

From Dr. Philos to PhD

*Senior Researchers' Experience and Views on Practice and Development within Doctoral Studies over the Last Half Century*³

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Introduction

When the first research fellows were enrolled in the new PhD programme in special needs education in 2002, it was 185 years since the first doctoral defence had taken place at the University of Oslo (UiO) in 1817 (Amundsen, 1962; Johnsen, 2013; <http://www.uv.uio.no/forskning/>). Currently there are two doctoral degrees at the Faculty of Educational Sciences, UiO, the new PhD and the initial Dr. Philos, which was the sole and unchallenged degree until the 1970s.

The last half century has witnessed the most radical change in the qualification for doctoral-level competence since the first doctoral conferral in Norway. This is due not only to development within higher education in Norway, but also related to the overarching transformation process of doctoral research organisation currently taking place at all European universities in the common Bologna process directed towards the European higher education area (http://ec.europa.eu/education/higher-education/bologna_en.htm). An

Citation of this chapter: Johnsen, B. H. (2013). From Dr. Philos to PhD. Senior researchers' experience and views on practice and development within doctoral studies over the last half century. In B. H. Johnsen (Ed.), *Research project preparation within education and special needs education* (pp. 80–95/pp. 78–93 in print edition). Cappelen Damm Akademisk. <https://doi.org/10.23865/noasp.124>
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3. Special thanks to those who have participated as interview informants and with other kinds of information, discussions and peer review; Edvard Befring, Eva-Signe Falkenberg, Thor Arnfinn Kleven, Solveig Bauge Løland, Reidun Tangen, NN, colleagues in the research group Humanity Studies in Pedagogy (HumStud) at the Faculty of Educational Sciences, UiO, and a number of other informants and peer reviewers working at different faculties and relevant external institutions.

overall intention of this article is to present the case of the University of Oslo as a contribution to the on-going information exchanges and discussions related to the Bologna process within the international project between the Western-Balkan universities of Belgrade, Ljubljana, Sarajevo, Skopje, Tuzla and Zagreb and the University of Oslo representing Norwegian university traditions (WB 04/06). Two articles discuss the Norwegian case, one based on historical text studies and the other based on interviews. A third related article provides a brief overview of the development of special needs education as an independent field of research and higher education within the seven participating universities.

This article contains a presentation and discussion of four senior researchers' experiences and views on the two Norwegian doctoral degrees based on open interviews. However, initially the forthcoming section addresses methodological aspects.

Issues, informants and methodology

Research questions. Three main issues set the focus of the study presented here. 1) How was the qualification for the traditional Dr. Philos degree practiced? 2) How did the development towards a doctoral research education and the recent PhD degree take place? 3) And how do the two different doctoral degrees function today? As mentioned, these issues are explored in a text study presented in this book (Johnsen, 2013). In this article the search for answers has another point of departure, the stories of four selected senior researchers at the Department of Special Needs Education and Department of Educational Research, Faculty of Educational Sciences, UiO, who have taken part in this development as doctoral researchers as well as supervisors and discussants for younger scientists. Their experience, knowledge and views on the changing conditions of doctoral research are studied through semi-structured open interviews. Beginning with the traditional Dr. Philos studies as the starting point of this developmental history, the first main issue was elaborated upon through questions about (i) their former education and conditions of employment when they started their doctoral research; (ii) support and cooperation with research colleagues and senior researchers; (iii) and about time factors and financial conditions. The other remaining main issues were examined through questions about (iv) the informants' conception of the development of organised doctoral degrees; (v) and their participation in this development

as pioneers as well as supervisors and discussants; (vi) their observations of similarities and differences between the organised PhD and the free Dr. Philos degree; and (vii) their views about the applicability and future development of the two degrees.

