

The final professional bachelor's thesis in Danish teacher education:

Tensions between theory, practice, and research in the
complexities of repeated reforms

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Teacher education in Denmark for primary and lower secondary school is a four-year, professional bachelor's programme. The repeated reforms, the changing policy requirements, and their consequences for the final professional bachelor's thesis are issues discussed in this article focusing on tensions between the weighting of theory, research, and professional practice. The history of Danish teacher education provides a background to understand this, and it is discussed whether the tensions might instead be understood as fields of synergy in the inevitable complexity of educating teachers. To exemplify this key point, the article illustrates three areas of student teachers' competencies: 1) the practical-pedagogical area, 2) the personal-professional area, and 3) the area of research and development. Previous research studies looking into the final thesis for primary and lower secondary school in Danish teacher education have, for example, discussed tensions between text norms, where mixtures of references to personal pedagogical values and academically oriented, formal, rhetorical features have been seen. Furthermore, there is previous research examining if and how student teachers can benefit from working with collaborative inquiries based, for example, on classroom video. An analysis of four professional bachelor's projects is presented leading to the conclusion that a professional inquiry orientation is dominant in the work with the final thesis.

Keywords: Final thesis; teacher education; research-based; practice-based; educational reform

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Introduction

The aim of this article is to discuss the history, orientations, and priorities related to the final thesis and the student teachers' work on this in Danish teacher education for primary and lower secondary school, which in reference to the Bologna declaration and the qualification structure of Danish higher education is a professional bachelor's degree (Uddannelses- og Forskningsministeriet, 2022a). First, a short rationale related to the dynamic field of theory, practice, and research will be given. The many reforms of teacher education and the fast-changing policy requirements are international trends (Murray, Swennen & Kosnik, 2019) and this is certainly an issue in Danish teacher education, which is just now implementing a new reform (LU2023). The last reform was in 2013, and before that there was a reform in 2007. In between these larger reforms there have also been smaller policy-induced regulations.

Murray et al. (2019) discuss from an international comparative perspective that some countries currently have reforms moving towards more research-based teacher education, while reforms in other countries focus on making teacher education more practice-based. These two discourses also affect Danish teacher education. The need for a stronger research base in the student teachers' final professional bachelor's thesis was emphasised in the latest external evaluation (Styrelsen for Forskning og Uddannelse, 2018), but there are also frequent calls for maintaining and strengthening the connection to professional practice, e.g., in student course evaluations and questionnaires (Böwadt & Vaaben, 2021). Furthermore, an intention to support craft-based, practical knowledge in education in general is on the contemporary political agenda in Denmark (Regeringsgrundlaget, 2022). This political agenda might have influenced the latest reform more than the evaluation and research reviewed below. Hence, the latest reform (LU2023) has many practice-based elements with more school practice both in placement periods and so-called integrated school practice, for example, a day per week, while the final professional bachelor's thesis is slightly reduced from 10-20 ECTS in LU2013 (Retsinformation, 2013) (typically fifteen) to ten ECTS in LU2023 (Uddannelses- og Forskningsministeriet 2022b; Retsinformation, 2023). There is also in the newest reform an intention to develop assessment and exams with more focus on professional practice, for example with a new professional exam after school practice in the fourth year, aimed to evaluate the professional teaching competence and evaluated in cooperation between a teacher educator from campus and a teacher from school practice (Retsinformation, 2023, §18). This is not connected with, but aimed to supplement, the professional bachelor's exam later at the fourth year (elaborated in the section about the final thesis).

Another issue related to Danish teacher education is the rich tradition related to working with pedagogical theory as it is, for example, discussed in research examining the knowledge bases for teacher education in general (Lund & Nielsen, 2020; Nielsen & Lund, 2020), and in relation to the final professional bachelor's thesis (Nielsen, 2015).

This broader context is critical to understand the positioning of the final professional bachelor's thesis in Danish teacher education. Within this context, the aim of the article is to describe and discuss how changing reforms have influenced the orientations in the final thesis. Previous research on the bachelor's thesis and the knowledge bases in Danish teacher education is included and, besides the steering documents, an analysis of four concrete theses

is presented. Furthermore, interviews with two leaders and a teacher educator have been used in the process. The three semi-structured interviews included questions about the ongoing work on implementing LU2023. Interviews were made online, audio-recorded and transcribed verbatim. The interview data will not be presented in a separate analysis, but a few quotes are included to illustrate and exemplify key-points regarding the implementation.

Regulations and policy-guided practices in teacher education

Danish teacher education is a fully *integrated* programme opposite to some countries having post-graduate teacher education. Hence, over the four years of the professional bachelor's programme, the student teachers study both the chosen (school) subjects like Mathematics, History, English etc., the subject didactics, and pedagogy, psychology etc. Furthermore, they are in periods involved in fulltime school practice; for example, covering three weeks in a year and, with the new reform, also periods with integrated school practice for example with one day a week at a school and the other four days at the campus. Teacher education is now situated at six national university colleges, but twenty-five years ago the teachers for primary and lower secondary school were educated at a local '*seminarium*' (more in the next section). Contrary to this, teachers for upper secondary school – the Danish gymnasium – are educated at the universities with a master's in one or two subjects and with a post-graduate in-service pedagogical course. These two systems have historically been very different, and when using the term 'teacher education,' this article refers only to the programme for primary and lower secondary school. This is aligned to how the term 'teacher education' normally is only used about this program in Denmark, while the in-service course for upper secondary teachers is called 'pædagogikum,' which is the same term as used about in-service courses for educators in higher education.

