Hybrid educators in teacher education

A study of their epistemic boundary work

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Summary

This article-based thesis investigates the epistemic characteristics of hybrid educators' boundary work in the context of Norwegian teacher education. With employment both as schoolteachers and educators, hybrid educators provide an interesting case to study the work of professionals who are associated with an expectation of "building bridges" between two knowledge domains.

Even though several researchers have emphasised the importance of creating stronger relations between the epistemic communities of teacher education, few have empirically investigated how such relations are constructed in educators' everyday activities. Furthermore, a shared characteristic among existing studies is the focus on higher education-based educators as carriers of expertise into the school context; studies on schoolteachers who work as hybrid educators in higher education are lacking. This thesis contributes to this research gap by empirically investigating how schoolteachers who work at teacher education boundaries relate to and engage with knowledge in their everyday work. Based on observational data and interviews, the empirical studies illuminate different epistemic aspects of hybrid educators' boundary work:

The first article examines how hybrid educators negotiate and establish their knowledge contribution in relation to already existing expertise in the higher education context. The analyses identify a contradiction between teacher education leaders' tendency to downplay boundaries on the one hand, and on the other, hybrid educators' experience of lacking inclusion, hierarchies, and power imbalances. The findings highlight the importance of recognising expertise as differentiated and as mobilised or silenced through participation in specific professional practices.

The second article investigates how hybrid educators relate to and engage with institutional practices and knowledge demands in the higher education context, focusing specifically on their engagement with research-based knowledge. The analyses identify research to be a vague and taken-for-granted expectation that hybrid educators are provided with few directions in approaching, and further highlight a pattern of distanced research engagement.

Whereas the second article focuses on how hybrid educators interpret and engage with knowledge associated with the higher education context, *the third article* directs attention towards how they make use of the knowledge they bring from the school context by directing

analytical attention towards practice-based artefacts. The findings demonstrate the complex task involved in "translating" such artefacts in ways that make relations between "theory" and "practice" transparent and studyable in a new context.

Across the three articles, the findings demonstrate how hybrid educators conduct boundary work both to clarify *differences* and enable *connections*. The thesis identify key characteristics of hybrid educators' boundary work as concerned with connecting with—or disconnecting from—higher education-based practices, creating knowledge relations, and negotiating responsibilities in the higher education context. The study further highlights the potential in better utilising the *different* expertise that hybrid educators bring to higher education-based teacher education. Rather than viewing the divisions that hybrid educators bring to the fore as damaging binaries, this study implies that teacher education institutions should foster *hybrid expertise* to reshuffle dominant perceptions of what knowledge has the most value in the different teacher education domains. Theoretically, this thesis demonstrates how the *boundary work* construct can be developed to illuminate the complex epistemic work involved in establishing relations across teacher education boundaries.

Sammendrag

Denne artikkelbaserte avhandlingen utforsker epistemiske aspekt ved grensearbeidet til hybride lærerutdannere i norsk lærerutdanning (*lærere i kombinasjonsstillinger*). Som lærere og lærerutdannere representerer hybride lærerutdannere utfordringer ved å skape praksisrelevans i høyere utdanning, og danner et interessant utgangspunkt for å utforske arbeidet til profesjonsutøvere som forventes å "bygge bro" mellom to kunnskapsdomener.

Eksisterende forskning har i økende grad rettet oppmerksomhet mot samarbeid og partnerskap mellom ulike domener av lærerutdanningen, men få har bidratt med empirisk forskning på hvordan hybride lærerutdannere skaper kunnskapsrelasjoner i sitt daglige arbeid. Et videre fellestrekk ved forskningen på hybride lærerutdannere er at søkelyset rettes mot utdannere fra høyere utdanning som "bærere" av ekspertise inn i skolekonteksten; få studier setter søkelys på *lærere* som bærere av ekspertise inn i høyere utdanning. Basert på observasjonsdata og intervju utforsker de empiriske studiene i denne avhandlingen ulike aspekt ved hybride lærerutdanneres epistemiske grensearbeid:

Den første artikkelen utforsker hvordan hybride lærerutdannere forhandler og etablerer sitt kunnskapsbidrag i høyere utdanning. Analysen identifiserer spenninger mellom lærerutdanningslederes tendens til å nedtone forskjeller og grenser mellom høyere utdanningsbaserte utdannere og hybride lærerutdannere på den ene siden, og på den andre, hybride lærerutdanneres oppfattelse av hierarki og manglende introduksjon til etablerte praksiser i høyere utdanning. Funnene framhever at kunnskap og ekspertise må anerkjennes som differensiert, og som noe som blir mobilisert eller stilnet i ulike profesjonelle kontekster.

Den andre artikkelen retter søkelyset mot hvordan hybride lærerutdannere kobler seg på institusjonelle praksiser og kunnskapskrav i høyere utdanning, og fokuserer særlig på deres bruk av "forskning". Funnene demonstrerer et distansert forhold til forskning, og viser videre at forskning framstår som en vag, selvsagt forventning som hybride lærerutdannere får lite hjelp i å tilnærme seg.

Der den andre artikkelen utforsker hvordan hybride lærerutdannere kobler seg på kunnskap i den høyere utdanningskonteksten, utforsker *den tredje artikkelen* hvordan de tar i bruk kunnskapen de bringer med seg fra skolekonteksten ved å rette analytisk blikk mot artefakter. Funnene framhever det krevende og kreative arbeidet det innebærer å "oversette" artefakter fra skolekonteksten på en måte som synliggjør koblinger til forskning og teori i høyere utdanning.

På tvers av de tre artiklene viser funnene hvordan hybride lærerutdannere utfører grensearbeid som kobler dem til—eller distanserer dem fra—høyere utdanningspraksiser, hvordan de skaper kunnskapsrelasjoner, og hvordan de forhandler sitt kunnskapsbidrag. Avhandlingen diskuterer nødvendigheten av å tydeliggjøre forventingene til lærerutdannere som jobber på tvers av kunnskapsdomer, og belyser potensialet i å legge vekt på forskjeller og framheve den unike *hybride ekspertisen* disse lærerutdannere bringer til høyere utdanning. Videre demonstrerer avhandlingen hvordan teoretiske perspektiver på *grensearbeid* kan videreutvikles for å bedre synliggjøre de epistemiske aspektene ved å skape relasjoner mellom to kunnskapsdomener.

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Risan, M. (2021). Negotiating professional expertise: Hybrid educators' boundary work in the context of higher education-based teacher education. *Teaching and Teacher Education, 109.* DOI: https://doi.org/10.1016/j.tate.2021.103559

Risan, M. (Under review). Schoolteachers as educators in higher education: Making sense of "research" in the context of research-based teacher education. *Under review in Teachers and Teaching: Theory and Practice.*

Risan, M. (2020). Creating theory-practice linkages in teacher education: Tracing the use of practice-based artefacts. *International Journal of Educational Research, 104.* DOI: https://doi.org/10.1016/j.ijer.2020.101670

Part I: Extended abstract

1. Introduction

This thesis examines hybrid educators' boundary work in the context of higher education (HE)-based teacher education. The focus of the thesis is motivated by the increased attention among educational researchers and policymakers on bringing epistemic communities of teacher education closer together in the pursuit of establishing stronger relations between HE-based and profession-oriented aspects.

For decades, researchers have criticised the predominance of academic knowledge over practice-based knowledge in teacher education (e.g., Cochran-Smith & Lytle, 1999; Cochran-Smith, 2005; Darling-Hammond et al., 2005; Korthagen 2010). Closely related to this debate, studies addressing varieties of university-school collaboration have increased within educational research. Among these, some have drawn attention to the necessity of teacher education programs to make better use of the knowledge and expertise that exists in schools—for instance, through new educator roles (e.g., Ellis & McNicholl, 2015; Zeichner et al., 2015). This thesis addresses attempts to utilise the expertise that exists in schools by empirically foregrounding the work of *hybrid educators* in Norwegian teacher education.

Working both in schools and academia, hybrid educators illuminate one of the most debated challenges of professional education: the balancing act between HE-based education and professional relevance. Whereas education programs such as medicine and nursing have long traditions of employing hybrid educators who work at the intersections between professional work and HE (e.g., Skaalvik et al., 2014), such positions are less established within the teacher education context. Instead, within educational research, the term *hybrid educators* is usually applied to refer to HE-based educators who supervise student teachers in the school context or HE-based educators who coordinate university-school collaboration (Clark et.al, 2005; Goodlad, 1994; Jennings & Peloso, 2010; Martin et al., 2011; Williams, 2013). In this study, however, the term is used to denote *schoolteachers* with co-employment as educators in HE-based teacher education. This focus is rather unique: While several researchers have focused on attempts to bring epistemic communities of teacher education closer together, a shared characteristic among these studies is the focus on school-based settings and HE-based educators as "carriers" of expertise. Studies on *schoolteachers* working in the HE context, however, are lacking.

With employment both in schools and in HE-based teacher education, hybrid educators provide an interesting empirical case to study the work of professionals who are associated with an expectation of "bridging" two domains. In particular, this thesis aims to illuminate the epistemic aspects of the *boundary work* (Langley et al., 2019) that hybrid educators conduct as they negotiate and create knowledge relations across teacher education boundaries. Within educational research, studies on hybrid educators' work are primarily based on self-studies or interviews (e.g., Clark et al., 2005; Jennings & Peloso, 2010); few have empirically traced educators' work at teacher education boundaries *in situ*. Consequently, although scholars have acknowledged that collaboration between schools and HE can be challenging—for instance, due to power imbalances and the challenge of establishing actual equality between participants (Daza et al., 2021; Ellis & McNicholl, 2015; Lillejord & Børte, 2016; Zeichner, 2010)—we know little about how these aspects shape and inform educators' everyday work at teacher education boundaries. This thesis contributes to this gap in the research literature by combining extensive observations of hybrid educators' work and interview data, providing an understanding of what hybrid educators *do* with knowledge.

