

FORMATION OF LINKS TO RESEARCH THROUGH THESIS WRITING: THE CASE OF THE SWEDISH TEACHER EDUCATION¹

LA FORMACIÓN DE VÍNCULOS CON LA INVESTIGACIÓN
POR MEDIO DE LA ESCRITURA DE TESIS: EL CASO
DE LA FORMACIÓN DE PROFESORES EN SUECIA

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Abstract

In 2006 a study on theses in two vocational programmes and two separate courses within the Swedish higher education system were conducted. In total 206 theses were evaluated by 14 experts in order to determine the scientific quality of the theses. In this article special attention will be paid to the teacher education programme. The other vocational programme – nursing education – is used as a point of reference to discuss two different approaches to the thesis. These will be addressed in terms of a consumer model and a producer model. Consequences considering students development of link to research in their thesis writing are discussed in relation to the two models. It is argued that an elaborated concept of link to research requires the use of both the consumer and the producer model not only within the thesis writing, but throughout the entire teacher education programme.

Keywords: Research link, scientific quality, teacher education, thesis.

¹ This article is a revised version of the Swedish article by E. Forsberg, *Formering av forskningsanknytning genom examensarbete*. (Formation of Research Link through Degree Thesis). *Studies in Educational Politics and Educational Philosophy: E-journal* 2006:2/2007:1.

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Resumen

En el año 2006 se llevó a cabo un estudio sobre las tesis en dos programas de formación profesional y dos cursos independientes del sistema de Educación Superior sueco. En total fueron evaluadas 206 tesis por 14 expertos, con el fin de determinar la calidad científica de las mismas. En el presente artículo se presta especial atención al programa de formación docente. El otro programa, de formación de enfermeras, es utilizado como punto de referencia para discutir dos enfoques diferentes de la tesis. Éstas serán discutidas en términos de un modelo de consumidor y un modelo de productor. Las consecuencias del desarrollo, por parte de los estudiantes, del vínculo con la investigación en la escritura de sus tesis son discutidas en relación a los dos modelos. Se argumenta que un concepto elaborado de vinculación con la investigación requiere del uso tanto del modelo del consumidor como del productor no sólo en la escritura de la tesis sino que a través de todo el programa de formación de profesores.

Palabras clave: Calidad científica, formación de profesores, tesis, vínculo con la investigación.

Introduction

SWEDISH TEACHERS HAVE LONG been educated at teachers colleges closely tied to the national school system and, traditionally, research has not held a prominent position in instruction (Ahlstrand & Bergqvist, 2005). Reforms striving to integrate research with teacher education have been implemented nonetheless in recent decades in Sweden as in many other countries (Erixon Arreman, 2005; Bernhard, Diaz & Allgood, 2005). In the latest reform of Swedish teacher education in 2001, one effort to reinforce the link to research took form with the introduction of writing a thesis worth 15 credits to the requirements leading to a degree in teaching. This corresponds to one quarter of an academic year worth 60 credits. In 2006, the Swedish National Agency for Higher Education, Högskoleverket (HSV), requested that studies be made of theses written in pursuit of a degree in the new teacher education programme (Forsberg & Lundgren, 2006) and of the research link in teacher education (Säljö & Södling, 2006). Both studies used other educational programmes as reference points

to analyze teacher education. Two different approaches were used in the theses written, a consumption model and a production model. In this article, data taken from two vocational education and training (VET) programmes studied will be used: the teacher education programme and the nursing education programme. This makes it possible to analyze and discuss the consequences of different ways of integrating research and undergraduate education within the framework of independent study.

An initial discussion of alternative ways of considering the research link and undergraduate education in higher education will include some of the preconditions and conditions that can render difficult the realisation of the ideal. Following that, attention will be given the link of research in teacher education and research as seen from the perspective of governmental administration. Special attention will be given thesis writing and its varying goals and functions. A report on the findings of studies of thesis writing will follow. A concluding discussion of the effects of integrating research and teacher education will focus on thesis writing. The discussion's point of departure will be an emphasis on consuming and/or producing educational knowledge.

Ties between undergraduate education and research at the university level

Both teacher education and nursing education were introduced to university-level education in 1977. Since then, ties to research, a scholarly basis, critical instruction and independence have been highlighted as the ideals and goals of a teaching education. University administrators, teachers and students continue to argue that these should be the primary characteristics of higher education (cf. Säljö & Södling, 2006). On a political level as well, this understanding has widespread support (Jalling, 2002). At the same time, critics have revealed a gap between the ideal and reality. Studies and evaluations of teacher education have found it lacking in scholarliness and not conforming to the standards

of university-level education. The difficulties schools face in attempting to live up to the ideal have been revealed in the process³. It has also been argued that “the weaker the tie to research, the stronger the rhetoric about the indispensability of that tie has grown” (Jalling, 2002, p. 33).

Research can be integrated with undergraduate education, reports Abrahamsson (1977), by means of a person and/or content. A personal connection means that the research tie is conveyed by an active researcher who participates in undergraduate education. Up until the 1960s, this type of linking to research dominated. The tie between education and research was maintained by a person, the professor, who both did research and taught. But with the introduction of the title of senior lecturer (*lektor*) in 1958 and university lecturer (*adjunkt*) in 1968, the concept of the link to research changed. The person no longer constitutes the tie. While a senior lecturer is trained to do research, actually doing research may not be part of the position, and the job description for university lecturer does not even include research training. The job descriptions of these teachers do not include making a contribution to the field. This does not mean that individuals who hold these positions do not appreciate the importance of having a research base in undergraduate education. To the contrary, this ideal seems to be of central importance, regardless of school, education and personal research training (Säljö & Södling, 2006). The proportion of teachers with doctoral degrees who participate in teaching and the proportion of teachers who teach and are required to carry out research are, in this perspective, important factors for achieving a link to research. That the share of teachers with doctoral degrees in teaching is both a limited and an unevenly distributed resource then becomes especially relevant. Important to note here is that the number of researchers with external financing has grown large, and the job description of these researchers often does not include teaching. Thus,

³ See, for example, *Högskoleverkets utvärderingar av lärarutbildningen Rapport 1996:1R* [HSV's Evaluation of Teacher Education, Report 1996:1R], *Report 2005:17R Parts I–III, departementsskriften om lärarutbildning Ds 1996:16* [Department Documents on Teacher Education Ds 1996:16] and *Lärarutbildningskommitténs betänkande SOU 1999:63* [Report of the Committee on Teacher Education SOU 1999:63].

both the occupational organisation and the way research is financed have contributed to increasing the gap between research and teaching (Bertilsson, 1989).