Teacher education in Denmark is regulated in many of its details by law ('the teacher education act') and executive orders, e.g., the newest from Retsinformation (2023). Hence, although organisation and progression of the courses in each teacher education institution is decided locally, the programme across the six university colleges is basically the same and is treated as such in this article. In the executive order from 2023, it is, for example, stated that the education overall consists of:

- Basic subjects: 70 ECTS (pedagogy: 20 ECTS, psychology etc.: 20 ECTS, citizenship, religion etc.: 20 ECTS, Danish as a second language: 5 ECTS, chosen themes e.g., health, sex and family education: 5 ECTS)
- The three (chosen) teaching subjects: 120 ECTS
- School practice: 40 ECTS
- The teacher bachelor's exam: 10 ECTS

In relation to the latter, it is stated in §20 that:

The **teacher bachelor's exam** consists of a larger written assignment (the bachelor's project) and an oral exam. In the written assignment, the student teacher must reflect on and seek a

solution for a **professionally relevant problem** related to teaching in schools and including results from **research and development projects** and **research-based literature**. The assignment must be written in relation to one of the teaching subjects chosen by the student. (translated by the author)

In the executive order, the two concepts bachelor's assignment and bachelor's project are used. These are also the terms most frequently used in daily dialogue. In this paper, the term 'thesis' is, however, also used to refer to the written part of what the executive order calls the bachelor's exam, and in the meaning of 'thesis' as emphasised in the definition from Råde (2019) and Gunneng and Ahlstrand (2002) as a broad comprehensive concept including bachelor's thesis, master's thesis, and similar project work. The two concepts (assignment and project) used in the executive order from 2023 are not new, but have been used since the introduction of the professional bachelor's degree in Denmark in 2000. The specification about 'one of the teaching subjects' is, however, changed from LU2013, where it was also possible to make a project referring to a general or special pedagogical issue. Furthermore, there is a change in denomination from LU2013 to LU2023 concerning the term 'teacher bachelor's exam.' This is changed from the previous policy documents where the term 'professional bachelor' from the Bologna protocol was used (Retsinformation, 2007b; Retsinformation, 2013). According to actors involved in the political agreement, the last change was a compromise made in the negotiations to satisfy those arguing for an even-closer craft orientation. The specified demand of referring to one of the school subjects is also aimed to direct the focus to specific teaching in schools, an issue discussed in the period between LU2013 and LU2023 with involvement from the ministry level urging for a change towards focusing on the school subjects (Bjerrill, 2018; Grynberg, 2019).

The purpose, overall content, and intended learning outcomes of the subjects are also described in the executive order and afterwards elaborated in the local curriculum-descriptions. This is, however, not the case (yet) for the bachelor's exam in the 2023 executive order, contributing to some confusion in the present implementation process.

A first key point here is that both the terms 'professionally relevant' and 'research-based' are highlighted in the executive order (Retsinformation, 2023), but there is a tendency of moving towards emphasising teaching as a craft and positioning school practice more strongly in teacher education. Hence, the duality of relevance for the profession and reference to research is an interesting analytical lens through which to discuss the final professional bachelor's thesis in Danish teacher education, and the final thesis model Yildirim et al. (in this issue) introduces emphasising, respectively, research, inquiry, and practice orientations are used below in the analysis of the data. The title of this paper refers to 'tensions', among other things, due to the context of the changing political decisions, and referring to the tensions being discussed also internationally:

Two fields of tension [...] theory and practice, i.e., between the academic and scientific demands of the profession and the day-to-day demands in exercising the profession. Second, there is tension between autonomously performing a job where the professionals themselves set the premises and society's need to regulate and control the performance of the professionals. (Wæge & Haugaløkken, 2013, p. 237)

It is, however, a key point that the duality might also be seen as a synergy (or a fusion, as, for example, described by Råde, 2019). This is further elaborated later in the article, but first a short outline of the history is given below.

From *seminarium* to university college

The education of teachers at a *seminarium* has its roots in the Enlightenment period; the first seminarium opened in 1791 and more followed, often started by local landowners or clergy and not connected to the universities. In the 1960s, there were around thirty institutions spread across the country. In the local rural communities, the teacher was positioned as a knowledge person together with the priest, and the church and religious issues for many years had a central role in teacher education. The education of teachers was for example throughout the nineteenth century influenced by the philosophy of the theologian and educational thinker N.F.S. Grundtvig (1783-1872) (Hjermitslev, 2020). Grundtvig is also known for influencing the tradition of Danish folk high schools. This is, according to Hjermitslev (2020), important for understanding some of the tensions still present today. For example, some debaters appreciate this as a valuable and special Danish contribution to teacher education, while others regard the Grundtvigian influence as an impediment to a necessary alignment of Danish teacher education to international academic standards. The complex development over the twentieth century from teacher education at a seminarium and the change from religious authority to research informed is also discussed in a Norwegian context (Marciuch, 2023).

From the 1960s and onward in Denmark, according to Rasch-Christensen and Thejssen (2011), there has been the development of two trends: 1) an academisation leading to the later placement in the Bologna qualification framework as a professional bachelor's degree, with a growing focus on academic standards and scientific methods, and 2) a professionalisation highlighting the purpose of educating qualified professionals for the school in the Danish tradition of integrated teacher education with synergy between student teachers' work with subject matter, pedagogy, and school practice. In relation to academisation, the formulation '*the use of an academic approach and scientific methods*' was first included in the 1996 law. But at the same time, it was emphasised that the particular '*Danish model for teacher education, with all elements in the education targeting the aim of educating teachers for the school*' should be maintained (Retsinformation, 1996). The final thesis was initiated with the 1997 law and described as this: '*The student teacher composes a larger independent assignment in relation to one of the chosen subjects*' (Retsinformation, 1997). The title of a professional bachelor followed in the law about medium-cycle higher education from 2000 with the new common regulations for the various 3-4 years professional bachelor's programmes (Retsinformation, 2000). Hence, a teacher education institution was now, together with other professional bachelor's programmes, located at what was first called centralised centres for further education (CVU). These institutions later developed to the university colleges (Retsinformation, 2007a). The duality between academisation and professionalisation is clear both in the law about medium-cycle higher education from 2000 and in the law introducing the university colleges (2007a):

... provide the students with a theoretical insight into subjects and insight into how the professions and vocations use theory and method in practice [...] the students should be able to describe, formulate, analyse and process professional problems. (Retsinformation, 2000)

... higher education [...] at an international level [...] a university college must secure that the knowledge base at the educations is characterized by being professional and developmental based. (Retsinformation, 2007a)

The term ‘research’ is, as here, often followed by or replaced by ‘development’, and the term research and development (R&D) is frequently used in discussions about Danish teacher education, signalling a particular kind of research resembling what internationally is called close-to-practice-research (Wyse et al., 2018).

Summing up, in the long historical view there is a movement from teaching being a vocation with a strong base in the local community through an academisation and professionalisation towards recognition of teachers as professionals with a professional bachelor’s degree.