1.1 Empirical context: Norwegian teacher education

Two main policy strategies for designing teacher education programmes have been at the forefront internationally: one strategy is to strengthen the primarily HE-based system of teacher education, while the other promotes greater deregulation and privatisation through more school-based teacher training (Darling-Hammond & Lieberman, 2012; Zeichner et al., 2015). These strategies demonstrate fundamental differences in terms of their view on what position academic knowledge and practice should have in the education of prospective teachers. Norwegian teacher education follows the first strategy and thus provides an interesting case for studying the implications of an increased focus on academic, research-based teacher education.

Norway's national teacher education tradition has existed since the early 1900s in different forms. Historically, teachers attended "seminars" at teacher training colleges (Halvorsen, 1999; Rasmussen, 2008). These seminars were characterised by closeness to practice and distance from scientific activities and emphasised the formative aspects of education. In 1973, teacher education programs were incorporated into college structures, yet they remained close to professional practice in schools (Kvalbein, 2006). Thus, even though teacher education programs today are primarily based in universities or university colleges, Norwegian teacher

education has historically had weak relations with HE, partly due to a lack of academic standards (Munthe & Rogne, 2016).

The current trend in the national steering of Norwegian teacher education is a movement towards stronger academisation (Askling et al., 2016; Mausethagen & Granlund, 2012). Today, teacher education programs at all levels are primarily delivered by universities or university colleges and involve at least 100 days of school-based practicum. From 2017, teacher education for Grades 1-7, 5-10, and 8-13 are all five-year integrated master's-programs. Additionally, some universities and university colleges offer a 1-year practical-pedagogical education program (PPU) for students who have already obtained a master's degree and wish to become teachers. Furthermore, one political strategy has been to increase qualifications among teachers through strengthened government support for continued education and professional development (e.g., Norwegian Ministry of Education, 2014, 2017).

Recent policy documents have increasingly characterised teacher education programs as "research-based" (e.g., Norwegian Ministry of Education and Research, 2017). For instance, teacher educators should be "active researchers" who hold "research qualifications" and conduct "research into the teaching practices of the teacher education programmes" (Norwegian Ministry of Education and Research, 2017, pp. 17-19). This, in turn, should enable "teaching based on high-quality research" (p. 7). The increasingly research-based teacher education should enable prospective teachers to handle development and change, better understand research content and processes, and develop solid communication, problem-solving, and critical thinking skills (Afdal, 2016).

Like many other countries, the teaching profession in Norway faces challenges in terms of requirements and turnover, and teacher education has repeatedly been criticised for being overly fragmented and for lacking professional relevance (e.g., Heggen & Raaen, 2014; NOKUT, 2006, 2019). Norwegian teacher education has undergone a series of reforms over the last few decades and demonstrates a balancing act between "research-based" and "profession-oriented" teacher education (Afdal, 2016), and the challenge involved in balancing these elements can be illustrated by the complex policy aims of Norwegian teacher education; an academic education that aims at both strengthening the position of theory and research and at providing a profession-oriented education with professional relevance (e.g., Norwegian Ministry of Education and Research, 2017; UHR, 2018). To address this balancing act, policymakers have suggested an increased focus on university-school collaboration, for instance, by expanding the employment of educators who combine their workload between

schools and campus (Norwegian Ministry of Education and Research, 2017, 2020). Even though these dual positions, referred to in this thesis as hybrid educators, may go both ways—they may be educators working part-time in schools or kindergartens, or schoolteachers or kindergarten-teachers working part time in HE—the latter is the most common (see Section 4.1 for more information about hybrid educators). The hybrid educators in this thesis have their primary employment in schools and are associated with an expectation of being "super teachers" (Jelstad, 2018) who are brought into campus-based teacher education to "build bridges between teacher education and schools" (NTNU, 2019). Hence, hybrid educators provide a particularly interesting informant group, as they represent the challenges involved in providing professional relevance in a HE context where "research-based" has become a dominant expectation and discourse.

1.2 Key concepts

By empirically foregrounding hybrid educators, this thesis investigates how professionals that are tasked with being "carriers" of expertise across institutional boundaries *engage with* and *relate to* knowledge in their everyday work. More specifically, the thesis illuminates the characteristic boundary work involved in connecting with—or disconnecting from—HE-based practices, creating knowledge relations, and negotiating epistemic responsibility and expertise.

To unpack the epistemic characteristics of boundary work, this thesis combines different analytical entry points. Inspired by Nicolini's (2009) notions of "zooming in" and "zooming out", the thesis zooms out on hybrid educators' boundary work as shaped and informed by *institutional practices* (Edwards, 2010; Hedegaard, 2014); that is, sets of knowledge demands and expectations regarding how work in HE-based teacher education should be carried out. The epistemic aspects of boundary work are further understood by "zooming in" on how hybrid educators engage with knowledge and the specific conceptual or material *artefacts* (Cole, 1996) of which they make use of.

Combined, these analytical entry points help illuminate how professionals who work across institutional boundaries of teacher education cannot simply enter a new domain and "build bridges". Rather, this involves the complex work of combining two sets of institutional practices that are associated with different forms of knowledge. In this study, this work is conceptualised as *boundary work* (Langley et al., 2019). There follows bellow a brief

explanation of some key concepts that are made use of in this thesis; the theoretical and analytical perspectives are explained in-depth in Chapter 3.

1.2.1 Professional knowledge

Hybrid educators are associated with the expectation of creating stronger connections between schools and HE. To enable an investigation and conceptualisation of how hybrid educators engage with and relate to knowledge through their work in the HE context, I choose to make a distinction between the different *forms of knowledge* that are associated with these domains. Even though scholars have repeatedly encouraged a move away from binaries and dichotomies in teacher education, distinctions such as "theory" and "practice" are often applied in research literature and policy documents to enable a conceptualisation of both *differences* and *relations* between knowledge associated with schools and HE (Kvernbekk, 2005; Smeby & Mausethagen, 2011).

The school context and the HE context are associated with different—yet closely related— *knowledge domains* (e.g., Carlile, 2004; Goodwin & Kosnick, 2013) that are shaped by their respective cultural, historical, and organisational trajectories. The "theoretical" knowledge associated with professional education in HE is often characterised as formal, consisting of research-based, methodological, theoretical, and codified aspects (e.g., Cochran-Smith & Lytle, 1999; Eraut, 2004; Grossman, 1990; Nerland, 2012; Shulman, 1987). "Practical knowledge", by contrast, is primarily associated with the tasks and demands of professional practice, and can be characterised as situated, contextual, and as bounded by time, space, and task (Fenstermacher, 1994). Practical teacher knowledge is often described as founded on a less accumulated and structured knowledge base than that associated with HE (Lohman & Woolf, 2001; Pedder & Opfer, 2013).

Despite their differences, the two forms of knowledge are closely related: Theoretical and research-based knowledge are commonly considered to be an interconnected part of professional teaching practice (e.g., Eraut, 2004; Kvernbekk, 2001). Furthermore, in countries such as Norway, the process of academisation and institutionalisation of teacher education has contributed to giving theoretical knowledge and research an important position within professional education, and teachers are increasingly expected to make explicit use of educational research; both from "within" the profession itself and "above" by policymakers (Hammersley, 2005; Hargreaves, 1996; Mausethagen & Granlund, 2012).

The nature of the *relationships* between the different forms of knowledge that make up professional education programs is a very old and much discussed debate. In this thesis, relations between the two forms of knowledge are investigated and conceptualised by directing attention towards *boundary work*, the *institutional practices* that hybrid educators encounter in the HE context, and the *artefacts* mobilised as representations of knowledge.

1.2.2 Institutional practices and artefacts

Hybrid educators are employed in two institutions with different knowledge traditions and demands. Hence, the task of creating relations between HE and professional practice in schools involves making sense of and connecting two sets of *institutional practices*.

Drawing on Hedegaard (2012, 2014) and Edwards (2010), I understand institutional practices as knowledge-laden, routinised actions that are historically shaped and reproduced through the use of resources (Edwards, 2010; Hedegaard, 2012, 2014). A focus on institutional practices contributes to illuminating how professionals face sets of demands and expectations regarding how their work should be carried out: These demands may be formalised—for instance, policy documents require Norwegian teacher education programs to be research-based. However, demands and expectations may also emerge from the taken-for-granted assumptions that characterise HE-based teacher education.

Furthermore, work in HE-based teacher education can be viewed as a socially and historically situated activity that is shaped by the cultural *artefacts* that characterise HE institutions. Artefacts can be conceptual or material, and they carry beliefs, knowledge, and logics from the culture from which they originate (Cole, 1996). How artefacts are employed, and for what purposes, give insights into how an issue is interpreted and what responses are available within an institutional practice. Typical examples of artefacts associated with HE include theories, research articles, and abstract models. Artefacts associated with the school context include teaching materials and pupil texts.

1.2.3 Boundary work

This thesis applies the construct of *boundary work* to capture the complex and dynamic work involved in negotiating and creating knowledge relations at teacher education boundaries. Langley et al. (2019) defined boundary work as "purposeful individual and collective effort to influence social, symbolic, material, and temporal boundaries; demarcations; and distinctions affecting groups, occupations, and organizations" (p. 704). They further described boundary work as a concept that both clarifies *differences* and enables *connections*. Similarly, Liu

(2015) emphasised that boundary work has various complex forms, and further proposed distinguishing between *boundary making*, *boundary blurring*, and *boundary maintenance* as key tools for analysis. These distinctions help unpack our understanding of what boundary work consists of by emphasising the dynamic process of creating and maintaining boundaries on the one hand, and negotiating connections and relations, on the other.