Informants. The four informants were purposely selected in order to a variety of factors in the developmental process through a time span of approximately fifty years⁴. Two men and two women participated in the interviews⁵. They started their doctoral studies in respectively 1965, 1974, 1982 and 1994, and defended their dissertations in 1970, 1989, 1994 and 1999. The time from when they started research planning to their doctoral defence varied from 5 to 20 years. Three of the Dr. Philos studies were individual projects, while one was conducted in cooperation with a colleague from a related research discipline. Thus the informants' experience as doctoral researchers as well as supervisors and opponents and participants in the development of new doctoral organisations covered the desired period of time. This article conveys the developmental story as it is perceived through their told stories.

Methodological rigor. Methodological rigor has been pursued through examination of authenticity and relevance, trustworthiness and transparency. These aspects represent different aspects of validity. In this connection an important question is whether the open questions asked are in accordance with the issues of the study. Are they relevant and authentic? 1) The question of authenticity and relevance was catered for during the first draft of interview questions which were based on my, the researcher's, inside knowledge and experience of the phenomenon as former doctoral researcher, and as supervisor and opponent at doctoral dissertation defences. 2) In addition to my own experience and perception of the phenomenon, literature on the subject was examined. 3) The interviews were implemented one by one during two hours or more (in three of the four cases more than two hours) where the informants had the opportunity to add information in written form. At the same time they were asked to comment on the authenticity and relevance of the ques-

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4. In order to illustrate development and variations through the time span covered by the interviews, the two informants who began their doctoral studies early are referred to as early informants when relevant, and the other two as recent informants. All four informants are Dr. Philos. There was no intention to select solely informants with this degree, and it was thus a coincidence that the youngest informant, who had the possibility to choose between degrees, also had the Dr. Philos degree. All interviews took place in the autumn of 2011.
 5. Information is not presented in any fixed order related to informants as an effort to secure anonymity related to specific information. However, the mentioned informants have given their permission to thank them by name.

tions, or whether they wanted to add, remove or rephrase questions. 4) The informants were sent the transcript of the interviews for respondent validation or member checking and asked to comment and revise them. This procedure also contributes to transparency. Some additional information was added, which gave the interviews increased depth. 5) Authenticity is also catered for in the presentation of information, as may be seen in the presentation of the informants' story below (the emic perspective), and the researcher's comments, mostly presented afterwards, but in some cases within the presentation and mostly with comparative references to relevant documentation. 6) Trustworthiness was pursued through application of multiple methods or triangulation. Thus the same main issues of this interview study were also posed in the mentioned historical text study presented in this part of the anthology (Johnsen, 2013). As these two studies have focused on the development in Norway, but with the extended intention of conveying the information to cooperating colleagues at the Western Balkan universities mentioned above, a third comparative text study of the development of doctoral studies and degrees has been implemented in cooperation with Western Balkan colleagues. Similarities and variations between the studies situated in Western Balkan and Norwegian universities may give an indication of transferability. In addition, even with large variations between universities, a joint "readability" or ability to interpret and compare the phenomenon amongst the members of the seven universities may indicate so-called naturalistic generalisation or joint recognition of the phenomenon development of doctoral studies. Again, this is an indication of transparency (Creswell, 2007; Gall, Gall & Borg, 2007; Kvale, 1996; Silverman, 2006).

From interviews through analysis to presentation. The implementations of the interviews are briefly discussed above. The procedure involving going from interviews to presentation took place in the following steps: interview – transcription – feedback from informants – sorting and listing of statements – condensation of similar statements into "meaning units" – the meaning units were presented concurrently with the main interview questions and contributed to a detailed and nuanced description of the phenomenon as it is presented in the joint story told by the four selected informants.

Senior researchers' experience, knowledge and views on practice and development within doctoral studies

Studies towards the degree of Dr. Philos

How did the traditional Dr. Philos degree encourage and facilitate research qualification? What was the status of doctoral studies? The first sections serve to set the stage for doctoral research before the development towards a structured research education started. They are followed by discussions of debate and foundation of new doctoral programmes. Responding to the open questions, the informants told their stories about their educational background, what inspired them to start doctoral studies and how they perceived their working conditions and research process.

