flexibility with the work plan and it also gives a possibility to use data from, e.g., longer interventions. However, a recent study from Norway reveals that four out of ten doctoral candidates believe that they do more duties than those set out in their work plan (Reymert, et al., 2017). This can sometimes explain why PhD candidates have problems to complete their doctoral theses in time. This is therefore an area that needs awareness from the educational leadership at the PhD institutions.

It is the committees' impression that most PhD candidates at NIH have annual work allocation of 25 percent (and thereby a four year PhD period), while fewer have three years full time with no work allocation. We find some information about the work allocation in the annual report scheme, but it is hard to find additional written documentation of how such a work is perceived by the PhD candidates over time. How large is actually the work load for the PhD candidates? How is the allocation of work planned in relation to the PhD candidates wishes and other obligations (e.g. field work, data collection, etc.)? How is this planned together with supervisors and employer? How is such a work allocation credited for the PhD candidate for future carrier development? These issues could be more transparent than today and considered in relation to other obligatory requirements for PhD-candidates. With 25 percent work allocation over four years, this means all together one whole year out of the four year PhD period. In addition, the compulsory educational part consists of 40 ECTS which means 2/3 year work load⁴⁵. Hence, the PhD-candidates have left approximately 2.3 years for presenting papers at international conferences, participating in research groups/graduate schools of research, carrying out their data collection, data analysis, publishing 4 scientific articles and writing the synopsis (extended summary/“kappen”). For instance, exchange/study abroad during the time left can be hard to realize.

⁴⁵ In Norway 60 ECTS is one year work load in higher education

Interviews and focus groups

The PhD candidates also had opinions about their teaching (or: working) assignments. Through the interviews the different conditions that exist between PhD candidates became obvious. These related to their competences and earlier work experiences. Those who felt inexperienced and had no teaching background found the demands high and very challenging. “Even if you are unexperienced you are expected to know how to teach”, as one said. Most candidates spoke positively about an introductory course in university pedagogy.

When asked about who decided their teaching assignment, the candidates said that they were supposed to teach about matters related to their research but in reality the need of the section was what often determined their teaching. Some would discuss their teaching assignment with the section leader, others said they were approached in the corridor by a fellow teacher who was in need of help. There is also a potential point for inequality in this sense: a difficult topic for teaching requires more time for preparation. Hence, if the time allocation is estimated in a similar way from the contact hours, the system might overload some of the candidates. In fact, several informants felt that the time estimation was a little of even a lot underestimated. When asked who would keep track of how much teaching the candidates do, one immediately said: “I do, who else would?”

The section leaders showed some insecurity about whether it was the main responsibility of the supervisor or the section leader to make sure the teaching assignment was at an appropriate level for the candidate. One section leader who was also a supervisor said that (s)he normally would teach together with the candidate in the beginning and provide some feedback, but this was an individual initiative by this particular supervisor and was not done systematically at the sections.

When the candidates were asked whether it was possible to say no to certain teaching demands. They said that it was possible to deny demands (with some hesitation), but it was much easier if you had a good supervisor that supported you and who you could discuss with in advance and plan what teaching assignments to take on. Another aspect that made it difficult to turn down teaching propositions was, according to the candidates, that many of them regarded NIH as an attractive future work place and a university they would want to have a permanent position at. Therefore some candidates wanted to make themselves as employable as possible. In that endeavor, one would, as one candidate said: “Portray oneself from its best side all the time”.

According to the section leaders the candidates were very keen to teach and to take part in other assignments at the section as well. One said that the candidates may misjudge the time they have in the beginning: “They think four years is an ocean of time that lies ahead of them”. The section leaders also seemed aware of the candidates wish to make a good impression for future work possibilities.

Conclusions and recommendations

For NIH funded PhD fellows, there are four years of PhD contracts with 25 percent duty work obligations. A three year PhD-fellowship is mainly for external-funded positions. The effective study time (180 ECTS) is similar in both contracts. There are pro and cons with both types of contracts. However, it was mentioned that; 1) four years give better possibilities of planning and executing a totally new research project, if this is what is needed to obtain all data for the thesis. Particularly interventions and publishing four articles take time and it might thus be difficult to complete everything within three years. 2) PhD training should not be only research, but also training for an academic career. Teaching is one of the most important work assignments, in addition to scientific research. It is imperative that high academic teaching is connected to scientific research and is based on the newest research data. Combining teaching with PhD research gives a unique possibility to get a good academic training.

The given proportion of time for teaching and other “non-research” work is quite high, at least compared to some other Nordic countries (e.g. 5% in Finland but 20% in Sweden but there it is an offer, not a duty). On the other hand, the allocated time gives a possibility for excellent training. In the interviews with candidates, some complained that it has not always been easy to restrict the time to 25 percent if there are pressures from senior professors, supervisors, etc. to teach more. The head of the section has a big responsibility in keeping the work obligation time slot as planned. Moreover, it should be noted that the time allocation preparation of teaching is also included. Most PhD candidates are still relatively unexperienced in teaching and the time they need to prepare their lectures etc. is much longer than for more experienced teachers. This should also be taken into account when calculating the time use.

Even if NIH has a short completion time and a high completion rate among PhD candidates, NIH might still consider if the requirement of four scientific articles is the best. A requirement of three scientific articles is quite common at other universities, state scientific university colleges and university colleges in Norway. NIH could also consider to reduce the obligatory courses in the educational part of the PHD degree, from 40 ECTS to 30 ECTS to reduce the obligatory work load for the PhD candidates. This will make it easier for PhD-candidates to participate in future Research schools courses in addition to the PhD programs’ courses.

1.8.7. Content and relevance of the 40 ECTS coursework

Document data

In the guidelines “Opplæring”⁴⁶, “Studieplan”⁴⁷ and “Oversikt emneplaner”⁴⁸ we examined the educational aspects of the doctoral degree at NIH. Since the educational component at

⁴⁶ <https://www.nih.no/forskning/ph.d-programmet/forskerutdanningslopet/opplaringsdel/>

⁴⁷ <https://www.nih.no/forskning/ph.d-programmet/forskerutdanningslopet/studieplan-ph.d.-i-idrettsvitenskap/>

⁴⁸ <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/oversikt-emneplaner2/>

NIH builds on the National Qualification Framework for Higher Education (NQF) (KD 2014) 3rd cycle (level 8), it is important that there is a coherence between this national framework, *Recommended Guidelines for the Doctor of Philosophy Degree (PhD) Recommended by the Board of the Norwegian Association of Higher Education Institutions* (UHR 2015) and the PhD regulations at NIH. Here it is mentioned that the coursework must consist of at least 30 credits, of which 20 credits must be completed following admission to the program. Credits approved as part of the required coursework should not have been completed more than two (2) years prior to the date of admission. If the institution itself does not provide all of the required courses, it must facilitate the candidate's participation in comparable courses at other institutions. Below we examine the different parts of the education component at the PhD program at NIH.