Research and education can also be linked by means of content. The basic idea is that the teacher does not necessarily have to be a researcher as long as the content of the education is tied to research. The content connection is achieved by requiring reading such as research surveys, research reports, scholarly journals and course literature that selectively monitor the scholarly developments of a specific discipline. The connection relieves teachers of the need to carry out research, but the link to research is nonetheless expected to occur mainly through the teachers, while it may also take place through guest speakers, for example. In an attempt to determine what may be considered research linking, Lundmark, Sjölund and Staaf (2006) argue that, alongside institutional factors such as those named above, scientific principles and a scholarly approach should also be included. Scientific principles include the link to research as defined here, in that content such as research results are integrated into the education, that students are trained in scientific methods and that students read scientific texts and become familiar with the research of their department.

A scholarly approach emphasises the importance of developing independence and critical and analytical abilities in terms of distinguishing, formulating, solving and evaluating problems. A scholarly approach refers to the Humboldtian principle of creating close ties between research and education with specific pedagogical forms. The seminar especially has been highlighted as a fundamental form for research linkage (Björklund, 1991, 2002). It is a matter of developing an educational environment characterised by discussions of research issues and making a contribution to the field. Defending a dissertation is a prime example, with argumentation and critical analysis as central phenomena (Björklund, 1991; Ahlström, 1992; Lundmark, Sjölund & Staaf, 2006). Scientific method and methods courses can provide the necessary but insufficient conditions to generate an attitude of making a contribution to the field among students in this setting. This is not something that can be assigned to specific stages of the educational programme, but rather something that should characterise the

education in its entirety. The goal of research linking in a seminar setting is for the student to learn to delineate a relevant problem, gather available data, take a preliminary stance on the matter, formulate the stance so it can be criticised and adjust the stance to the extent it does not meet the standards of criticism (Säljö & Södling, 2006).

Link to research with limits

It has not always been easy to integrate research and education, for a number of reasons. With the introduction of VET programmes at the university level, subjects and academic programmes were transferred without an obvious scholarly identity and tradition. The reform of 1977 also meant that new schools at university level without research funding or doctoral programmes were established. In addition, the division of labour among a varied number of agencies has involved separating undergraduate education from research and postgraduate education. The period following WWII brought sweeping change involving, alongside increased efficiency (throughput), altered rules of access, a number of new educational programmes, broadened course offerings and a dramatic increase in the number of students (e.g. Kim, 2002). By 1975 Andolf had argued in a ministerial investigation (DsU 1975: 15) that undergraduate education had, through the process of so-called diversified recruitment, been expanded and decentralised to the extent that the value of public access to education seemed to be more highly valued than its link to research. These developments brought about a shift in university-level education away from training the elite to teaching the masses (Trow, 1974). The student body has become much more heterogeneous in terms of knowledge, experience and values, and today students' preparedness for advanced study is more varied. This in turn means that the streaming issues that had previously applied primarily to the compulsory school system and upper secondary education are increasingly questions for higher education. These new conditions increasingly demand individually adapted content and varied work methods (Kim, 2002). In other words, there is "a tension between expecting, on the one hand, integrated educa-

tion and research and, on the other hand, schools to be able to make it happen” (Säljö & Södling, 2006, p.18). In this era of education for the masses the Humboldtian ideal would appear to be, if not unrealistic, at least seriously challenged.

Teacher education and the link to research

At the end of the 1990s, the Government appointed a parliamentary teacher education committee (LUK 97) with the task of reforming teacher education⁴. The committee’s report, *To Learn and Lead* (SOU 1999: 63), presents the necessity of education resting upon a scholarly foundation and well-trying experience, and one of the tasks of the committee was to propose ways of integrating teacher education and research. The investigation ties research linking and a scholarly foundation to the new educator assignment, the reflective teacher, and to expectations of a close relationship between teacher education, research and educational trends. Teachers are now expected to personally develop new ways of organising and leading work in the schools and, according to the committee members, this requires an awareness of the entirety. Following this investigation, the Government Bill 1999/2000: 135 emphasised in addition that all aspects of the educational programme should reflect a scholarly approach.

Reorganisation of teacher education in the beginning of the 2000s regrouped teacher education into three major areas. General Education, or *Allmänna utbildningsområdet (AUO)*, is worth 90 credits, and includes subjects all future teachers must study. Concentration courses corresponding to at least 60 credits can be in the subject or the subject area corresponding to the age group for which the student is being educated. Specialisation – the third area – is worth 30 credits. In addition, *Verksamhetsförlagda utbildningen (VFU)*, or student teach-

⁴ For a description and discussion of Swedish teacher education trends from the time of its introduction to university-level education in 1977 and the relationship of these trends to changes in the Swedish school system, see Drakenberg (2001) and Bergem, Björkqvist, Hansén, Carlgren and Hauge (1997).

ing, makes it possible for students to relate the subjects and theories studied with the pedagogical praxis. Both the university level and the compulsory school system share a common responsibility for students during teacher education. The student teaching part of the educational programme can be seen as an arena in which students are expected to connect theory and practice. The purpose is also to improve the conditions for research that would be practically relevant, such as making research more accessible to teachers teaching in the schools. The linking of research into teacher education is expected to influence not only the students but also the activities, teachers and school administrators as the students engage in pedagogical praxis.