The final thesis

The final thesis has been weighted a little differently in ECTS through the twenty-five years it has been part of Danish teacher education. In LU2007 it was worth ten ECTS, and it was emphasised that the thesis should build on one of the chosen school subjects, the pedagogical subjects, and also on skills developed in school practice, and that the student teacher should demonstrate a use of ‘*scientific method*’ (Retsinformation, 2007b, §10). In appendix 6 it was elaborated that:

The bachelor’s project should qualify the student for practicing in the function as a teacher working independently in the profession and qualify for further education on a relevant master’s or candidate study.

With this quote, the double aims of being the final exam in teacher education and qualifying for further education to a master’s level is clear. It must be emphasised that there is no master’s level in teacher education in Denmark, but teachers with a professional bachelor’s degree are qualified for a master’s level in other fields for example pedagogy or pedagogical psychology and recently also for a range of new professional master’s programs being implemented from 2026. In LU2013, the final professional bachelor’s project was described as 10-20 ECTS-point, and it was emphasised that the project should be based on a ‘*concrete empirical problem*’ using ‘*results from concrete research and development projects and research-based literature from the school-area*’ (Retsinformation, 2013, §14). In appendix 4, the intended learning outcomes were listed, including, e.g., demonstrating knowledge of ‘*own and others’ inquiries about school and educational development and innovation*’ and demonstrating ability to ‘*use scientific methods in own empirical inquiries and in evaluating others’ inquiries.*’

Finally, in LU2023, the professional bachelor's project is back to being worth ten ECTS and although it is still an executive order with the headline of '*education with professional bachelor's degree for teachers*' the final project is now, as mentioned, called a *teacher's bachelor* (Retsinformation 2023, §4). Contrary to the other executive orders, there is not an elaboration of the intended learning outcomes concerning the final thesis (teacher's bachelor), only the statement quoted in the section about regulations and policy-guided practices above. This has been problematised by all the leaders and teacher educators interviewed during the work on this article, and at present there is ongoing bottom-up work from the university colleges to develop the executive order. The concrete practice, like supervision, around the work with the final thesis is regulated by the local curricula. At some institutions there are two supervisors, one from the chosen school-subject and one from the pedagogical subjects, but this is not the case at all institutions. It is not yet clear if the slightly reduced ECTS credits will mean anything in practice in terms of time allocated for the final thesis, its supervision and examination.

Summing up, there appears, based on the executive orders, to be a tendency that the demands for the student teachers' academic approach have been specified over time by, for example, referring to the empirical inquiries (research-orientation), but now moving back towards a practice-orientation (Yildirim et al., in this issue). This implies some tensions between these two orientations in the political discussion about the final thesis. There are, however, in some of the process documents from the work with LU2023, intentions pointing more towards what Råde (2019) calls a fusion, or maybe the term synergy is more descriptive in relation to these intentions. Teacher education LU2023 is described by the leader network as referring to a progression under three headers, referring to overall competencies in the areas of 1) the practical-pedagogical, 2) the personal-professional, and 3) research and development (Figure 1).

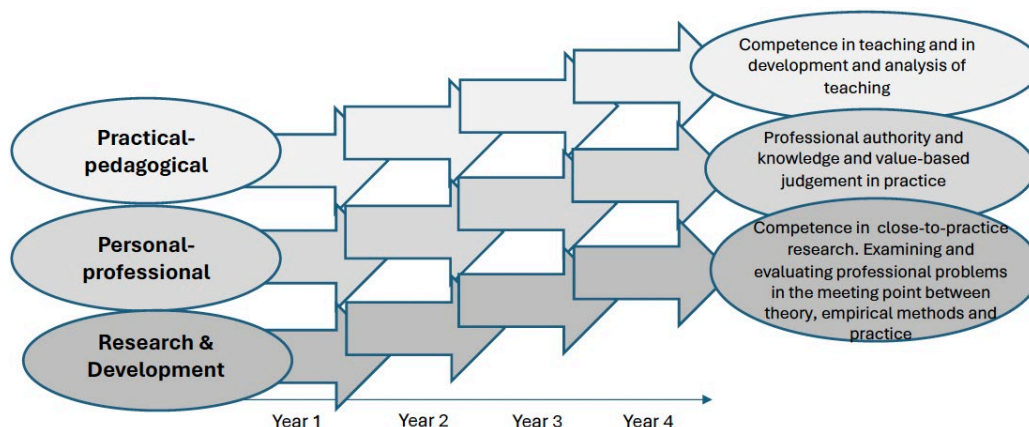


Figure 1. Progression through teacher education under three headers as described by the national leader network in teacher education (freely translated by the author from the documents at <https://www.laereruuddannelsesnet.dk/arbejdsnotater/>).

The idea about describing progressions under such overarching themes was first presented in Danske Professionshøjskoler (2020) and experts in Danish teacher education worked proactively to influence the direction in the period before the reform (LU2023). A range of process documents from this work are available on <https://www.laereruddannelsesnet.dk>. The three areas and the intended progression (Figure 1) are all elaborated under the headers of student teachers' actions and reflections; for example, the progression in relation to research and development includes both the reading and analysis of theory and research, the identification of knowledge needs, the work with scientific methods, and the application of and communication about close-to-practice research, i.e., aligned to competences internationally described under the header of teachers' research literacy (Boyd et al., 2022; Mausethagen et al., 2023; Philips et al., 2023).

At the same time, this progression is, as illustrated in Figure 1, closely connected to the other progressions under the themes of 'practical-pedagogical' and 'personal-professional'. One of the leaders interviewed exemplifies the potential synergy referring to how the student teachers need to use their insights from the practical-pedagogical and personal-professional areas to identify and formulate a research question:

... where data then - referring to the progression related to research and development - is analysed, because you [the student teacher] need to have a deep awareness about and sensitivity to the issues you are going to dissect in the systematic analysis.

This quote illustrates how the model (Figure 1) builds on some of the same ideas as Philips et al. (2023) do when discussing the particularities of *teachers'* research literacy, highlighting teachers' engagement with research as intimately bound up with teaching practice, and the moral and epistemic demands in the role of a teacher. Furthermore, the stakeholders interviewed emphasise that the new professional exam (see the introduction) could have competences related to personal-professional area in the foreground while the bachelor's exam could have competences related to research and development in the foreground, but in both cases based on the ground of (a synergy between) the three areas.