What were the requirements for doctoral studies? Before starting on their doctoral studies, all four informants had reached an educational level in accordance with the major or second cycle level of the pre-Bologna structure of higher education (See information about pre- and post-Bologna higher education and degree structure in the Appendix). As in most continental European countries, Norwegian higher education was of considerably longer duration before the adoption of the Bologna structure; a combination of two or three research disciplines was required, whereof one discipline, a so-called major subject, was selected for further studies and research in a second cycle study. The major subjects of the informants were within the related disciplines of education, special needs education and psychology. One of the informants had chosen to take a Mag. Art degree (Magistergrad, for further explanation see the Appendix), which consisted of completing a more thorough research work than in mainstream second cycle education. The informant explained that the "Mag. Art degree indicated a wish to continue with further research". This view is in accordance with documented information about the formal intentions with this degree (Collett, 1999; Høstaker, 1996; Johnsen, 2013; Skoie, 2005). When it came to intermediate disciplines, they varied considerably. Two of the informants had psychology as one of their first cycle subjects. The other subjects were music, mathematics, natural sciences, teacher education and special needs education.

What initiated a doctoral study? The informants' working tasks played an important role in their decisions to enter a doctoral study, even though their working conditions were different. The two early informants started in the 1960s and -70s; a period when it was more common than today to apply research assistants. Thus, they were head-hunted as research assistants while they were in the conclud-

ing phase of their major thesis work. This may have contributed to direct their interest towards further research, since it was not unusual that research assistants continued to pursue doctoral studies. However, different barriers obstructed doctoral research, one of which was the large workload required of research assistants. Another was the mentality within “some groups at the research department”, as one of the informants stated. They argued that a doctoral degree was unnecessary to pursue an academic career. Still, there were some who started their doctoral research as fast as possible, even though it “... took place almost in secret”, as another informant expressed, adding: “The few of us who started doctoral studies did so in addition to our work tasks”. A third argument that was presented was that the degree of Mag. Art was equivalent to a doctoral degree since a few internationally outstanding Norwegian researchers’ Mag. Art degree had been evaluated as being equivalent to an American PhD⁶. Thus, with references to such examples, it was argued that the Mag. Art degree was sufficient for furthering their careers as researchers. The early informants’ story about this low level of interest exemplifies the general mentality towards the doctoral degree, particularly within the social and humanistic sciences, as documented in Johnsen (2013). The two recent doctoral projects were inspired by professional projects and research activities at the time.

Planning doctoral research. Current PhD education programme accepts research fellows on the basis of high quality research plans as discussed in Johnsen (2013). What marked the beginning of a Dr. Philos study?

I did not even start with a project plan. My choice of research theme was made in connection with other activities

This is how one of the early informants described the beginning of the doctoral studies. However, those who applied for research grants to the Norwegian Arts and Sciences Research Council; NAVF⁷ were obliged to submit a research plan. Requirements for such plans seem to have been less rigorous than it is now. One

6. One of the informants used as an example that it was well known that later “Peace Professor” Johan Galtung’s Mag. Art degree was evaluated as being equivalent to an American PhD. This is confirmed in his published CV (galtung@transcend.org).

7. Up until 1993, several national research funds served different disciplines, such as The Norwegian Arts and Sciences Research Council (Norges allmennvitenskapelige forskningsråd, founded 1949). In 1993 the different funds were merged into The Research Council of Norway (Norges forskningsråd). The Research Council is currently Norway’s official body for the development and implementation of national research strategy. The Council is responsible for enhancing Norway’s knowledge base and promoting basic and applied research and innovation in order to help meet research needs within society. The Research Council also works actively to encourage international research cooperation. (http://www.forskningsradet.no/en/Vision_and_mandate/ Last updated 25. 02. 2011; *Store norske leksikon*. http://snl.no/Norges_forskningsrad. Last updated 28. 06. 2010).

of the informants told that there had been very short deadline to write this plan, while one of the recent informants said the following:

Our application to NAVF did not have a sophisticated theoretical basis, but was concrete and detailed concerning methodology. It was a rather complete plan, even in the eyes of current readers.