*Emneplan Theory of Science (5 ECTS)*⁴⁹:

This course stands in a coherent relationship in relation to NQF (KD 2014) where one of the learning goals is that "The candidate... is in the forefront of knowledge within his/her academic field and masters the field's philosophy of science (...) (p. 9). The course plan is very short and not in line with the National Qualification Framework⁵⁰. From the interviews the course receives blended feedback concerning quality – the majority were very positive when NIH's own experienced staff had the teaching responsibility in this course. But when external lecturers had the course they were quite dissatisfied with this course. The committee recommends that KFU consider having more continuity among lecturers in this course from their own staff, who knows the sport sciences from "inside" and are able to attach the philosophy of science to the PhD candidates at NIH's research designs and methodology they apply in their articles in their doctoral thesis. The course should also highlight the implications philosophy of science has in the synopsis of the doctoral thesis. In this way, one might avoid that philosophy of science is perceived as a "side track" of the PhD candidates' doctoral thesis and can be a more integrated part as it is intended by the NQF.

*Emneplan Fag- og metodeeksamen*⁵¹ (30 ECTS)

This course can be related to the learning aims in NQF: "The candidate can formulate problems, plan and carry out research and scholarly and/or artistic development work The candidate can carry out research and scholarly and/or artistic research work of a high international standard. The candidate can handle complex academic issues and challenge established knowledge and practice in the field" (KD 2014, p. 9).

In the «KFU SAK 13/90: EVALUERING AV FAG- OG METODEEKSAMEN» (2013) we find a quite thoroughly evaluation of this course and this is a good example of how to quality assure educational quality based on this kind of evaluation. Even if there are quite uplifting findings

⁴⁹ <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/oversikt-emneplaner2/vitenskapsteori--theory-of-science/>

⁵⁰ Here is an example of a PhD-course which is in line with the course template based on the National Qualification Framework (KD 2014):
http://www.uib.no/sites/w3.uib.no/files/attachments/mixed_method_course_description.pdf

⁵¹ <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/oversikt-emneplaner2/emneplan-fag--og-metodeeksamen/>

in this report, it is important for KFU to implement these as well as new regulations for course plans. When we examine the course plan, it is very short and not in line with the National Qualification Framework. In addition it is rare to have doctoral courses as large as 30 ECTS which actually is 6 months full time work for a student in higher education today. Several of the PhD candidates we interviewed expressed positive experiences with the course, but said that the work load was clearly less than 30 ECTS. Moreover, there were also complaints that the course did not really match the PhD topic and hence it did not give enough methodological support to the candidate. Both the committee and the PhD candidates were surprised that there were no lessons and no teaching in the course. Is this a “self study” course with little resources attached to the actual learning process (and formative assessment) and much resources attached to the learning outcome (exam and exam committees) (and summative assessment)? Even if KFU has had good experiences with this course throughout the years, the committee recommends to revise and reduce the scope of the course down to 15 ECTS. This would create possibilities to expand the course portfolio and implement several courses within transferable skills (e.g. 1-5 ECTS courses, like university pedagogy, academic writing, Mixed Method course, literature review course, synopsis course, “Big data”, etc.).

Emneplan for Kvalitativ analyse⁵² (5 (ECTS))

This can be related to the learning outcome of the NQF where the “candidate is in the forefront of knowledge within his/her academic field and masters fields’ (...) methods. (...) The candidate can evaluate (...) different methods and processes in research (...). The candidate can contribute to the development of new knowledge, new theories, methods, interpretations and forms of documentation in the field” (p. 9). In the interviews the PhD-candidates seem to be satisfied with the quality of this course. The course plan is partly in line with the National Qualification Framework.

Emneplan - Evaluering av måleegenskaper (2,5 ECTS)⁵³

We found only little information about this course and in the interviews the PhD candidates seemed unsure if this course was obligatory and if they had attended this course. However, we can see that this course focuses on statistical/quantitative analysis (e.g. ANOVA), but the course plan is very short and not in line with the National Qualification Framework. Moreover, the need for statistical expertise may differ by the research topic. Hence, it could be considered to have more advanced statistical courses out of which the candidates could choose the one(s) which are most closely related to their PhD thesis.

⁵² <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/oversikt-emneplaner2/kvalitativ-analyse/>

⁵³ <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/oversikt-emneplaner2/maleegenskaper/>

Emneplan - Kvantitative design (2.5 ECTS) ⁵⁴

This can be related to the learning outcome of the NQF where “The candidate is in the forefront of knowledge within his/her academic field and masters fields’ (...) methods. (...) The candidate can evaluate (...) different methods and processes in research (...)The candidate can contribute to the development of new knowledge, new theories, methods, interpretations and forms of documentation in the field” (p. 9). The focus of the course is on randomized experiments, quasi-experiments and correlational studies (cross-sectional studies and longitudinal design). In the interviews, the PhD candidates seemed to be partly satisfied with this course. The course plan is very short and not in line with the National Qualification Framework.

Our impression was also that there is some confusion among PhD-candidates with regard to the course portfolio in general. It is also quite clear that course portfolio consists of too few courses in relation to other PhD programs in Norway and should be expanded with courses especially within transferable skills and skills related specifically to the topic and methods of individual PhD topics.

Concerning the course “Fag og metodeeksamen”, this course seems to lack sufficient written information about what is required in the exam. And when “Fag og metode eksamen” make up 30 of 40 ECTS and which is directly related to the topic of the PhD-candidates thesis and thereby to the section, we will support the claim from the NOKUT-evaluation at NIH in 2012: “It appeared in the interviews that although NIH has a single program for research education, it is experienced in the reality that each of the five subject sections has its own program” (NOKUT 2012, p. 8). More generally, it seems like there would be a need for a more systematic evaluation of courses in light of the requirement in an article based thesis, and also in light of employability and the doctoral educations relevance for future employers.

Interviews and focus groups

When talking with the candidates about the educational part of the PhD program, they were pleased with the course in theory of sciences. They had strong opinions, however, about the so called “subject- and method exam”. It was considered useful in many ways, and they liked the examination part but they had difficulties understanding why there were no lessons and no teaching in the course. In their view, that would have improved the course essentially. Their comments also revolved around unclear learning objectives and criteria and some were frustrated over the lack of tutoring. In the eyes of the candidates it was very much up to the supervisor if they got the support needed or not. Some informants felt they were left quite alone with the work. They also complained about the lack of feedback and that there was no evaluation of the course. The candidates we talked to had not had the chance to give any feed-back after completing the course. One candidate thought the examination mirrored the performance based culture at NIH: “One is supposed to work day and night for

⁵⁴ <https://www.nih.no/forskning/ph.d-programmet/om-ph.d-programmet/oversikt-emneplaner2/kvantitative-design/>

two weeks to get it done. That used to be ok, but having a family and small kids, now it is tough". Another critique was related to the topic itself: after collecting the vast amount of literature, it was still not clear if the final topic would be close to the topic of the PhD thesis. Hence, one comment heard from several informants was that the choice of method topic should have been more flexible so that the very large exam would have supported and helped the candidate in writing the thesis better than it now did.

