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# Dichotomous and Multifaceted: Teacher Educators' Understanding of Professional Knowledge in Research-based Teacher Education

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## ABSTRACT

In the Nordic countries, teacher education programmes are shifting towards a research-based design, thus placing new expectations and requirements on teacher educators. In this study, we aim to explore teacher educators' understanding of professional knowledge in research-based teacher education. We interviewed 16 Norwegian and six Finnish teacher educators. The teacher educators' views of professional knowledge could be divided into two main categories – academic characteristics and personal characteristics – and three dichotomies were discussed: educational sciences versus subject sciences, research versus teaching and collaboration versus autonomy. Teacher educators come from various backgrounds and bring different experiences into teacher education. Thus, their understanding of professional knowledge in research-based teacher education seems to be dichotomous and multifaceted. The dichotomies that were uncovered and the tensions between them provide the foundation for further development of teacher education in Norway and Finland.

## ARTICLE HISTORY

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## KEYWORDS

Teacher educators; research-based teacher education; professional knowledge; Norway; Finland

## Introduction

The research on teacher educators has highlighted their pivotal role in improving the overall quality of education (Cochran-Smith et al., 2018; Goodwin et al., 2014). The European Commission's (EC's) report on Supporting Teacher Educators for Better Learning Outcomes (EC, 2013) also stressed the important role of highly qualified teacher educators in preparing and supporting the next generation of schoolteachers. Despite increasing efforts to widen and deepen the research on teacher educators, there is still no clear essential knowledge base for their work (Kelchtermans et al., 2018; Ping et al., 2018). According to Goodwin et al. (2014), teacher educators found their knowledge base to be unclear and they felt that they lacked formal preparation. This can be considered a weak and insufficient basis for offering high-quality education for future teachers. Many researchers have further highlighted the need to scrutinise teacher educators' professional background and the relevant qualification processes in order to enhance their professionalism (Berry, 2007; Korthagen et al., 2005; Koster et al., 2005; Loughran, 2006). In this article, the focus is therefore on *professional knowledge*, which is the theoretical knowledge and practical skills necessary for the teacher educator profession in research-based teacher education (Tamir, 1991).

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The emphasis is on teacher education in Norway and Finland. Teacher education in Norway has been research-based for the last decade and it became master's-based in 2017, while this was already the case in Finland in the 1970s (Jakhelln et al., 2019).

The Norwegian context is the point of departure of this article, although the study responds to the call for more comparative studies by also incorporating data from teacher educators in the Finnish context (Harrison & McKeon, 2010; Maaranen et al., 2018). The overall aim is *to explore teacher educators' understanding of professional knowledge in research-based teacher education*. The following research question is posed: What characteristics of professional knowledge do teacher educators highlight in research-based teacher education? In this way, we respond to the current discussion on the challenges involved in developing high-quality teacher education and educating professional teachers who are prepared to meet the demands placed on them in the future (Darling-Hammond & Hyler, 2020). Furthermore, the study relates to the ongoing discussion on the role of research within teacher education (Menter & Flores, 2021). The study was carried out by both Norwegian and Finnish researchers, and with these two different perspectives, valuable information was added and novel insights were gained (Blömeke & Paine, 2008). Moreover, the Finnish researchers had worked in both countries, aiding the further understanding of the similarities and differences between the two contexts.

## Background and Central Concepts

In line with the aim of this study, we will firstly give a general overview of research on teacher educators and, secondly, we will discuss central concepts in relation to teacher educators' professional knowledge.

### Research on Teacher Educators

While research on teacher education in general has increased during the past decade and is subject to ongoing interest (Menter & Flores, 2021), research on teacher educators has been limited, fragmented and often restricted to self-study approaches, even though there has been some development in the field (Ellis et al., 2014; Izadinia, 2014; Korthagen et al., 2005; Maaranen et al., 2019). These initiatives, in terms of communities of practice, support and shared commitment, have fostered teacher educators' professional development (Smith & Flores, 2019). In a review of teacher educators' professional learning from 2000–2015, Ping et al. (2018) underlined teacher educators' direct influence on student teachers and their indirect influence on the learning results of pupils in schools. This is also supported by several other researchers who note the obvious relationship between students' learning and teachers' professionalism in general (Chetty et al., 2013; Goodwin et al., 2014).