The general goals of the Higher Education Act, Chapter 1, Section 9 (SFS 2001: 1263) state clearly that all university-level students shall develop the ability to make independent and critical evaluations and independently discern, formulate and analyze problems. They should be prepared to experience trends in working life. In addition to knowledge and proficiency in their areas, students should be able to seek out and evaluate scientific data, keep up with educational trends and be able to exchange findings with people without expertise in the area. The Higher Education Act in other words requires that all higher education be tied to research and result in a scholarly approach. The term research-based, used by Franck (2002), may be more correct, because the intent is that education in its entirety should be based on a scientific foundation. A resolution on the structure of academic degrees (SFS 1993: 100 appendix 2) stipulates requirements for a degree in teaching beyond the general goals of the Higher Education Act. In addition to these regulations there are the goals of each school. The focus on the link to research means that, in order to obtain a degree, students of teaching should be able to employ and systemise their own experiences and those of others together with relevant research results as a basis for professional development.

In other words, the research link in teacher education is expected to take place in many different ways and with somewhat diverse goals (Carlström Hagman, 2005). The research link as a means of developing a critical, scholarly approach, as a tool for professional develop-

ment, as an essential aspect of efforts to professionalise the field and as a requirement for acceptance as graduate student are just some of the many facets of the link to research (Berntsson, 2005). To satisfy these multifaceted requirements would of course require very favourable conditions. That such conditions are not always in the offing has been discussed above. Referring specifically to teacher education, one could say that the intersection of the university and seminar cultures, with their roots in a multitude of scholarly traditions, has not made the link to research simple (Karlsson Lohmander, 2004). The choice of research area or areas to be integrated with teacher education raises another set of questions, and the answers have varied over time and are by no means obvious, based on the range of ways in which schools handle the issue (e.g. Englund, 1996; Franck, 2002; Lindberg, 2002). Other possible complicating factors include the socioeconomic backgrounds of the students and their previous academic performances. Teacher education in Sweden primarily recruits students from homes with limited academic traditions. The competition for acceptance to educational programmes is not very tough, and thus students with relatively low marks are admitted to teacher education (Ahl & Nilsson, 2000). Raising the level of scholarliness of the link to research has also been discussed, the difficulties of doing so sometimes explained by the Swedish teacher education, in spite of it being a unified system, also being part of a covert binary system without any permanent scholarly status or access to research (Erixon Arreman, 2005). The problem of actualising the intentions of the 2001 reform has also been encumbered by policy formation and transformation and the actual and imagined opportunities of a specific culture (Beach, 2000). Integrating teacher education and research is in other words neither entirely simple nor straightforward (Erixon, Frånberg & Kallós, 2001). Säljö and Södling (2006) however have listed a number of measures that could contribute to reinforcing the position of research in teacher education. Their observations encompassed institutional, economic, content and structural aspects of the research link as a process, outcome and proximity to research and active researchers.

Thesis writing at the intersection of education, research and professional activity

It should be clear from the discussion above that the required independent study worth 15 credits is only one of many ways in which undergraduate study can be tied to research. The majority of advanced educational programmes in Europe that result in a bachelor's or master's degree are concluded with a thesis. Very little research has been done, however, on undergraduate or graduate theses (Meeus, Van Looy, & Libotton, 2004; Ahlstrand & Bergqvist, 2005). This was confirmed by my own searches in a number of databases in 2007, including JSTOR, EBSCO, and SpringerLink. The studies that have been carried out, however, make it clear that the degree thesis brings to the fore factors such as choice of subject, independence and influence, persistence and hard work, the forms of teaching, concentration, practical and/or theoretical orientation, research methods, advising, the attitudes and approaches of the students and the dependency of these factors on one another (e.g. Meeus, Van Looy & Libotton, 2004; Westbury, Hansén, Kansanen & Björkvist, 2005; Kansanen, 2007). Stressed is also that students of teaching are not accustomed to posing research questions or utilising their writing as a means to critically research something, but that this could be changed if the students were confronted with a stimulating environment in which the academic context and learning process are integrated (Ahlstrand & Bergqvist, 2005). Altered expectations in society and in the teaching profession along with demands for increased professionalism and critical reflection are other reasons cited for research linking and thesis writing (Westbury, Hansén, Kansanen & Björkvist, 2005).

Given these trends, writing a thesis can be seen as one of the central intersections for the meeting of education, research and teaching as a profession in the teacher education programme. Independent study had been introduced to teacher education in Sweden by 1993 in the form of a required thesis (SFS 1993: 100). The purpose was to facilitate the linking of teacher education into the more research and theoretically based praxis of the university. But it was also argued that

the paper should be relevant to the teacher's future vocation. The LUK teacher education committee (SOU 1999: 63) justified independent thesis writing by citing a number of benefits, including the opportunity for the student to tie together previously acquired knowledge or to intensify that knowledge.