The other parts of the education rendered less comments, but some called for more courses in statistics and more knowledge about how to handle empirical data based on personal information. The course "The publishing game" was appreciated by those who have had the opportunity to take part, although the course was not part of the program and gave no credits. A wish put forward by several candidates was that KFU could be more flexible in approving courses that the candidates had taken somewhere else. Moreover, there were some suggestions on courses to be held in English.

Weighing all that was said about the 40 ECTS study part, the candidates, and some supervisors as well asked for more flexibility so that this part would support and help the various and variable PhD theses more. NIH is truly multidisciplinary in terms of the focus of different sections, as well as the topic and approaches of the theses. An educational part of a PhD program that cannot meet the varying needs of all candidates in an equal way is not ideal and it may increase inequality between the students. A flexible program which can at least partly (say, e.g. 50%) be tailored according to individual candidate's needs could be an answer to this challenge. It may even be questioned if examinations and courses are the only way to train candidates; e.g. supervision of Bachelor's and Master's thesis and seminar and congress presentations could be given ECTS's as a part of the education. Finally, some commented that the 40 ECTS should be allowed to be spread over the four year period in order to give more freedom in planning the study. In that way the candidate can attend courses when there is less pressure for active research work in field or in the laboratory.

Conclusions and recommendations

As a summary the committee recommends that the educational part of the doctoral program at NIH should be updated in line with the new requirements in the Norwegian National Qualification Framework (KD 2014)⁵⁵. The course portfolio ("opplæringsdelen") of 40 ECTS of today at NIH seems to be perceived as valuable for quite a few among the employees, while the doctoral candidates want a revision of this course portfolio. The PhD organization at NIH, NIHSPØ has suggested to implement a course in university pedagogy⁵⁶ in such revision. It is recommended that such a revision take place in near future and that the scope of the "signature course" Fag - og metodeeksamen should continue to exist, but in a reduced volume (e.g. 15 ECTS). At the same time more courses with more specific focus (1 to 5 ECTS) within transferable skills should be implemented. The courses NIH are not able to give, could be offered through more binding and long lasting collaborations with graduate school of research ("forskerskoler").

⁵⁵ See here: <https://www.regjeringen.no/contentassets/e579f913fa1d45c2bf2219afc726670b/nkr.pdf>

⁵⁶ See SU sak 27/17: https://www.nih.no/globalassets/dokumenter/sta/studieutvalg/2017/su-protokoll-7-17_28.11.17.pdf

Article based theses are dominating at NIH, but what are the guidelines for such a thesis, and how is such a thesis assessed? Although diversity can be good at times, predictability and transparency regarding guidelines, requirements and assessment criteria for the candidates are important and it concerns both formative and summative assessment. When examining the guidelines and requirements for the doctoral thesis at NIH these are quite general and partly ambiguous. This should be more transparent for the PhD candidates than today and here is a room for improvement. Some candidates also thought it would be of much help to have a template for how the PhD thesis should look like. As it is now, a PhD from NIH has no uniform design. In addition, the guidelines for the synopsis are inadequate and should also be more concrete and transparent. On this basis there should as far as possible be more transparent common guidelines, requirements and assessment criteria across subject fields at NIH when it comes to the article-based dissertations

The requirements of four articles in a doctoral thesis is also quite ambitious (and partly ambiguous as it is formulated) within a three year scholarship. We recommend NIH to consider a reduction to three articles. The quality of a PhD thesis is rarely correlated with the number of publications. Sometimes three good publications may form a more coherent thesis than four publications. Moreover, a requirement of too many original publications may lead to “slicing” a study to two smaller papers, instead of one larger (and presumably more important) paper.

Another important point is the digitalization in higher education, which has so far had little focus on PhD level. In the recently published "Digitalization Strategy for Universities and Higher Education 2017-2021", the research and researcher have received a lot of space and a separate target goals where it is emphasized that it is important to: "Strengthen the researchers' digital skills to utilize ICT optimally in their research - to be able to perform their tasks efficiently and exploit the opportunities digitization allows to develop the field" (KD 2017, p. 24). It is the committee's impression that NIH does not have any special focus towards digitalization on PhD level and in their PhD program today. This should be considered in light of educational quality in their PhD program at NIH, in light of “Big Data” in research, and in light of the National Qualifications Framework for Higher Education (NQFH 2014).

Finally, we find that KFU has much responsibility for the education part and the PhD program at NIH, but the role of the KFU in the organization may appear to be somewhat unclear for “outsiders”. What is the relationship between the KFU and the Board at NIH, what areas have KFU decision responsibility, what strategic responsibility do KFU have at NIH, etc. are questions that probably have obvious answers to “insiders” at NIH, but even we as an evaluation committee were left slightly uncertain of the definite mandate of KFU. We encourage NIH to clarify KFU's role in the NIH-organization and make it easier to understand what kind of responsibility KFU has (and has not) when it comes to strategic development and improvement of the PhD program.

1.8.8. Is the work done at a good international level?

Document data

In the PhD-regulations at NIH, we find in § 10.1 *Requirements for dissertation*, that the thesis should be an independent, scientific work that meets international standards regarding ethical requirements, professional level and methodology in the field of study (NIH 2017, p. 11-12). It is not our ambition to assess all the factors that might influence “a good international level” among PhD’s at NIH, but rather focus on two selected variables.

The first one is the Norwegian Publication Indicator (NPI)⁵⁷ which is based on data from the quality assured publication channels in Norway. This means that a national publishing council quality assures the scientific journals and publishers before they are accepted on level 1 or level 2 in the official register over scientific publication channels. Scientific publications and publishers which are qualified to be included in the NPI are used as the basis for the performance-based basic funding system in Norway. This system is also relevant for PhD candidates at NIH since they normally publish their articles in their thesis in these quality assured publication channels. However, PhD candidates at NIH writing a monograph thesis are not relevant for NPI initially (since they don’t publish articles), but will be credited after completing their thesis and disputation.

When assessing the quality the PhD candidates at NIH in relation to the NPI, one has to be aware of the fact that the candidates can be described as temporary employees with a certain diversity. There are NIH’s internal funded PhD candidates, the externally funded PhD candidates (through NRC, etc.), PhD candidates in NIH’s PHD program which are funded and employed at institutions and there are people employed as PhD candidates at NIH who have their disputation at other institutions (mostly UiO). The NPI will be influenced by such diversity since the publication point will be divided in first place between main authors and co-authors, between the different institutions they are employed at, but also international co-authors influences these publications points. With such reservations, in the table below we report the publication statistics for the PhD candidates at NIH for the period 2014-2017. The table is based on NIH's publication statistics for the period 2013-2017 in light of the PhD candidates employed at NIH in the period 2013-2017.