In previous research, three issues have been particularly emphasised: the *induction* phase of becoming a teacher educator (Murray & Male, 2005); teacher educators' *identity* (Izadinia, 2014); and *professional development* (Flores, 2018). *The induction phase* is experienced as demanding by teacher educators, especially since the character of the profession is multifaceted and complex (Korthagen et al., 2005), and it involves two key challenges: how teacher educators develop a pedagogy in higher education and how they become research active (Loughran, 2014; Murray & Male, 2005). A review by Izadinia (2014) revealed that teacher educators, specifically during their first years in the profession, experienced their work as stressful and challenging, and they had doubts about their abilities to perform their role. Furthermore, they felt lonely and found it difficult to acquire an *identity* as a teacher educator (Murray & Male, 2005). Many teacher educators had previously been schoolteachers, and the career change involved in becoming academic teacher educators involved in research had challenges (Maaranen et al., 2019). The main issue was in moving from being "first-order practitioners" (i.e., schoolteachers) and experts to becoming "second order practitioners" and novices. Even though they had extensive experience of school teaching, they needed to acquire new knowledge and a new understanding of academic practice. They

were expected to become active researchers within a short period of time, although few of them had any previous research experience (Murray & Male, 2005). The academisation of teacher education has also increased the pressure on teacher educators (Maaranen et al., 2019).

In addition to an intense induction phase, there are other areas of importance in teacher educators' further *professional development*: context, personal qualities, support and research (Lunenberg et al., 2014). Context refers to the professional standards regarding the knowledge base that is expected from teacher educators in different contexts. Teacher educators' personal qualities that are needed in the profession are, for instance, intrinsic motivation and an interest in the subject discipline and student teachers. The importance of support from more experienced teacher educators relates particularly to research methodological advice and how to find the balance between teaching and research. Previous research (Ping et al., 2018) has revealed several barriers for teacher educators' professional development, such as a lack of time and resources, an excessive workload, insufficient encouragement from managers and a negative working climate. Studies have further shown that research is a key component in teacher educators' professional development for them to better understand teaching student teachers (Harrison & McKeon, 2010; Tack & Vanderlinde, 2014), to develop teaching in a scientifically-based manner and to contribute to the development of the teacher education curriculum (Willemse & Boei, 2013). Although there has been increasing interest in developing university pedagogy in an academic context, there are still limited official initiatives for teacher educators (Tack & Vanderlinde, 2014). Thus, teacher educators' work is not yet considered a well-developed profession in terms of formal requirements and specific support programmes (Ping et al., 2018). In the following section, we focus on the professional knowledge of teacher educators.

### **Teacher Educators' Professional Knowledge**

Professional knowledge is a multifaceted concept that can be defined in various ways (Aspfors et al., 2019). Smith and Flores (2019) have differentiated between the professional expertise of teacher educators and teachers' professional expertise. One way of capturing the meaning of professional knowledge is to refer to two levels: teacher educators are teachers of teachers and their "teaching subject" is "teaching". Consequently, teacher educators' professional knowledge includes "content knowledge, communicative knowledge, knowledge about adult learning, feedback and motivation, research knowledge, and how to develop reflective competence within others" (Smith & Ulvik, 2015, p. 435). Cochran-Smith (2005) illustrates this two-fold position of teacher educators, pointing out that they are expected to be experts in both teaching about teaching and conducting research. They not only teach a particular school subject, but they also teach the "teaching of that subject discipline". Becoming a teacher educator also encompasses, besides teaching expertise and supervision, being a fully-fledged researcher.

Due to the academisation process, teacher educators' professional knowledge has been discussed, especially in relation to their role as researchers. According to Tack and Vanderlinde (2014, p. 301), "teacher educators' researcherly disposition" can be defined as "the habit of mind to engage in research and thus to produce both local knowledge and public knowledge on teacher education". Teacher educators are expected to publish research nationally and internationally and are examined regarding both the quality and quantity of their research publications (Korthagen et al., 2005). The status of the research is related to how teacher education is organised. In research-intensive universities, teacher educators' research-related activities are seen as crucial for the profession (Goodwin et al., 2014; Harrison & McKeon, 2010). In Finland, for example, teacher educators value research as the second most important part of their profession after their student teachers' learning (Hökkä et al., 2017; Maaranen et al., 2019). The academisation of teacher education over a long period has thus influenced teacher education as a profession as well as the academic status of teacher educators. In contrast, in institutions emphasising teaching and development, the most popular role of a teacher educator is still as a "teacher of teachers" (Meeus et al., 2018, p. 16). Since teacher