Under the terms of Government Bill 1999/2000: 135 following LUK, the writing of a thesis was intended to provide the student with the opportunity to demonstrate an ability to apply scientific methods, theories and research ethics and in doing so, develop a scholarly approach. Writing a thesis is also seen as professional preparation so that students, after having become teachers in their field, are able to make use of current research and theories and critically evaluate various educational classroom methods. The changed prerequisites of teaching and the responsibility of teachers in developing their profession were especially emphasised as arguments for reinforcing the scholarly foundation of teacher education. LUK found that the time spent and credits earned in writing a thesis could be advantageously assigned to the concentration or specialisation chosen by the student. The belief that the student's professional status as a future teacher would be reinforced by writing a thesis supports this reasoning. Writing a thesis is also intended to provide the student with the opportunity to tie the acquisition of knowledge to the future profession. In the 1990s, thesis writing was increasingly associated with arguments that changes in the educational system had affected shared responsibility, content and professional formats. Teachers were now expected – within the framework of what was initially called “participating governance” (SOU 1992: 94) – to actualise the goals of the school and contribute to the growth of the profession (HSV report on the new teacher education 2005: 17RJ). Or, as expressed in Government Bill 1999/2000: 135:

Given the altered pedagogical assignment facing teachers and the need to develop the role of teacher, it is critical that we reinforce research and postgraduate education as part of teacher education and the pedagogical profession. Schools of today are placing new and tougher demands on teachers and their ability to analyze and develop approaches to educational content and organization (p. 36).

Independent study can be seen here as the link that makes the move from graduate to postgraduate education. Agreement has been reached that independent study should be worth 15 credits and satisfy the concentration, specialisation or general education credit requirement. Uncertainty remains, however, regarding when in the educational programme and at which level a thesis should be written. Its value for acceptance to postgraduate education is generally uninvestigated, despite the ambition to solve precisely this problem⁵.

The importance of writing a thesis for university education has been highlighted earlier (e.g. Bergqvist, 2000). Situated at the end of an educational programme, Gustafsson and Hallström (2005) argue that writing a thesis is appropriate as an object of study for analyzing the extent to which the education corresponds to the overriding goals of the Higher Education Act. Others argue that independent study encompasses all the stages of the research process and is well suited to developing a scholarly approach (e.g. Björklund, 1989). Independent study has also been highlighted as the phenomenon that forms the clearest divisional line between upper secondary school and a university education.

The writing of theses and seminar treatment of the completed paper form the core of a university education. The thesis and seminar setting should provide individual students with the opportunity to demonstrate that they have absorbed the methodological skills and the analytical approach that characterises scholarly pursuits. (Bjereld, 1996, p. 1)

⁵ The inclusion of teacher education in the Bologna process has nonetheless implied a series of changes. This is apparent from *Vägar till högskolan för kunskap och kvalitet* (Gov. bill 2006/2007:107). Of particular relevance is the division of teacher education. Education for teaching preschool, kindergarten or afterschool care requires a degree at the undergraduate level, while teaching the later years of compulsory school and upper secondary school require an advanced degree. For students who have chosen to train to teach the early years of compulsory school it is possible to obtain an advanced degree if desired. The decision that was reached by the Government on 22 March 2007 also puts specific requirements on independent study. While an undergraduate thesis earns 15 university credits, graduate students are expected to produce a thesis worth 30 credits or two theses of 15 credits each. The difference between the undergraduate and graduate levels is also that the latter qualifies the student for postdoctoral study.

Indeed, many high aspirations as expressed above have hinged in a broad sense on independent study and more specifically on introducing thesis writing to teacher education. It is expected to respond to a number of varied goals. As an in-depth study of a subject central to the educational programme, independent study can serve to express the relationship between education and research. As an opportunity to study a topic relevant to classroom experience, writing a thesis can also provide a link between education and employment. Writing a thesis can thus be formulated, executed and presented in the intersection of education, research and employment. In this sense, scholarship and what is considered well-trying experience complement each other. The well-trying experience is not just any experience; it transcends experience and concerns experience that should be communicated and preferably documented, critically reviewed based on criteria that are relevant to the profession and evaluated based on social and professional values and norms (Franck, 2001). Even if the relation between education and research on the one hand and education and teaching as a profession on the other neither are exclusive nor contradictory, it is primarily the first relationship that will be in focus for the remainder of this paper. In the HSV evaluation, the panel of experts found that writing a thesis “to a high degree seems to control the link to research that students of teaching experience in their education” (HSV report series 2005: 17 R, p. 138). While the study by Säljö and Södling (2006) in part contradicts this, it is apparent that writing a thesis remains a well-chosen object for the study of how undergraduate education is tied to research.

Writing a thesis in practice

In the 2005 HSV evaluation (HSV report series 2005: 17R) of teacher education, it was found that writing a thesis is an important step in the educational programme and a decision was made to conduct a follow-up study. The report *Examensarbetet inom den nya lärarutbildning* (Forsberg & Lundgren, 2006) reports the results of this study. The main focus of the study was on writing a thesis in the teacher

education programme, with theses from another VET programme and two advanced level classes in business and psychology used as reference points for the evaluation. The theses from the programmes and subjects included in the study were gathered from four schools, two of which were universities. Theses were also gathered from teacher educational programmes at another four university-level schools. A panel of experts in the specified areas was entrusted with the evaluation of the scholarliness of the theses. Of 14 experts, 7 pairs of evaluators were formed, and each pair was composed of one evaluator from a university college and one from a university. Four of the evaluator pairs had expert knowledge relevant to the teacher education programme and the other three pairs brought expertise from nursing, business and psychology. Of the 14 evaluators, 8 were professors and the other 6 senior lecturers. The study was done as a sampling study, and a sample of 206 theses were selected for evaluation and analysis of the total of 1595 papers written in these subjects during the 2005 autumn semester. Of those, 146 were written by students who were pursuing a VET programme and they are focused upon here. Of the 146 theses 116 were written by students of teaching, and 30 by students of nursing⁶.