Table 6 shows how the PhD candidates from the five subject sections at NIH have published articles in their doctoral thesis during 2014-2017.

Table 6. Author weight in the different sections

⁵⁷ More information about NPI here: <https://npi.nsd.no/>

| Person | Author weight | | | | | Start | Disputation | Comments |
|--|---------------|---------------|---------------|---------------|---------------|-------|-------------|---------------------------|
| | 2014 | 2015 | 2016 | 2017 | SUM | | | |
| NN | | | 0,83 | 0,67 | 1,50 | 2016 | | Work in progress |
| NN | | | | | - | 2011 | | Work in progress |
| NN | | | 0,43 | 0,25 | 0,68 | 2013 | 2016 | |
| NN | 0,90 | 0,62 | 0,42 | 0,30 | 2,24 | 2013 | 2017 | |
| NN | 0,49 | | | | 0,49 | 2013 | | Permission |
| NN | 1,25 | | | 0,59 | 1,84 | 2013 | 2017 | |
| NN | | | | 0,79 | 0,79 | 2016 | | Work in progress |
| NN | | | 1,93 | 0,50 | 2,43 | 2016 | | Work in progress |
| NN | | | | 0,85 | 0,85 | 2015 | | Work in progress |
| NN | 0,94 | | | | 0,94 | 2010 | 2014 | |
| NN | | | | | - | 2013 | 2015 | External employed |
| NN | | 0,78 | | | 0,78 | 2009 | 2015 | |
| NN | 1,26 | 8,50 | 1,04 | | 10,80 | 2009 | 2014 | |
| NN | 1,58 | 1,12 | 2,18 | 1,00 | 5,88 | 2009 | 2013 | Permanent position (2014) |
| NN | | | 0,47 | | 0,47 | 2017 | | Work in progress |
| Total Section of Physical perf | 6,43 | 11,01 | 7,31 | 4,95 | 29,70 | | | |
| NN | | | | 1,38 | 1,38 | 2015 | | Work in progress |
| NN | | | | 0,75 | 0,75 | 2014 | | Work in progress |
| NN | | | | 0,68 | 0,68 | 2013 | | Work in progress |
| NN | | | | | - | 2014 | | Work in progress |
| NN | | 1,76 | 0,76 | 0,96 | 3,48 | 2012 | 2016 | |
| NN | 2,58 | | 5,68 | 6,76 | 15,02 | 2010 | 2015 | |
| NN | 1,08 | 0,77 | 2,66 | | 4,52 | 2013 | 2016 | |
| NN | | | | 0,21 | 0,21 | 2010 | 2015 | External employed |
| NN | 1,20 | 0,87 | 1,08 | 0,92 | 4,07 | 2013 | 2018 | |
| NN | | | | 0,51 | 0,51 | 2013 | | Work in progress |
| NN | 0,23 | | | | 0,23 | 2008 | 2017 | External employed |
| NN | | 2,04 | | 1,34 | 3,38 | 2009 | 2013 | |
| NN | 0,98 | 1,32 | | | 2,30 | 2009 | 2014 | |
| NN | | | 1,25 | 2,22 | 3,47 | 2016 | | Work in progress |
| NN | 0,23 | | | | 0,23 | 2011 | 2015 | External employed |
| NN | | 0,82 | 2,06 | 1,05 | 3,93 | 2009 | 2013 | |
| NN | 1,08 | | 0,80 | 1,46 | 3,34 | 2009 | 2014 | |
| NN | 0,50 | | 0,91 | 0,41 | 1,82 | 2009 | 2015 | |
| NN | | | | 0,45 | 0,45 | 2013 | | Work in progress |
| NN | | 2,00 | | | 2,00 | 2009 | 2015 | External employed |
| NN | | 1,15 | | 2,81 | 3,96 | 2012 | 2018 | |
| NN | 0,68 | 0,94 | 1,16 | 0,54 | 3,33 | 2013 | 2017 | |
| NN | | | | 0,25 | 0,25 | 2016 | | Work in progress |
| NN | | | | 0,60 | 0,60 | 2017 | | Work in progress |
| NN | | | | | - | 2016 | | Work in progress |
| NN | 2,85 | | | | 2,85 | 2010 | 2015 | |
| NN | 1,11 | | 1,56 | | 2,67 | 2010 | 2014 | |
| Total Section of Sport Medici | 12,52 | 11,66 | 17,93 | 23,30 | 65,41 | | | |
| NN | | | | 0,31 | 0,31 | 2012 | 2017 | |
| NN | | | | | - | 2013 | 2017 | |
| NN | | 1,29 | | 0,79 | 2,08 | 2012 | 2017 | |
| NN | | | 1,64 | 0,22 | 1,86 | 2012 | 2017 | |
| NN | | | | 0,50 | 0,50 | 2014 | | Work in progress |
| NN | | | | 0,63 | 0,63 | 2010 | 2016 | |
| NN | | | 1,06 | | 1,06 | 2009 | 2015 | Permanent position (2017) |
| NN | 1,50 | | | | 1,50 | 2007 | 2017 | |
| NN | | | | 1,59 | 1,59 | 2014 | | Work in progress |
| NN | 0,67 | | | | 0,67 | 2010 | 2015 | |
| NN | | | | 2,12 | 2,12 | 2014 | | Work in progress |
| NN | | | | | - | 2013 | | Work in progress |
| NN | | | | | - | 2014 | | Work in progress |
| Total Section of Coaching and | 2,17 | 1,29 | 2,70 | 6,16 | 12,31 | | | |
| NN | | | | 1,69 | 1,69 | 2013 | 2018 | |
| NN | | 4,68 | | | 4,68 | 2010 | 2016 | |
| NN | | | | | - | 2014 | | Work in progress |
| NN | 0,47 | | | | 0,47 | 2009 | 2015 | |
| NN | | | | | - | 2013 | | Not completed |
| NN | | | | | - | 2013 | | Work in progress |
| NN | | | | | - | 2013 | | Work in progress |
| NN | | | | | - | 2015 | | Work in progress |
| NN | 1,00 | | | 0,50 | 1,50 | 2010 | 2017 | |
| NN | | | | | - | 2015 | | Work in progress |
| NN | | | | | - | 2016 | | Work in progress |
| Total Section of Physical activ | 1,47 | 4,68 | - | 2,19 | 8,33 | | | |
| NN | | 1,50 | | | 1,50 | 2011 | 2016 | |
| NN | | | | 0,50 | 0,50 | 2014 | | Work in progress |
| NN | | | 1,04 | 2,44 | 3,48 | 2013 | 2017 | |
| NN | | | | 1,06 | 1,06 | 2016 | | Work in progress |
| NN | 2,03 | 4,00 | | | 6,03 | 2010 | 2014 | |
| NN | | | | | - | 2010 | 2014 | Monography |
| NN | | | | | - | 2013 | | Work in progress |
| NN | | | | | - | 2015 | | Work in progress |
| NN | 1,00 | | | | 1,00 | 2013 | | Work in progress |
| NN | | | | | - | 2014 | | Not completed |
| NN | 1,00 | | | | 1,00 | 2009 | 2015 | |
| NN | | 1,35 | | 0,35 | 1,70 | 2009 | 2014 | |
| Total Section of Culture and S | 4,03 | 6,85 | 1,04 | 4,45 | 16,28 | | | |
| Total subject sections | 26,61 | 35,50 | 28,98 | 40,95 | 132,04 | | | |
| TOTAL NIH | 130,80 | 229,59 | 216,03 | 277,22 | 853,64 | | | |
| Total share, PhD's | 20% | 15% | 13% | 15% | 15% | | | |