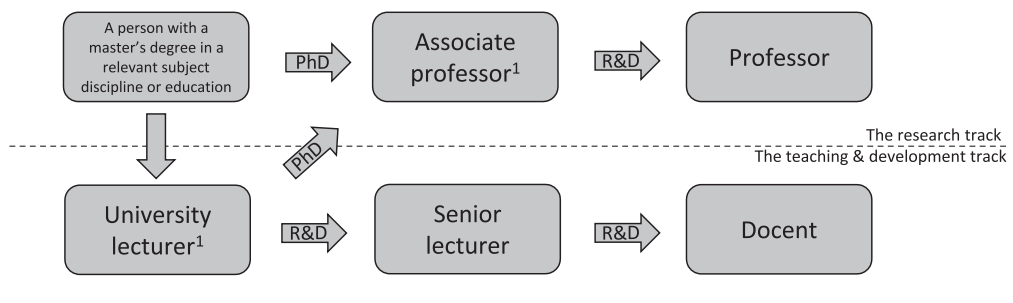
education for primary and lower secondary schools in Norway has not been research-based until the last decade, it has been characterised by a teaching-intensive approach. From the student teachers' perspective, the status of research is thus two-fold: they appreciate the teacher educators' expertise as teachers and, at the same time, they value their research experience as a quality criterion for good teaching (Healey et al., 2010; Krokfors et al., 2011).

Despite an increased focus on research, not all teacher educators are interested in research and research-related activities (Ping et al., 2018; Smith & Flores, 2019). There are both attitudinal and organisational barriers when teacher educators start conducting research. If they lack research experience or do not have expectations concerning a research role, they will experience difficulties in identifying themselves with that role (Griffoen, 2018). Joram (2007) also notes the different epistemologies between teacher educators and practicing teachers. Research produced by teacher educators is often not experienced as relevant and useful by schoolteachers in practice. Due to the academisation of teacher education, the teacher educators' "street credibility" – that is, their experience as school teachers – is undervalued, whereas their "research credibility" in terms of their research and publications is highly valued (Dinkelman et al., 2006; Korthagen et al., 2005). In line with this, Tack and Vanderlinde (2014) accentuate the need to conduct research that enhances teacher educators' professional development and is relevant for practice.

## Contexts

In Norway, the teacher education programmes for the primary and lower secondary levels are in a process of change from four-year programmes to five-year master's degree programmes, emphasising research-based teacher education (Ministry of Education and Research, 2017). The vision is to educate teachers who have an inquiring attitude towards teaching. However, research has shown that although there has been more emphasis on research, the extent and depth of the research focus varies (Munthe & Rogne, 2015). The need for research-based teacher education in Norway has further resulted in a national process where several university colleges have merged with or into universities (cf. Smith & Flores, 2019, p. 434). These new institutions have different cultures for teaching and research, which also influence the development of a strong research-based approach to education.

Norwegian teacher educators have diverse educational backgrounds, especially when it comes to research. At present, there are two tracks to becoming and developing as a teacher educator in Norway: the research track and the teaching and development track, as displayed in Figure 1. For the first track, a person with a master's degree earns a PhD, becomes an associate professor and may continue to become a professor. For the latter track, a person with a master's degree (i.e., a university lecturer) can qualify to become a senior lecturer through development projects and publications with a workload corresponding to a PhD and can go further to gain a docent position (Munthe &



**Figure 1.** An overview of the two main tracks of becoming and developing as a teacher educator in Norway. <sup>1</sup>Needs teacher education or a course in pedagogy for higher education.

Rogne, 2015). A senior lecturer is considered equal to an associate professor, but with competence and a position that is more teaching-oriented. Similarly, a docent is considered equal to but is more teaching-oriented than a professor (note that a docent in Norway refers to a position and is different from a docent in Sweden and Finland, which refers to an academic title). In other words, some Norwegian teacher educators do not possess a PhD. Furthermore, some teacher educators possessing a PhD have it in their educational discipline (e.g., biology or linguistics) rather than in education and might have less experience with educational research.

In Finland, the teacher education for primary school has been university-based and attached to a five-year master's degree programme since the 1970s. The aim is to prepare critically reflective professional teachers, highlighting their ability to successfully apply argumentation, decision making and justification in solving pedagogical problems, who can combine research findings about teaching with the profession's practical challenges. The teacher educators are required to have a PhD and thus follow the research track in [Figure 1](#). Most of them are also qualified as teachers, although there is no official requirement for that (e.g., Maaranen et al., 2019; Tirri, 2014). In general, three categories of teacher educators can be distinguished: professors, associate professors and university lecturers, all having a PhD in education.