Directing analytical attention towards hybrid educators' boundary work implies a focus on *boundaries.* In this thesis, boundaries are referred to as *epistemic* and *institutional,* highlighting both that hybrid educators work in two different institutions and how these institutions are associated with different knowledge domains. While the boundary work construct has traditionally been applied to illuminate how professional groups demarcate boundaries to establish professional responsibilities, I seek to develop the boundary work concept by foregrounding the *epistemic* aspects of this work. To illuminate these aspects, the empirical studies in this thesis are concerned with tracing what hybrid educators do with knowledge: In particular, the empirical analyses direct attention towards how hybrid educators interpret and engage with knowledge in the HE context, including how they make use of the knowledge they bring into the HE context.

1.3 Research questions

The main aim of this thesis is to examine the epistemic aspects of hybrid educators' boundary work at teacher education boundaries. The analyses shed light on how professionals who are tasked with bringing expertise across institutions relate to and engage with knowledge in their everyday work, providing an understanding of the dynamic and complex work involved in negotiating relations between two different knowledge domains.

The overall research question for the PhD-thesis is as follows: *What characterises hybrid educators' epistemic boundary work in the higher education context?*

From this, three sub-questions are addressed across three empirical studies:

1) *How do hybrid educators engage with institutional practices and knowledge demands in the HE context?*
2) *How are knowledge relations created through hybrid educators' boundary work?*
3) *What tensions do hybrid educators encounter in the HE context, and how are these negotiated?*

These research questions are addressed across the three articles by investigating different epistemic aspects of hybrid educators' boundary work and by applying different analytical entry points. Table 1 outlines the research questions, the data, and the main findings of the three articles.

Table 1: *Overview of the three articles*

	Research questions	**Analytical focus**	**Empirical material**	**Main findings**
Article 1	*What characterises hybrid educators' boundary work in the context of HE-based teacher education?* *How is their professional expertise as educators negotiated through that work?*	*Zooming out on*: boundary work *Zooming in on:* negotiations of expertise	Interviews Observations of hybrid educators in collaborative settings in the HE context	Boundaries are *bridged*, *maintained*, and *rejected* as hybrid educators negotiate their epistemic contribution in relation to existing expertise in the higher education context. Perceptions of a "hierarchy" dictate whose knowledge matters when and in what ways. The article demonstrates the importance of recognising expertise as differentiated and as mobilised or silenced through participation in specific professional practices. It highlights the opportunities involved in embracing and making use of the differences and tensions that hybrid educator positions bring to the fore.
Article 2	*How do hybrid educators interpret and relate to expectations associated with "research" in the context of research-based teacher education?* *How do they engage with these expectations?*	*Zooming out on:* institutional practices, knowledge domains *Zooming in on:* research-based practices	Interviews Observations of hybrid educators' higher education-based work	"Research-based" is identified as a self-evident, vague, and implicit part of institutional practices in the HE context.. The article pinpoints a pattern of distanced research engagement, characterised by a lack of ownership. Hybrid educators engage more actively with research when identifying research aspects that are relevant for professional practice.

				The article demonstrates the importance of "research-based" not becoming a taken for granted assumption.
Article 3	*How are linkages between theoretical and practical knowledge created when hybrid educators use artefacts from professional practice in their campus-based teaching?* *What are the implications for how we understand and conceptualise efforts to strengthen theory-practice linkages in campus-based teacher education?*	*Zooming out on:* forms of knowledge *Zooming in on:* practice-based artefacts, knowledge relations	Interviews Observations of hybrid educators' HE-based teaching	Considerable creative and constructive work is required from hybrid educators to successfully *translate* and *recontextualise* practice-based artefacts to learning situations in ways that make knowledge relations transparent. Different forms of knowledge are put in relation to one another to explore the theoretical underpinnings of a practice-based artefact, to validate the practical use of an artefact through claims of research, or to put claims of theoretical knowledge to the test with practice-based artefacts. The analyses also illustrate how practice-based artefacts become instrumental "recipes" when the relations remain latent.

Article 1 examines how hybrid educators negotiate and establish their knowledge contribution in relation to already existing expertise in the HE context. Based on observations of collaborative settings, interviews with hybrid educators, and interviews with teacher education leaders, the analyses demonstrate how perceptions of hierarchies and power imbalances are most prominent when hybrid educators are positioned in established practices where their knowledge contribution seems to be redundant. The analyses further identify a contradiction between teacher education leaders' tendency to reject and downplay boundaries on the one hand, and hybrid educators' experience of lacking inclusion into HE-practices on the other.

Article 2 investigates how hybrid educators relate to and engage with institutional practices in the HE context, focusing specifically on research-based knowledge demands. The empirical material consists of interviews with hybrid educators and observations of their campus-based

work. The analyses identify research as a vague and taken-for-granted expectation that hybrid educators are provided with few directions in approaching, as well as highlighting a pattern of distanced research engagement.

While Article 2 focuses on how hybrid educators interpret and engage with knowledge associated with the HE context, *Article 3* directs attention towards how they make use of the knowledge they bring from the school context. Based on interviews and observations of hybrid educators' campus-based teaching, the findings demonstrate the complex task of applying these artefacts in ways that make knowledge relations between "theory" and "practice" transparent.

Combined, the three articles shed light on the epistemic characteristics of boundary work by illuminating what hybrid educators *do* with knowledge and "how it is made to matter" (Nerland & Jensen, 2014). The analyses demonstrate how boundary work is shaped by factors such as perceptions of power imbalances, hierarchies, and institutional knowledge demands in HE-based teacher education. These aspects are further explored and discussed in Chapter 6.

1.4 Overview of the thesis

The remainder of the extended abstract is organised as follows: Chapter 2 positions this study in relation to existing research, focusing especially on research concerning efforts to create stronger relations between schools and university in general, and in the HE context in particular. Chapter 3 outlines the theoretical and analytical perspectives applied in the thesis. Chapter 4 elaborates on the methodological foundations of the thesis and presents the data corpus and the analytical approach. This chapter includes reflections on validity, generalisability, limitations, and ethical considerations. Chapter 5 summarises the three articles, focusing on the empirical findings. Chapter 6 discusses the main findings based on the research question and the three sub-questions, provides theoretical reflections, and suggests the most central practical implications of this study. The thesis concludes with indicating possible pathways for future research.

2. Literature review

To position this study within existing lines of research, this chapter is organised into two main sections: The first section focuses on broader strands of research addressing work at epistemic boundaries in teacher education. This section seeks to both provide an overview of the empirical contributions of these studies, and to highlight how educational research has conceptualised work at boundaries. The second part of the review focuses on research concerning how to create relations to professional practice *in the HE context*. In particular, the section aims to provide an understanding of how existing research has studied and conceptualised the representation of professional practice in campus-based teacher education.

The development of this review was explorative. First, I searched databases such as Eric, Google Scholar, and Oria to identify central and much-cited research contributions on topics such as teacher educators' work, university-school collaboration, and hybrid educators. Thereafter, I used a version of "snowball sampling" (Vogt, 2005), a process that involved following citations and research colleagues' suggestions to further examine published and presented empirical research in books and peer-reviewed journals. The review has been conducted in two main steps: 1) a more general review for the purpose of this extended abstract, 2) a more detailed review process for the purpose of the three articles. Overall, I searched for words such as *partnerships, university-school* and *third space* in combination with *teacher education* to identify literature on collaboration between schools and HE. It was particularly challenging to find research on hybrid educators' work due to the variety of titles and tasks designated to educators with dual positions. Thus, to find relevant research on hybrid educators' work, I searched for words such as *teacher educators*, *boundary brokers*, *clinical educators*, *faculty teachers* in combination with *knowledge/knowledge base, knowledge relations*, *practice-based artefact,* or *theory-practice linkages/connections.*

A vast body of research could be considered relevant for a literature review addressing work across epistemic and institutional boundaries within the context of teacher education. For instance, several studies have shed light on how prospective teachers encounter boundaries between campus-based teacher education and work (e.g., Edwards & Fowler, 2007; Jahreie & Ottesen, 2010; Tsui & Law, 2007), and a substantial body of research has investigated the transition from vocational education to vocational practice (e.g., Harreveld & Singh, 2009; Lampert, 2003; Tuomi-Gröhn & Engeström, 2003). However, given the thesis' focus on

epistemic aspects of boundary work *in the HE context*, I narrowed the scope of this review by mainly excluding research with empirical focus solely on the school context. Furthermore, considering the thesis' focus on hybrid educators, the review aims at highlighting research that analytically foreground what educators do with knowledge when working at epistemic boundaries between schools and universities.

2.1 Research addressing work at teacher education boundaries

This review section provides an overview of how educational research has addressed work at boundaries between schools and HE in teacher education. These lines of research are relevant for the present thesis as they contribute to an understanding of how actors from different epistemic communities—such as student teachers, school-based mentors, and HE-based educators—come together in settings where boundaries between schools and universities are intended to intersect and overlap in the pursuit of learning and transformation. These studies further provide an understanding of the possible tensions and epistemic negotiations that arise through work at these intersections.

2.1.1 Characteristic aspects of work at teacher education boundaries

A vast body of contemporary research on epistemic boundaries in teacher education focuses on the design and implementation of school-university *partnerships* that are established to connect epistemic communities from schools and universities (e.g., Allen et al., 2017; Jones et al., 2016; Lemon et al., 2018). Several of these studies focus on organisational aspects of partnership models and success criteria, and a common characteristic across these studies is the concern with developing models that are truly collaborative and horizontal, rather than hierarchical. For instance, Jones et al. (2016) investigated the structures and practices of successful partnerships, suggesting a four-part framework to guide successful university-school activities. Lemon et al. (2018) found that the design and implementation of partnerships should be characterised by open and constant dialogue among all participants involved.