Table 6 shows a certain variation between the five sections where the PhD candidates at the largest section (SIM) contribute with 65.4 author parts. The PhD candidates at NIH account for about 15 percent of NIH's total production of publishing points in the national publication indicator (NPI). The general tendency appear to be that the PhD candidates at NIH publishes their scientific articles in renowned publication channels on a good international level. However, we find certain variations between the five sections which will be describe further below.

Doctoral thesis among PhD candidates at NIH

In 2010 77 percent of the PhD graduates were article-based dissertations in Norway. Within medicine/health 99 percent were article-based dissertations in 2010, while within the humanities the majority was monographs (NIFU 2012). In 2018 article based dissertations are the most common dissertations in Norway and it is the same tendency at NIH where the majority is article based dissertations. We will examine some of these below.

The quantitative and qualitative evaluation of doctoral theses at NIH was based on all completed theses during years 2013—2017. In total 57 theses were found, that is, roughly 11 per year. The distribution of the theses per section is shown in Figure 4. For comparison, the same figure also shows the distribution of Master’s students (taken from autumn semester) and PhD students (taken from the annual nr. of candidate agreements). It can be seen that the number of Master students is quite equal in all five sections. However, the number of PhD candidates and PhD theses is clearly highest in the section of sports medicine, and quite equal in the remaining four sections. Although some sections have a proportionally higher (or lower) student throughput in completed theses vs. PhD candidates, annual variations make interpretation of these findings difficult. The relative success in the Section of Sports Medicine is a reflection of external financing and grants.

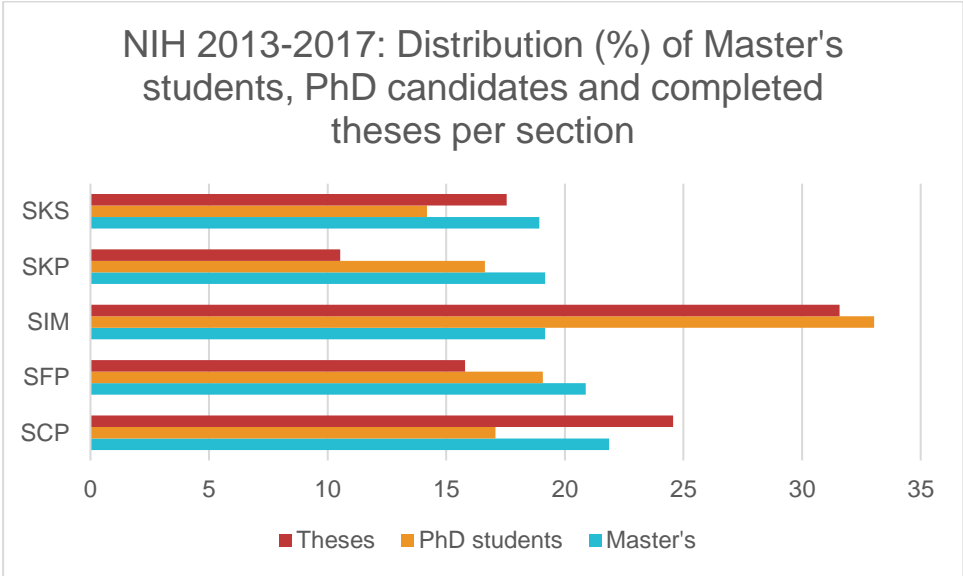


Figure 4. The distribution of Master students, PhD candidates and completed doctoral theses 2013—2017 at NIH.

To get a deeper insight into the doctoral theses of NIH, we chose the three most recent theses available in the database *Brage* from each department. These theses were used to get an insight on the present topics, scientific and methodological approaches and questions, and compositions of the theses. All but one of the theses were composed of four or five original papers. In many countries, the tendency is towards less papers, hence a well-thought combination of three papers could be considered in the future.

It is noteworthy that even in cases when perhaps the solution could typically have been a monograph, these theses still used international publications and original papers. This is – as a start – already an indication of the ambitions seen in most, if not all of the examined papers. A typical trend is that one of the four papers was not published⁵⁸ at the time of disputation.

All papers were published in international journals, as judged from the authors' and editorial board members' nationality. The impact factor (IF) of the chosen journals varied from low (<1) to excellent (7). In most cases, the IF was <3, which is typical in this area of science. Papers including qualitative research were in general published in lower-indexed journals, compared with quantitative papers, but this reflects the research area, and it cannot be used as an indication of lower research quality, *per se*.

Another indication of ambition is seen by the way different scientific approaches (quantitative, qualitative) are used, even within the same thesis. Moreover, a combination of different methods were used. Examples are observation, interviews and document analysis in qualitative research, and method approaches, cross-sectional and intervention research in quantitative approaches. The level of ambition could be regarded as higher than the IF's show.

Another typical feature of the theses is a strong and relevant combination of scientific rigor and practical applicability. Several of the theses are based on practice oriented research question, but despite this, the scientific approaches are well grounded. There is also a great variation regarding participants and/or targets in the doctoral theses. There are studies including "normal" children, adults and elderly individuals, as well as young and grown up athletes from several sports disciplines.

The remarkable diversity of topics (yet clearly within the scope of sports sciences in a broad sense) may be regarded as evidence of ambition, skills and innovativeness. There may be, however, one drawback and this is mainly related to proper use of resources. It may be worthwhile considering the use of one dataset to two or even more theses. This might lead to better use of existing data sets and also to deeper insight in a certain issue. It could be even more interesting to combine the expertise and approaches of different departments, in other words, to improve the multidisciplinary aspects of research in one issue. This would mean multidisciplinary approaches in a problem-bases-research manner. While this may not *per se* improve the quality of a single thesis, it would improve the use of resources, it would

⁵⁸ There are no statistics at NIH (as we know) that shows how many of these become published after disputation.

educate the doctoral students into understanding and appreciating other disciplines (which helps working in multidisciplinary groups later) and it may also bring better societal impact.

Finally, the guidelines and assessment criteria for assessing the doctoral thesis at NIH are quite general and could be more specified to avoid confusion among the PhD candidates. NIH seems to use international doctoral committees and e.g. in 2016 there were international opponents in all ten assessment committees.