## Method

This study is part of a larger comparative research project in Norway and Finland that focuses on teacher educators' views on research-based teacher education. In this article, a qualitative research approach has been chosen based on interviews from the project.

### *Informants and Data Collection*

The data was collected in autumn 2019 through semi-structured interviews (Kvale & Brinkmann, 2018) with 16 teacher educators from Norway working at two different universities and, in total, on three campuses, and six teacher educators from Finland working at one university and on one campus. The two Norwegian teacher education institutions were chosen to exemplify both metropolitan and rural teacher education and thus to display the variation in the institutions. In Finland, a teacher education institution with Swedish as a first language was chosen to allow the informants to speak in their mother tongue (the Scandinavian languages are mutually intelligible) and to allow all project members to analyse the original interview data.

The informants were chosen to represent diverse subject and educational backgrounds, and their qualifications were thus the basis for strategic selection. Two selection criteria guided the selection. They needed to 1) hold a permanent position in primary and secondary school teacher education and 2) have at least five years' work experience in teacher education. These criteria were chosen to ensure that the informants had extensive insight and experience from where their reflections on professional knowledge in research-based teacher education were drawn. The Norwegian informants included five university lecturers, two senior lecturers, six associate professors, two docents and one professor who, between them, had the following subject backgrounds: science, music, language 1, social studies, physical education, arts and crafts, English, mathematics and pedagogy. The Finnish informants included four university lecturers, one associate professor and one professor who, between them, had the following subject backgrounds: physical education, arts and crafts, pedagogy, science, language 1 and foreign languages. All Finnish informants and seven of the Norwegian informants (i.e., the associate professors and the professor) possessed a PhD. Thus, the Norwegian informants were more heterogeneous, both when it came to research experience (possessing a PhD or not) and educational background (subject background vs educational background), as described in the context section.

The interviews were conducted by the project researchers (including the authors). Each interview lasted for 30–45 min and was recorded and transcribed. The interview guide was developed

within the research project and consisted of four themes: (1) research-based teacher education, (2) teacher educators' professional knowledge and development, (3) student teachers' professional knowledge, and (4) collaboration between the campus and the field of practice. In this article, interview data from themes 1, 2 and 4 is used.

### **Data Analysis**

The transcripts were analysed using NVivo 12 software. A qualitative content analysis was used as the data-analysis method (Schreier, 2014). Dialogues and meetings were held regularly, aiming at reaching a common understanding of the results from the data. All researchers participated in the analytical process, although two of the authors had the main responsibility and jointly analysed the transcripts through an inductive coding process. The coding process was inspired by constant comparative analysis (Strauss & Corbin, 1998). After a process of open coding generating a broad number of codes that were compared and synthesised, 23 axial codes were generated and related to teacher educators' professional knowledge. These codes were grouped and, after several rounds of discussions with the two other authors, including a comparison of the data from the two countries, we arrived at two main categories and six sub-categories (three per category). In this way, peer debriefing between the authors ensured the trustworthiness of the study. The study followed the general ethical standards approved by the Norwegian National Research Ethics Committees (2016) and by the Finnish Advisory Board on Research Integrity (2016).

### **Results**

The two main categories and the six sub-categories characterising teacher educators' professional knowledge in research-based teacher education are presented in Table 1. The table aims to visualise the emphasis on the Norwegian context mirrored in the Finnish context. The categories are illustrated with rich and thick quotes from the interviews to ensure the trustworthiness of the study.

#### **Academic Characteristics**

An attribute of the teacher educators' professional knowledge was academic characteristics, such as methodological and research skills, critical and analytical skills and dissemination and use of research.

#### **Methodological and Research Skills**

All teacher educators in the study talked about methodological and research skills and held similar views as to what those skills entailed. They mentioned methods for data collection and analysis, and experience and skills in planning and conducting research for smaller and larger projects. Action research was also suggested as an important element of research-based teacher education.

**Table 1.** An overview of the categories generated through the analysis and the distribution of informants.

Categories and sub-categories		Norway (16 informants)	Finland (6 informants)
		N	N
<i>Academic characteristics</i>	Methodological and research skills	16	6
	Critical and analytical skills	8	4
	Dissemination and use of research	13	4
<i>Personal characteristics</i>	Change competence	11	4
	Perception of different types of knowledge	15	6
	Collaboration	11	0



Some of the Norwegian informants had their research background in the teaching subject and not in education and they were in the process of re-education. These informants emphasised the need for further education in order to develop within research. Other Norwegian informants also emphasised the importance of knowing a diversity of methods, but pointed to a consciousness of one's own knowledge as well:

... to know a diversity of methods. Or at least be conscious about what methods one knows. (...) And when we are going to supervise student teachers, we know that we are competent in the matter we are supervising. (Norwegian professor)

The Finnish teacher educators did not talk in the same way about their knowledge of different methods, as they seemed to take that for granted, thus allowing them to read and understand research. For them, this category included methodological skills and knowing how to plan and conduct research on both a smaller and larger scale.

