

On the choice of thesis format and on writing the "kappa" of a thesis of publications

I. Choosing format of the PhD thesis

Considerations

The formats of dissertations vary. We generally distinguish between *monographs* and *theses by publications*, sometimes also referred to as a *compilation of research articles*. Traditionally, the latter format is completely dominating in natural science and medicine, while monographs still constitute the most common thesis format in the field of humanities and social science, including educational research. In Sweden, however, we now witness a rapid development towards theses by publications in social and educational science, not least fuelled by initiatives at various levels to introduce so called quality-based resource allocation, defining quality in terms of the number of articles in high-standard international refereed journals and the number of quotations in such publications.

Here I will briefly compare the two dissertation formats and their pros and cons. It is essential that the doctoral student and his/her supervisors have a discussion of these issues at an early stage in the dissertational work in order to inform the individual study plan.

Content aspect

Many research questions and research designs, for example historical and longitudinal studies, do not easily lend themselves to investigation and presentation in the form of smaller, consecutive pieces (i.e. articles). In educational research we, as a rule, have to use quite a large proportion of the maximum sum of words to describe and explain e.g. the Swedish school system before we can come to the core of the study. In other words, the complexity and culture boundedness of social and educational research can make it more difficult to present research in article form than it is e.g. in medical experimental research. However, it is far from impossible in most cases – just more demanding.

Quality aspect

Submitting articles to well-respected journals with good referees means that the texts will be scrutinized by even more eyes than the monograph. The written comments from the referees are often perceived as valuable help to improve the article.

The number of suitable publications

Compared to natural science, the number of good scientific journals – Swedish, Nordic and international – is low in our research field, and qualifying for publication in one of them often takes considerable time and at worst may delay the dissertation process.

Communication aspect

An international article addresses a much larger part of the scientific community than a monograph in Swedish. However, the latter – nowadays also available on the Internet – undoubtedly gets a larger Swedish audience, in particular professionals in the field.

Qualification aspect

In many universities and faculties, resource allocation systems are now introduced in which refereed articles in international journals result are more rewarding than other publications. Also, being able to list such publications is a merit when applying for research posts. On the other hand, writing a thorough and good monograph in Swedish, i.e. in the language you are probably best at, may be seen as the most solid way of formulating, testing and reflecting on your scientific work. Having done that, you have a better basis for formulating and further developing your research in article form and in another language, it may be argued.

Facilitating the work

Dividing the dissertation work into smaller stages, i.e. writing a number of articles with clearer time limits than chapters of a monograph, is perceived as helpful by some doctoral students, but not by others – this is probably a matter of personality.

Autonomy of the doctoral student

The compilation format is more common when the doctoral student is part of a larger research project. Some questions concerning his/her autonomy as a researcher may arise out of this fact. For example: to what extent is the formulation and framing of research questions and the choice of theory and design made by the doctoral student – to what extent is it a choice already done by senior researchers? If several researchers co-author articles – what is the contribution of the author? Such questions must be clarified in the kappa.

The following example of trying to combine the pros of both formats comes from Linköping university, the department of Management and Engineering (Goldkuhl 2008):

... we have postulated that dissertations should be written in the form of monographs. (---) The monograph is chosen as a standard model, as it demands unity (helhetlighet) and congruence, something which is often difficult to achieve with the compilation-of-articles model, which unfortunately commonly runs the risk of becoming relatively fragmented. (---) We have also formulated a demand of international review: "parts of the scientific work resulting in the PhD thesis should also be presented in at least two research articles which are internationally exposed and reviewed. In this manner we both achieve the advantages of the monograph, and at the same time consider the demands of international scientific review.

Quality assessment of the two kinds of dissertations

Requirements

The extent to which special requirements are defined for theses by publications in the study plans for doctoral studies differs from case to case. Lidström (2007), who investigated principles of theses by publications in political science in Sweden, and within the faculty of social science at Umeå university, distinguished between a general rule – the work of such a

thesis should correspond to that of a monograph – and more specified demands. He gives examples of the latter from Umeå: geography, economics, psychology, social work and sociology. Also pedagogical work belongs to this group, one may add. The special requirements normally concern

- a. number of articles/other publications
- b. if articles should be published in or accepted for publication in scientific journals of high quality (i.e. with a referee system, possibly also international in character), or more generally hold such quality that they could be published in such journals
- c. the number of articles with the PhD student as the main or only author
- d. that the kind and scope of work of the PhD student is described if articles are co-authored (c.f. appendix 1).

In both cases, in principle the whole thesis is discussed at the disputation. But normally, articles that are accepted or published in journals with a referee system and hence already have undergone a quality assessment are scrutinized and discussed in less detail than texts that have not been evaluated in this way before.

