This is the published version of a paper published in *Teachers and Teaching: theory and practice*.

Permanent link to this version:
http://urn.kb.se/resolve?urn=urn:nbn:se:lnu:diva-68994

Routledge
Taylor & Francis Group

Research-based teacher education? Exploring the meaning potentials of Swedish teacher education

Daniel Alvunger and Ninni Wahlström ![ORCID]

Department of Education, Linnaeus University, Växjö, Sweden

ABSTRACT

In this article, we explore the meaning potentials of teacher education in terms of the significance of a research-based approach and the different pedagogic identities that such an approach implies. The study's aim is to examine the important factors for education to be considered research-based and to identify and analyse the research base of teacher education in Sweden. The results from the analysis of a large number of course documents and from a survey administered to teachers and students in four teacher education programmes indicate that the emerging potential meaning is that teacher education is generally a strongly framed professional education with a relatively weak and adapted research base. The analysis of the classification and framing of disciplinary content and pedagogy in the Swedish teacher education curriculum points at different pedagogic identities emerging from the different meaning potentials that are made available to the students. We argue that a thorough understanding of research-based teacher education needs to be grounded in both course content and its research base as well as other possible pedagogical aspects of research-based education; the education as a whole must be included in the concept of research-based education.

The purpose of this study is to explore and problematise the meaning of research-based teacher education and to consider the influence of different meaning potentials on teacher-students' pedagogical identities.[1] The study's aim is to examine the important factors for education to be considered research-based and to identify and analyse the research base of teacher education in four different teacher education programmes in national Swedish teacher education. The study's theme is current in many countries, and Sweden is used here as an example. The following three research questions have been formulated to guide the study: (1) In what distinct ways can teacher education be characterised as research-based? (2) What different meaning potentials can such an approach imply? (3) What kinds of pedagogical identities are provided for by the different research-based education approaches?

CONTACT Ninni Wahlström ✉ ninni.wahlstrom@lnu.se

The first section of the article introduces the concept of research-based teacher education and the study's theoretical and methodological frameworks. The second section presents the results from the literature analysis of selected courses from four teacher education programmes in Sweden. The third section reports the results from a teacher and student survey. The fourth and final section critically examines and discusses the results of the study in terms of potential meanings and pedagogic identities.

The meaning of research-based teacher education

There is a long-standing debate in teacher education concerning the relation between 'theoretical' and 'practical' knowledge. Some research findings indicate that teacher-students experience difficulties when applying the knowledge they gained in academic courses in practice; therefore, they sometimes feel that their teacher education programme does not adequately prepare them for their future profession (e.g. Klette, 2002). To bridge the gap between theory and practice, Westbury, Hansén, Kansanen, and Björkvist (2005) suggest that teacher preparation should ideally offer broader contact with all the elements that normally make up a teacher's work – not only lesson planning and the practice of present-day teaching strategies, but also collaboration with colleagues, tutoring students with special needs and problems and resolving social conflicts. According to Furlong, McNamara, Campbell, Howson, and Lewis (2008, p. 317), a practical approach has become dominant in England during the last two decades, where initial teacher education has been 'almost entirely practically oriented' through the specific construction of a partnership that closely links initial teacher education to national policy. The authors argue that discourses once considered to be vital components of higher education, such as research, theory and critique, are no longer viewed as important aspects of teacher education (Furlong et al., 2008). Even if a practical perspective is at the centre of teacher education, it does not necessarily mean that the research aspect is ignored. Sachs (2016) highlights the need to create a discourse for a more collaborative or research-engaged teaching profession. She argues for a professional teacher identity that is informed and improved by systematic classroom research (see also Cochran-Smith & Lytle, 1999). Darling-Hammond (2006) also argues for an approach to teachers as classroom researchers and expert collaborators who can learn from one another as an essential part of encountering the ever-increasing demands of a deepened knowledge base for teaching diverse classrooms. In such an action-research approach, a key factor is the use of theory and research to stimulate inquiry into practice. Action-research has the potential to enhance teachers' own learning through an increased awareness of the relation between a deepened knowledge and their own actual teaching practice (Colucci-Gray, Das, Gray, Robson, & Spratt, 2013). A report on teacher education in the United Kingdom (BERA-RSA, 2014[2]) identified four different ways in which research can contribute to teacher education: (1) the content of the teacher education programme is built on research-based knowledge, (2) the research informs the design and structure of teacher education programmes, (3) teachers and teacher-educators are equipped to be both partakers in and consumers of research and (4) teachers and teacher-educators conduct research on their own practice. The report argues for both schools and colleges to become research-rich environments, which requires that teachers and researchers work in partnership rather than conducting their work as entirely separate entities.

Regarding the relation between academic research and school practice, the Nordic countries have taken a somewhat different route. In Finland, a teacher's academic education has

featured a research-based approach for over 30 years. For the Finnish teacher's education, this means that courses are integrated with research and that the students produce a master's thesis at the end of their studies. 'The aim is to educate autonomous and reflective teachers capable of using research in their teaching and who can be defined as pedagogically thinking teachers' (Toom et al., 2010, p. 333). Munthe and Rogne (2015) investigated the meaning of research-based teacher education in an interview study in Norway comprised of 36 students and 36 teachers. The authors concluded that Norwegian teacher-educators and teacher-students believe that research-based teacher education includes the degree to which teacher-educators are involved in research and have first-hand research experience. They also included other aspects such as the students' academic reading and writing, their learning and discussion of research literature, their learning about research methods and their ability to apply them in the their own projects (Munthe & Rogne, 2015).

There are only a few Swedish studies on research-based teacher education. One study examined research on teacher education from the beginning of the 1980s to the mid-1990s; it found that research about teacher education is dominant and that teacher-educators rarely question the content and constructs of teacher education. With reference to this study, research on the results and the effects of teacher education was the weakest genre during the period studied (Ahlström & Kallós, 1996). According to Lindberg (2003), a common theme in teacher education theses is how teacher-students perceive different aspects of their teacher education; however, the research field on teacher education is scattered, with few reciprocal references between the studies. Hallsén (2013) observed a change that started around 2000 in which the dominant research trend shifted toward a focus on relevant teacher education for the students' future profession. In the move from research about teacher education to research for teacher education, there was also a move in the examined studies from a more descriptive to a more normative perspective.