More than half of the theses from the teacher education programme were written by students who had enrolled for 210 credits. Just over a third of student authors were enrolled for 240 credits or more and approximately a tenth for 90 credits. The theses from nursing were written in programmes of 180 and 195 credits. In the teaching programme, approximately one third of the theses were written by one author and just over two thirds by more than one author, typically two. In the nursing programme it was somewhat more typical to have two authors (80%). In general, in other words, co-authorship was common. The gender distribution typical of the fields being studied was reflected, with female authors dominating. About four fifths of the theses in teacher education had one or several female authors. The majority of the theses had a *length* of 21–30 pages but a size-

⁶ A more detailed description and methodological discussion is present in Forsberg and Lundgren (2006).

able amount was also 31–40 pages. The papers written in the teaching programme were somewhat longer than those from the nursing programme. *Tables* and *figures* were relatively rare in the theses. Approximately two thirds of the theses had no tables and just as many had no figures at all. *Appendixes*, however, were quite common. In all, about 85% of the theses had one or more appendixes. The use of footnotes and end *notes* were less common, however. About a fourth of the papers made use of footnotes.

The students' choices of research methods correlated with the programme they were enrolled in. In the teaching programme interviews were primarily used for data collection (63%). In the nursing programme the students almost exclusively analyzed documents (articles in scholarly journals), (90%). Methodological triangulation was rarely used.

Table 1. Number and per cent of research methods (N=146).

	Research methods					sum
	interview	survey	observation	documents	triangulation	
Teacher programme	73 63%	15 13%	8 7%	12 10%	8 7%	116 100%
Nursing programme	0 0%	2 7%	1 3%	27 90%	0 0%	30 100%

The reference lists of the theses were analyzed for number of references cited, in other languages than Swedish, to scholarly journal articles/research papers and to public material, course literature and popular press. Based on the total amount of material, the *number of references* varied between 7 and 108 with a mean of 26 and a standard deviation of 14. The theses in the teaching programme had an average of 22, and the mean for theses in the nursing programme was 33. The variation for each educational programme was 9 and 8. It is not

surprising that the number of references was most in the papers with more than one author. *The number of references in languages other than Swedish* was on the whole relatively limited. The mean and dispersion of Table 2 show that both the number of references in a language other than Swedish and *scholarly articles* and reports are rare in papers written in the teaching programme. A total of 60% had no reference in any other language than Swedish, 21% had one reference, and 15% listed between two and five references, leaving the remaining 4% listing more than five. There was a clear difference compared with theses by nursing students. Based on the means, it was above all the nursing students who made use of this type of reference. In other words, it was primarily those who, in connection with the writing of their papers, read literature in languages other than Sweden that was relevant enough to the theses that the reference was included in a list of references. It was also primarily these students who came in direct contact with scholarly primary sources.

Table 2. Mean and variation of references other than Swedish and number of scholarly articles/ reports (N=146).

	Language other than Swedish		Scholarly articles and reports	
	<i>mean</i>	<i>variation</i>	<i>mean</i>	<i>variation</i>
Teacher programme	1	3	3	3
Nursing programme	18	10	19	9

What the table fails to reveal but should be noted is that students did, to a limited degree, make use of previously produced third- or fourth-year theses. References to *popular press* or *professional press* were relatively uncommon. One fifth of the papers in the teaching programme contained one or two such references, but approximately two thirds of the theses had no reference to any type of popular press. Reference to various types of *public material* was, however, more common.

For the teaching discipline these were typically curricula and syllabi and information from any number of central authorities. Just over two thirds of the theses listed 1–5 references to some kind of public material. Those students in the teaching programme should so rarely cite references in foreign languages may not necessarily mean they lack references to foreign authors. While no systematic record has been made of translations of foreign works, their occurrence is visible. Nor is it obvious that the lack of scholarly articles and research papers would indicate that the thesis authors lack a grasp or awareness of the scholarly discipline treated by the thesis. To the contrary, the discipline can sometimes receive a more general clarification. However, it does mean it is less likely that students, when they write their theses, come into scholarly contact with for example primary sources or concrete examples of theory and empirics relating to each other and being utilised productively in analyses and interpretations of outcomes.

This review included only theses receiving *marks* of Pass (Godkänd) or Pass with Distinction (Väl Godkänd). Theses receiving a mark of Fail (Underkänd) were thus excluded. Approximately two thirds (66%) of the included theses in the teaching programme received a mark of Pass and about one third (34%) Pass with Distinction. All of the theses in the nursing programme were marked Pass, even those produced at colleges with the possibility of receiving a mark of Pass with Distinction. The three-mark scale was used, in other words, only in one of the nursing programmes, while it was used in all but one of the teaching educations. The marks of the theses had a positive relationship, if a weak one, with the length of the paper and number of references cited. Theses of more than 30 pages in length were, along with a large number of references, more common among papers receiving a mark of Pass with Distinction.

All the *examiners* of the theses that were reviewed in the nursing programme held PhDs. This also applied to a prominent majority in the teaching programme (91%). Just over half (58%) of the *supervisors* of the reviewed theses in the teacher programme had their PhDs and about 13% did in the nursing programme.

Table 3. Number and per cent of examiner and supervisor (not) holding a PhD (N=146).

		examiner		
		<i>PhD</i>	<i>no PhD</i>	<i>sum</i>
Teacher programme supervisor	<i>no PhD</i>	5	44	49
		4%	38%	42%
	<i>PhD</i>	5	62	67
		5%	53%	58%
	<i>sum</i>	10	106	116
		9%	91%	100%
Nursing programme supervisor	<i>no PhD</i>	-	26	26
		-	87%	87%
	<i>PhD</i>	-	4	4
		-	13%	13%
	<i>sum</i>	-	30	30
	-	100%	100%	

Table 3 indicates that it was exceedingly uncommon (4%) for both the supervisor and examiner to not hold PhDs in the teaching programme. Other theses typically had either an supervisor or examiner with a PhD, typically the latter. For the 30 reviewed theses in the nursing programme, the situation was partially different. In these cases, the examiners of all theses held PhDs, but a much smaller portion of the papers (13%) had been advised and examined by teachers with a PhD. Supervisors without PhDs were very common (87%).