### ***Critical and Analytical Skills***

Other academic characteristics emphasised by teacher educators in both countries were critical and analytical skills. The perspectives were quite similar in the two countries and were addressed through two perspectives: as an important skill in research-based teacher education and as a skill an educator develops through research. One of the Finnish professors pointed to the premises behind having teacher education at the university level, as opposed to at a lower academic level:

By having teaching education at university level, the foundation is established. It is research-based development, and the teacher educators should have a research approach and an analytical approach to their work and their teaching. I think it is the same thing, too, in order to promote development and a critical attitude, and that education should not just be education based on emotions. (Finnish professor)

This professor highlighted research and theory as important ingredients for professional knowledge. Several other informants also argued that the critical and analytical skills developed through research may lead to better teaching practices: "I think we actually become more critical. The focus is more analytically connected to the profession and it aligns more closely with the profession" (Norwegian docent). Others pointed to how experiences from research can lead to more self-confidence in the profession and to daring to contradict colleagues with arguments based on research.

Even though the perspectives were quite similar in the two countries, the research focus was more established in Finland and the link between research and critical and analytical thinking was not mentioned explicitly.

### ***Dissemination and use of Research***

Both the Norwegian and Finnish informants emphasised the importance of being updated on research and presenting new research to the student teachers. They emphasised that they needed to be updated on research in several areas, since their teaching included more topics than their research interests did. However, some of the Norwegian informants were reserved about research and were doubtful about what kind of research should be included in teacher education programmes:

One consequence is that we have to adapt the subject matter and be able to include research in what they are doing – and in a way so that they can overcome it and understand that it is important. And then you actually need to do research training at the level of the student teachers. (Norwegian associate professor)

This doubtfulness might be linked to a division that can be found in the Norwegian material when it comes to the type of research they want to include in their teaching. Most of the teacher educators talked about how educational research should inform their teaching, while others talked about the importance of presenting the newest research in their own subject field rather than educational research.



The Finnish teacher educators seemed to be clearer on the relationship between research and teaching. This relationship can be connected to what they include in their teaching: “The best is when you get hold of a good article and you sit like this ... Underlining the PDF and realising what aspects should be included in your courses” (Finnish professor). It can also be connected to how research, in turn, will affect their teaching and work in general:

Probably, [research] involves a way for me ... actually it affects everything in my work. It affects my attitude to most things. How I analyse most things. (...) It is like an attitude to everything. To how you plan your teaching. To how you choose what’s relevant and what you include in your teaching. So, I would argue that it has quite high significance. (Finnish university lecturer)

This university lecturer expressed a holistic perspective on how research affected her entire working life. Similar perspectives were seen when teacher educators from both countries emphasised the spin-off benefit of their PhD work, such as this associate professor who talked about how her PhD affected both her teaching, supervision and her relationships with the student teachers: “I think that the education I received through my PhD has done something for the way I look at my job and the way I reflect over teaching and supervision, and my relationships with the student teachers” (Norwegian associate professor). Others pointed to the more obvious parts of the PhD process, including courses and experience with all parts of the research process.

### **Personal Characteristics**

Another attribute of the teacher educators’ professional knowledge was *personal characteristics*. Teacher educators from both countries emphasised the personal traits and skills needed for working with research-based teacher education, such as *change competence*, *the perception of different types of knowledge* and *collaboration*.

### **Change Competence**

Two-thirds of the teacher educators in the two countries emphasised change competence as important professional knowledge. Even though change competence was addressed by several teacher educators in both countries, the Norwegian teacher educators addressed it to a higher extent and their focus was linked to both teaching and research. The teaching aspect included learning new and relevant topics and teaching methods, and several teacher educators emphasised the importance of being innovative as both teacher educators and teachers. Others, however, expressed a certain scepticism regarding the shift towards more research-based teacher education and some even felt a lack of acceptance from their student teachers and the field of practice.