In Sweden, the meaning of research-based teacher education is broadly in line with the Finnish and Norwegian definition in the sense that the discourse of research-based teacher education in Sweden includes a scientific student thesis at the bachelor's or master's level, depending on the type of teacher exam (see the next section). Furthermore, the concept of 'research-based' includes the aspects illustrated in the Norwegian study concerning the degree to which teachers themselves are involved in conducting research, reading and discussing research literature and learning about research methods (Björklund, 1991). Another perspective is emphasising how students understand and engage in the scientific process, that is, how they develop critical examination and questioning as a scientific-critical approach (The Swedish Higher Education Authority [TSHEA], 2015). However, much is still unknown about the relation between teaching content and its research base in national teacher education programmes or how teacher-students and their teachers perceive their education as research-based. Thus, there is a need for studies on the actual content of teacher education from a perspective of the research base's characteristics and the teacher-educators' and teacher-students' notions of research-based education.

A brief overview of Swedish teacher education

In Sweden, teacher education consists of one year of full-time study in the 'educational science core' (60 ECTS)[3] and half a year of placement (30 ECTS), which is the same for all teacher education programmes, independent of the length of teacher programme and the type of the teaching degree. The educational science core is divided into the following

sub-areas: school system, history, fundamental values and social conditions; curriculum theory and didactics; development, learning and special education; assessment and grading; social relations, conflict management and leadership; theory of science and research methodology; and evaluation and development work (Official Report, 2008, p. 109).

The programmes' lengths range from 3 years (teacher education programme in early childhood education) to 5.5 years of full-time study (teacher education programme for upper secondary school). Teacher-students (except vocational teacher-students) for pre-school finish their education with a student thesis (15 ECTS) at the bachelor's level. In primary and upper secondary teacher education, students write two theses (15 ECTS) or one extended thesis (30 ECTS), one thesis at the bachelor's level and one thesis at the master's level. This is similar to the Finnish system, with the difference being that Swedish teacher-students are not bound to complete a general bachelor's or master's degree before their teacher exam. In Sweden, teacher-students retrieve an exam in Bachelor of Arts or Master of Arts in education after they have completed their studies.

Theoretical and methodological framework

This study's aim is to go beyond the taken-for-granted view of teacher education as being research-based and explore in what distinct ways and to what degree teacher education can be characterised as being research-based. Two Swedish texts (Björklund, 1991; Swedish National Agency for Higher Education [NAHE], 2006) stand out as being especially important for forming the four criteria that capture the meaning of research-based teacher education that is recognisable in the Swedish context. With reference to the brief international review in the introduction of the article, it is reasonable to think that the term 'research-based' is conceptualised in somewhat different ways in different social, historical and cultural teacher education traditions. We map the content in a selection of actual course plans and lists of course literature as our starting point. To map what kind of research, what kind of texts and what kind of communication these texts represent – toward different disciplines or toward the profession – we turn to Basil Bernstein's (1990, 2000) concepts of 'classification' and 'framing'. The assumption that different courses have more or less strong disciplinary traditions and thus may be understood as part of a hierarchical order prompts the second research question: What meaning potentials do the specific combinations forming the Swedish 'profile' of research-based teacher education imply? That is, how does the way teacher education relates to current research shape the meaning of what a teacher should know and be able to do? This, in turn, opens up a third research question concerning different pedagogical identities embedded in the different meanings of research-based education: What kinds of pedagogical identities are provided for by the different research-based education approaches?.

In Swedish teacher education, the content and scope of the courses to be included in teacher education are stipulated in what can be termed as a national curriculum for teacher education, shaped by the official report and the government bill preceding each teacher education reform. In this way, teacher education can be compared to other education regulated by national curricula, such as school education, where different courses and programmes are implicitly given different statuses. Bernstein's theory is useful for investigating national teacher education programmes and how hierarchal aspects of what counts as knowledge are reflected in the way teacher education is regarded as research-based. In sum, we use

Bernstein's framework to explore how teacher education as a university education produces and reproduces different meanings and potentially different pedagogic identities for what it means to be a teacher – in other words, exploring the tension between teacher education as professional training and as academic education. For this purpose, we apply Bernstein's analytical concepts of 'classification', 'framing', 'meaning potentials' and 'pedagogic identities'.

Classification and framing

Bernstein (1990) identifies the pedagogic device as the arena where pedagogic discourse is processed in terms of its intrinsic grammar of the production, reproduction and transformation of the discourse. The grammar forming the process of a pedagogic discourse is built up by distributive rules (what knowledge for whom), recontextualising rules (the selective appropriation of discourses for the reproduction of a pedagogic discourse) and rules for evaluation (principles for the evaluation of pedagogic practice). The recontextualising processes form different pedagogic discourses by relocating, reordering and reselecting elements from other discourses outside the pedagogic discourse. Bernstein includes both how knowledge is distributed and with what implications in his concept of a pedagogic device (McLean, Abbas, & Ashwin, 2012). While distributive rules form the outer framework of who will communicate what to whom, the recontextualising rules produce a pedagogic discourse consisting both of a discourse of knowledge and skills and of a moral discourse of social order. The discourse of knowledge and skills shapes the instructional discourse, and the moral discourse of social order forms the regulative discourse. However, according to Bernstein (2000), the instructional and regulative discourses are essentially a question of one interrelated discourse.