The panel of experts was supposed to evaluate the *scholarliness of the theses* based on the following aspects: research link, problem formulation, theoretic awareness, method, theory-empirics, and language and presentation. In addition, the experts were also asked submit an overall assessment on a 1–5 scale with the following marks: *Underkänd* (Fail), *Med tvekan godkänd* (Passing but Unsatisfactory), *Godkänd* (Pass), *Väl godkänd* (Pass with Distinction), and *Mycket väl godkänd* (Pass with Special Distinction). For the teaching programme, the reviewers made use of the entire scale in their assessments of the theses overall. Starting with the lowest, 3, 32, 56, 23 and 2 theses were marked 1, 2,

3, 4 and 5 respectively. In the nursing programme, no thesis received an overall assessment of 1 or 2, but 20, 9 and 1 papers were marked 3, 4 and 5 respectively. These data are based on a mean value for each thesis based on the assessments of several expert reviewers. There is a mean of 2.8 and a variation of 0.9 figured for all assessments of the theses in the teaching programme. The corresponding figures for the nursing programme are 3.2 and 0.6. The evaluation of the various selected aspects demonstrates, as indicated in Figure 1, that there are a number of differences between the programmes.

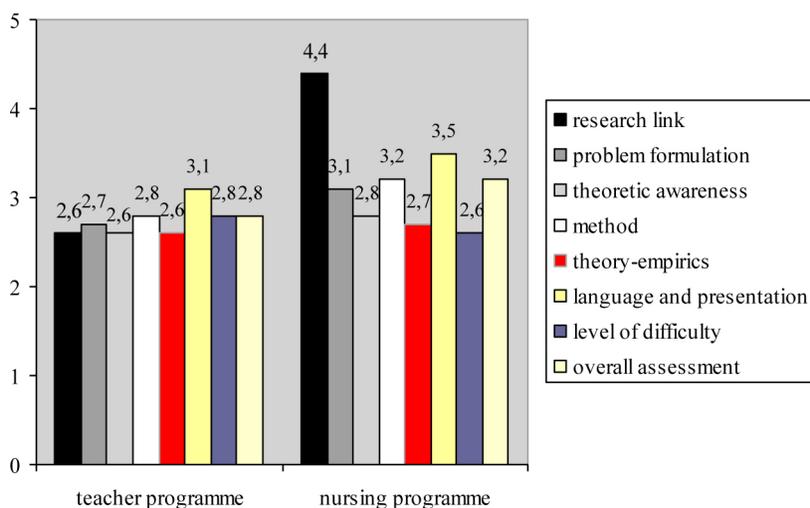


Figure 1. Evaluation of various selected aspects and an overall assessment of the theses. Mean based on a 1-5 bottom to top scale.

The overall assessment of the theses from the nursing programme (3.2) is more positive than that of the teaching programme (2.8). The uniformity of the evaluations of the selected aspects is 0.8–1.0 measured as a standard deviation for the teaching programme and, for the nursing programme, a 0.6–0.9 standard deviation. In general, the evaluations are most uniform for *language formulation and presenta-*

tion, which can also be seen in relation to the opinion of the other aspects in the respective programmes and received a high value, 3.1, in the teaching programme and 3.5 in the nursing programme. Experts generally found the *level of difficulty of the theses* to be neither too low nor especially high (2.8 for papers in the teaching programme and 2.6 in the nursing programme). This can indicate that students did not take on tasks more difficult than they are able to carry out with given resources and in the time that was available to them. For papers in the nursing programme, *research link* obtained the highest value (4.4), which reflects the results previously reported for the use of scholarly references. In the teacher programme, research link together with *theoretic awareness* and the relationship between *theory and empirics* were assigned the lowest value (2.6). The latter two had also been assigned relatively low values, 2.8 and 2.7, in the nursing programme. *Problem formulation* and *methodology* received somewhat higher values, however, 3.1 and 3.2, respectively. This corresponds to values for the teaching programme's theses of 2.7 and 2.8. Aside from the nursing programme papers being valued higher on average by the experts, it is above all in the research-link category that the differences are most obvious. It should be noted that the overall assessment correlates positively for all selected aspects.

The *external expert assessments* can also be viewed *in relation to internally based evaluations*, that is the marks the theses originally received. This is not to say that these are interchangeable or comparable units. Firstly, the opinions assessed by the experts are based on the thesis as a finished product. Secondly, they have had access to a more differentiated scale, which increased the variation. Thirdly, the experts were assigned the task of observing scholarliness particularly, based on the aspects that were highlighted in the evaluation. The marks given for the independent study courses included aspects that evaluated the process of writing the paper, such as local conditions of the courses, which established the conditions for both what was to be evaluated and the weight assigned the various aspects (cf. Gustafsson & Hallström, 2005). The variation is clear from the syllabi, advising and grading criteria collected by HSV. One question referred to the level, or the appropriate point in the progression of the teacher education at which

to write the thesis. At some schools the syllabus predetermined which courses were at C level and whether they were required for acceptance to postgraduate studies. At other schools, there was “uncertainty as to the level at which writing a thesis should be situated” (HSV report series 2005: 17R p. 139). Other variations were related to the purpose of writing a thesis, what was to be included in the evaluation, when the evaluation should take place, and which person or persons should participate in the evaluation. Even here, a number of differences were identified. That is, there were several reasons why the overall assessment of the experts and the marks the paper received were not directly comparable. A comparison could nonetheless be made to support a discussion about differences and what may have caused them.