It is too early to evaluate how respectively the practice-turn in the executive order (Retsinformation, 2023) and the intention about synergy from the leader network will affect the development of Danish teacher education in general and the final thesis in particular in the future, but the thoughts about a practice model of teachers' research literacy from Philips et al. (2023), which in many ways support a synergy model, will be further elaborated in the discussion below.

Research and evaluation on the final thesis in Danish teacher education

Although there is not much research looking into the final thesis in Danish teacher education, a few studies that are relevant are reviewed in this section. In addition, an evaluation carried out by international experts on teacher education in Denmark (Styrelsen for

Forskning og Uddannelse, 2018) is discussed particularly in relation to the findings on the final thesis.

A first large research study was carried out within the context of a Ph.D. project (Møller, 2005) examining the positions on, and enunciating problems characterising praxis around the final (bachelor's) thesis as text-genre, and the interactions of the agents in teacher education in relation to these problems in the fields of teaching, tutorials, and examinations. The main conclusion was that the agents of teacher education are acting within a space of conflict because the discursive practices regarding the final thesis take place in a complex field of tensions between the traditional text norms and academic text norms (Møller, 2005, p. 310). It is, as in the present article, emphasised that the teacher education programme historically has been developed by not referring strictly to academic traditions, and that the profession-oriented dimension has traditionally been guided by an interpretation referring closely to the policy documents. Conflicts arise when the student teachers meet the quite restricted formal text requirements for the final thesis as the available positions do not allow for emotional- and experience-based competence. This leads according to Møller (2005) to textually produced mixtures with a combination of praising specific pedagogical values and academically-oriented, formal, rhetorical features. The recommendation was to find more dynamic ways to handle the academisation, including acknowledging the student teachers' practice knowledge and the social negotiations with fellow student teachers and teacher educators during the process of working on the thesis (Møller, 2005).

A later research study (Nielsen, 2015) involved a participatory design and revealed further the understanding about the tensions experienced by the student teachers during their work on the final thesis. The study followed a group of student teachers who collaboratively analysed videos of their school practice to use in their final theses. Their meaning-making was examined based on interviews about perceived outcomes from the collaborative video-club, and included analyses of how they constructed understanding during the process of working on the thesis, and how their interpretation of (the videotaped) classroom experiences developed over time (Nielsen, 2015). The findings showed that the structured collaborative analysis supported the student teachers in a nuanced consideration of concrete incidents and in reconstructing their experiences with a focus on student learning. They noted the benefit of the peer support and had a positive view of the structured approach. Additionally, they emphasised insights gained by starting from a fine-grained analysis of concrete incidents encountered in their school practice before applying theory (Nielsen, 2015). An analysis of the final theses from the student teachers in the videoclub concluded, however, that the student teachers, despite emphasising the outcomes of using practical explanatory theory (Nuthall 2004), still referred to the same '*bildung*' theories in the theses due to a wish to perform academically (Nielsen, 2015). Some of the theories appeared to be an add-on in the text, and this was, according to the student teachers, not done to discuss their own fine-grained results, but to perform in line with the formal requirements.

The use of theories as an add-on is also discussed in the interviews informing this article more specifically referring to that concepts from philosophy of science according to the interviewees are being used frequently in student teachers' final theses apparently to live up to formal requirements and academic demands. An experienced teacher educator refers to the importance of supervising the student teachers so they:

...differ between relevant research literature and relevant theory [...] a reflective selection [...] referring to their own empirical inquiry [...] they do not have to write phenomenology and hermeneutics quite so often without really using it to discuss the findings.

Studies examining an action learning approach

Following the conclusions from Nielsen (2015), there have been some initiatives and studies examining possibilities for having a more entrepreneurial, action-learning or lesson-study approach to student teachers' work on the final thesis (Nielsen, 2021; Nielsen et al., 2018; Hedegaard, Larsen & Krogh, 2016; Kaas et al., 2017). Kaas et al. (2017) emphasise the inherent tensions between identification and distance as the professional bachelor's degree should both qualify for further academic education and for the work as a teacher. An example of tensions is, according to Kaas et al. (2017), that the student teachers' orientation towards future practice often includes questions about identification ('which teacher do I want to be') but distance is a quality criterium in a critical academic stance.

Nielsen et al. (2018) present a cross-case analysis where student teachers have been involved in co-creation (action-learning) with in-service teachers based on specific challenges identified in practice at the teachers' schools. The student teachers were using data from these experiences for their final theses. The student teachers referred to meaningful learning as focused on mastering, not just performing academically, and the in-service teachers emphasised the contribution from the student teachers, e.g., their more theoretically-informed inputs. The co-creation experiences contributed, as also highlighted by Wæge and Haugaløkken (2013) and Nielsen (2015), to the use of more practical explanatory theory (Nuthall 2004), and furthermore stimulated a reflection about what research can be, e.g., also co-creation and action research, allowing the voices of practitioners to be heard in a research context. It can be added that possibilities in an action- research and/or entrepreneurial approach to the final thesis is also discussed in international research (Råde, 2019), and recently suggested in the Norwegian, integrated, master's level teacher education (<https://uni.oslo-met.no/entre/hva-er-en-entreprenoriell-masteroppgave/>). Hence these tensions are well-known across different countries' contexts but, as argued, there appear to be some particular issues related to what – even in official legislation – is referred to as the Danish tradition.

Evaluation of the professional bachelor's thesis and a discussion about teachers' research literacy

The issue about a Danish tradition being slightly different from that in other Scandinavian countries was also concluded based on an external evaluation from 2018 where a group of experts from Norway and Sweden contributed with an analysis of a range of final theses from Denmark (Danmarks Evalueringsinstitut, 2018; Styrelsen for Forskning og Uddannelse, 2018). The experts from Norway and Sweden were asked to evaluate the final theses as if they were from their own country. All in all, a random selection of ninety-two final theses were analysed in relation to an overall evaluation of strengths and weaknesses, the degree to which the student teachers referred to research, the degree to which they examined an empirical (research) question, and with what mark it would have been awarded in their country. The conclusion was that many of the Danish theses start from a concrete problem

at a school. This was positively emphasised in the evaluation. Likewise, the student teachers typically work with their own empiric material and some of the experts stated that the projects appeared to have more relevance for practice than is typical in Norway and Sweden. However, there were also some critical points, e.g., the evaluation concluded that the demands are higher in Norway and Sweden; for example, in relation to academic skills, structure in the thesis, and the provision of a state of the art of previous research (Danmarks Evalueringsinstitut, 2018).