With respect to the research aspect, the academisation of Norwegian teacher education involves a change in tasks and a larger research focus for all teacher educators. Furthermore, the previously mentioned Norwegian informants who had their research background in their teaching subject, and not in education, needed a particular emphasis on change competence since they had to change their field of research. Some of these teacher educators still conducted research in their own field of expertise rather than in education, which made it more demanding to implement research-based teacher education. In addition, it brought about some tension in the field as it contributed to more discussions on education versus subject disciplines in the Norwegian material:

There is a controversy in teacher education because people would like to continue doing what they used to do, and there are a lot of people who are employed because of their subject background – not because they are teacher educators or have school-related competence. A weakness in our educational system is that there are not enough people who are oriented towards the profession. (Norwegian docent)

The docent points to an important issue in the Norwegian context, where teacher educators with a subject discipline may focus more on the topics within the subject rather than on how to teach these topics, and, hence, become *teachers of teachers*. There are, however, teacher educators who have a

background in a subject discipline and are still oriented towards the profession and conduct educational research. Some Norwegian teacher educators also see the possibilities of development that are a foundation for the job:

This is perhaps what I find most enjoyable about this job; it is a very educational job. I have been working here for 10–12 years, and I never stop learning. It is always something new and something that I get caught up in – or am asked about – that extends my perspectives. It is something I take great pleasure and benefit from. (Norwegian associate professor)

Looking into the Finnish material, they do not have similar tensions, probably because everyone has a PhD in education and therefore they do not need to change their field of research as did some of the Norwegian teacher educators. Their focus on change competence is related to further education and a will to develop and be curious and dare to throw themselves into new and unknown tasks, especially related to teaching. One of the Finnish university lecturers noted:

In a way, I feel that there is not a single person who is sufficiently educated upon employment. Everyone has to be educated further throughout their working life as well. It has a lot to do with your attitude and perspective when working at a university, which is important when you start working here. (Finnish university lecturer)

Overall, and in line with this university lecturer, the Finnish teacher educators were more homogeneous in terms of their focus being on how they needed to develop and continue with their education within their position.

### *Perception of Different Types of Knowledge*

Another frequently appearing aspect in the material was how the teacher educators *perceived* and valued *different types of knowledge*; they discussed *subject knowledge versus educational research and theoretical versus practical knowledge*. There were similar results in the two countries in terms of the proportion of teacher educators addressing the issue, but a trend found in the material was that some Norwegian teacher educators had different perspectives on the value of different types of knowledge compared to their Finnish counterparts. The latter mainly talked about different knowledge and how this could be integrated, and how different people could contribute with different aspects of research-based teacher education:

What student teachers gain from teacher education is approximately ... like a sausage soup – a mixture of everything. Even though we are different teachers on different courses, and even though we believe that the most important part is what they gain from our own course, the student teachers gain a lot throughout the programme. (Finnish Senior lecturer)

As we can see in the excerpt, the teacher educator embraces difference. This is in line with the others who emphasise the importance of teacher educators having different interests and backgrounds, both with respect to the subject and experience.

In the Norwegian material, the teacher educators were somewhat divided. Some aligned with the Finnish teacher educators, embracing a heterogeneous work environment and emphasising knowledge integration. Others, however, focused more on what others lacked, mostly connected to whether they possessed a PhD or not, which seemed to be a touchy topic, as illustrated by this excerpt from a teacher educator with a PhD:

For those having a particular responsibility for the research part, because I don't think that we can expect that everyone should have [the research part], but for us ... I think that you should have a PhD. (...) What you gain from working on a PhD is something you are not aware of before you are done, or during the process. While those who choose the other track, as senior lecturers and docents, have problems acknowledging the difference. They therefore feel ignored since they do not have the same knowledge. (Norwegian associate professor)

The associate professor's perspectives on the importance of a PhD and the different views of knowledge were confirmed by another teacher educator who did not possess a PhD and found the PhD competence overestimated:

I think it is unfortunate if you focus on employees with PhDs, only (...) There are many from our field who do not possess a PhD and who work here as university lecturers, but have many years of experience from schools. (Norwegian senior lecturer)

In this excerpt, the senior lecturer touches upon another dispute in the material, which is the importance of the field of practice and accepting the difference between the theoretical and practical contexts within teacher education. Some Norwegian teacher educators focused on what the field of practice lacked. Other Norwegian educators, together with the Finnish educators, acknowledged the field of practice and focused on how teacher educators and teachers could complement each other. They focused more on how everyone, regardless of educational background, needed to develop within the position, as addressed in relation to change competence above.