It should be noted that the differences in the theses in the teaching programme were moderate, but they exist and go in both directions with a weak preference toward a lower overall assessment than received marks. All theses in the nursing programme had received a mark of Pass, even in the few cases in which it was possible to receive a mark of Pass with Distinction. In their overall assessment, the panel experts had nonetheless assessed nine of ten papers as Pass with Distinction and one paper Pass with Special Distinction. The remaining twenty papers were given an assessment of Pass.

To consume or produce knowledge: Is that the question?

When the results of the empirical studies were gathered, some differences between the two VET programmes were more apparent than others. As previously observed in both of the two follow-up studies (Forsberg & Lundgren, 2006 and Säljö & Södling, 2006), these can be traced to different models being used in writing a thesis. The link to research thus gains different expressions in relation to these two models. According to one interpretation of the link to research, which perhaps primarily reflects the extent to which scholarly documentation was utilised, theses written by nursing students would appear to be well grounded in research. Firstly, the experts assigned the papers a high value for the research link, 4.4 on average on a 1–5 scale. Sec-

ondly, an overwhelming majority (90%) of the students in the nursing programme had done some kind of document analysis of the content of scholarly articles. The evaluation of the research link was lower for the teaching programme (2.6), and interviews dominated as the data-gathering tool. Otherwise, students were relatively well distributed (7%–13%) over other methods of gathering data, such as survey, observation, documentation and in some cases triangulation. The choice of method in this perspective formed the basis for how the students at this stage of the process came into contact with research in the subject area treated by the thesis. This was not compensated for to any noticeably extent in any other phase of the writing, as revealed in the differences citing scholarly texts in the reference lists of the theses. The mean among theses from the teaching programme was 3 scholarly references, and this corresponds to the nursing programme level of 19 references. In addition, the latter would also appear to come into greater contact with international research since they use texts written in languages other than Swedish to a considerably greater degree. Given these results, it would appear that the link to research in the nursing programme is strong. The theses from the teaching programme present a relatively weaker link between research and writing a thesis. This is in spite of aspects such as the person-based research link being stronger in the thesis-writing course in the teaching programme. The number of cases in which both the examiner and the supervisor did not hold PhDs was almost nonexistent in the teacher education programme.

In the 2005 evaluation by HSV of teacher education, the panel of experts expressed the impression that the research link, in the form of practicing the assimilation of knowledge from the research and documented research results of others, such as by actively studying the professional literature, is noticeably lacking. /.../ There is a strong focus on research as process in which the student is expected to be the active partner. (HSV report series 2005: 17R p. 138)

The results reported here would lend these statements some support. Typically common in the syllabi of teacher education is the emphasis on the student being expected to be able to formulate and

delimit a problem for empirical study and further processing, analysis and reporting in written form. This is accompanied by a focus on research as a process. The link to research in the nursing programme seems strong, which can to a large part be explained by the use of a model that focuses on the consumption of research. This was apparent in a variety of syllabi, advising and instructions that were gathered in conjunction with the review of the theses. In *Dags för uppsats - vägledning för litteraturbaserade examensarbeten (Time for Thesis Writing - a Guide to Literature-Based Degree Theses)* (Friberg, 2006) the consumption model is justified in the following manner:

Students of nursing and the undergraduate nurse are primarily consumers of research. This means that the nurse assimilates research carried out and communicated by means of dissertations, scholarly articles, reports and presentations at conferences, workshops and the like. Students shall review, weigh and evaluate its usefulness in relation to their activities. If such review provides positive results, the student may contribute to changing the praxis of the care unit and/or the care of the individual patient. (Segesten, 2006, p. 11)

Säljö and Södling (2006) also noted the dominance of the consumer-based model in the nursing programme. They argued that the two VET programmes not only function differently but also have different degrees of research linkage, and that this can in part be traced to the issue of a developed knowledge base.

It has been a goal of nursing for over thirty years – and widely achieved – to solve the issue of a scholarly educational base by introducing the general subject of nursing science, a subject that serves to join together the entire educational programme and provide an indisputable level of a link of research to broad sections of the education. No similar strategy has been developed in teacher education during the same period. (p. 54)

The authors indicate furthermore that a correspondingly distinct subject identity is not to be found in teacher education, “either in the form of the subjects taught or as a common area of research,” (pp. 51–

52). At the same time, they note that educational science has grown in latter years into a possible area of link to research for teacher education. The issue of which research subject teacher education should relate to has, as mentioned, been a recurring one, and proposals have varied over time (e.g. Englund, 1995). Whereas pedagogy as science historically grew out of an attempt to respond to precisely this need for systematic scholarship in teacher education, it has in latter decades been challenged by both diversifying (didactics, teachers' work, pedagogic work) and integrating (educational science/s/) alternatives (e.g. Lindberg, 2002). Given this background, the problem may not be as much a lack of a discipline as the difficulty of selecting the relevant discipline from among all the existing alternatives.

The professional responsibility of a nurse, according to Segesten (2006), can be described from three different levels – consumer, developer and producer – which can in turn describe the three different ways of considering the link to research. The role of consumer applies mainly to the undergraduate nurse as described above, and here the focus falls upon the utilisation of existing research and measures to be implemented in practice. Experienced nurses, specialist nurses and master's students are expected, in addition to being a consumer, to also contribute to their field. This means that they are also expected to “do minor investigations, make new combinations and applications of existing knowledge and cooperate with researchers when appropriate” (p. 11). The role of producer is reserved for graduate students and postdoctoral students.