Two of the informants changed the theme of their research after they had received research grants. In both cases they considered their topic to be implausible for the time being. However, they completed their doctoral studies with the new research theme. In one of the cases, the former study was ready as an unpublished report, and was later applied in other connections.

How were the working conditions during the Dr. Philos study? As mentioned above, the informants were working either within higher education or partly within their profession when they started their doctoral research. The two informants who started as research assistants were head-hunted by professors during their second cycle education and major research study because their competences were needed for teaching and research assistance. The position as research assistants did not imply permanent employment. Both were later employed as university lecturers while still working on their doctoral studies. One of the recent informants worked half-time within higher education and half-time as a professional therapist at an interdisciplinary institution, from where the inspiration for the doctoral research project came. Only one of the informants had a permanent full-time position within higher education. During their career all four became assistant professors or associate professors, and they are currently professors of education or special needs education.

As also mentioned, early doctoral research was more or less done in addition to compulsory work tasks. "It was mainly done in my spare time", said one of them. A system granting so-called sabbaticals or full time research terms for academic staff had not yet been introduced during their doctoral research projects. The overall impression from the interviews was that it was difficult – if not impossible – to make a reliable time line for completing their doctoral studies due to their insecurity concerning work tasks, potential research time and finances. One of the recent researchers based the doctoral thesis on a study commissioned by an external institution. Included in the project agreement was a one-time payment which was large enough to pay for research assistance, diverse minor expenditures and a small number of the research tasks. The study was mainly implemented within the research time, which had now been defined as approximately half of a research position, and with one additional semester

as full time researcher (the other half of a full-time position consists, as a rule, of student-related duties within the Norwegian university system).

Three of the informants applied for and were granted research scholarships from the Norwegian Arts and Sciences Research Council (NAVF). The duration of their research fellowship varied. Thus one researcher was granted a three-year, full-time fellowship, another a fellowship which lasted through the beginning phase of the study, and the third researcher received a half-time fellowship for three years. The three NAVF applicants all received some help and support in their application procedure from a senior researcher, and one informant also cooperated with a colleague. The help consisted of obtaining information about how to apply and, in one case, also of support with the writing.

Did the informants have access to mentors during their doctoral work? No formal supervision is linked to the Dr. Philos degree, and the stories of the four informants illustrate that informal support varied between cases. One informant cooperated with a senior researcher who had given generous support at the beginning of the study, but who soon moved to a distant university. No single senior researcher took over this role. However, the informant gained a foothold in an informal research group where research philosophy and -methodology was on the agenda, and participation in these discussions was very supportive.

Another informant told about a good cooperation with a leading professor throughout the doctoral research process. Good relations and cooperation with colleagues in the educational as well as psychological and sociological research community also created fertile conditions for learning as well as contribution to the development of these disciplines. In addition a large student group were important supporters as trainees and participants in the doctoral research project.

The third informant was helped and supported by a professor within the research discipline as well as by a professor and colleagues from a cooperating research discipline.

The fourth informant received support from a reference group connected to the study, and one of the members in the group was a professor at the informant's workplace. The research department provided assistance with statistical analysis, and a research colleague was of great help with this work.

Development towards doctoral research education and the PhD degree

Even though the informants have Dr. Philos degrees, they are familiar with and have personal experience with the development of structured doctoral

degrees. One of them was the initiator of this new kind of doctoral degree, and all informants have participated in teaching and supervising candidates enrolled in structured doctoral programmes. They are therefore asked about their experience and perception of the development of doctoral research education and, eventually, the adoption of the PhD degree.