The major recontextualising processes in the pedagogic device concern the constitution of the 'what' and 'how' of pedagogic discourse. The 'what' refers to the content, categories and relationships to be transmitted through education; Bernstein (1990) terms this recontextualising process for what counts as knowledge as 'classification'. The 'how' refers to the communication of educational content; Bernstein terms this transmission of educational content as 'framing'. The term classification means the relation between two categories. According to Bernstein (2000, p. 6), it is 'the insulation between the categories of discourse which maintains the principles of their social division of labour'. In other words, it is 'silence which carries the message of power' (Bernstein, 2000, p. 6), implying that power is maintained by insulation. When there is a strong classification (insulation) between everyday knowledge and specialised knowledge, there is also a hierarchy between the different forms of knowledge. While classification concerns power relations and the nature of social space for pedagogic discourse, the control of communication in pedagogic relations has to do with 'framing'. Where the framing is strong, the transmitter has explicit control over the instructional elements, and regulates the control over communication. Framing regulates relations within a context (Bernstein, 2000, p. 12); in this case, teacher education programmes. Because framing relates to 'the locus of control' and 'criteria of the knowledge to be acquired' (Bernstein, 2000, p. 99) in the context of teacher education, examples of strong framing are represented by course content related to the profession as teacher. Example of weak framing, in this study, is instead courses where different disciplines dominate, without explicitly relating the course content to the teacher-students' future profession.

In the present study, we are interested in examining if and how different courses within teacher education can be discussed in terms of strong or weak classification regarding the

content of the courses. A strong classification would indicate a strong disciplinary or professional discourse. Moreover, when looking at the course literature in a course as a whole, does the course literature mainly communicate its content toward a professional community or toward a community of a subject discipline?

Meaning potentials

In the language of the recontextualisation processes in the pedagogic device, Bernstein (2000) includes both how knowledge is distributed and with what implications. He uses the term 'voice' to refer to who is legitimised to say what to whom in a pedagogic context and the term 'message' to define the form of what is said. The rules in the pedagogic device selectively regulate the pedagogic communication in accordance with what the pedagogic device makes possible. In other words, each pedagogic device contains different meaning potentials, which are selectively expressed and communicated. In this study, the term 'meaning potential' represents the potential pedagogic discourses available in Swedish teacher education.

Pedagogic identities

In Bernstein's theory, the construction of pedagogic identities is the result of 'voice–message' relations; that is, what is said by whom in the official knowledge discourse, represented by the state through its managing of its educational institutions (Bernstein, 2000, p. 79; McLean et al., 2012). A pedagogic identity has a collective base in a certain education that is formed by the knowledge content and the communication of knowledge in that specific education. Identity refers to available resources within education for creating collective beliefs about belonging, recognition and self-understanding. In the present study, we discuss how different ways of classifying and framing knowledge influence different meaning potentials and thus different potential pedagogic identities.

Categorising research in teacher education

Drawing on a theoretical framework outlined by Cochran-Smith et al. (2016), we use a model of indicators for categorising the type of research present in the course literature of selected courses in teacher education. The indicators function as a protocol to determine whether certain literature can be regarded as research-based, and if so, which genre of research a particular text can be considered to represent. With reference to Cochran-Smith et al. (2016), we used the following indicators to categorise the content of course literature: (1) the construction of the research problem; it says something about the dominant discourses within different types of research; (2) the underlying assumptions regarding this specific research and the logic upon which the argument is based; it indicates a perception of learning, knowledge, teaching and the purpose of school; (3) the researcher's positioning within a broader field of research and research purposes; and (4) the research design, theoretical and methodological starting points and requirements for evidence.

Methodological design

In order to explore the pedagogic discourse of research-based teacher education in Sweden, the study focuses on the following three key areas:

- An analysis of the meaning of research-based education
- An analysis of the research fields represented in the course literature from a selection of courses in four Swedish teacher education programmes (document study)
- A web-based survey answered by a sample of teachers responsible for teacher education curriculum design and a sample of teacher-students in the fourth year of their studies

The initial phase of defining research-based education included four official reports from the Swedish Government and three national and international research texts. The document study on teacher education covered 68 educational plans and 160 course plans from 17 universities and colleges offering programmes for preschool teachers, primary teachers (early years), primary teachers (later years) and upper secondary school teachers. The educational plans represent the four programmes in the 17 universities, and the 160 course plans cover nine selected courses from the four teacher programmes in all of the represented universities. Since we were interested in the research base of teacher education as a whole, we selected course plans that differed from those used in the methodology course and the course on writing a student thesis. The reason for this was twofold. First, we expected that the course plans in those courses primarily included certain standard texts on research methodology. Second, the course plans for the student thesis courses generally do not include much fixed literature; instead, the students choose literature relevant for their specific thesis subject. Further, in selecting the courses, we chose not to include placement studies because placement courses are not related to the educational science core in terms of course literature. However, for the students, there are many opportunities to relate to their placement or field experience as an arena for integrating theories, knowledge and practices in the survey. We sent the online survey to 114 teachers and 2484 students in their fourth year of teacher education in four different teacher programmes in 16 universities. The survey was conducted during the fall of 2014. In the questionnaire, the informants were asked to take a position on five different claims. The questionnaire was answered by 1159 students (46.7% response rate) and 80 teachers (70.2% response rate).

Different potential meanings of research-based education

This section presents the results of the analysis of the three key areas: an analysis of the meaning of research-based education, an analysis of the research fields represented in the course literature and the results of the survey.

According to a report from NAHE (2006), the following are related to research-based education: the teacher-students' opportunity to learn from the most recent research on education, to have teachers that are themselves active researchers and to develop the habit of reading research texts and results. Research-based education not only serves as an important quality indicator for the training itself, but it also influences the students' ability to function well in their future profession. In line with this approach, teacher-students should develop their knowledge of scientific methods in order to be able to conduct in-depth investigations in a professional manner at the master's level (see Westbury et al., 2005). Research-based education also concerns the students' ability to adopt a critical and scientific attitude toward professional issues during their teacher training. 'Critically' in this context is synonymous with 'independently'. From this perspective, students should also develop their capacity for curiosity and a desire to learn more from research within relevant fields. Furthermore,

students should develop the ability to formulate interesting problems in relation to key areas within their field of competence. In this study, the exploration of research-based teacher education is founded on the following four criteria used in the document study of different meanings of 'research-based':

- *The content of education is based on scientific research.* This criterion corresponds to the following statement in the survey: 'In my training to become a teacher, I have read course literature that is based on research' (Table 1).[4]
- *Teaching is conducted by teachers who both teach and perform research.* This criterion corresponds to the following statement in the survey: The teachers teaching in the teacher training that I participate in are active both in terms of teaching in teacher training and in conducting their own research' (Table 2).
- *Education encourages the students' curiosity to learn more in a subject area and promotes an attitude of openness toward alternative perspectives.* This criterion corresponds to the following statements in the survey: 'In my training to become a teacher, I have developed my ability to orient myself in current research questions' and 'After reading and discussing literature courses, I have come to reconsider my own previous positions on school and teaching' (Tables 3 and 4).
- *Education takes the form of open and critical discussions where arguments are formulated and tested against each other in open dialogues.* This criterion corresponds to the following statement in the survey: 'In my teacher training, we have open and critical discussions where various arguments are tested against each other' (Table 5).