This evaluation has been widely discussed but as stated in the Introduction, the results referring to the academic level do not appear to have influenced the new reform very much. Some of the critique of the approach in the evaluation has been the fact that the professional bachelor's exam consists of *both* the written thesis and an oral defence, whereas only the written thesis was evaluated by the experts. This might be one of the reasons for the difference in suggested mark, where the mark from the experts on average was slightly lower than the actual mark given. Furthermore, the tendency to highlight the need for research-based knowledge (in particular) positioned in a slightly reductionist way has been discussed by referring to a range of *other* knowledge types in teacher education (Lund & Nielsen, 2020; Nielsen & Lund, 2020). Knowledge in teacher education consists, according to Nielsen and Lund (2020) of various ways of handling knowledge, e.g., not only positioning student teachers as consumers of knowledge in research produced by others, but also potentially involved in the enactment and construction of knowledge. Some of the conclusions in the study from Lund and Nielsen (2020) align with the way Healey and Jenkins (2009), in their model of undergraduate research and inquiry, differ between a research-based, research-oriented, research-tutored, and research-led emphasis, highlighting an approach with student involvement in active inquiries as being a research-based approach. The Danish student teachers appear, based on the evaluation, to work in a research-based way, examining empirical problems from schools while the research-led focus on demonstrating a structured overview of previous international research and the research-tutored and oriented focus on academic skills when writing a thesis appeared to be weaker.

Nielsen and Lund (2020) refer to different types of knowledge, like global and local theory, and evidence. Referring to Ellis (2016), global evidence is described as having '*harder edge*' and being '*thought to be purer, more reliable, more certain and able to be confidently articulated and to have academic status*' (p. 368). Yet such generic forms of knowledge represent, according to Hermansen and Mausethagen (2016), a contrast to teachers' experience-based knowledge, which is of a more local and contextual character. Lund and Nielsen (2020) also use the terms global versus local about theory as a knowledge type. This has sometimes also been referred to as theory with respectively a large T or a small t, with the small t-theory also referred to as practical explanatory theory (Nuthall 2004). Winch et al. (2015, p. 213) state that '*a body of theory is important in enabling teachers to discriminate autonomously between good sense and common sense*', and the research studies looking into the Danish professional bachelor's thesis referred to above is not suggesting less use of theory just problematising what kind of theory is most relevant to discuss the empirical material in the thesis.

This brings us back to the way teachers' research literacy is defined by Philips et al. (2023) as intimately bound up with teaching practice and the moral and epistemic demands in the role of a teacher and not just being a subset of what expert researchers know. Thus,

obviously, the different ways a teacher’s research literacy is conceptualised has different implications for how to develop and demonstrate research literacy in the final thesis.

Final thesis orientations: Four examples

A range of final (bachelor’s) theses are continually being made publicly available at an official national Danish website. Teacher educators nominate projects they think might inspire others in teacher education and in schools, and a national expert group makes the final decision about what to publish on the site. The methodological choice and sampling strategy in the work with this article has been to use the four newest final theses from this site – the latest uploads with a full text option - as examples (retrieved 1 May 2024 <https://www.folkeskolen.dk/laererprofession/>). The analysis refers to the model for final thesis orientations (Yildirim et al., in this issue) (Figure 2) and to the critical questions highlighted in the 2018 evaluation (Is there an empirical problem? What kind of (international) theory and research is used? What kind of methods are used?).

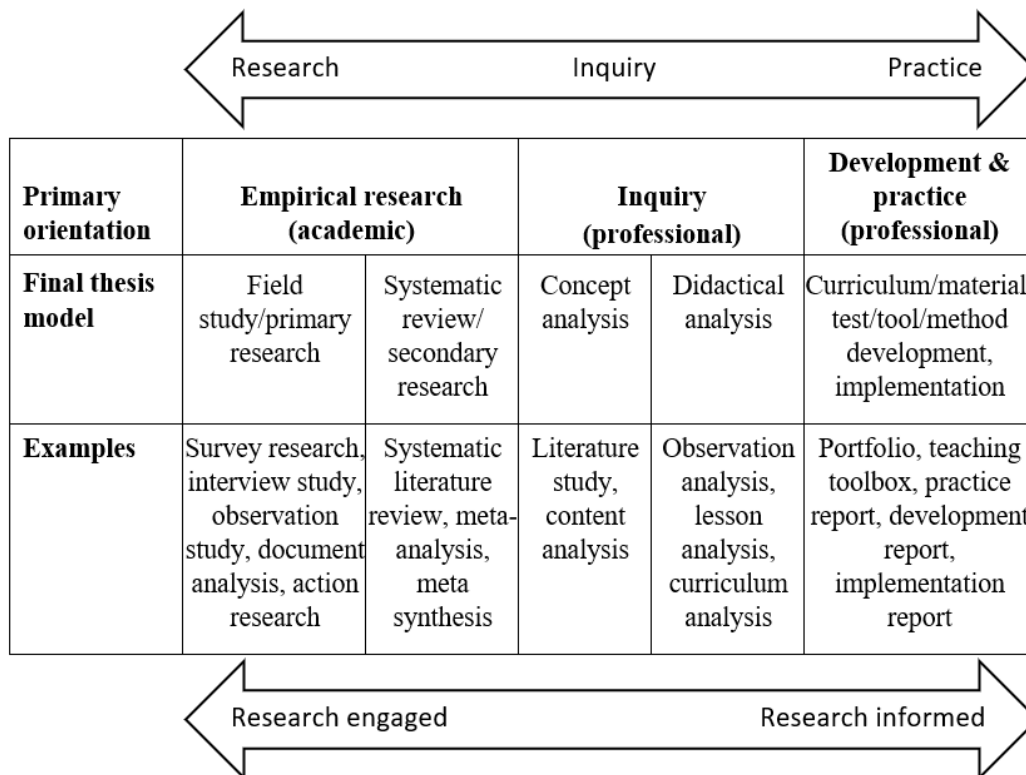


Figure 2. A framework to represent various final thesis orientations in teacher education (Yildirim et al., in this issue). The framewrok is used to analyse the four theses (see Table 1).