The two early informants recalled the background and starting point of the development of a new doctoral structure from the 1960s, and both gave a similar description of the mentality within the educational research community at that time. One informant described the mentality as “scientifically and theoretically unconscious”. As late as in the 1970s, the research community was criticized for being “naïve empiricists”. However, an increasing number of students started to take notice of this criticism. They became aware of the first movement towards the establishment of a Norwegian structured doctoral degree around 1970. One informant recalled that in autumn of that year, Swedish colleagues informed about a new organisational model inspired by American degrees. Towards the end of the 1970s, one of the early informants was appointed as representative to a committee on behalf of the Faculty of Social Sciences, where the Department of Educational Research was situated at that time. The task was to discuss the development of a structured doctoral degree. Some of the senior researchers were still sceptical and argued “... that it would lead to a lowering of the level of doctoral degrees”. Why this scepticism? Some suggested explanations related to doctoral degrees in general were mentioned above (This question is also discussed in Johnsen (2013) in this anthology). The informant recalled that committee members worried that the research candidates would not be allowed sufficient time to do a large research project with the suggested doctoral study regime. Furthermore, the committee did not find any pressure from the Faculty in favour of a new degree and concluded the task without having produced a plan. While the Faculty of Social Sciences remained reluctant, the first organised doctoral degree was introduced at the Faculty of Mathematics and Natural Sciences in the beginning of the 1980s, to the informant’s recollection⁸, and their example was soon followed by other faculties.

8. According to historical texts it was launched in 1977. For more information, see the text studies in Johnsen (2013). In the mentioned article suggested reasons why the mathematics and natural sciences faculties were positive to this development are also discussed.

Different higher education institutions and different paths to the PhD

While the “mother of educational sciences”, the Department of Educational Research, took shared the reluctance to the emerging transformation of doctoral studies at the Faculty of Social Sciences, the current Department of Special Needs Education, at that time known as the Norwegian Institute for Special Education (NISE), embraced the idea. Why this difference in attitudes? Could it be that the NISE was a young and upcoming higher educational institution with ambitions to develop special needs education into a research discipline? Could a reason be that the head of the NISE during several years had been positive to doctoral studies for many years, as far back as from his own student days? These questions are not examined in any detail in this article. Today the two research communities are collaborative partners at the Faculty of Educational Sciences, UiO. Informants recall that already in 1982–83, the first ideas about developing a structured doctoral degree were discussed internally at the NISE. A draft was delivered to the relevant head of department in the Ministry of Education and Church Affairs in the autumn of 1983, which resulted in their encouragement to continue this development. Further preparations were completed internally at the NISE as well as in cooperation with other university colleges. The work was inspired by organisation of similar programmes at Gothenburg University, Sweden, the Norwegian Agricultural University and the Norwegian School of Sport Sciences. The political aspect of the development was the most challenging. When a model for a structured programme was presented at a meeting in the Ministry of Education and Church Affairs in the autumn of 1985, it garnered the minister’s support, and the model was accepted by a Royal Decree of April 18. 1986. Thus, the NISE introduced the first organised doctoral programme in a Norwegian educational research discipline through creating the degree Dr. Scient in Special Needs Education. Several years later when the department was incorporated in the newly established Faculty of Educational Sciences, together with the Department of Educational Research and other educational departments, the organised doctoral degree was changed to Dr. Polit, which had become the first degree for a jointly structured doctoral education programme at the Faculty of Social Sciences. Thus, although the educational departments inhabited a new faculty, they initially borrowed the degree of the Faculty of Social Sciences. Currently the Faculty has a joint structured degree of PhD in education, special needs education and other related fields within education. Through

the process towards the PhD degree a number of revisions of the doctoral programme concerning structure and content have been implemented (see Johnsen, 2013).

Doctoral studies in the developing phase towards the award of a PhD

The two recent informants completed their doctoral studies during the period of debates and development regarding structured doctoral studies. One of them started the doctoral study shortly before the structured doctoral study programme was approved. “Many things have changed since the time I was studying for my doctorate”, stated the informant. Referring to personal experience as supervisor and discussant for PhD candidates at different universities both in Norway and abroad, the informant pointed out that the content of the structured doctoral study programme is developing rapidly:

There are in particular three domains which have been subject to a radical boost in terms of quality, namely philosophy of science, methodology and research ethics or research integrity. These are all areas which doctoral candidates need to be able to master.