1.8.9. International collaboration and networks

Our general impression is that PhD candidates at NIH are encouraged to participate in international research arenas. We noted that some candidates even manage to take a period of their PhD at a university abroad. This is an especially good way of establishing international collaboration and networks both during their PhD-period, but also afterwards. However, experiences from Norway in general show that too often PhD candidates meet administrative obstacles when going abroad (e.g. process of applying for Visa, housing, finding kindergarten/school if they have children, everyday logistics and other practical issues that take too much time). When the time frame for taking a PhD in Norway is quite tight (as mentioned), it is very important that the period abroad must be very well prepared and planned, academically relevant, and the PhD candidate must be attached to already existing research networks with which the supervisors and research groups have established collaboration.

Based on a summary of the KFU annual report (2016), we find that during the years 2013-2016 18 candidates in the doctoral program had international stays (min. 3 months), 44 candidates had international presentations and 44 candidates had published internationally. 2 of the candidates who disputed 2016/2017 have had foreign stays of 1-6 months and 9 have attended conference / seminar abroad.

From the committees perspective the PhD program in general facilitates international networking and participation in international research arenas. However, there is a variation between the five sections concerning this issue. Therefore we encourage NIH to evaluate the conditions PhD candidates from different sections have to take part in international networks in light of the "Matthew effect" (Merton 1968). There should be equal possibilities and encouragement for PhD candidates at the same program to realize internationalization and study abroad.

1.8.10. Are the PhD-candidates adequately integrated into professional environments?

Document data

As already stated earlier, PhD-candidates at NIH are a very diverse group. A large number of PhD candidates have another employer than NIH and are normally situated at their own institution outside NIH. This might cause some challenges for NIH to ensure that external PhD-candidates are integrated into sound professional environments at their local institutions. Through the accessible documents we have not found much information about how this issue is experienced by the different groups of PhD candidates inside and outside

NIH. Therefore, this was one of the interview topics for the interviews (presented later in this report). At the same time there are some common factors which is relevant to highlight across PhD groups and across PhD program, and we will highlight these below.

With few exceptions, the section leaders and the candidates, had annual employee conversation ("Medarbeidersamtale"). One candidate stated: "I have a very thoughtful and nice section leader who takes care of everyone. The environment is very inclusive and we do many social activities together". While the candidates seem well included in the environment of the different sections, the same could not say to be true regarding the research environment.

PhD's and research groups

In the *Recommended Guidelines for the Doctor of Philosophy Degree (PhD) Recommended by the Board of the Norwegian Association of Higher Education Institutions* (UHR 2015) it is mentioned that "The agreement regulates the rights and obligations of the parties during the period of admission and is intended to ensure that the candidate participates on a regular basis in an active research group and that he/she is able to complete the training within the stipulated time period" (p. 4). Research groups are important for several reasons for the PhD candidates (Thune et al. 2012), as well as for the supervisors. The research groups can function as "collective scaffolding" for the PhD candidates.

NIH has several research groups but we have not found any written information that concerns if every section have research groups, if, and eventually how the PhD candidates become members of these groups, how often they meet, what strategies the research groups have, how often PhD candidates can present/discuss their own research in these groups, etc. Belonging to a research group is of great importance for a PhD candidate, for psycho-social reasons of being included as a member of a research community as well as for quality reasons of the scientific work produced. It is also essential for the possibility to develop an identity to that community.

In light of the above mentioned reasons and the requirements from national regulations above, it is important that NIH and KFU ensure that all PhD candidates at NIH have a membership and participates regularly in research groups. Those sections which do not have research groups at present should consider establishing new research groups within a time frame of maximum one year. KFU is also recommended to secure that external PhD-candidates belong to a research group at their employers' institution and have a regular contact with such a research community. NIH could consider to make it obligatory in the PhD contract for the PhD candidate and the supervisors to indicate which or whose research group the PhD candidate will be attached to.

Another aspect of this issue is that in national evaluations of research in Norway, research groups are always assessed. Moreover, in research applications to the Norwegian Research Council, the research group has an important focus and in NRC's "Toppforsk" the research groups even have the main assessment focus.

PhD's and research schools/Graduate schools of research

In The White Paper, St. 18, *Concentration for Quality. Structural reforms in the university and college sector* The Ministry of Education emphasizes the importance of research schools:

"Research schools will help raise the quality of doctoral education. An important goal is for university and university colleges to promote recruitment and increase the proportion of candidates who complete their doctoral education. It is also a goal to shorten execution time. They will also contribute to the internationalization of Norwegian doctoral education" (KD 2016, p. 52). The NFR evaluation of research within Humanities in Norway also signals the importance of focusing on improvements in doctoral education in the years to come and some of the same is concluded by the expert committee in the newly completed evaluation of Norwegian education research (March 2018): "The RCN, together with NOKUT, should carefully consider which institutions have sufficient expertise and capacity to undertake high quality doctoral training, and ensure that there are opportunities for partnership that can provide high-quality training and skills development" (NRC 2018, p. 73).

To our knowledge, only very few PhD candidates at NIH are attached to research schools and we have not found any written documentation at NIH about the PhD programs' relationship and collaboration with research schools in Norway and abroad. It seems likely that this exists only on an individual level and in some research groups.

What are the pros and cons of research schools? Research schools are very often based on a partnership and a consortium agreement between several PhD programs at different institutions. Some of them are regional, some are national and some are international. They can be organized around a narrow thematic field, while others are more interdisciplinary. From, e.g., the national research schools within education, NATED⁵⁹ and NAFOL⁶⁰ we can observe that participation in such a research school provides access to additional research networks consisting of many other PhD candidates and their supervisors.

It is quite common that the supervisors will be affiliated to the same research school as their PhD candidates and the candidates can, e.g., take part in additional courses which the PhD program at NIH cannot provide. The main activities in research schools should therefore be complementary to the PhD program at NIH, e.g., PhD courses within transferable skills with invited top lecturers and where the PhD candidates are encouraged to present the progress of their own research, in order to receive feedback from other PhD candidates and professors.

Some research schools⁶¹ organizes 'master classes' (or 90% seminar) for PhD candidates near completion and this prepares PhD candidates for the defense of their doctoral theses. However, the research schools should not increase the PhD candidates work load even more, but be an important supplement to NIH's own PhD program based on the needs of the PhD candidates. The committee recommends that NIH and KFU initiate a process where

⁵⁹ NATED existed between 2009-2015: <http://www.uv.uio.no/english/research/nated/>

⁶⁰ Nafol has existed from 2009-→: <http://nafol.net/>

⁶¹ See WNGER II: <http://www.uib.no/iped/111879/western-norway-graduate-school-educational-research-ii-wnger-ii>

they consider partnerships with regional or national research schools in the near future. This would be important first of all for the PhD candidates, but also to achieve a broader course portfolio for the PhD program today (which is quite limited at present).