The first indicator of research-based education constitutes a point of departure for the document study of course content in teacher education. As shown above, all four indicators are represented in the survey addressed to teachers and students.

Research-based teacher education according to course literature

A substantial number of the 160 syllabuses we analysed have an eclectic and thematic character that is reflected in the course literature. The majority of publications are anthologies and monographs that generally provide overviews of research fields or a specific theme for what is considered to be important for teachers to know. The main purpose is to introduce the students to a certain context, not a scientific line of argument. To a great extent, the format can be described as 'textbooks for teacher education' with instructional traits. Handbooks (e.g. on academic writing), support materials from the Swedish state authorities, and books on research methodology are to a minor extent included in the analysed course literature.

About one out of 10 publications in the examined course plans is a scientific journal article. In this respect, there are differences between the teacher education programmes: courses in the upper secondary teacher programme feature more scientific and international articles than other programmes. In a discussion regarding research literature as one of the criteria for research-based teacher education, the frequency of scientific articles is an important aspect. Journals are arenas for communicating and disseminating results in the research society and represent an on-going discussion within a research field; furthermore, they have been peer-reviewed before being published. The course literature is indeed based on research, but the students' opportunities for critical examination are limited because it is not usually clear how research questions are formulated, how the research is designed,

how the analysis of the results is conducted in the studies and how conclusions are drawn. Instead, the students mainly encounter second-hand descriptions of research; however, the students are introduced to the current research field and its results in a language and format that is adapted to them as a target group.

From the analysis of the knowledge content, it is possible to distinguish courses that are characterised by coherence and strong classification versus those that are 'hybrid courses' with a combination and integration of various content from apparently disparate research fields (weak classification). Another aspect is the extent to which the course literature relates to a professional discourse in terms of how knowledge content is framed in relation to the teaching profession. In the following, we present and discuss three examples of courses that can be placed on a scale from weak to strong classification and three examples of weak to strong framing in relation to the teaching profession discourse.

An example of weak classification is the field of 'curriculum theory and didactics' in the course literature from the primary teacher programme, which presents four categories: historical and curriculum theory perspectives; learning theories, learning environment and processes of learning; general and subject-specific didactics; and the teaching profession and classroom/teaching practice. Even if there is a relatively solid research base for curriculum theory within international and national research, this fact does not seem to have had an impact in the course literature. The eclectic character indicates that curriculum theory is considered to be a suitable area for integrating with other research fields and knowledge themes, particularly learning theory from a sociocultural perspective, which is a dominant research focus in the literature. A similar trend is obvious concerning the courses integrated with didactics, where students' learning, predicaments for learning, learning environments and learning processes dominate.

The knowledge area 'development, learning and special education' from the preschool teacher programmes serves as an example of medium-to-strong classification. Although the three identified categories – children's play, development and learning within preschool; children in need of support and special education; and documentation and methodical issues – highlight different aspects of development and learning, there are two separate research bases: (1) post-structuralist theory, norm-critical discourse theory and deconstruction; and (2) phenomenography and variational theory rooted in social constructivism. The former perspective challenges notions of the pedagogue, while the latter focuses more on the child's perspective and interactional and relational learning. However, despite different research perspectives within the field, it is possible to see a strong connection between research and methodological approaches and their practical application.

Among the courses from the primary and secondary teacher programmes, the knowledge field of 'assessment and grading' and the subject courses in Swedish and history stand out as examples of strong classification. In this study, we focus on assessment and grading courses, identifying the following four categories: supporting the pupils' learning; subject didactics and didactical competence; evaluation, systematic quality work and assessment; and documentation and tools for assessment. The categories are almost exclusively based on references to Anglo-Saxon research from a social constructivist/sociocultural theoretical angle. The research field 'assessment for learning' has a hegemonic position, and one could thus speak of a kind of 'canon' with reappearing and similar theories and texts regardless of the university. The psychometric and behavioural sciences research – which once enjoyed a prominent position in Swedish assessment research – has had to yield to this new research

paradigm. Many publications have the character of instructions and manuals (e.g. self-evaluation tools for pupils and teachers, guidelines for assessment practice, schemes for peer assessment and matrices for knowledge assessment).

If the categorisation of strong and weak classification indicates a hierarchy between different course subjects, then the categorisation of strong and weak framing adds important dimensions concerning the control of communication in the teaching profession. An example of weak framing is the subject courses in history for upper secondary school teacher-students. The courses rarely focus on issues of classroom practice or professional knowledge, such as assessment. At some universities, there are subject courses without any or just a few references to subject didactics and the teaching profession. While there are a few exceptions, the absence of content oriented toward teaching is striking.

The study of subjects is an essential part of the education for upper secondary teacher-students. An equivalent for preschool teacher-students is the course 'language development', which imparts professional knowledge concerning children's reading, writing and language development in preschool. It is in this context that we find an example of medium-to-strong framing of knowledge content. The literature addresses the concept of literacy and children's communication, language development, strategies for the foundations of sociocultural theories of learning and, to a minor extent, cognitive language theory. Ethnographic field studies are frequent and are directly related to the preschool teachers' work.