### Collaboration

In the Norwegian material, *collaboration* was emphasised by most teacher educators. One aspect within collaboration mentioned by the Norwegian respondents was collaboration *between colleagues in the teacher education programmes* as a means to solve new tasks and the role of collaboration in facilitating learning, as expressed by one of the teacher educators:

I believe in collaboration between colleagues. One colleague might have knowledge and experience in one area and another colleague might bring something else. A third colleague has competence in a third thing. I like that and find it very educational. (Norwegian associate professor)

Another aspect of collaboration in the Norwegian material concerns the relationship *between campuses and schools*. Some emphasised the role of research in closing the gap between these two arenas and that teacher educators, teachers and student teachers could gain from exploring different issues together.

The Finnish teacher educators did not address collaboration at all. Instead, they addressed the importance of being independent and autonomous and pointed to traits such as the *ability to prioritise* and *motivational power*, making one able to go *the distance*, as exemplified by one of the professors:

I think [the job] demands curiosity and a will to develop. A certain inner drive, which means that you are autonomous. Our job is without clear guidelines, which means that you have a lot of freedom, which in turn means that you need to be able to shape your freedom, making it appropriate for what you are supposed to do. So, I believe that strong motivational power and will are needed. And a little bit of madness, allowing you to dare to throw yourself into everything without really knowing where it will lead. (Finnish professor)

The informants from the two countries seemed to differ the most with this category and expressed different understandings of professional knowledge in research-based teacher education.

### Discussion

The aim of this article was to explore teacher educators' understanding of professional knowledge in research-based teacher education. The findings showed that, in line with previous research, there is a limited consensus among the teacher educators concerning their understanding of professional knowledge (Berry, 2007; Goodwin et al., 2014; Harrison & McKeon, 2010; Korthagen et al., 2005; Koster et al., 2005; Loughran, 2006). In the following, we will discuss three dichotomies permeating the teacher educators' understanding of professional knowledge: educational sciences versus subject sciences, research versus teaching as well as collaboration versus autonomy. The dichotomies are used to display the tensions in the material and do not necessarily reflect opposing views.

According to the first dichotomy (*educational sciences versus subject sciences*), several of the Norwegian teacher educators possessed a PhD in their subject discipline (e.g., history or literature) rather than in education. Some of these teacher educators wanted to continue conducting research in their own subject discipline, yet most of them were in the process of re-education. Since teacher

educators not only teach a particular school subject but also teach the “teaching of that subject discipline” (Cochran-Smith, 2005; Smith & Flores, 2019), conducting and using research in education was considered to be at the core of professional development. Several Norwegian teacher educators, and especially those whose teaching subject was not in education, stressed the need for developing their research and methodological skills in educational sciences, and hence called for professional development (Flores, 2018; Tack & Vanderlinde, 2014). Change competence was thus seen as an important factor in both teaching and research in the Norwegian cohort. In contrast, more intuitively, the Finnish teacher educators emphasised educational research as a part of professional knowledge and the need for more specific methodological skills was not as pronounced. This could be related to the fact that all of them possessed a PhD in education and thereby possessed the methodological skills needed in supervising master’s students as well as doing educational research. Research in educational sciences is experienced as more relevant for the practice field, which further enhances teacher educators’ professional knowledge (e.g., Tack & Vanderlinde, 2014).

The second dichotomy, *research versus teaching*, denotes the relationship between research and teaching, and it was emphasised by the Finnish educators, whereas, for several Norwegian educators, the two aspects were viewed as more separate. The latter also reflects their doubt about research-based teacher education and whether educational or subject research should inform their teaching. This can be explained in terms of the background of research-based teacher education in the two countries. In Finland, the master’s programme is well established (Tirri, 2014) and the teacher educators have reflected on considerations of professional knowledge in research-based teacher education (cf. Maaranen et al., 2018, 2019). As previously introduced, the teacher education programme in Norway has recently been established at master’s level (Ministry of Education and Research, 2017), which means that the first student teachers in the new programme were at the beginning of their third year at the time of the interviews. Thus, there were no incorporated views of how research and teaching should be integrated in the programme. This will be further discussed with respect to the challenges of becoming a teacher educator and to disputes seen in the material.