PhD-fellows groups

Of different reasons some PhD candidates experience taking a PhD as a “solitary journey” and they want to be a part of a community. Since few of the PhD candidates at NIH appear to be members of research groups, PhD fellow groups could be an alternative solution. Normally such groups are informally organized, but they can despite this be quite important for the PhD-candidates psychological and social well-being and to subject-related needs. Such groups could be attached to the PhD candidates’ council at NIH, NIHSP0⁶². The aim of NIHSP0 is e.g. be a link between PhD students and postdoctoral students and NIH's leadership and promote fellow and postdoctoral students at NIH's interests in education and research policy cases. The committee recommends the KFU and the section leaders to support initiatives to establish PhD-fellows groups (in pending of establishing more formal research groups for all the PhD-candidates).

Interviews and focus groups

One of the specific questions in this evaluation relates to the integration of PhD candidates to the research environment. As already mentioned, some external candidates felt that they were isolated from NIH. They did perceive, however, that they had a good research environment at the university they worked at. One external candidate belonged to two different research groups. Few of the internal candidates belonged to even one research group. When asked if there were opportunities to present article drafts and get responses on work in progress from other persons than the supervisors, the candidates said there were such possibilities within the sections. However, it did not seem to be a routine assignment in the sense that it was part of a regular higher seminar or likewise but rather was it up to the candidates themselves to take such an initiative. An exception is an annual meeting when all the candidates are expected to present their work. The candidates spoke highly about this as an appreciated occasion that improved their work.

The candidates also spoke highly about their colleagues but it is obvious when talking both to candidates and supervisors that the research environment is a critical part. In order to develop their competence and learn new things, some supervisors found it important to take part in other scientific activities outside of NIH. One said: “I go out – I go outside of NIH... that is absolutely essential to develop and get new knowledge. I go to international conferences, I collaborate with colleagues from other universities. It seems as if the same is true for the candidates if they want inspiration and new ideas, they also need to actively search for other environments. Those with a drive do, for example to get responses on article drafts but it does not seem to be a compulsory part of the system. Both supervisors and candidates thought mandatory seminars, for example half way or so called 90 percent seminars would be a good idea.

⁶² <https://www.nih.no/om-nih/organisasjonen/foreninger/nih-stipendiat--og-postdoktororganisasjon/>

An important part of the PhD process is to become an independent researcher, but it is a fine line between being independent and feeling vulnerable and lonely. In that sense it takes pedagogical touch from the supervisors to train the candidates to solve problems and take initiatives on their own and at the same time provide necessary support and strengthen the candidate's confidence if needed.

When the candidates were specifically asked the question "Do you generally feel lonely", some instantly said "yes". Perhaps that is why especially some candidates appreciated that the candidate organisation NIHSPÖ arranged lunches where the candidates could meet and discuss mutual matters. Both candidates and section leaders thought that NIH had great potential to work more across the different sections and conduct multidisciplinary projects within sport science. If that was the case, the research environment for individual candidates (and supervisors) would also be larger and perhaps more dynamic.

2. Recommendations

In alignment with the mandate of the evaluation, the committee offers key messages and recommendations on ways to further develop the PhD-program at NIH as well as what should be prioritized to meet future challenges and needs. The committee has applied certain "lenses" and focus areas in this process and especially the relationship between the *formulation arena* and *the realization arena* (Lundgren and Lindensjö 2000). We have also used the focus areas *educational quality (institutional level)*, *study quality (program level)* and *teaching quality (course level/individual level)* (Skodvin 2013) in the process.

The main aim of these recommendations is to give NIH *feedback* on where they succeed and where there are room for improvement, but also *feed forward* (Hattie and Timperley 2007) regarding what we recommend that needs to be done and where to go from here.

2.1 Recommendations – from policy to practice

In this last part of the evaluation we will summarize the different recommendations made throughout the report. We will also highlight and repeat some areas and certain issues that we have brought forward, since we believe that they are essential for NIH to consider in assuring the quality of the PhD-program in the future.

While conducting the evaluation we have been concerned with identifying gaps between what is formulated on a central level and what is realized in practice, especially from the perspective of the candidates and supervisors. If there are gaps between policy and practice we believe that stipulated regulations, directives, policies and likewise need to be implemented in a more thorough manner – they need to be transformed from the formulation arena to the realization arena.

We want to start by expressing our satisfaction and admiration with how the PhD-program at NIH is conducted in general. Our impression is that the over-all quality of the program is good. We have observed that most candidates are pleased, they finish in time and the completion rate is good, the publications included in the theses meet international standards, many of the supervisors are experienced and experts in their fields, the program

is evaluated continuously and reported to the board at NIH. Nevertheless, there are room for improvements and we take it to be our mission to promote factors that could, or in some cases need to be developed in order to further increase the quality of the PhD program. We hope the following key messages and recommendations and highlighted areas to consider will contribute in making NIH an even more successful university.

Below we start with the key messages:

Selected key messages from the evaluation committee include:

- NIH should quality assure that all parts of their PhD program are in line with the national PhD regulations
- NIH should establish more coherence between *educational,-study,- and teaching quality* in their PhD program. This will secure a better quality assurance not only on the candidate level, but also on the program level.
- More emphasis needs to be put on the importance of gathering data from the PhD candidates at NIH over time for quality assuring different elements of the educational component of the PhD at NIH.
- NIH should develop more sustained and optimal career opportunities for their younger permanent staff where professional development (e.g. within supervision) and “Young research leaders program” can be measures to secure promotion tracks and NIH’s capacity to handle the large number of PhD’s at the PhD program.
- NIH should secure that all the five sections have research groups and should actively support researchers who want establish new research groups so that all PhD candidates at NIH belongs to a research group.
- NIH should give all the PhD candidates the opportunity to be members of a research school and should establish a partnership with other institutions to realize such research school consortium.
- NIH should revise their PhD regulations and implement new formative assessment forms (e.g. mid term evaluations and “master class”) to fulfil the needs of the PhD candidates and the national PhD regulations
- NIH should develop and implement a systematic approach concerning the pedagogy of supervision and the quality of the education component of the PhD. This should take into account new requirements for the supervision role in light of PhD-candidates needs and new national PhD-regulations. It should also take into account how transferable skills and digitalization could be integrated in the educational component to increase the educational quality of the PhD-courses.

In the following we will give some specific recommendations that concern the questions and the mandate of the evaluation:

- **Are NIH's admission criteria suitable for recruiting the best candidates?**
 - Our impression is that NIH is successful in recruiting candidates that have the right dispositions for accomplishing a PhD.