The preschool teacher programme's course literature is by far the most related to a teaching profession discourse. The knowledge area 'development and learning' is an example of a strong framing with an emphasis on the relationship between research and professional knowledge. One reason for this might be that researchers with a professional background in preschool teaching write the course literature. The research closely relates to the question of how pedagogues can develop their pedagogical practice. Another dimension is that the course literature addresses issues from practice, such as pedagogical documentation, as well as methodological aspects that connect research and practice. In the graph below, the analysed courses have been positioned in relation to strong or weak classification and strong or weak framing.
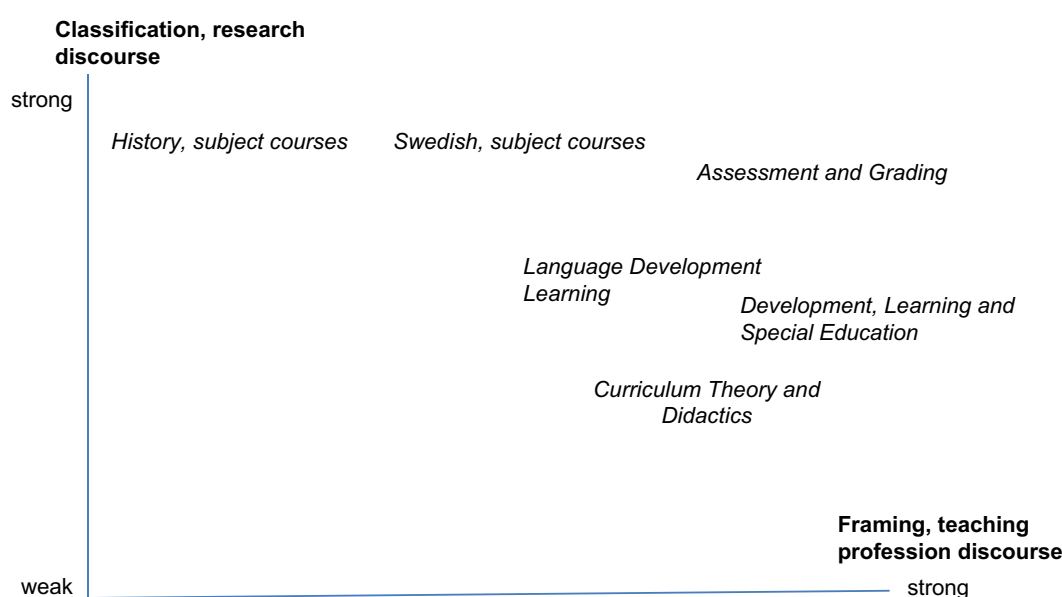

Figure 1. Different courses within Swedish teacher education programmes placed on a scale between strong and weak classification regarding research discourse and strong and weak framing regarding teacher profession.

As illustrated above, most of the literature is not 'original' research; thus, we can discuss texts *about* research *for* teacher education. The most frequent genre is 'interpretative research' (i.e. studies that describe, analyse and interpret specific situations on a local level with consideration for the contextual sociocultural frame that surrounds each teaching situation). The research may, for example, deal with teachers' and students' conceptions of different phenomena, didactical perspectives related to teaching and learning, learning processes and the organisation of teaching in a multicultural environment. Preschool research is often centred on ethnographic studies of children's social and cultural contexts and pedagogical documentation. However, there are also examples of the 'practitioner research' genre, such as self-study research and action research, even if this genre is not as prominent as interpretative research. Action research is more common in preschool pedagogics, with examples of how such research can contribute to educational development or evaluation.

A general conclusion from the analysis of the course plans and course literature is that, while the content of teacher education is research-based, the students rarely encounter original and first-hand research. The represented research mainly focuses on how teachers and pupils from different perspectives describe, understand and experience practices related to classroom or school contexts primarily based on sociocultural learning theory.

Research-based teacher education according to teacher-educators and teacher-students

The questionnaire used in this study consists of five questions; it was sent to students and teachers at four teacher programmes at 16 universities. [5] In the diagrams below, three of the four teacher programmes are reported separately;[6] the totals of all the students' answers from all four programmes are also shown. The responses from 80 teachers at the four programmes are also reported. The result is statistically significant. However, this mixed-method study is mainly qualitative in its approach, and we will mainly discuss the results in terms of tendencies or patterns.

Table 1. The degree (%) to which teacher-students and teacher-educators perceive course literature as research-based.

	Students				Teacher-educators		
	Pre TP	Pri TP	USS TP	Students in total	Pre TP	Pri TP	USS TP
In most courses	73	73	71	73	90	100	81
In many courses	22	24	24	22	5	0	7
In only a few courses	3	2	3	3	5	0	6
Hardly ever	0	0	0	0	0	0	3
Do not know	2	1	2	2	0	0	3
	N = 437	N = 132	N = 280	N = 1157	N = 21	N = 17	N = 31

Notes: Pre TP = preschool teacher programme; Pri TP = primary school teacher programme 4–6; USS TP = upper secondary school teacher programme. Statistical significance $p < 0.01$ (Cramers's V).

Nearly three-quarters, or 73%, of the students agree that they have read research-based course literature in most of the courses they have attended. The teacher-educators in the primary teacher programme are totally convinced that most of their programme's course literature is research-based. In all the examined teacher education programmes, the teacher-educators to a higher extent than the teacher-students agree with the statement that most of the courses are research-based.

Table 2. The degree (%) to which teacher-students and teacher-educators believe that teacher-students develop the ability to orient themselves in current research issues during their teacher education.

	Students				Teacher-educators		
	Pre TP	Pri TP	USS TP	Students in total	Pre TP	Pri TP	USS TP
Totally agree	41	23	31	35	43	35	32
Partly agree	54	65	52	55	52	65	55
Do not agree at all	2	11	14	7	5	0	3
Do not know	3	1	3	3	0	0	10
	N = 437	N = 132	N = 281	N = 1158	N = 21	N = 17	N = 31

Notes: Pre TP = preschool teacher programme; Pri TP = primary school teacher programme 4–6; USS TP = upper secondary school teacher programme. Statistical significance $p < 0.01$ (Cramers's V).