Only one of the informants started preparing for a doctoral dissertation after the structured degree was approved, and therefore had the opportunity to choose between pursuing the structured or the free Dr. Philos degree. In answer to my question why the Dr. Philos degree was chosen, the informant pointed to the study project that was already completed and reported. “When the decision was taken to continue the work towards completing a doctoral thesis, there was no felt need for taking part in the methodological education which was an integral component of the structured doctoral study programme.” In this way the informant followed the path of some of the colleagues working at the Department of Special Needs Education, who delivered their research theses for evaluation for the Dr. Philos degree. Other colleagues chose to participate in the structured doctoral study programme.

Similarities and differences between the two doctoral degrees

How do the two different doctoral degrees function today, according to the informants? “I do not see any significant differences between the doctoral theses

of these two degrees”, stated one of the informants. Another informant supported this view when it came to Dr. Scient and Dr. Philos, but wondered if a slight difference was about to appear between the PhD and former degrees. At any rate, the difference between dissertations within the same type of degree seemed to be larger than between the degrees themselves. However, with regard to the doctoral study process, they found clear differences. One of the informants said:

I do not understand how anyone is able to complete a doctoral thesis today without having access to the methodological research community. One needs some form of education or help to pursue a doctoral degree, since both science and methodology have progressed so much.

The informant added that scientific terminology had become much more professional and advanced, referring to experience as a doctoral opponent. It was also argued that the level of Norwegian doctoral work was fully comparable to – and in certain scientific niches even higher – than in some other countries.

The informants discussed advantages and weaknesses of the current structured PhD degree. Having access to supervisors was pointed out as an advantage. However, this requires highly skilled supervisors who are able to adapt to the needs of the candidate. The increasing number of research fellowships financing the doctoral study programme marked a positive milestone, as did the increasing number of doctoral candidates. For some candidates their awarded fellowship period has been too short, and this could be a serious limitation. Seminars relevant to the selected doctoral study were also seen as an advantage. However, obligatory courses could also be obstacles if they were not relevant to the candidate’s studies. One point of view was that several seminars had proved to be rather abstract, formalistic and philosophic in nature. The opportunity to participate in a research community with other research fellows was applauded. In addition it was recommended that candidates were given responsibility for seminars for students on lower levels. One informant discussed the relatively newly established formal research groups at the Faculty of Educational Sciences (www.uv.uio.no/english/research/about/research-groups) and pointed out that while some of the groups were of high quality, not all passed the mark. The informant had observed the following possible dilemma:

Some research groups may have a so strong common identity that they push forward their own scientific basic understanding. When this happens, some candidates may feel restricted in relation to their own research ideas. The same imbalance may occur

between supervisor and candidate. It is an important balance between the research group's dominance and the individual researcher's independence, not least in the methodological area. I am a bit sceptical to the research groups at this point.

Informants also conveyed other ideas and views concerning doctoral studies. One remark concerned the unpretentious informal term "the doctor school". The argument against using this term was that it might give negative and wrong associations and that a PhD study programme should be academically and personally stimulating for the candidate and disciplinary for the academic environment. Another informant wanted to convey the idea that doctoral work had strengthened their personal level of professionalism as a supervisor:

I have always been solution-oriented, but through my research I have strengthened these skills significantly: resource-oriented, resilience-oriented and empowering supervision.

The informant added some thoughts about future developments related to PhD studies, and stated that certain PhD studies in psychology in other countries currently require that the doctoral candidate complete a one-year internship after having been awarded their PhD degree.

Regarding the formalities surrounding the doctoral degree, one of the informants hoped that the tradition of undertaking a public defence of the doctoral thesis will stay in place in spite of developments in another direction in some countries. "We should not "over-familiarise" this aspect, since completing doctoral research involves doing a great deal of work".