The ideal of seeking diversity presenting theses with different kind of theoretical and empirical approaches is emphasised at the website. A thesis does not have to be evaluated with the highest grade to be chosen. Furthermore, it is explicitly stated that it is in no way a search for one normative pedagogical truth. Anyway, the theses at the website are all chosen as

being of a certain quality. Hence, the aim here is not to present an average picture, as we have that from the evaluation in 2018. The aim is to exemplify how the stakeholders in Denmark perceive ‘quality’ in a final (professional bachelor’s) thesis. An overview of the analyses of the four theses is presented in Table 1.

Table 1. A presentation of the analysis of the four theses (sampled as the four latest theses uploaded at <https://www.folkeskolen.dk/laererprofession/>)

Problem statement	Background: Theory and research	Methods	Orientation (Yildirim, et al., in this issue)
How can I as a teacher plan for the competence area ‘Gender, Body & Sexuality’ in ‘Health, Sex & Family Education’?	Theory and research related to norm-critique, gender, heteronormativity, and semantic teaching approaches. Eleven references to chapters in theory books and four to primary research (in Danish). Five references to general pedagogical and didactical theory books (in Danish). Three references to popular articles (websites) and a documentary.	Design-based research with participatory observation, student evaluation and student products from two classes. Five references to methods literature (all in Danish).	Primarily professional inquiry-orientation, with a reference to, e.g., observation.
Can a playful approach to biology teaching support the students’ subject competences? How can playful teaching be designed to motivate students’ participation and engagement?	Theory and research related to playful learning. Reference to two research articles (in English) and seven references to theory books (in Danish). Seven references to articles on websites about playful learning, motivation, and aesthetic learning processes (in Danish) and to a video about motivation research (in English). Four references to general pedagogical and didactical theory books, four in Danish and one in English.	Interview, questionnaire, and observation in the context of experimenting with a specific teaching unit with one class of students. Five references to methods literature (all in Danish).	Primarily professional inquiry-orientation, with a reference to didactical analysis and observation. It is, however, based on implementation of a specific teaching unit, hence there are elements of a development and practice orientation.
How can I as a teacher at a segregated special school	Theory and research related to literature teaching and aesthetic learning.	Action learning with structured observation.	Primarily professional inquiry-

design inquiry-based literature teaching, focused on students' experiences and understanding?	Reference to nine theory books and five primary research publications (all in Danish). Three references to general pedagogical and didactical theory books (in Danish).	Six references to methods literature (all in Danish).	orientation, with a reference to, e.g., observation.
How can students with special needs work with inquiry-based mathematics? What happens when they are involved in an inquiry being respectively teacher led, student led, or decided in a democratic process?	Research about inquiry-based mathematics teaching and teachers' relational competencies. Nineteen references to primary research articles from mathematics education (eleven in English and eight in Danish). Two references to general educational research articles (in Danish).	Case-study with video observation. Five references to methods literature (all in Danish).	Primarily an empirical research orientation, referring to a systematic review of the international research.

The four theses, from four different university colleges, all include a problem statement referring both to theory and research, and with some kind of empirical research or inquiry. The formulation 'how can I as a teacher' is used in two of them, 'teaching' is a prefix of some kind in two of them, and 'students' is used in two of them, indicating in a first glimpse a professional orientation (Yildirim et al., in this issue). The context differs between a subject (mathematics), a content area in a subject (literature teaching in L1), a cross-disciplinary content area (Health, Sex & Family Education), and a broad pedagogical approach (playful learning). The last example is elaborated in the context of biology teaching, hence at least three of the projects refer 'to one of the teaching subjects chosen by the student' as it is obligatory in the newest executive order, although they refer to LU2013 (the first cohort with the final thesis referring to LU2023 are the student teachers graduating in 2026). This illustrates what is also discussed by Grynberg (2019) that the supervisors at the colleges seem to have listened to the call from the ministry guiding the student teachers towards a specific relevance for subject teaching in schools already, before the implementation of LU2023. The column with backgrounds (Table 1) illustrates that the main literature used in three of the projects is written in Danish. These references include theory books and research publications in Danish, e.g., reference to Ph.D. projects written in Danish. Furthermore, it must be emphasised that the theory books frequently used in Danish teacher education are often based on research but edited and written to target teachers and student teachers.

The project referring to mathematics education appears to be a little different and this might, referring to Yildirim et al. (in this issue), be characterised as research-engaged while the others tend to be research-informed. The mathematics education study is based on a systematic search in the research literature. Not all the research papers are in the reference list, presumably due to the page limit in the thesis of 25-30 pages, but the appendices

provide an overview of the full search results and criteria for the choice of the primary research studies referred to. Three of the final theses refer specifically to participatory methods, e.g., design-based research or action learning, and the last one to a case-study methodology. All use methods literature in Danish, typically books targeting specifically the task of completing a professional bachelor's project. Three of the studies primarily have a professional inquiry orientation (Yildirim et al., in this issue), but the mathematics education study has elements pointing towards academic empirical research, although the professional orientation is still evident in the case study approach. These four examples are not included to claim that one approach is more qualified than the other, but the diversity is a key finding. Quality, as seen from the perspective of teacher educators choosing these theses for the website, is apparently not just dependent on one issue and, in general, the differences in literature might be due to the various fields and traditions. Hence, this short analysis confirms the evaluation from 2018 where one conclusion is that there appears to be a large diversity in the Danish professional bachelor's projects, but in general with a clear relevance for practice (Danmarks Evalueringsinstitut, 2018).

Discussion and conclusions

A quote from one of the leaders being interviewed in the work on the paper can serve as the first words in the final discussion:

The two perspectives normativity and the empirical are supplementary [...] pedagogy is carried by values but the normativity needs disturbance [...] the research and development perspective [...] the rigorous analysis to understand your experiences [to prepare for the work in] professional learning communities with colleagues.

The analysis of the changing policy requirements has illustrated how Danish teacher education is highly regulated at the policy level. The requirements for the final thesis have mirrored one of the trends referred to by Rasch-Christensen and Thejsen (2011): the trend of an academisation but cannot be understood without including also the other trend of a professionalisation and the Danish '*seminarium*' tradition referred to even in the executive orders. There appears over time to have been a kind of a pendulum swing between advocating for a more research-based approach and the vision of a close connection to practice. This can lead to tensions when mentoring the future teachers and trying to address both the academic and scientific demands and the student teachers' interests and growing insights into the day-to-day demands when exercising the profession, as highlighted by Wæge and Haugaløkken (2013). The second of the two fields of tensions they emphasise – the tension between autonomously performing a job where the professionals themselves set the premises and society's need to regulate and control the performance – might even be more relevant to understand the Danish case in relation to positioning the final thesis in teacher education. Evidently the fast-changing policy requirements can create frustrations among the professionals, and it is exemplified how a national forum of stakeholders actually suggest to balance the perspectives, and support a synergy between the various competence areas including differing between what should be in the foreground in the bachelor's exam and in the new

professional exam, respectively. This potential synergy is also discussed in the international research of, among others, Råde (2019).