A substantial line of partnership research focuses specifically on how to promote evidence-based teaching and improve practice in schools through what is referred to as *research-partnerships* (e.g., Coburn & Stein, 2010). These studies are often concerned with the increasingly school-based teacher education in Anglo-American contexts, empirically foregrounding how practitioners and HE-based researchers collaborate to establish shared

goals and designs for these partnerships. A common characteristic among these studies is the emphasis put on fostering teacher authority as a factor that enables successful collaboration, as teachers "commonly have lower status than researchers" (Engle, 2010, p. 23). Thus, such partnerships should be structured in ways that depend on and benefit from both researchers' and teachers' points of view.

Within the body of research addressing partnerships in teacher education, a growing line of studies applies the metaphor of *third spaces* to denote the merging point between epistemic communities (e.g., Bullock, 2012; Cuenca et al., 2011; Jackson & Burch, 2019; Martin, et al., 2011; Williams, 2013, 2014; Zeichner, 2010). Even though these studies vary in terms of their focus and use of the third space-concept, they generally have in common the view that third space represents a "new" space where, for instance, mentors in schools, student teachers and educators from HE can "jointly create new knowledge" (Lillejord & Børte, 2016, p. 558). Furthermore, a third space represents a place where tacit knowledge is made explicit, and the ideal is to establish democratic collaboration where dichotomies and "troubling binaries" such as theory/practice are blurred (Jackson & Burch, 2016, p. 140). Zeichner (2010) argued that the third space is an essential dimension of teacher education where forms of knowledge come together in less hierarchical ways. This involves

> a rejection of binaries such as practitioner and academic knowledge and theory and practice and involve[s] the integration of what are often seen as competing discourses in new ways—an either/or perspective is transformed into a both/also point of view (Zeichner, 2010, p. 92).

These studies further tend to foreground the ideal of third spaces as providing opportunities for voices and knowledge sources from different domains to be equally valued, as well as encouraging new reflections on established practices (Beck, 2018; Forgasz et al., 2018).

In their scoping review of research on university-school partnerships as third spaces, Daza et al. (2021) found that even though the notion of third space has been applied as both an analytical and practical framing within educational research, there is little agreement about how to operationalise the rather "vague and utopian concept of the third space" in professional practice (2021, p. 2). The authors further argued that there is still a lack of insight into "how partnerships can address the challenges that arise from its implementation" (Daza et al., 2021, p. 3). Daza et al. (2021) further identified two main themes within third space literature: 1) negotiating identities, and 2) the intersection of epistemologies. The research

concerned with the intersection of epistemologies are characterised by, for example, their focus on new pedagogical possibilities in third spaces, and practical implications to achieve more democratic relationships in partnerships, such as settings with school-based mentors, HE-based supervisors, and student teachers (e.g., Jackson & Burch, 2016; Lejonberg, et al., 2017). Research concerning identities highlight how participants in partnerships negotiate their hybrid roles and rethink their identities in the third space. These aspects will be further explored in relation to *educators' work at teacher education boundaries* in Section 2.1.2.

A common theme across the research literature on partnerships and third spaces, is the focus on tensions and challenges that arise due to aspects such as lacking joint goals (e.g., Cochran-Smith & Lytle, 1999); the establishment of trust (e.g., Bryk & Schneider 2003); varying expectations regarding roles, responsibilities, and group norms (e.g., Lieberman & Grolnick 1996); and resentments over perceived status differentials and different work rhythms (e.g., Grossman et al. 2008). In general, the processes of building new practices within collective third spaces are often described as historically and socially complex, messy, and fraught with power differentials that need "continual re-mediation" and involves a struggle for establishing a "shared vision" (Gutiérrez, 2008, p. 154). In their research mapping of partnership research in teacher education, Lillejord and Børte (2016) highlighted the use and possible "misuse", of the third space-construct, arguing that the construct is inspired by normative ideals that may result in contradictions and challenges when implementing partnerships (Lillejord & Børte, 2016). The authors pointed to several tensions and challenges that may arise in third spaces, including negotiations of authority in form of expert knowledge, as school-based actors and HE actors tend to participate on different premises. Similarly, Daza et al. (2021) found relational aspects to often be associated with tension in third space literature, highlighting power struggles and competing discourses as concerns identified in research on identity and supervision settings (e.g., Chan, 2019; Cuenca et al., 2011; Martin et al., 2011; Luthen & Kolstad, 2018). However, even though these strands of literature identify tensions and challenges of work at institutional boundaries, few studies have shed light on how such dynamics materialise in epistemic aspects of micro-level practices.

In the next section, I turn towards literature that foreground *educators'* work at university-school boundaries.

2.1.2 Educators' work at teacher education boundaries

Establishing partnerships in which different epistemic communities work together entails connecting expertise from different sites. The body of research that empirically foregrounds educators as "carriers" of expertise across epistemic boundaries in teacher education are of particular relevance for this study. Research on hybrid educators is extensive within professions such as nursing and medicine where the employment of educators who work both as practitioners and at colleges or universities has longer traditions (e.g., Skaalvik et al., 2014; Wenner & Hakim, 2019). Within educational research, however, few have focused on hybrid educators' work in general, or on the empirical aspects of their work specifically.

In the Norwegian teacher education context, Olsen and Lie (2019) evaluated the trial employment of schoolteachers as hybrid educators in HE-based teacher education at one Norwegian university. Based on interviews with hybrid educators and teacher education leaders, the authors identified prominent challenges and provided suggestions for further improving the uses of such positions. In this evaluation report, Olsen and Lie (2019) particularly emphasised the potential of directing increased focus towards what these educators can bring back to the school context, as well as the necessity of including hybrid educators in planning of campus-based activities. Even though the authors pointed out the benefit of employing hybrid educators as one providing "theory close to practice" and "practice close to theory" (2019, p. 31), the report directed little attention towards the *epistemic* work that these hybrid educators conduct in the pursuit of creating theory-practice linkages.

The majority of the literature highlighting hybrid educators' work tends to foreground university-based educators who supervise student teachers in the school context (e.g., Martin et al., 2011; Williams, 2013; Zeichner, 2010). Clark et al. (2005) characterised hybrid educators as *partnership facilitators*, as they tend to be responsible for organising and coordinating university–school partnerships. Furthermore, this line of literature emphasises the need for participants to work together in third or hybrid spaces in ways that provide student teachers with integrated forms of knowledge and expertise about the teaching profession and alter perceptions of whose expertise counts in the education of future teachers. A common characteristic across these studies is that even though they share a common advocacy for hybrid, less hierarchical epistemic relations, and the fusing of expertise (Jackson & Burch, 2019), most of these studies focus not so much on the epistemic aspects but more on

the identity issues and role conflicts involved in negotiating contextual factors in order to develop and foster collective relationships.

Within the line of literature empirically foregrounding educators' work at teacher education boundaries, a vast body are self-studies that direct analytical focus towards exploring the complex register of identities and roles available when working at teacher education boundaries (e.g., Martin et al., 2011; Taylor et al., 2014; Williams 2013). These studies highlight explicit expectations and definitions as crucial contextual factors that may mediate work in third spaces and point to the necessity of clearer definitions of roles and tasks for those working in-between expectations from the academic context and expectations from schools (e.g., Clark et al., 2005; Poyas & Smith, 2007; Williams et al., 2018). Martin et al., (2011) explored the multitude of roles that they take on as university-based hybrid educators in the pursuit of facilitating collaborative relationships in third space settings. In this study, the authors pointed to the task of ensuring an equal power balance between actors such as student teachers, school-based mentors, and university-based educators as one of the most challenging aspects of their "boundary bridging efforts" (p. 308). Martin et al. (2011) further described how they as university-based educators become guides, trouble-shooters, counsellors, negotiators, and consultants as they actively work towards "bridging boundaries and establishing collaborative relationships" (p. 300).

A common characteristic in the literature on educators' work at teacher education boundaries, is that challenges tend to be linked to the historically dominant position of universities. Consequently, researchers encourage a *transformation* of partnerships between HE and the teaching profession (Ellis & McNicholl, 2015). In their book *Transforming Teacher Education,* Ellis and McNicholl (2015) drew on different sets of studies on teacher educators' work in England and Scotland to argue that partnerships tend to be divided up on the basis of historically evolved cultural norms between schoolteachers and HE-based partners. They highlighted that HE partners are tasked with "abstracting" knowledge in order to give it wider meaning and are thus responsible for adding value to what schools do, while they argue that there is little "or no acknowledgement that there might be a strong (or even stronger) reverse contribution" (2015, p.136). They further argued for "hybrid practices of knowledge production" (p. 139) where knowledge that is valued in practice situations in schools to a larger degree contribute to shaping the academic discipline of education (p. 139).

Drawing on examples of collaborative activities at a variety of teacher education programs in the US, Zeichner et al. (2015) highlighted the difficulties involved in establishing democratic structures in *hybrid* spaces. Foregrounding collaboration between participants from universities, schools, and communities, Zeichner and colleagues argued that work in these spaces requires teacher education institutions to alter existing power relations by rethinking "who is an expert" (p. 132) and establish less hierarchical collaboration structures with schools that better facilitate practitioners' inclusion and encourage educators to work across institutional boundaries. Zeichner et al. (2015) further drew on the concept of *horizontal expertise* from cultural historical activity theory to speculate on the possibilities for more egalitarian and democratising teacher education practices. For instance, they suggested that schoolteachers should not only be included in courses but also be made active participants in the planning, instruction, and evaluation of activities related to a course, thereby creating more authentic, acceptable, and accessible possibilities for the inclusion of teachers' expertise (p. 127).