There are, however, no sharp boundaries between these levels. To the author it was obvious, initially at least, that the consumer perspective extends beyond the use of produced scientific knowledge, and the findings of this study indicate that it also involves “combining different research results into new wholes and thereby contribute to the creation of new knowledge” (p. 9). The necessity of understanding the entire research process and its scholarly theoretic foundations was also emphasised as a prerequisite to being able to review and evaluate previous research. This perspective also would seem to indicate the existence of developmental opportunities for theses in both teaching and nursing educations. Reconsidering the expert-panel opinions

of the levels of scholarliness we can observe that the papers in the nursing programme were awarded higher values in terms of a link to research, which seems to not have had any greater transfer-of-training effects. Even if the aspects are assessed at somewhat higher values than their corresponding values in the teacher programme, the differences between the papers written in each programme are considerably less. The assessments of problem formulation, theoretic awareness, method, the relationship between theory and empirics and the overall assessment of the papers reveal that the differences between the programmes are, in other words, not of the same order of magnitude.

The broader understanding of research linking that was introduced initially, citing Lundmark, Sjölund and Staaf (2006) and Björklund (1991) and others, includes a scholarly basis for the educational program and a scholarly approach in addition to the institutional aspects. It brings to the fore that several of the aspects assessed for scholarliness in thesis writing that were originally considered to be parallel to research link rather should be considered internal aspects of it. The matter of research linking is thus not solved by the selection of a consumption or production model for writing a thesis. Or, in other words, viewing the field in terms of the consumption or production of knowledge is not the issue.

Säljö and Södling (2006), who discuss the link to research in terms of process, outcome and proximity to research and researchers and relate it to the relationship between theory and practice, indicate that all students have much to gain by an early introduction to the role of research consumer. They observe however the importance of the student not only being seen as a receiver of information and research activities; the student must “gain the opportunity to develop as a subject and participant in contributing to the field, to not only learn about research but also to be a part of the scholarly setting” (p. 58). The authors conclude that there is a comprehensive pattern in which teachers report a larger portion of linking to research in the instruction than the students confirm. Viewing linking to research as a process, as a scholarly approach to knowledge, the authors argue nonetheless that students have internalised the ideal of a scientifically based education. They also argue that the students obtain access to research results by

such means as the course literature. Thus, the students are exposed to “a reasonable selection of previous research” (p. 58).

At the same time, regarding linking to research in terms of familiarity with and proximity to research results and way of working reveals a different pattern.

.../ a palpable alienation to research in a real sense, .../ Usually they know little, if anything, of the research being carried out in the department .../ Particularly uninitiated in the periodical literature of the subject. .../ unfamiliar with academic terminology .../ Research viewed as something abstract and not as an actual and fruitful activity. (Säljö & Södling, 2006, p. 56)

The authors also found a recurring attribute among students of equating research with method or a methods course and that student rarely spoke of the content or creative dimensions of research. In addition, it was not unusual for students in teacher education compared with those in nursing education to see a conflict between the link to research and career preparation. The former is of course seen as theory and the latter as practice.

A number of the experts reviewing the independent work in teacher education raised the issue of the scholarliness of the theses. This included for example what the experts thought was an unfounded choice of qualitative method or personal interview. We chose not to study the reasons for the dominance of qualitative methods, but a similar dominance in social work has referred to both cognitive and social components.

The first one – the knowledge hypothesis – is based on the assumption that students and supervisors in social work lack knowledge in research methods in general and in quantitative research methods in particular .../ A second explanation – the cultural hypothesis – is based on the fact that there is a more or less explicit scepticism against quantification of the social world .../. The third hypothesis – the resemblance hypothesis – assumes the existence of tangible similarities between the qualitative research interviews and social work practice (not only training in research but also conforms and confirms profes-

sional skills) /.../ Our final explanation is the hypothesis of paradigmatic development – in the context of discovery by means of inductive and qualitative approaches and techniques. (Dellgran & Höjer, 2003, p. 569)

It was rare for the choice of term-paper subject to be problematic. The choice of subject was most often found by the experts to be relevant, interesting and newsworthy in relation to the future profession. However, in the weaker theses, which by the way were relatively rare, issues were found with language use, presentation and structure. It is possible to identify students with a strong normative attitude toward what was being studied. The student had simply adopted the task of arguing a specific position rather than testing and thereafter if justified arguing for it. The absence of original literature and international research and the lack of reflection over the content of utilising different types of sources were other problems that were raised in relation to papers that were given the overall assessment by reviewers of Fail, Pass and Pass with Distinction. In general, a more creative, investigative perspective and an observatory, independent approach was sought, along with a broad theoretic awareness and understanding of how theory and empirical data can be understood and used in relation to each other. In the evaluation of teacher education that was carried out by HSV and preceded studies of thesis writing and linking to research, the experts found that the role of writing a thesis in teacher education rested on

methodological rather than epistemological grounds; questions of how activities in schools can be documented, commented on and developed dominate over questions of how the basis of knowledge for the teaching profession appears and how, given such basis, hypotheses can be developed to test it. /.../ What would seem to be emphasised to a lesser extent is that writing a thesis is the development of curiosity and a searching attitude, a disciplined problem formulation and a systematic research. (HSV report series 2005: 17 R p. 140)

In their study of writing a thesis, Forsberg and Lundgren (2006) found that the ambition to contribute to the field rather than draw

from the field through writing a thesis seemed to be counterproductive. The link to research in the sense of making use of original scientific literature in writing a thesis would argue for such a conclusion. When we start from the broader understanding of the research link described above, it is not reasonable to compare the two models of writing a thesis. They should instead be seen as complementary. Fundamentally, they are dialectically related to one another and thus constitute the requirements for each other. The field for the production of scientific knowledge is never separated in absolute terms from the field of consumption of such knowledge. They are tied to each other not only through the reasons for why a specific kind of knowledge should be developed but also by means of the separate ways in which knowledge is generated, disseminated and used. For students, it is therefore valuable to continually be experiencing the separate ways in which undergraduate, graduate and professional life are interrelated. For this to happen, more attention needs to be directed to the conditions of the education and the measures that can be taken to reduce the gap between ideal and reality.

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Recibido: 17.07.2012 / Aceptado: 14.09.2012