The need to work explicitly to create a sense of coherence among the student teachers working on the final thesis is supported by the research from Møller (2005), illustrating how the student teachers struggle to navigate the regulations referring to academic norms at a time where they are in the middle of the value-based work on shaping their identities as future teachers, wanting this to also be mirrored in their thesis. Hence, the suggestion of working with a progression from day one in teacher education, as illustrated in Figure 1, is interesting. The heterogeneity in the knowledge bases in teacher education is well-known but, as emphasised by Hatlevik and Havnes (2017), student teachers can experience a sense of coherence even in the inevitable complexity if supporting the sense-making and the experience of mastering and agency, e.g., by facilitating their work with practical syntheses. This has been discussed in research projects looking into the final thesis in Danish teacher education, for example examining the student teachers' work in collaborative video-clubs and how they can use this as data in their final theses (Nielsen, 2015).

An external evaluation comparing Danish teacher education with Norway and Sweden led to a recommendation of qualifying the work on the research-base and supporting student teachers' academic skills. The four examples analysed in this article illustrate the diversity, but also the relevance to the profession, highlighted by the Nordic experts. Seen across the four projects, the diversity is seen concerning the use of literature written in Danish versus in English and the use of primary research versus theory books summing up the research. It must, however, be taken into account that there might be more relevant research literature about playful learning in Danish than about inquiry in mathematics (two of the examples in Table 1), as there is in Denmark a large national research programme related to playful learning and in which many of the theory books are rooted. Philips et al. (2023) refer, in a discussion about teachers' research literacy, to the research-related reasoning that is demanded by teaching practice and emphasise that teachers use different criteria to evaluate high-quality research than do researchers. Furthermore, teachers' use of research, according to Philips et al. (2023), is a social phenomenon, taking place in an institutional context and in collaboration with colleagues, and it might be that the differences seen in the type of references (Table 1) also mirror the student teachers' involvement in the community with different teacher educators and the research they are involved in.

The short conclusion in the comparative context of this special issue is that the professional inquiry orientation (Yildirim et al., in this issue) appears to be most dominant in relation to the final thesis in Danish teacher education. Looking forward, further research and theoretical work in the field of conceptualising teachers' research literacy is recommended to guide the future discussion of the role of the final thesis in the education of professional teachers.

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References

- Bjerrill, S. (2018). *Læreruddannelsen evalueret: Minister vil læse de studerendes bachelorprojekter til undervisningsfagene*. Folkeskolen <https://www.folkeskolen.dk/bacheloropgaven-laerer-og-efteruddannelse-laererstuderende/laereruddannelsen-evalueret-minister-vil-lase-de-studerendes-bachelorprojekter-til-undervisningsfagene/743393>
- Boyd, P., Szplit, A., & Zbróg, Z. (2022). *Developing teachers' research literacy*. Wydawnictwo Libron.
- Böwadt, P. R., & Vaaben, N. (2021). Hvad skal vi med læreruddannelsen? Om teori- og praksisudfordringer i overgangen mellem læreruddannelse og profession. *Studier i Læreruddannelse og Profession*, 6(1), 51-72. <https://doi.org/10.7146/lup.v6i1.127787>
- Ellis, V. (2016). The challenge of transformation: Å arbeide med kunnskapsproblemet i lærerutdanningen. *Acta Didactica Norge*, 10(2), 366-374. <https://doi.org/10.5617/adno.2866>
- Danmarks Evalueringsinstitut. (2018). *Indhold og faglige krav i læreruddannelsen*. <https://ufm.dk/publikationer/2018/filer/delanalyse-1a-indhold-og-faglige-krav.pdf>
- Danske Professionshøjskoler. (2020). *Udvikling af læreruddannelsen - Retning, indhold, principper og progression i fremtidens læreruddannelse*. <https://www.laereruddannelsesnet.dk>
- Grynberg, S. (2019). *Botten er vendt: Nu skriver de lærerstuderende projekt i deres fag*. Folkeskolen. <https://www.folkeskolen.dk/bacheloropgaven-laerer-og-efteruddannelse-laererstuderende/botten-er-vendt-nu-skriver-de-laererstuderende-projekt-i-deres-fag/387605>
- Gunneng, H., & Ahlstrand, E. (2002). *Quality indicators in final thesis in higher education: A comparative pilot study*. Linköping University Faculty of Arts and Science.
- Hatlevik, I.K.R., & Havnes, A. (2017). Perspektiver på læring i profesjonsutdanninger: Fruktbare spenninger og meningsfulle sammenhenger. In S. Mausethagen & J-C. Smeby (Eds.), *Kvalifisering til profesjonell yrkesutøvelse* (pp.191-203). Universitetsforlaget.
- Healey, M., & Jenkins, A. (2009). *Developing undergraduate research and inquiry*. Higher Education Academy.
- Hedegaard, K., Larsen, C. H., & Krogh, K. E. (2016). Det aktionslæringsbaserede bachelorprosjekt. In B. O. Hallis, & G. Grimeth (Eds.), *Lessonstudy i en nordisk kontekst* (pp. 142-161). Gyldendal Norsk Forlag.
- Hermansen, H., & Mausethagen, S. (2016). Når kunnskap blir styrende: Læreres rekontekstualisering av nye kunnskapsformer. *Acta Didactica Norge*, 10(2), 92-107. <https://doi.org/10.5617/adno.2467>
- Hjermitslev, H.H. (2020). Grundtvigske seminarier 1840-1920. 54. *årbog fra Selskabet for Skole- og Uddannelseshistorie*, 63-96. <https://uddannelseshistorie.dk/aarboeg/aarboeg-2020/>
- Kaas, T. et al. (2017). *Lektionsstudiebogen*. Hans Reitzels Forlag.