Even if the majority of the students perceive their course literature to be research-based, only 35% of the students totally agree with the statement that they have developed their ability to orient themselves in current research issues during their studies. In the primary teacher programme, only 23% of the students think this is the case. As regards, the extent to which the teacher-students develop an ability to orient themselves in current research, teacher-educators and teacher-students exhibit a conformity in their response patterns.

Table 3. The degree (%) to which teacher-students and teacher-educators estimate that the teachers are themselves active researchers.

	Students				Teacher-educators		
	Pre TP	Pri TP	USS TP	Students in total	Pre TP	Pri TP	USS TP
Most of the teachers	35	23	39	32	29	37	49
Some of the teachers	61	72	51	62	71	63	48
Do not know	4	5	8	5	0	0	3
Never so far	0	0	2	1	–	–	–
	N = 438	N = 131	N = 280	N = 1157	N = 21	N = 17	N = 31

Notes: Pre TP = preschool teacher programme; Pri TP = primary school teacher programme 4–6; USS TP = upper secondary school teacher programme. Statistical significance $p < 0.02$ (Cramers's V).

Thirty-two percent of the teacher-students believe that most of the teachers they meet in their teacher training programme are engaged in both research and teaching. Approximately twice as many (62%) feel that this is true for some of the teachers who teach in their programme. The tendency seems to be that teacher-students in teacher programmes for primary school and upper secondary school experience a somewhat lower degree of belief that their teachers are engaged in both research and teaching compared to the teacher-educators in the same programmes. If we assume that teacher-educators teaching in these programmes have a reasonably reliable perception of the proportion of active researchers in teacher staff, the teacher-students in the programmes seem to underestimate the proportion of active researchers they encounter during their teacher education. In the preschool teacher programme, the opposite situation prevails. In this programme, the students estimate the proportion of active researchers in the teaching staff as higher compared to the estimation made by the teacher-educators. According to the teachers, the proportion of teachers who are also researchers is the highest in upper secondary teacher programmes and the lowest in preschool teacher programmes.

Table 4. The degree (%) to which teacher-students and teacher-educators believe that teacher-students reconsider their previous attitudes on education and teaching during their teacher education.

	Students				Teacher-educators		
	Pre TP	Pri TP	USS TP	Students in total	Pre TP	Pri TP	USS TP
On several occasions	69	64	43	60	91	75	68
Once or twice	27	33	50	35	0	19	16
Never	1	0	5	2	–	–	–
Do not know	3	3	2	3	9	6	16
	N = 438	N = 132	N = 281	N = 1159	N = 21	N = 17	N = 31

Notes: Pre TP = preschool teacher programme; Pri TP = primary school teacher programme 4–6; USS TP = upper secondary school teacher programme. Statistical significance *p* <0.01 (Cramers's V).

The majority of the students in preschool teacher training programmes (69%) feel that they have reconsidered their previous attitudes on education and teaching on several occasions after reading and discussing the course literature; about 90% of their teachers think this is the case. Students in the upper secondary teacher education programme attribute a significantly lower degree of influence to the course literature. Only 43% of these students agree that they have had reason to reconsider their earlier viewpoints on numerous occasions during their training. However, half of the upper secondary teacher-students think that such reconsiderations have occurred occasionally during their teacher training. Teacher-educators are more likely to think that the students are re-examining their previous positions after discussions based on course literature. This applies to all three teacher programmes.

Table 5. The degree (%) to which teacher-students and teacher-educators believe that teacher-students encounter open dialogues where different standpoints are contested against each other during their teacher education.

	Students				Teacher-educators		
	Pre TP	Pri TP	USS TP	Students in total	Pre TP	Pri TP	USS TP
Totally agree	45	22	34	37	52	53	58
Partly agree	52	67	54	56	43	47	42
Do not agree at all	2	10	10	6	0	0	0
Do not know	1	1	2	1	5	0	0
	N = 437	N = 132	N = 281	N = 1156	N = 21	N = 17	N = 31

Notes: Pre TP = preschool teacher programme; Pri TP = primary school teacher programme 4–6; USS TP = upper secondary school teacher programme. Statistical significance *p* <0.01 (Cramers's V).

Approximately half of the students only partially agree with the statement that their education is characterised by participation in open and critical argumentation. In all three of the examined teacher programmes, the teacher-educators are more certain that teacher education comprises critical discussions from different viewpoints compared to the teacher-students.

In sum, according to the survey teacher education is primarily research-based in the sense that the content of the education are based on scientific research and that the education stimulates students to demonstrate openness toward different perspectives on school and education when reading and discussing course literature. Over 50% of the students in total and a majority of the teacher-educators fully agree with these statements.

Potential meanings and pedagogic identities in teacher education

The results from the analysis of a large number of course documents and from the survey addressed to teachers and students in teacher education show that to some extent, Swedish teacher education can be characterised as research-based, depending on the meaning attributed to the concept.

Meaning potentials of a research-based teacher education

Our initial conclusion was that the course literature is understood as being research-based; however, on closer examination, we found that the literature is mostly based on secondary sources of research. An implication of the dominance of this adapted form of literature is that teacher education in the explored context does not necessarily instil the students with the habit of reading scholarly texts in their original form. Thus, it is possible that the students have not exercised the ability or tendency to orient themselves toward current research literature for either their present needs to write a master's thesis or their future needs to be well-informed professional teachers. Moreover, the framing of knowledge seems usually to be designed in a specific form, namely, as reflections and discussions from a given perspective rather than based on an argumentative examination of different perspectives. This form of strong framing related to a teacher education discourse contributes to quite a powerful normativity in those areas representing both strong classification and strong framing in relation to the profession. Thus, the courses with both strong classification and strong framing respond to the need to equip prospective teachers with a certain kind of teacher competence, but they do not in the same way as subject courses respond to the need to educate teachers for an intellectual profession with an obvious link to research.

There are, however, differences in classification and framing within different teacher education programmes and between different courses within a programme. Subject courses generally have a strong classification with regards to the discipline and a weak framing toward the professional discourse. These courses have higher status in terms of being part of a 'traditional discipline' compared to the vocationally oriented courses in the 'educational science core', which instead have a strong classification and framing toward a teaching profession discourse that is mainly based on the discipline of education. This hegemonic position in relation to the educational science core particularly applies to the subject-oriented courses in the programme for subject teachers (see Figure 1).