The typical challenges of becoming a teacher educator were evident in our material: how to develop teaching in higher education and how to become research active (Loughran, 2014; Murray & Male, 2005). One criterion for the informants in this study was five years of experience from teacher education, to provide insight into the complexities of this work. However, due to the academisation process of teacher education in Norway, some of these teacher educators could still be considered to be in the induction phase (Murray & Male, 2005), meeting the challenges characterising the first years of the profession, despite several years of experience. Thus, there is a need for professional development (Flores, 2018; Tack & Vanderlinde, 2014) targeting both new and more experienced teacher educators. In this respect, there is also a link to the teacher educators’ identities (Izadinia, 2014). The literature points to the process where teacher educators with backgrounds as schoolteachers change from being regular teachers to becoming academic teacher educators conducting research (Maaranen et al., 2019). However, teacher educators who lack relevant research experience or do not have expectations concerning a research role will also experience difficulties in finding their identities as teacher educators (Griffoen, 2018; Murray & Male, 2005). This can be affected by the university culture and the process of merging Norwegian university colleges into larger universities. The university colleges have traditionally had less of a focus on research (Meeus et al., 2018) and teacher educators from these institutions may not identify themselves with a university culture with an emphasis on research (Goodwin et al., 2014; Harrison & McKeon, 2010). This may influence teacher educators’ understanding of research versus teaching as part of their professional knowledge (Smith & Flores, 2019).

Another aspect related to research versus teaching was that the results (all categories except collaboration) indicated more disputes and discrepancies among the Norwegian teacher educators than among their Finnish counterparts. The disputes might be ascribed to the heterogeneity of

the Norwegian teacher educators compared to the more homogenous Finnish teacher education system. The disputes were mainly related to the two tracks of becoming a teacher educator in Norway (cf. Munthe & Rogne, 2015), including the increasing emphasis on possessing a PhD. Teacher educators who possessed a PhD emphasised what they had gained from it, whereas teacher educators without a PhD found the PhD to be overestimated. Similarly, teacher educators following the more teaching-oriented track were occupied with justifying their own background as being of equal value to those following the research-oriented track (e.g., Dinkelman et al., 2006; Korthagen et al., 2005). Thus, the two career tracks in Norway seem to divide and open up tensions among teacher educators and lead to criticism regarding what professional knowledge the others lack.

The teacher educators from the two countries differed in the extent to which they emphasised *collaboration versus autonomy*, the third dichotomy. The Norwegian informants largely noted the importance of collaboration between teacher educators in relation to both teaching and research. Furthermore, the collaboration between campuses and schools was highlighted when referring to research as playing a crucial role in closing the gap between the two. To increase teacher educators' professional knowledge, support from more experienced teacher educators, especially concerning research methodological advice, was seen as essential (Lunenberg et al., 2014; Vanassche & Kelchtermans, 2016). In contrast, the Finnish teacher educators emphasised independence and autonomy in the profession. In Finland, educational autonomy is highly valued at all levels, and teachers as well as teacher educators exercise substantial pedagogical independence (Aspfors et al., 2018; Jakhelln et al., 2019). The emphasis on autonomy among the Finnish teacher educators in this study is thus in line with the national system and its trust in teachers' proficiency as part of their knowledge base.

A limitation of this study is that there was less Finnish material than Norwegian material. However, the Finnish material was also more homogenous, which was in line with a prior quantitative study conducted as part of the overall research project (Aspfors et al., *in press*), and it was considered to be saturated after six interviews (cf. Saunders et al., 2018). The heterogenous nature of the Norwegian context (i.e., Norwegian institutions differed in terms of their teaching and research culture and the teacher educators had diverse educational backgrounds and educational research experience) called for several interviews to reveal the different perspectives of the informants. On the other hand, more interviews may well have increased the heterogenous nature of the Norwegian material. In line with previous research (e.g., Munthe & Rogne, 2015), there are different views of research-based teacher education in Norway, which may have affected the teacher educators' understanding of professional knowledge. Therefore, the semi-structured interviews used in this study allowed the interviewees to cope with potential uncertainties during the interviews (Kvale & Brinkmann, 2018).

## Conclusion

In line with the call for a comparative perspective and studies related to teacher educators' roles and research activities (Harrison & McKeon, 2010; Maaranen et al., 2018), the aim of this study was to explore teacher educators' understanding of professional knowledge in research-based teacher education. The dichotomies permeating the findings and the tensions between them could contribute to developing the professional knowledge base of teacher educators and further teacher education in the two countries. From a Norwegian perspective, the results highlight the challenges that can be met in the implementation of the five-year master's programme and from a Finnish perspective, they can give new insights for the further development of teacher education. In sum, teacher educators come from various backgrounds and bring very different experiences into teacher education. Their understanding of professional knowledge in research-based teacher education was found to be dichotomous and multifaceted. Therefore, we call for further research to include more institutions in both Norway and Finland in order to deepen our understanding of teacher educators' professional knowledge.

## Disclosure Statement

No potential conflict of interest was reported by the author(s).

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