In some studies, educators working at teacher education boundaries are conceptualised as boundary brokers tasked with initiating and facilitating third space work and ensuring that different perspectives are merged, "making the practical theoretical and the theoretical practical through a recursive, theory–practice bridging-and-brokering process" (Jackson & Burch, 2019, p. 142). In the context of the increasingly school-based teacher education in England, Jackson and Burch (2019) found that participants perceived the third space as a non-hierarchical place in which no particular voice was dominant. Based on interviews and observations of workshops in which HE-based educators assumed the roles of boundary brokers, these workshops were found to help school-based educators think differently about their experiences, making them think more critically about theoretical underpinnings and encouraging a *conceptual shift* in their teaching practices. The authors argued that the mutual respect among the participants was based on the realisation that although each member of the group did things differently, "there are merits in each way" (2019, p. 147).

By contrast, interviewing schoolteachers involved in a university–school partnership with HE-based educators in China, Wang and Wong (2017) found relationships between the participants to be understood in terms of *expert* and *practitioner*. In these partnerships, HE-based educators took on the roles of boundary brokers who were tasked with delivering, translating, and co-creating knowledge. Furthermore, they identified few references to the kind of reciprocity that they had predicted to find in teachers' and academics' accounts of

partnership work. While the partnership was clearly valued, the study demonstrated a persisting perception of asymmetry, which was especially prominent in the school-based staff's responses (Wang & Wong, 2017).

2.1.3 Summary

This review section has provided an overview of the different ways in which teacher education research has conceptualised and investigated work at epistemic boundaries in teacher education. Combined, the existing body of research sheds light on efforts to break down dichotomies in teacher education by bringing different epistemologies and practices closer together through partnerships and third spaces, foregrounding organisational and structural aspects of collaboration as well as the implications for roles and identities.

Focusing specifically on research foregrounding educators who work at teacher education boundaries, the review further demonstrates that despite ideals of equality and hierarchical structures, these are also spaces of tensions and challenges. For instance, the research points to the challenges of hierarchical power relations, unclear identities and responsibilities, and conflicting perceptions of expertise and whose knowledge matters in different educational contexts. A shared characteristic among these studies, however, is the focus on HE-based educators as carriers of expertise in mainly school-based settings; by contrast, studies on schoolteachers working at epistemic boundaries in the HE context are lacking. Another shared characteristic within this line of literature is that a significant number of these studies are based on self-studies or interviews; there is limited research based on micro-analyses of practices and work, and analyses combining observational material and interviews are particularly lacking. Consequently, we lack a nuanced understanding of what educators *do* with knowledge in everyday work situations.

A shared premise for studies on partnerships in teacher education is the promotion of these settings as arranged *spaces* where participants from different sites work together on set tasks, such as co-supervision of student teachers. However, most teacher education activities are set outside such arranged settings. For instance, efforts to bring the epistemic communities of teacher education closer together may also entail making professional practice visible and relevant in the HE-based teacher education context. Thus, the review moves on to identify how the existing literature has researched and conceptualised efforts to foreground professional relevance in the HE context *outside* such arranged spaces.

2.2 Creating relations to professional practice in the HE context

The following section aims to give an overview of the research highlighting epistemic relations to professional practice in HE-based teacher education contexts. Whereas Section 2.1 demonstrates how research has investigated work at epistemic boundaries primarily by foregrounding HE-based educators who transition from one site to the other, this section focuses on bringing professional relevance across boundaries *into the HE context.* As research on schoolteachers who work across the epistemic boundaries of teacher education is lacking, this section is instead concerned with efforts to establish cross-institutional relations in HE-based teacher education both at the program level and through the use of practice-based artefacts.

2.2.1 Professional relevance at the program level

A substantial body of research on creating epistemic relations to professional practice in HE-based teacher education contexts focuses on how to ensure a balance between research-based and practice-relevant aspects at the *program level*.

Within the literature foregrounding how teacher education programs provide student teachers with opportunities to learn from practice in HE settings, a line of research has examined strategies, routines, or activities that campus-based teaching should focus on to make the connections between campus courses and professional practice in schools more evident. In this literature, activities of the teaching profession that educators should foreground on campus are most commonly referred to as *core practices* (Grossman et al., 2008; Jenset, 2017), *generative practices* (Franke & Kazemi, 2001), or *high-leverage practices* (Hatch & Grossman, 2009). Presented as a characterisation of quality in teacher education, core practices are explained as practices that teacher students should master before taking full responsibility of classrooms in schools. Core practices occur with high frequency in teaching, and novice teaches can enact them in classrooms across different curricula or instructional approaches; they allow novice teachers to learn more about pupils and about teaching, they preserve the integrity and complexity of teaching, they are research-based, and they have the potential to improve student achievement (Grossman et al., 2009, p. 277). Researchers promoting core practices suggest that a focus on these in both teacher education and school placement can make relations between theoretical aspects of higher education and aspects of professional practice more evident for student teachers (Grossman et al., 2009).

A considerable body of literature foregrounds the notion of *coherence* as a means of connecting academic courses and professional relevance. This body of literature has produced several concepts for describing aspects of coherent teacher education programs—such as *structural* and *conceptual* coherence—foregrounding meaningful interrelationships between program components and different actor's perceptions and experiences of coherence between these components (Darling-Hammond, 2008; Hammerness, 2006). Hammerness (2013) conducted a study foregrounding conceptual and structural coherence through an examination of characteristics of coherence in Norwegian teacher education. Based on documents and interviews with program leaders and educators, the study found that many educators and program leaders drew a clear distinction between campus courses and the practical work taking place at schools. The study further pointed to a lack of opportunities for student teachers to learn in the context of practice, as educators contended that in campus courses, relatively little time was used to analyse pupils' work or other artefacts used in classrooms.

Studies conducted by Jenset (2017) and Jenset et al. (2018) supported findings from Hammerness (2013). Based on findings from observations and surveys of courses in Finnish, Norwegian, and American teacher education programs, these studies examined teacher candidates' opportunities to learn from practice-based coursework, as well as the instructional practices contributing to these opportunities. More specifically, Jenset (2017) examined practice-based coursework by investigating student teachers' opportunities to plan for teaching and teacher role, practice and rehearse teaching and teacher role, analyse pupils' learning, include teaching materials, talk about field placement, take the pupils' perspective, see models of teaching, and see connections to national or state curriculum. The findings identified across all three sites lacking opportunities connected directly to routine classroom teaching practices, for instance, opportunities to analyse pupils' learning and see models of teaching.

This line of research provides insights into structuring the content of teacher education programs in order to make professional practice represented in the HE context. However, a lack of empirical attention has been directed towards how such relations should be constructed through educators' everyday teaching activities and what specific resources they should draw on in this respect. This analytical level is important because structural and conceptual coherence are ultimately supported and sustained by the micro-practices that educators enact in their daily work. Consequently, efforts aimed at linking professional

practice with HE-based aspects are reflected in educators' approaches to specific tasks and teaching materials.

2.2.2 Practice-based artefacts

An emerging body of teacher education research has explored representations of professional practice on campus by foregrounding how *resources*, or *artefacts*, from professional practice are used in campus-based settings. These studies emphasise the importance of incorporating materials and artefacts from real classroom practice on campus to help students immerse themselves in the complexity of real practice (e.g., Ball & Cohen, 1999; Forzani, 2014; Jenset, 2017; Jenset et al., 2018). Several of these studies emphasise the importance of practice-based artefacts; however, they do not investigate the uses of these more in-depth. For instance, in their study of practice-based teacher education coursework in Finland, Norway and the United States, Jenset et al. (2018) found that student teachers were frequently provided with opportunities to work with practice-based artefacts. However, their study revealed little about *how* students and educators made use of these artefacts.

Within the body of literature that analytically foregrounds practice-based artefacts, several studies focus on artefacts as representations of teaching and student learning in mathematical teacher education specifically (e.g. Ghousseini & Sleep, 2010; Lampert & Ball, 1998). The aim of applying these artefacts is to "make practice studyable" on campus by grounding learning in the "real materials of teaching" (Ghousseini & Sleep, 2010, p.159). Analysing a case of practice-based professional development program in which the program designers deliberately tried to mediate participants' learning *in* and *from* practice, Ghousseini and Sleep (2010) argued that practice should be made studyable in ways that enable learners to become deliberate users of practice beyond a particular artefact: Pointing at the potential of practice-based artefacts, the authors argued that such artefacts need to be thoughtfully selected, and their use needs to be carefully scaffolded (Ghousseini & Sleep, 2010). The authors found that practice was made studyable when educators explicitly modelled good teaching by adapting activities to the background knowledge of student teachers, and by explicitly articulating goals and intentions whereby the educators did not "do the work for the learners" (Ghousseini & Sleep, 2010, p. 159).

While these studies pointed to the potential of applying activities on campus that represent and visualise the practical tasks of teaching, Ellis et al. (2011) identified missed learning potential as student teachers tended to interpret artefacts that educators applied from the

professional field as "a rule" or "something that you do", rather than engaging in a learning process of discovering the conceptual underpinnings of such artefacts (Ellis et al., 2011, p. 20). In their report on partnership teacher education in England and Scotland, educators were found to primarily apply artefacts from the professional context, and researchers identified a tension in how these artefacts could function as a "tool" that mediated learning of student teachers or perceived with more instrumental motives as a "rule" (Ellis et al., 2011, pp. 19-22). These findings emphasised not only opportunities for learning that may arise when artefacts from professional practice are applied, but also the challenges involved in applying these artefacts so that they are not merely interpreted as instrumental recipes for completing particular tasks of teaching.

Despite growing interest among researchers in the potential of practice-based artefacts for demonstrating linkages to professional practice on campus, few have investigated how educators make use of such artefacts, including how they work to identify relevant underpinnings of the artefacts that students teachers can analyse, criticise, and scrutinise.

2.2.3 Summary

Combined, these strands of research provide valuable perspectives on how to research and conceptualise epistemological relations in campus-based teacher education by highlighting how professional practice can be represented in the HE context. Given that these strands of literature emphasise professional relevance at the program level and through the use of practice-based artefacts, it is interesting that the literature seems to assume that HE-based educators alone should be responsible for demonstrating the relations to professional practice. The literature says little about how to include school-based actors in such activities in the HE-based context. Furthermore, existing research points to both the potential of and challenges involved in applying practice-based artefacts in the HE context, but we know relatively little about how educators work to interpret and give meaning to such artefacts as they are brought from one context to the other.