The survey results revealed that Swedish teacher education is research-based in relation to the criterion that it 'promotes an attitude of openness toward alternative perspectives'. Both the students and teachers think that the students are prepared to take inspiration from the perspectives on teaching that they encounter in their teacher education. However, since many courses are normative in the sense that only one perspective is presented, there is little evidence that students develop the habit of carefully examining various arguments against each other.

Based on the results of the present study, the pedagogic device of Swedish teacher education recontextualises the meaning of a university-based programme for teacher education as a teacher education discourse dominated by the supposed needs of the prospective profession. It is also possible to discern a duality of the education as a whole, where subject courses with strong classification and disciplinary framing get a hierarchal precedence over

the common professionally oriented courses in the 'educational sciences core'. The emerging meaning potential from this study is that teacher education generally represents a strongly framed teaching profession discourse with a relatively weak and adapted research base. The strong classification and weak teacher professional framing of subject courses in the programme for upper secondary teachers partly points toward a more distinct research-based form of teacher education. However, the latter argument is not fully supported by the results from the student survey, reporting that half of the students on the upper secondary school teacher programme only partly agree that their teacher education is characterised by open argumentation based on different and contrasting perspectives. However, the latter argument is not fully supported by the results from the survey, reporting that half of the students on the upper secondary school teacher programme only partly agree that their teacher education is characterised by open argumentation based on different and contrasting perspectives. In this regard, there is a difference in attitude between teacher-students and teacher-educators. Just over 50% of teacher-educators totally agree with the statement that open argumentations occur within their teacher education courses. The results of the study reveal a paradox in how Swedish students experience their education: according to the criteria for research-based education in the Swedish context, the students on the preschool teacher programmes have generally experienced their education as more research-based compared to the students in the upper secondary school teacher programmes. However, these different experiences of research-based teacher education are not supported by the results of our examination of their course literature.

Different academic pedagogic identities

The analysis of course documents and the students' experiences and perceptions of voice and message – that is, of the classification and framing of disciplinary content and pedagogy in the Swedish teacher education curriculum – points at different pedagogic identities emerging from the different meaning potentials that are made available to the students (Bernstein, 2000; McLean et al., 2012). For students in the upper secondary school teacher programmes, the pedagogic identity is mainly formed by a strong specialised disciplinary identity; that is, a pedagogical identity based on *disciplinary research*. In Bernstein's terms, the pedagogic identity is a hybrid between a retrospective identity – characterised by a strong classification and framing of the disciplinary content – and a prospective, future-oriented identity that is sensitive to aspects of gender, ethnicity, diversity and sustainable development – characterised by a strong professional classification and framing in the common 'educational science core'. The students on the preschool teacher programmes and the primary teacher programmes to a greater degree have their identities formed by this latter prospective. In other words, they have a future-oriented identity because of the classification and framing of the vocationally oriented courses structuring most of their teacher education programmes. In the preschool teacher programme, both teacher-educators and teacher-students seem to adopt a pedagogical identity based on *research on education*. This assumption is based on the relatively high and consistent estimates made by teacher-students and teacher-educators in terms of research-based literature, ability to orient themselves in current research and the ability to rethink previous opinions on school and teaching. Regarding the primary school teacher programme, teacher-students' pedagogical identity in relation to education research and discipline research seem to be more diffuse and uncertain, especially in relation to

their ability to orient themselves in current research. In addition, the teacher-educators on the same programme have low estimations on the students' possibilities in this regard. The students also seem to misjudge the extent of active researchers in their teacher education when compared to the opinion of the teacher-educators. We suggest that the teacher-students on the primary school teacher programme to a higher degree feel themselves to be somewhere *in-between* a strong education and a strong disciplinary research discourse.

Drawing on the results from this study, we argue that it is not sufficient to understand teacher education as research-based only from the fact that the teacher-students write a scientifically based student thesis. Rather, their education as a whole needs to be included in the notion of research-based education, taking course content and its research base as well as different aspects of research-based education into consideration when exploring what a research-based teacher education might mean and imply. Unless the nature of the research and how it is communicated to the students is scrutinised, it becomes difficult to conclude what means the teacher education offers prospective teachers to relate in a reflective and thoughtful way in relation to the requirements of a continually evolving policy arena and from a continually complex teaching environment.

The study shows the significance of research regarding the meaning of 'research-based teacher education' by analysing syllabuses and enquiries of the attitudes of teacher-students and teacher-educators. However, the results from the study are limited to document analyses of course plans and to a rather constrained questionnaire, albeit answered by a relatively large amount of teacher-students. For future research, a complementary analysis of qualitative data from interviews with a selection of the two groups of teacher-educators and teacher-students might provide insights that can open up for a deeper understanding of the formation of pedagogical identities.

Notes

1. This article theoretically develops and deepens the discussion on the empirical results from a Swedish project, 'Research-based teacher education', conducted on behalf of the Swedish Research Council. The project was part of a larger initiative on educational research financed by the Swedish government. The empirical results were reported online in Swedish in 2015 and the project is included in a forthcoming book chapter in Swedish.
2. A joint research report from the British Education Research Association (BERA) and the Royal Society for the Encouragement of the Arts, Manufacturing and Commerce (RSA).
3. European Credit Transfer and Accumulation System (ECTS) is a standard for comparing the performance of students of higher education across the European Union.
4. These quotes are from the students' version of the questionnaire.
5. The study is conducted in accordance with the principles and guidelines for good research ethics issued by the Swedish Research Council (*Good Research Ethics*. Stockholm: 2017). Since none of the participants are below the age of 18, no ethical review is requested.
6. The three programmes reported separately represent preschool (for children aged 1–5 years), primary school (school year 4–6) and upper secondary school (school year 6–9) teacher education programmes. The fourth programme, the primary teacher education programme for preschool class to school year three, is not included in the diagram in order to enhance the overview's clarity; instead, all four programmes are included in the column 'Students in total'.