II The 'kappa' of a thesis by publications: some notes

Writing a thesis made up by a compilation of articles with some kind of embracing text is a rather new phenomenon in our field of research. Writing this latter text, the kappa, is not seldom perceived as an unclear and problematic task for PhD students and their supervisors. Little is written about this topic, however. In this section I make an attempt to clarify the function of the kappa, and to give some recommendations concerning its design.

The kappa is more than a simple summary

In English the "kappa" is often called "summary". This is somewhat misleading as the kappa should be more than a simple summary of the articles. *Its basic function is to provide a brief but dense synthesis and summary of the dissertation project as a whole.* The concept "dissertation project" is central here, as the primary focus is neither on the parts (the articles or book chapters) nor on the larger research project that the thesis possibly emanates from. The articles should be summarised, and the larger research project should probably be briefly presented, but the synthesis should concern the dissertation project. Ideally, the articles are clearly related to each and cover most of the dissertation project. In that case the writing of the kappa is a more straightforward one, than if the articles are just vaguely related to each other and/or just cover a smaller part of the larger project. The latter may be the case especially if the domain of the doctoral student was not properly defined already at an early stage.

The essence of the kappa

The kappa should¹

- give an introduction to the problem area and the various sub-studies
- describe the overall aim and research questions of the dissertation
- provide a research overview and relate the author and his/her contribution to the research field concerned
- Describe central theoretical and methodological points of departure of the dissertation as a whole
- Present and critically discuss sources, methods and other considerations made in the different sub-studies/articles
- Describe how the articles are interrelated
- Explain the disposition of the dissertation and illuminate the progression of dissertational work. Clarify the contribution of the author, if the thesis includes co-authored articles (c.f. appendix 1)
- Summarize and synthesise the main findings and conclusions of the thesis.

Components of the kappa

Even though the requirements and guidelines from different disciplines study plans may vary somewhat, the kappa should normally include the basic elements below.

Introduction

The general research focus of the thesis is introduced and the main contents of the articles are outlined, preferably in an interesting way, in order to motivate the reader to continue!

Aim and research questions

The aim and research questions of the whole research project are presented. They should be formulated in such a way that the aim and research problems of the articles are possible to derive from this section. However it is often advisable that the more detailed aims and research problems in the articles are reduced and reformulated to more overriding questions (Jørgensen & Andersson 2005).

Research overview

The research overview is as central part of the kappa as in the monograph. In neither case should it be understood as an exhaustive summary of prior research, but such a narrow conception is all too common. At worst, the research overview consists of piling short research abstracts on each other. At best, it (1) makes explicit the criteria for inclusion and exclusion of research and covers the thus defined area in a good way, (2) summarizes, analyses and syn-

¹ This section to a large extent builds on Jørgensen & Andersson 2005, to whom I am very grateful for sharing their work with me.

thesises the selected contents, (3) identifies and comments upon the methodologies used in the field, (4) make conclusions regarding the scientific and practical significance of his/her selected research problem, (5) should have a clear and logical structure and be well-written (Botte & Beile 2005).

Theoretical points of departure

The kappa should include a brief overview of the theories and central concepts used in the thesis. Here, as in the case of a monograph, the PhD student is advised not to make detailed and comprehensive theoretical essays, but to concentrate on such aspects which are of special importance to his/her analysis. It may be assumed that most readers with an academic degree in the social/educational field are familiar with many of the theories, as well as research methods at a basic level, and normally do not need lengthy descriptions.

Design and methods

The author should aim at giving a clear overview of his/her research design *in toto*, including the selection of empirical material (e.g. local contexts, schools, individuals), methods of data collection and analysis, and ethical aspects. Temporal aspects, such as the time of data collection and finalizing different part-studies, should be clarified.

Summary of the articles

The included articles are briefly summarized in terms of aims, design and major findings.

Conclusions

The conclusions of the whole dissertation project should be presented. In other words the author should not make a simple collection of the conclusions of the separate articles, but aim at a clarification of the major conclusion of the whole.

Discussion

The kappa may have a final section where the major findings and ideas of future research are briefly discussed. This section may eventually include some self-critical reflections on the work.