2.3 Review summary and implications for the study

In this review, I have presented an overview of the main strands of research that shed light on efforts to create epistemic relations in teacher education. Overall, existing literature draw attention to the benefits and potentials of establishing non-hierarchical spaces where knowledge and expertise from different domains of teacher education come together in the pursuit of learning and transformation. The research further characterises the epistemic

boundaries of teacher education as places of tensions and challenges that are shaped by traditional knowledge hierarchies and power relations between schools and universities. These aspects have primarily been researched in relation to identity issues and role conflicts; there are few studies that document how these tensions and challenges shape the epistemic work of participants from different domains.

Although researchers acknowledge the importance of utilising and valuing expertise from both schools and HE in teacher education, research on hybrid educators is generally limited, fragmented, and often restricted to self-study approaches. Existing research has primarily foregrounded HE-based educators or school-based mentors as "carriers" of expertise in collaborative settings; few have examined the work of schoolteachers that are tasked with bringing expertise to the HE context. Rather, research that is concerned with relations in HE-based teacher education provide insights on how professional practice can be represented through curriculum and program design, and through the utilisation of practice-based artefacts. However, despite an increased interest in partnerships, third spaces, and boundary crossing within educational research, there is a shortage of studies that provide empirical insights on the actual practices with which professionals engage to forge epistemic relations between schools and HE. Studies of work *in situ*—particularly those combining observational data and interview data—are largely missing.

This thesis builds upon and extends existing lines of research by highlighting the complexity of work involved in creating relations outside arranged "third space" settings. By empirically foregrounding schoolteachers who are expected to "build bridges" in HE-based teacher education, this study contributes to nuancing such metaphors by providing a better understanding of what constructing epistemic relations across educational boundaries entails. More specifically, the study seeks to illuminate how professionals who work across epistemic boundaries relate to and engage with knowledge from different domains. Conceptualising the work involved in crossing institutional and epistemic boundaries and establishing responsibilities and epistemic relations as *boundary work* (Langley et al., 2019)*,* I argue that we need a framework that better captures the complex and dynamic work involved in creating relations across teacher education domains. Rather than conceptually foregrounding the *spaces* where different expertise intersect, this study aims to unpack and foreground the epistemic work conducted by hybrid educators. I turn to these theoretical and analytical perspectives in the next section.

3. Theoretical and analytical perspectives

This thesis aims to understand the epistemic aspects of hybrid educators' boundary work. To illuminate these aspects, a central concern of the thesis is how to illuminate what hybrid educators *do with knowledge.* For this purpose, I draw on and combine theoretical and analytical perspectives that are closely related but have been used in different ways in different fields. I argue that these theoretical and analytical resources provide helpful tools for unpacking the complex and dynamic process of creating relations between two knowledge domains.

To illuminate the epistemic aspects of hybrid educators' work, I draw on and combine theoretical perspectives that share fundamental assumptions: In particular, the thesis draws on *relational* perspectives on knowledge that assumes knowledge to be *situated*, *enacted,* and *emerging* through interaction. These assumptions have implications for how I approach and conceptualise epistemic aspects of hybrid educators' work: To capture what hybrid educators do with knowledge, I foreground analytical entry points that help grasp both how educational work is accomplished *in situ,* and how this work is embedded in the wider knowledge dynamics of teacher education. More specifically, I draw on theories of professions to illuminate the different forms of knowledge that hybrid educators are expected to create relations between. To conceptualise what hybrid educators do with knowledge, I foreground an understanding of hybrid educators' work as shaped and informed by *institutional practices* (Edwards, 2010; Hedegaard, 2012, 2014)—a concept that is strongly rooted in cultural-historical traditions. I further draw on analytical resources both from cultural-historical traditions and what Fenwick et al., (2011) described as sociomaterial traditions in education research by directing attention towards *artefacts* (Cole, 1996) as carriers of knowledge in professional practice. In addition, I utilise concepts from social practice theory when conceptualising hybrid educators' work as *boundary work* (Langley et al., 2019),

These perspectives are applied for the overall purpose of illuminating how hybrid educators *relate to* and *engage with* knowledge in the HE context. In the following section, I elaborate on the analytical framework applied.

3.1 Analytical framework

3.1.1 Professional knowledge

A key concern of this thesis is to conceptualise and illuminate the knowledge that hybrid educators are expected to create relations between. To this end, I draw on theories of professions to make a distinction between the different *forms of knowledge* that are associated with professional education and professional practice and the *relations* that are created between these.

Even though scholars have repeatedly encouraged a move away from binaries and dichotomies in teacher education that reinforce the notion of "the two-worlds pitfall" (Anagnostopoulos et al., 2007; Jakhelln et al., 2019), distinctions such as "theory" and "practice" are often applied in research literature and policy documents to enable a conceptualisation of both the *differences* and the *relations* between knowledge associated with schools and HE (Kvernbekk, 2005; Smeby & Mausethagen, 2011). The school context and the HE context represent different—yet closely related— institutions with distinct knowledge demands and ways of interacting with knowledge. The two institutions represent different *knowledge domains* (e.g., Carlile, 2004; Goodwin & Kosnik, 2013) and are shaped by their respective cultural, historical, and organisational trajectories. The "theoretical" knowledge associated with professional education in the HE is often characterised as formal, consisting of research-based, methodological, theoretical, and codified aspects (Cochran-Smith & Lytle, 1999; Eraut, 2004; Grossman, 1990; Nerland, 2012; Schulman, 1987). Historically, theoretical, scientific, and abstract knowledge have gained a higher standing and more value than practical skills and professional performance—also in the field of teacher education (Korthagen et al., 2005).

"Practical knowledge", by contrast, is primarily associated with the tasks and demands of professional practice, and can be characterised as situated, contextual, and bounded by time, space, and task (Fenstermacher, 1994). Practical teacher knowledge can further be described as founded on a less accumulated and structured knowledge base than that associated with HE (Lohman & Woolf, 2001; Pedder & Opfer, 2013). To perform school tasks, teachers have been found to apply knowledge that is primarily tacit and personal, shaped by experience and reflexivity (Cochran-Smith & Lytle, 1999; Nerland, 2012; Schön, 1987). Furthermore, teachers ground their teaching practice on a highly individualised work culture (Klette &

Carlsten, 2012) and a weak theoretical orientation (Ball & Cohen, 1999; Grossman et al., 2008; Hargreaves, 1994).

Despite these differences, the two forms of knowledge are closely related, and theoretical and research-based knowledge are commonly considered to be interconnected parts of professional teaching practice (e.g., Eraut, 2004; Kvernbekk, 2001). Furthermore, theoretical knowledge is held to constitute an important foundation for professional work—as well as being a source for professional legitimacy and jurisdiction (Freidson, 2001). The importance of theoretical and research-based knowledge for professional teaching practice has been increasingly emphasised in countries such as Norway, where the process of academisation and institutionalisation of teacher education has contributed to give theoretical knowledge and research an important position within professional education, and schoolteachers are increasingly expected to make explicitly use of educational research; both from "within" the profession itself and from "above" by policymakers (Hammersley, 2005; Hargreaves, 1996; Mausethagen & Granlund, 2012).

However, the nature of the *relationship* between the different forms of knowledge that make up professional education programs is an old, very much discussed debate. Within theories of professions, scholars argue that one of the core challenges of professional education is to help students discover *meaningful relationships* between different dimensions of professional knowledge (Hatlevik, 2014). These meaningful relationships can, for instance, be described through notions of *coherence* (e.g., Buchmann & Floden, 1991, 1992; Hammerness, 2006; Tatto, 1996), or *practical synthesis* (Grimen, 2018). Others have emphasised the importance of providing students with opportunities to learn from the tensions and contradictions that emerge between different dimensions of professional education. From this point of view, the task of both addressing critical differences and exploring similarities is seen as providing an important foundation for learning (Buchmann & Floden, 1992; Heggen et al., 2015).

In sum, a common issue across professional education programs is the challenge of being "hybrid institutions with one foot in the academy … and one in the world of practitioners" (Sullivan, 2005, p. 25). Hybrid educators highlight this balancing act, as they are expected to demonstrate relations between the knowledge associated with the "academy" and "the world of the practitioners". Making such relations visible entails making aspects of their professional knowledge *explicit* for prospective teachers by articulating tacit knowledge and underlying theory (Lunenberg et al., 2014; Murray & Male, 2005; Polanyi, 1967). However,

while theories of professions offer fruitful ways to conceptualise different forms of knowledge, I argue that knowledge relations can be better understood by turning attention towards perspectives that foreground the work involved in creating relations *in situ.* For this purpose, I direct attention towards the knowledge-laden *institutional practices* and *artefacts* that hybrid educators engage with through their work in HE.

3.1.2 Knowledge-laden institutional practices and artefacts

Hybrid educators' task of creating relations between HE and professional practice does not only involve connecting different forms of knowledge; it also involves making sense of and connecting two sets of *institutional practices.*

Drawing on Hedegaard (2012, 2014) and Edwards (2010), I understand institutional practices as knowledge-laden, routinised actions that are historically shaped, and reproduced through the use of conceptual and material resources. This perspective further holds that professionals face sets of *demands* and *expectations* related to how work is expected to be carried out within an institution (Hedegaard, 2012, 2014): These demands may be formalised. For instance, policy documents require Norwegian teacher education programs to be research-based. However, they may also emerge from taken for granted assumptions that characterise HE-based teacher education. Drawing on notions of institutional practices to study hybrid educators' boundary work enables a conceptualisation of the intersection between the cultural and historical aspects that characterise HE-based teacher education on the one hand, and the specific actions that hybrid educators engage in as they relate to and engage with institutional practices in their work as educators on the other.