Acknowledgement

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Daniel Alvunger is a senior lecturer in Education at Linnæus University, Sweden. His research concerns curriculum theory with focus on the complex and intertwined relations between transnational policy, national educational reforms and the implications of reforms in local schools. Another area of interest is school development and educational leadership. Among recent publications are 'Towards new forms of educational leadership?: The local implementation of förstelärare in Swedish schools' in *Nordic Journal of Studies in Educational Policy* and 'The nested systems of local school development: Understanding improved interaction and capacities in the different sub-systems of schools' in *Improving schools*, co-authored with Carl-Henrik Adolfsson.

Ninni Wahlström is a professor of Education at Linnaeus University, Sweden. Her current research focuses on transnational and national policy discourses and their implications for national curriculum and classroom teaching from a perspective of critical curriculum theory. She is also interested in educational philosophy and theory, specifically in pragmatism. Her most recent publications are Wahlström, N. & Sundberg, D. (2017): *Transnational curriculum standards and classroom practices: The new meaning of teaching*, Routledge, and Bergh, A. & Wahlström, N. (2017) "Conflicting goals of educational action: A study of teacher agency from a transactional realism perspective" *The Curriculum Journal*.

ORCID

Ninni Wahlström 🆔 http://orcid.org/0000-0001-5554-6041

References

Ahlström, K. G., & Kallós, D. (1996). Recent research on teacher education in Sweden. Problems and issues in a comparative perspective. In D. Kallós & I. Nilsson (Eds.), *Research on teacher education in Finland, Germany and Sweden* (pp. 5-46). Umeå: Umeå University.

BERA-RSA. (2014). *Research and the teaching profession: Building the capacity for a self-improving system*. Final report of the BERA-RSA inquiry into the role of research in teacher education. Oxford: BERA-RSA Inquiry into Research and Teacher Education.

Bernstein, B. (1990). *The structuring of pedagogic discourse. Volume IV: Class, codes and control.* London: Routledge.

Bernstein, B. (2000). *Pedagogy, symbolic control and identity: Theory, research, critique* (1st rev ed.). Lanham, MD: Rowman & Littlefield.

Björklund, S. (1991). *Forskningsanknytning genom disputation* [Research connection through disputation] (p. 112). Uppsala: Acta Universitatis Upsaliensis, Skrifter utgivna av Statsvetenskapliga föreningen i Uppsala [Essays published by the Political Science Association in Uppsala].

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education, 24*, 249–305.

Cochran-Smith, M., Villegas, A. M., Abrams, L., Chavez Moreno, L., Mills, T., & Stern, R. (2016). Research on teacher preparation: Charting the landscape of a sprawling field. In D. Gitomer & C. Bell (Eds.), *Handbook of research on teaching* (5th ed., pp. 439–547). Washington, DC: American Educational Research Association.

Colucci-Gray, L., Das, S., Gray, D., Robson, D., & Spratt, J. (2013). Evidence-based practice and teacher action-research: A reflection on the nature and direction of 'change'. *British Educational Research Journal, 39*, 126–147.

Darling-Hammond, L. (2006). Constructing 21st-century teacher education. *Journal of Teacher Education, 57*, 300–314.

Furlong, J., McNamara, O., Campbell, A., Howson, J., & Lewis, S. (2008). Partnership, policy and politics: Initial teacher education in England under new labour. *Teachers and Teaching: Theory and Practice, 14*, 307–318.

Hallsén, S. (2013). *Lärarutbildning i skolans tjänst? En policyanalys av statliga argument för förändring* [Teacher education in the service of school? A policy analysis of State arguments for change] (p. 133). Uppsala: Acta Universitatis Upsaliensis [Uppsala Studies in Education].

Klette, K. (2002). What are Norwegian teachers meant to know? Norwegian teachers talking. In K. Klette, I. Carlgren, J. Rasmussen, & H. Simola (Eds.), *Restructuring Nordic teachers: Analyses of interviews with Danish, Finnish, Swedish and Norwegian teachers* (pp. 71–93). Oslo: Institute for Educational Research, University of Oslo.

Lindberg, O. (2003). Samtal eller parallella monologer? Svenska avhandlingar om lärarutbildning perioden 1953–2000 [Conversations or parallel monologues? Swedish theses on teacher education during the period of 1953–2000]. *Pedagogisk forskning i Sverige* [Educational research in Sweden], *8*(3), 158–183.

McLean, M., Abbas, A., & Ashwin, P. (2012). The use and value of Bernstein's work in studying (in)equalities in undergraduate social science education. *British Journal of Sociology of Education, 34*, 262–280.

Munthe, E., & Rogne, M. (2015). Research-based teacher education. *Teaching and Teacher Education, 46*, 17–24.

National Agency for Higher Education. (2006). *Utbildning på vetenskaplig grund – röster från fältet. Rapport 2006:46R* [Research-based education – Voices from the field. Report (2006). 46R]. Stockholm: Author.

Official Report. (2008). *En hållbar lärarutbildning. Betänkande av Utredningen om en ny lärarutbildning (HUT 07)* [A sustainable teacher education. Official report from the committee for a new teacher education (HUT 07)]. Stockholm: Utbildningsdepartementet [Ministry of Education and Research].

Sachs, J. (2016). Teacher professionalism: Why are we still talking about it? *Teachers and Teaching: Theory and Practice, 22*, 413–425.

The Swedish Higher Education Authority. (2015). *Högre utbildning och forskningsanknytning* [Higher education and research-connection]. Stockholm: Author.

Toom, A., Kynäslahti, H., Krokfors, L., Jyrhämä, R., Byman, R., Stenberg, K., … Kansanen, P. (2010). Experiences of a research-based approach to teacher education: Suggestions for future policies. *European Journal of Education, 45*, 331–344.

Westbury, I., Hansén, S. E., Kansanen, P., & Björkvist, O. (2005). Teacher education for research-based practice in expanded roles: Finland's experience. *Scandinavian Journal of Educational Research, 49*, 475–485.