- Lund, J.H. & Nielsen, B.L. (2020). Viden i læreruddannelsen: En analysemodel. *Studier i Læreruddannelse og Profession* 5(1), 135-156.
- Marciuch, M. (2023). Pedagogiske brytninger i mellemkrigstidens læreruddannelse: secularisering, vitenskapeliggjøring, akademisering: Frigjøring? In S. Mausestagen et al. (Eds.). *En forskningsbasert skole?* (pp. 237-271). Universitetsforlaget.
- Mausestagen, S., Bøyum, S., Caspersen, J., Prøitz, T.S., & Thue, F. W. (2023). *En forskningsbasert skole? Forskningens plass i læreruddanning og skole*. Universitetsforlaget.
- Murray, J., Swennen, A., & Kosnik, K. (2019). *International research, policy and practice in teacher education*. Springer.
- Møller, H. (2005). *Diskursiv praksis i læreruddannelsen: En empirisk undersøgelse af bacheloropgavens positioner og udsigelse*. PhD thesis. Copenhagen: Danmarks Pædagogiske Universitet.
- Nielsen, B.L. (2015). Pre-service teachers' meaning-making when collaboratively analysing video from school practice for the bachelor project at college. *European Journal of Teacher Education*, 38(3), 341-357. <https://doi.org/10.1080/02619768.2014.983066>
- Nielsen, B.L. (2021). Lærerstuderendes bachelorprojekter i samarbejde om udvikling i skolen. *Liv i Skolen* 2(2021), 62-69. <https://doi.org/10.7146/lup.v5i1.118866>
- Nielsen, B.L., & Lund, J.H. (2020). Different dimensions of knowledge in teacher education: Towards a typification. *Nordic Journal of Comparative and International Education*, 4(3), 9-25. <https://doi.org/10.7577/njcie.3722>
- Nielsen, B. L., Nielsen, O., & Weisschädel, S. (2018). Teachers and preservice teachers co-creating: relatedness, agency in supporting inclusion, and meaningful participation in research. In M. Sablić, A. Škugor, and I. Đurđević Babić (Eds.), *42nd ATEE Annual conference proceedings: Changing perspectives and approaches in contemporary teaching* (pp. 49-64). Association for Teacher Education in Europe (ATEE).
- Nuthall, G. (2004). Relating classroom teaching to student learning: A critical analysis of why research has failed to bridge the theory-practice gap. *Harvard Educational Review* 74 (3), 273-307. <https://doi.org/10.17763/haer.74.3.e08k1276713824u5>
- Philips, K.P., Eriksen, A., & Mausestagen, S. (2023). Educational research literacy: Philosophical foundations and empirical applications. *Professions & Professionalism* 13(2), e5307. <https://doi.org/10.7577/pp.5307>
- Rasch-Christensen, A., & Thejse, T. (2011). Fra seminarium over CVU til University College. Folkeskolen.
- Regeringsgrundlaget. (2022). *Ansvar for Danmark: Det politiske grundlag for Danmarks regering*. <https://www.stm.dk/statsministeriet/publikationer/regeringsgrundlag-2022/>
- Retsinformation (1996). Lov om uddannelse af lærere til folkeskolen. 1996/1 LSF 162. <https://www.retsinformation.dk/eli/ft/199612K00162>
- Retsinformation. (1997). Bekendtgørelse af lov om uddannelse af lærere til folkeskolen. LBK nr 608 af 10/07/1997. <https://www.retsinformation.dk/eli/lta/1997/608>
- Retsinformation. (2000). Lov om mellemlange videregående uddannelser. LOV nr 481 af 31/05/2000. <https://www.retsinformation.dk/eli/lta/2000/481>
- Retsinformation. (2007a). Lov om professionshøjskoler for videregående uddannelser. LOV nr 562 af 06/06/2007. <https://www.retsinformation.dk/eli/lta/2007/562>
- Retsinformation. (2007b). Bekendtgørelse om uddannelsen til professionsbachelor som lærer i folkeskolen. BEK nr 219 af 12/03/2007. <https://www.retsinformation.dk/eli/lta/2007/219>

- Retsinformation. (2013). Bekendtgørelse om uddannelsen til professionsbachelor som lærer i folkeskolen. BEK nr 231 af 08/03/2013. <https://www.retsinformation.dk/eli/lt/2013/231>
- Retsinformation. (2023). Bekendtgørelse om uddannelsen til professionsbachelor som lærer i folkeskolen. BEK nr 374 af 29/03/2023. <https://www.retsinformation.dk/eli/lt/2023/374>
- Råde, A. (2019). Professional formation and the final thesis in European teacher education: a fusion of academic and professional orientation. *Education Inquiry*, 10(3), 226-242. <https://doi.org/10.1080/20004508.2018.1514910>
- Styrelsen for Forskning og Uddannelse. (2018). *Kvalitet og relevans i læreruddannelsen. Ekspertgruppens evaluering og vurdering af læreruddannelsen af 2013*. Styrelsen for Forskning og Uddannelse.
- Uddannelses- og Forskningsministeriet. (2022a). *Degrees and qualifications*. <https://ufm.dk/en/education/higher-education/degrees-and-qualifications>
- Uddannelses- og Forskningsministeriet. (2022b). *En ambitiøs læreruddannelse tæt på folkeskolen og til gavn for folkeskolen*. <https://ufm.dk/lovstof/politiske-aftaler/aftale-om-reform-af-laereruddannelsen-13-september-2022.pdf>
- Winch, C., Oancea, A., & Orchard, J. (2015). The contribution of educational research to teachers' professional learning: philosophical understandings. *Oxford Review of Education*, 41(2), 202-216. <https://doi.org/10.1080/03054985.2015.1017406>
- Wyse, D., Brown, C., Oliver, S., & Poblete, X. (2018). *The BERA Close-to-Practice Research Project: Research Report*. London: British Educational Research Association. Retrieved from: <https://www.bera.ac.uk/publication/bera-statement-on-close-to-practice-research>
- Wæge, K., & Haugaløkken, O.K. (2013). Research-based and hands-on practical teacher education: an attempt to combine the two. *Journal of Education for Teaching*, 39(2), 235-249. <https://doi.org/10.1080/02607476.2013.765195>
- Yildirim, A., Åström, M., & von-Brömssen, K. (in this issue). Final thesis in teacher education: Orientations and practices. *Nordisk Tidskrift för Allmän Didaktik*.