The task of creating stronger relations between HE and professional practice involves the bridging of two sets of institutional practices and the *artefacts* (e.g., Cole, 1996) associated with the two institutions. Artefacts can be conceptual or material, and carry beliefs, knowledges, and logics from the culture of which they originate, and provide constraints and affordances for use. As artefacts are interpreted and engaged with in particular historical and cultural contexts, socially constituted notions of relevance and purpose *mediate* how artefacts are approached (Vygotsky, 1978; Wertsch, 1991). Typical artefacts associated with professional practice in schools include teaching materials, pupil texts, local curricula, or specific teaching methods. Typical examples of artefacts associated with the HE context include concepts, theories, research articles, general principles, or abstract models. Even though artefacts are seen as directing human action and playing a generative role in how

activities emerge, the characteristics of this generative role cannot be taken for granted. Rather, artefacts enter into dynamic interrelationships with the persons who engage with them, as well as their broader environment (Tronsmo, 2019) and they may, therefore, play an important role in the reproduction and renewal of institutional practices.

The analytical focus on institutional practices and artefacts makes the work of hybrid educators an interesting empirical case for examining knowledge relations in teacher education: Hybrid educators literally bridge two institutions, and they are specifically tasked with "bridging" a cultural and epistemic "gap". They are therefore well positioned to bring practice-related artefacts into HE to support student learning and forge relations between different forms of knowledge. However, artefacts are neither neutral nor ready-for-use. Rather, they are inscribed with knowledge that invite further practitioner elaboration and interpretation to various extents. This entails that hybrid educators cannot simply "transfer" knowledge from the school context into the HE context; artefacts need to be given meaning by those who work with them in the *in-situ* activity (Tronsmo, 2019). In other words, artefacts that travel from one domain to another typically need to be *recontextualised* as they enter a new setting (Hermansen, 2015). Hence, when hybrid educators make use of practice-related artefacts in a HE-setting, it is not necessarily clear how relations are to be made between the artefact and the knowledge that is valued in HE, or how the artefact can be mobilised to support student learning.

Taken together, directing attention towards institutional practices and artefacts contributes to illuminating the knowledge-laden demands and artefacts that shape and inform hybrid educators' *boundary work*.

3.1.3 Boundary work

As demonstrated in Chapter 2, existing research has investigated work at epistemic boundaries in teacher education by applying concepts such as boundary crossing and third spaces. I argue that *boundary work* (Langley et al., 2019; Mørk et al., 2012; Zietsma & Lawrence, 2010) can be applied as an overreaching analytical conceptualisation of work at institutional and organisational boundaries in teacher education. I further argue that this construct may be further developed to unpack and conceptualise the *epistemic* aspects of such work.

The notion of boundary work was initially applied by Gieryn (1983) to investigate how scientists distinguish their authority from that of "non-scientists", and the concept has

subsequently been used to analyse how professionals build boundaries to demarcate their own domain of expertise from that of other professions (e.g., Abbott, 1988, 2005). In these contexts, boundary work has primarily been applied to identify the *creation* of professional boundaries; thus, the concept is often associated with power relations and viewed as an activity of discursive claim-making concerned with the division of labour and establishment of expertise that distinguish professionals from other groups (e.g., Fournier, 2000; Liljegren, 2012).

Langley et al. (2019) described boundary work as a concept that both clarifies differences *and* enables connections. Similarly, Liu (2015) emphasised that boundary work have complex varieties of forms, further proposing a distinction between *boundary making*, *boundary blurring*, and *boundary maintenance* as key tools for analysis. These distinctions help unpack an understanding of what boundary work consist of by emphasising the dynamic process of creating and maintaining boundaries on the one hand and negotiating connections and relations on the other. Langley et al. (2019) defined boundary work as "purposeful individual and collective effort to influence social, symbolic, material, and temporal boundaries; demarcations; and distinctions affecting groups, occupations and organizations" (p. 704). They further suggested three categories of boundary work:

> 1) *Competitive boundary work,* which is concerned with creating and maintaining boundaries to defend professional territory. Even though this work mainly reaffirms differences between professional groups, it may also entail identifying similarities by blurring and bridging boundaries (Langley et al., 2019, p.710).

> 2) *Collaborative boundary work,* which is concerned with realigning and negotiating boundaries to enable collaboration. Collaborative boundary work entails navigating underpinning power relations and is often made possible by individuals who downplay differences and emphasise similarities.

> 3) *Configurational boundary work,* which directs attention to how organisational structures affect boundaries from the outside. For instance, leaders may reshape professional landscapes by re-arranging spaces that either clarify differentiation or blur boundaries by constructing integrated domains.

Although these categories cannot be neatly delineated empirically, they enable an analytical focus on work at epistemic boundaries as a complex and dynamic process of establishing, creating, and bridging professional boundaries. Considering how professionals both

demarcate boundaries in relation to other groups *and* how boundaries are blurred as connections are sought, it follows that boundary work cannot be studied through a focus on an individuals' action in isolation. Rather, work is understood as an activity that is embedded in social contexts and thus available to interpretation through participation in these (Nicolini, 2012; Schatzki et al., 2001). Boundary work should be viewed as multifaceted, tactical, and situated; how and why professionals engage in boundary work is strongly influenced by local conditions and social contexts. Furthermore, by including the leader perspective, this thesis also sheds light on the *configurational boundary work* (Langley et al., 2019) that is conducted at the organisational level to facilitate for hybrid work at teacher education boundaries—or the lack of such work.

Directing analytical attention towards boundary work implies a focus on *boundaries.* However, in the literature, boundaries are defined and conceptualised in various ways—and often not at all. In their review of boundary work research, Langley et al. (2019) conceptualised boundaries as "social, symbolic, material, temporal boundaries that demarcates and distinguishes groups, occupations and organisations" (p. 704). In a review of boundary crossing and boundary objects in educational research, Akkerman and Bakker (2011) conceptualised a boundary as "a sociocultural difference leading to discontinuity in action or interaction". They further argued that as an "in-between or middle ground, a boundary belongs to both one world and another" (p. 141) and therefore may legitimate coexistence at boundaries by distinguishing roles and responsibilities (Akkerman & Bakker, 2011). In this literature, boundaries are often viewed as tensions, barriers or challenges that should be bridged or blurred to achieve learning and development. Others have encouraged a view on boundaries as *trading zones* for relations, interactions, and translations among different fields (Lander & Atkinson-Grosjean, 2011; Rasmussen & Holm, 2012). From such a perspective, the boundary itself is brought into focus: Attention placed on the in-between, the boundary, and designations such as *boundary worker*, *boundary spanner* or *role hybrid* are used to facilitate the "transfer of knowledge between contexts" (Rasmussen & Holm, 2012, p. 67).

Closely related to the focus on boundaries and boundary work lies notion of *boundary objects.* Boundary objects can be defined as artefacts that fulfil a bridging function between different epistemic communities (Akkerman & Bakker, 2011; Jahreie & Ludvigsen, 2007). However, to become a boundary object, the artefact must be jointly worked on "at the boundaries of the systems" (Akkerman & Bakker, 2011, p. 509). Even though the analytical focus of this thesis

lies on hybrid educators' use of practice-based artefacts, an interesting question to ask is whether such artefacts may have the potential of becoming boundary objects that are collectively worked on "at the boundaries" in campus-based activities.

Whereas the boundary work construct has traditionally been applied to illuminate how professional groups demarcate boundaries to establish professional responsibilities, I seek to further develop the boundary work concept by foregrounding the *epistemic* aspects of this work. To illuminate these aspects, the empirical studies in this thesis are concerned with tracing what hybrid educators *do* with knowledge: In particular, the empirical analyses direct attention towards how hybrid educators engage with knowledge in the HE context, and how they make use of the knowledge they bring into the HE context. Furthermore, a core advantage of the boundary work concept is that it allows researchers to be attuned to the creativity, constructions, and collaboration that emerge through *negotiations* conducted in workplace settings (Langley et al., 2019). This study thus directs attention towards negotiations of knowledge relations, epistemic responsibilities, and expertise.

3.2 Summary

Based on fundamental assumptions of knowledge as *relational*. *emergent* and *situated*, this thesis combines perspectives that have proven useful for unpacking what hybrid educators do with knowledge through their work at teacher education boundaries. Combined, these analytical entry points provide an analytical framework that illuminates how professionals who work at epistemic and institutional boundaries cannot simply enter a new domain and "create bridges". Rather, they have to establish their position within a new organisational and institutional context and negotiate their epistemic contribution in relation to existing expertise through *boundary work*.

By foregrounding how those who work at epistemic boundaries engage with different institutional practices and knowledge demands, and how they relate to and make use of artefacts associated with different knowledge domains, I seek to further develop the conceptual potential of boundary work by strengthening the focus on the epistemic dimension of such work.

4. Data and methodology

In this chapter, I elaborate on the study's research design, the context and participants, the data corpus, methodical considerations, and the analytical strategies applied. Thereafter, I turn to issues concerning the scientific quality and research ethics of the study.

4.1 Research design

Choosing an appropriate research design depends on the phenomena studied and the research questions asked (Hatch, 2002; Lamont & Swidler, 2014). From the onset, the focus of this thesis was directed towards the epistemic aspects of hybrid educators' work. Furthermore, as explained in Chapter 3, a key theoretical assumption directing this thesis is the view of knowledge as *relational*; that is, enacted and emerging through interaction. Thus, knowledge is understood as specific to the relations and structures of which they are part. A further key assumption of this thesis is that knowledge is viewed as embedded in the routines and artefacts of professional practice. These assumptions invited a qualitative research design that enabled the epistemic aspects of hybrid educators' work to be empirically traced through in-depth, detailed analysis of work situations *in situ*.