- Whether it is *the* best candidates remains a question. Our future suggestion is therefore that these admission criteria should be complemented by a systematic gathering of information that could directly provide KFU and NIH with knowledge of the quality of the PhD candidates, which in turn could form the basis for analysis, assessment and action.
- NIH should consider to implement a recruitment strategy that increase the percentage of international PhD candidates.
- NIH should consider to perform more thoroughly interviews as a selection criteria when employing PhD candidates.
- NIH could consider a consequent residence obligation for the PhD positions advertised to secure a sound and stable PhD community at NIH.
- NIH can consider if external funded PhD candidates from other university colleges taking their PhD at NIH should get the opportunity to have temporary office facilities at NIH during their PhD period (e.g. 3-6 months periods)
- NIH could consider to restrict external time consuming work activities outside NIH during the PhD scholarship period (to avoid delays because of such circumstances)
- **Does the PhD-candidates have good (enough) professional guidance in terms of scope and quality?**
 - NIH should secure that every PhD candidate at NIH's PhD program has two supervisors.
 - NIH should consider to revise their annual reports in order to improve the PhD candidates and the supervisors possibilities to report aspect that can hinder progress
 - NIH should implement Mid-Term evaluation as compulsory for all PhD-candidates and supervisors
 - NIH should consider to implement "Master class" (or (90% evaluation) to improve the formative assessment for PhD candidates
 - NIH should secure that every PhD candidate is attached to a research group when they start their PhD scholarship at NIH
 - NIH should secure that every PhD candidate has the opportunity to become a member of a research school
 - NIH should consider to implement a compulsory supervision course for supervisors
- **Does the education component in the degree program contain relevant topics and is the education at a sufficiently high scientific level?**
 - NIH should revise their course plans in order to fulfill the requirements in the National Qualification Framework
 - NIH should monitor the employability issues on PhD level in the years to come and attempt to more systematically map where the PhD-candidates at NIH get working opportunities after completing their PhD

- NIH could consider to reduce the obligatory courses in the educational part of the PHD degree, from 40 ECTS to 30 ECTS.
 - NIH could consider to start a process of considering participation in research schools so the PhD candidates can take additional courses in these
 - The committee recommends to revise and reduce the scope of the *Fag og metodeksamen* course down to 15 ECTS.
 - The committee recommends NIH to implement a teaching part in the course *Fag og metodeksamen*
 - NIH should consider to make a more flexible educational part which to a higher degree is tailored according to individual candidate's needs
 - The committee recommends that the guidelines for the for the synopsis (extended abstract/ "Kappen") should be more transparent for the PhD candidates
 - The committee recommends that the assessment criteria for article based dissertations at NIH could be more transparent for the PhD candidates
- **Is the work done at a good international level?**
 - The general tendency appear to be that the PhD candidates at NIH publishes their scientific articles in renowned publication channels on a good international level.
 - However, we find certain variations between the five sections and NIH could consider to evaluate the publication patterns among PhD candidates in the years to come
- **Are the PhD-candidates adequately integrated into professional academic environments?**
 - The committee recommends NIH to secure that every PhD candidate belongs to a research group where they can present their research and get feedback on work in progress.
 - NIH can consider to improve the multidisciplinary of research across the sections in order to let the PhD candidates have access to a larger research community
 - The committee recommends that those sections which don't have research groups at present should establish new research groups within a time frame of maximum one year.
 - NIH should consider to evaluate more systematic how the external PhD candidates (employed at other institutions) perceives their opportunities to be integrated in the professional academic environment at NIH.
 - NIH could consider to implement more transparent information about when PhD candidates meets supervision challenges which needs to be handled by others than their supervisors.

- **Retains the PhD-program for international networking and participation in international research arenas?**
 - It seems like the PhD candidates at NIH have good opportunities for international networking and participation in international research arenas

- **Is quality development of the supervisor's competence adequately safeguarded?**
 - As mentioned, the committee recommends that NIH implement a compulsory supervision course for supervisors.
 - The committee also recommend that NIH examines and consider if the opportunities of career development towards professorship could be improved in some sections
 - The committee recommends NIH to analyze if there are any gender differences to be aware of and if career development programs for young researchers (young associate professors) could be a part of NIH' strategic plan in the years to come.
 - The committee recommends more systematic sharing of knowledge between supervisors, especially from senior supervisors to young and less experienced supervisors.
 - The committee recommends that NIH should implement incentives among young employees to become supervisors and we see this as a necessary measure to be able to handle the high number of PhD candidates today (app. 70) and in the years to come.
 - The committee recommends NIH to reconsider PhD candidates participation in longitudinal research where the work load sometimes can be too high and the research design too ambitious within a PhD scholarship of 3-4 year.

- **What are the strong and weak aspects of NIH's PhD program in light of the National Qualifications Framework for Higher Education and Guidelines for corresponding PhD programs at other comparable institutions (University of Oslo, Norges Handelshøyskole)?**
 - The committee recommends that NIH evaluate how the coherence are between study,-program and teaching level in relation to the National Qualification Framework.
 - It is the committees' impression that the educational quality work is done mainly at the PhD-candidate level and less at the PhD-program level and this could be improved at NIH
 - Since NQFH clearly states that the quality assurance of PhD education must be attached to the program level and focus on the PhD-program as a whole, the committee recommends that NIH should develop existing routines for evaluation in order to realize such processes

- The committee recommends that NIH continuously focus on the employability and evaluate the relevance of PhD program in relation to employers outside NIH.
- The committee recommends NIH to consider if the number of employees in the research administration at NIH are in line with the 250% increase of PhD candidates the last 10-15 years.

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Appendices

1. The focus areas in the interviews

The Interviews with Head of KFU provided information on *institutional level* was related to

- KFU's role in the NIH organization
- KFU's responsibility for the PhD program
- the relationship between the KFU and the Board at NIH
- How KFU quality assures the PhD program at NIH
- How KFU considers the opportunities for professional development for supervisors at NIH

There were five interviews with the section leaders, the information provided was related to

- the role of section leaders in the NIH organization
- the relationship between the section leaders and the KFU concerning the PhD-program
- How systematic the employee conversation with the PhD-candidates is
- How section leaders contribute to the quality assure the PhD program at NIH
- the professional development of supervisors at NIH

There were six interviews with supervisors and the information provided was related to

- experience of being a supervisor at NIH
- KFU and section leader's involvement in supervision issues at NIH
- How systematic the supervision with one's own PhD-candidates is
- opportunities of the PhD candidates to give feedback on supervision in the NIH organization?
- professional development of supervisors at NIH

There were 18 interviews with the PhD-candidates (15 internal and 3 external) and the information provided was related to

- experience of being a PhD at NIH
- KFU's, section leaders' and supervisors' involvement in the PhD candidates well being at NIH
- How systematic the supervision with one's own supervisors is
- opportunities of a PhD candidate to give feedback on supervision in the NIH organization?
- professional development of supervisors at NIH

There was an interview with the leader of the PhD-candidates own organization, NIHSP0 at NIH and the information provided related to:

- experience with being a leader for the PhD's at NIH?
- KFU's, section leaders' and supervisors' involvement in the PhD candidates well-being at NIH?
- the psycho-social conditions for PhD's at NIH?

- opportunities has you as leader for the PhD candidate of giving feedback in the NIH organization about challenges for both internal and external PhD-candidates?
- The professional development of supervisors at NIH?