References

- Boote, David N & Beile, Penny (2005). Scholars Before Researchers: On the Centrality of the Dissertation Literature Review in Research Preparation. *Educational Researcher*, 34(6), 3-15.
- Goldkuhl, Göran (2008). Krav på avhandlingar – ämnesområdet informationssystemutveckling. Linköpings universitet, institutionen för Ekonomisk och Industriell utveckling, Informationssystemutveckling.
- Jørgensen, Hans & Andersson, Lars-Fredrik (2005). *Att skriva kappa. Inlednings- och avslutningskapitlet i en sammanläggningsavhandling*. Diskussionsunderlag till det sjätte ekonomisk-historiska mötet Umeå universitet 7-9 oktober 2005.
- Anders Lidström (2007) *Principer för sammanläggningsavhandlingar – en kartläggning*. Statsvetenskaplig Tidskrift 2007:2, 188-189.

Appendix 1.

Uppgift om doktorandens insats i samförfattade arbeten i en doktors- eller licentiatavhandling

Av examensordningen för utbildning på forskarnivå (bilaga till Högskoleförordningen) framgår bl a att man för att erhålla doktorsexamen ska

- visa förmåga till vetenskaplig analys och syntes samt till *självständig kritisk granskning* och bedömning av nya och komplexa företeelser, frågeställningar och situationer,
- visa förmåga att kritiskt, *självständigt*, kreativt och med vetenskaplig noggrannhet identifiera och formulera frågeställningar samt att planera och med adekvata metoder bedriva forskning och andra kvalificerade uppgifter inom givna tidsramar och att granska och värdera sådant arbete,
- visa *intellektuell självständighet* och vetenskaplig redlighet samt förmåga att göra forskningsetiska bedömningar (mina kursiveringar).

Motsvarande formuleringar finns för licentiatexamen. Närmare anvisningar för de krav som ställs på en doktorsavhandling – monografi eller sammanläggningsavhandling ges av fakultetsnämnden och/eller institutionen. Det är vanligt att explicit skriva att den enskildes insatser i samförfattade arbeten skall framgå, för att man ska kunna göra en bedömning av doktorandens självständighet.

1. Några exempel från samfak, Umeå universitet

Studieplan för forskarutbildning i pedagogiskt arbete

En sammanläggningsavhandling bör i normalfallet innehålla fyra uppsatser samt en sammanläggningsdel (kappa). Uppsatserna skall ha en sådan kvalitet och omfång att de bedöms kunna antas för publicering. I de fall någon av uppsatserna är samförfattad med andra personer skall avhandlingsförfattarens insats anges.

Studieplan för forskarutbildning, Handelshögskolan:

Licentiatuppsatsen/doktorsavhandlingen skall utformas antingen som ett enhetligt, sammanhängande vetenskapligt verk (monografiavhandling) eller som en sammanläggning av vetenskapliga uppsatser med en introduktion till och kort sammanfattning av dessa (sammanläggningsavhandling). Kravet på självständighet utesluter inte att uppsats- respektive avhandlingsarbetet kan ingå i ett större forskningsprojekt. En vetenskaplig avhandling, som har författats av två eller flera personer gemensamt, får godkännas som doktorsavhandling om författarnas insatser kan särskiljas.

2. Exempel från andra universitet:

Karolinska Institutet: Uppdrag och instruktion för disputationskommitté

1.3.6 Antalet delarbeten i en sammanläggningsavhandling kan variera men de skall sammantaget ha en omfattning och kvalitet som enligt betygsnämnden motsvarar hög kvalitet och produktion ur ett

internationellt perspektiv och i relation till fyra års heltids forskarutbildning. För delarbeten som ingår i flera avhandlingar skall varje doktorands insats tydligt kunna särskiljas.

Anvisningar för framtagande av doktorsavhandlingar och regler för tryckningsbidrag.

Utbildningsvetenskapliga fakultetsnämnden, Uppsala universitet

I samförfattade sammanläggningsavhandlingar måste det gå att särskilja författarnas självständiga insatser.

Studieplaner för forskarutbildning i Hälsovetenskap resp. Psykologi, Fakultetsnämnden för humanvetenskap, Mittuniversitetet.

I det fall då avhandlingen eller något/några av dess delarbeten samförfattats med andra personer skall avhandlingsförfattarens individuella insatser redovisas.

Göteborgs universitet: IT-universitetets fakultetsnämnd

1.2. Vetenskaplig avhandling som har författats av två eller flera personer gemensamt får godkännas som doktorsavhandling för sådan författare vars insatser kan särskiljas.

Linköpings universitet: studieplan för forskarutbildning i Medicinsk vetenskap

Sammanläggningsavhandling för doktorsexamen skall omfatta minst två delarbeten, och vanligen inte mer än 4. Det exakta antalet som krävs beror av de enskilda arbetenas kvalitet, omfång och inte minst den roll doktoranden haft i tillkomsten av respektive delarbete. Doktorandens insats skall tydligt kunna urskiljas.