One or two doctoral degrees?

Do we need two doctoral degrees? The informants all agreed that there are many advantages to having two degrees. There was a general understanding and consensus that the organised doctoral degree will be advantageous for future researchers in many ways, and that the PhD has become the most widely used degree. Most of the arguments therefore focused on maintaining the Dr. Philos degree as an alternative. They pointed out that the free Dr. Philos provides opportunities for those who do not have access to an organised doctoral study programme. Amongst them are professionals outside the university community, persons working at the grass roots level and others who are not dependent on research fellowships. , One of the informants added that it is nonetheless important that it takes a long time to phase out an old model.

Conclusion

What does this story tell us about the status and development of the highest research level, the doctoral degree? How does it compile and present new knowledge about the development from the traditional Dr. Philos degree towards doctoral research education and, eventually, the PhD degree? The joint story of four senior researchers within education and special needs education illustrates a multitude of details as to how they experienced and understood the status and development of doctoral degrees and organisation during the last half century. Their story reveals a living picture of practice and appreciation, scepticism and counter argumentation against this development, and they portray the few who early on “secretly pursued a doctoral degree under the radar of the general opinion”. The story also shows how new ideas and measures made it more acceptable and practically feasible to carry out doctoral studies. It tells about growing research professionalism and increasing consciousness related to theory, methodology and research ethics, as well as concerns regarding future dilemmas and pitfalls.

This article does not aim to tell the entire story about the status and development of doctoral degrees, but to present one selected dimension of this history. In the larger historical picture this presentation only covers the last fifty years of development. It conveys the phenomenon through the lenses of four certainly very competent and experienced key informants, but with the delimitations of a qualitative interview study. Moreover, it focuses solely on the development of doctoral degrees and organisation in Norway, even though it points to a wider European context and states an explicit intention to share this historical insight with colleagues, specifically project partners at the Western Balkan universities. Thus this article certainly makes a minor contribution in a joint exchange of knowledge and experience during the joint Bologna process regarding development and organisation of doctoral studies. However, the text also aims to contribute to a possible recognition of mentalities, dilemmas and opportunities embedded in local endeavours related to the Bologna process for colleagues at other European universities and beyond.

This is one of three articles in this anthology contributing to the exchange of knowledge and experience regarding the development of doctoral studies within the Bologna process. In the article *Doctoral Studies at the University of Oslo from 1811 to PhD* (Johnsen, 2013), often referred to here, another perspective is taken, as it presents a historical text study covering the time from the foundation of the first university in Norway till today. A third article, *Doctoral*

Studies from Yugoslavian Times to the Bologna Process. Historical milestones in the establishment of universities, educational and special needs educational sciences and doctoral degrees at the universities of Belgrade, Ljubljana, Sarajevo, Skopje, Tuzla, Zagreb – and Oslo (Johnsen, et. al., 2013), offers a third perspective in an introduction to the history of universities and doctoral studies with specific attention paid to the foundation of rehabilitation and special needs education as a research field.

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Appendix: Higher education and grade structure before and after the transformation to the common European Bologna system

University education and grade structure before 2003 (Store norske leksikon. <http://snl.no/> and more references).

Cand. Mag was a first-cycle degree based on studies in between 7 and 9 semesters, depending upon choice of university disciplines. Cand. Mag education should consist of three different university disciplines.

Major level (hovedfag) or second cycle degree consisted of four additional semesters' continuation of disciplines from the Cand. Mag study. It included a research thesis.

Magister artium (Mag. Art; in Norwegian: Magistergrad) was an old degree, which were standardized to seven years' university education, whereof three years was dedicated to a research theme of free choice

University education and grade structure after 2003 (<http://www.nokut.no/en/>)

The structure of higher education in Norway since 2003 consists of three-year bachelor's degrees (also called a first degree or undergraduate degree), two-year master's degrees and three-year doctoral degrees (post-graduate degrees).