The orientation towards the epistemic aspects of hybrid educators' work called for an insight into naturally occurring events (Silverman, 2014). Thus, I found it appropriate to conduct extensive observations of three hybrid educators to get an in-depth understanding of their campus-based work. The fieldwork was conducted across the academic semesters of 2018-2019, and during the fieldwork, I aimed at observing the three hybrid educators in all activities in which they participated on campus, including staff meetings, seminars, and campus-based teaching. An advantage of conducting observations is that observational data provide knowledge on what people actually *do,* not merely what they say they do (Jerolmack & Khan, 2014). The observations of the hybrid educators' campus-based work provided opportunities to observe epistemic aspects that were more or less prominent *in situ* and provided insight into the contextual and institutional settings that informed their work.

Towards the end of the fieldwork, I conducted individual interviews with the hybrid educators to gain a better insight into their perceptions and interpretations of campus-based activities (see Table 3 for an overview of the data material). Furthermore, I conducted individual interviews with the hybrid educators' immediate leaders on campus to get a better understanding of the expectations, intentions, and demands associated with the hybrid educator position.

There are several benefits of combining observations with interview data; for instance, interviews provide a deeper insight into *interpretations* of observed decisions and actions (Riessman, 2008). I elaborate further on the data material in the following sections. First, I present the context and rationale for the selection of the participants.

4.2 Context and participants

This thesis investigates the epistemic characteristics of boundary work by empirically foregrounding hybrid educators and HE-based teacher education in Norway, which is the empirical site of the study. Even though recent policy documents encourage the utilisation of hybrid educator positions in Norwegian teacher education, often referred to as *delte stillinger* (dual positions) or *kombinasjonsstillinger* (combined positions) (e.g., Askling et al., 2016; Norwegian Ministry of Education and Research, 2017), there is no such thing as an established hybrid educator tradition. Thus, the utilisation of hybrid educator positions varies from institution to institution. For instance, hybrid educators may be schoolteachers or school-leaders who have co-employment in higher education, or they may be campus-based educators who collaborate with partnership schools; they may participate in university-school research projects, or they may be tasked with co-teaching seminars on topics concerning the teaching profession.

To find participants, leaders at eight Norwegian teacher education institutions were contacted, and four of these confirmed that they had employed hybrid educators for the 2018-2019 academic school year. The institutions provided contact information for the hybrid educators, who were primarily schoolteachers with main employment in upper- or lower secondary schools. To gain a somewhat more nuanced insight into how different institutional practices shape hybrid educators' boundary work, it was of interest to recruit hybrid educators from more than one institution. Consequently, the selection criteria for choosing the three informants were that they worked at different institutions and that they worked both in schools and in campus-based teacher education. Moreover, as this study is concerned with hybrid educators' work in the context of HE, it was of interest to recruit informants who had a workload of at least 20% related to teacher education. The three hybrid educators who confirmed that they were willing to participate in this study worked as schoolteachers at lower- or upper secondary schools in different parts of Norway and as educators at three different universities.

In Norway, teacher education programs at all levels are primarily delivered by universities or university colleges and involves at least 100 days of school-based practicum. The participants in this study worked at teacher education programs for Grades 1-7, 5-10, or 8-13, each of which are integrated five-year-programs at master's level. Additionally, two of the participants taught students attending a 1-year practical-pedagogical education program (PPU)—since 2019 this program has been for students who have already obtained a master's degree but lack formal teaching qualifications. The participants were primarily employed by the universities as hybrid educators due to their teaching experience, their familiarity with the teacher education program through work as school-based mentors, and/or due to their subject-specific competence. They all had teaching degrees; however, unlike a growing number of educators in the Norwegian teacher education context, they had not obtained a PhD and they did not conduct research as part of their educator tasks. The three educators were employed by the university primarily to teach student teachers; both Hybrid 2 and Hybrid 3 taught subject didactics, while Hybrid 1 taught seminars focusing on various aspects of the teaching profession (see Table 2 for an overview).

Their work as educators did not entail any specific tasks in the school context; however, both Hybrid 1 and 3 mentored student teachers in their school-based practicum. Because this thesis is concerned with boundary work in the context of HE, I did not observe the participants' work in the school context, and their campus-based work was the main topic of the interviews.

Table 2: *Overview of the participants*

Name (pseudonyms)	Hybrid Educator 1	Hybrid Educator 2	Hybrid Educator 3
Workload	20% as teacher educator 80% as secondary schoolteacher	50% as teacher educator 50% as upper secondary schoolteacher	30% as teacher educator 70% as upper secondary schoolteacher
Main campus-based task	Teaching seminars focusing on various aspects of the teaching profession, often together with campus-based educators	Teaching social science didactics	Teaching religion and ethics didactics

Experience as a hybrid educator	First year	Fifth year	Third year
Other teacher educator tasks	Mentoring students in their practicum	Participating in research group meetings Evaluating student papers Visiting students in their practicum	Mentoring students in their practicum Participating in research group meetings Evaluating student papers

To gain a better understanding of the intentions, expectations, and demands associated with the hybrid educators' work and how the institutions facilitated hybrid educators' inclusion into the HE context, I considered their closest leaders on campus to be an appropriate informant group to interview. The interviews with the leaders provided a valuable foundation for understanding the contextual factors that shape hybrid educators' work, as well as the expectations and demands associated with the hybrid educator position. The leader interviews are mainly applied in Article 1 (see Section 4.3.2).

4.3 Data collection

As previously mentioned, the data material is derived from fieldwork conducted at three teacher education institutions over the academic semesters of 2018-2019 and comprises both interviews and observations (see Table 3 for an overview).

Table 3: *Overview of the data material*

Participants	Observations	Interviews
Hybrid Educator 1	Introductory meeting (1h) Co-planning meetings with campus-based educators (5h) Campus-based teaching, alone (12h) Co-teaching, with other campus-based educators (25h) Informal observation (lunch breaks etc.) (2h)	Individual interview with Hybrid Educator 1 (1h)
Hybrid Educator 2	Introductory meeting (1h)	Individual interview with Hybrid Educator 2 (1h)

	Staff seminars and meetings, including research group meetings (2h) Campus-based teaching, alone (8h) Informal observation (lunch breaks etc.) (1h)	
Hybrid Educator 3	Introductory meeting (1h) Staff seminars and meetings on campus, including research group meetings (8h) Campus-based teaching, alone (23h) Campus-based teaching, together with campus-based educators (8h) Informal observation (lunch breaks etc.) (1h)	Individual interview with Hybrid Educator 3 (1h)
Immediate leaders on campus		Individual interviews with each hybrid educator's immediate leader on campus (1h x 3 = 3 h)
Total	**98h**	**6h**

4.3.1 Observation data

The observation material comprises approximately 100 hours and cover different campus-based activities in which the hybrid educators participated; including meetings, seminars, and campus-based teaching. The three hybrid educators provided me with their schedules, and I observed as much of their work as practically possible. They also informed me about and invited me to other campus-based activities that came up; for instance, an informal co-planning session with other educators in the campus-café.

I usually met the hybrid educators before a session, and we would chat informally as we walked together to the campus-based activity. After introducing myself to colleagues and/or students, I conducted observations from a chair at the back of the room. Even though I went into observations with a rather open focus, my attention was, as previously mentioned, primarily directed towards the epistemic aspects of hybrid educators' work. Due to the analytical interest in artefacts, I collected all handouts that the hybrid educators distributed to their students, and they also sent me lesson plans and other relevant documents.

I wrote fieldnotes with pen and paper and did not bring any pre-determined observation manuals. At the beginning of a new session, I always made notes of how many people that were present and briefly described the context (e.g., seminar with all teacher educators at the institution). When writing fieldnotes, I aimed at making near-verbatim notes of what the hybrid educators said. I also made notes of what they did, where they positioned themselves in the room, as well as the artefacts they made use of. Furthermore, I made notes of what other actors said and did, and the artefacts they drew on when interacting with hybrid educators. During observations, several things stood out as interesting: For example, I was surprised at how passive the three hybrid educators became in collaborative settings, such as staff meetings. I made notes of such reflections in my fieldnotes both during and after each session.

After a session, I always re-read my fieldnotes and added immediate reflections in a separate document. I consecutively transcribed the fieldnotes and saved them in a password-locked folder on my PC. In general, I never actively participated during the observations, but educators, leaders, and student teachers often chatted informally with me before and after meetings, lessons, or seminars. The three hybrid educators were open and welcoming, and they usually came up to chat with me after a session; these informal conversations provided insights into their immediate thoughts and reflections. For instance, one of the participants explained how she felt like "such an outsider" after a staff seminar (Article 1).

The collection of observation data involved several challenges. First, the organisation and predictability of the participants' work schedules varied. For instance, it was more practical to observe Hybrid 1 who worked on campus one whole day each week, compared to Hybrid 2 who taught 90-minute lessons distributed on different weekdays. Together with the long geographical distance, this led to Hybrid 2 being observed less than the others. Second, there were great variations in how often I had the opportunity to observe the hybrid educators in collaborative settings. Sharing their workload between schools and campus, the three educators seldom had the opportunity to participate in meetings and seminars with HE-based staff, as the hours they worked on campus were mostly spent teaching. The observations of Hybrid 1 stood out in this regard, as she often took the initiative to co-teach and co-plan with campus-based educators. Third, even though video recordings would have provided more detailed transcriptions, it was difficult and impractical to obtain prior written consent from all student teachers and colleagues involved in the different settings.

4.3.2 Interview data

During the fieldwork, I conducted interviews with both the hybrid educators and their immediate leaders on campus. I wanted to wait to conduct the interviews with the three hybrid educators until I had established relationships and had carried out some preliminary analysis; therefore, the interviews with the hybrid educators were conducted towards the end of the fieldwork. These interviews were used to generate further understanding of the reasonings, understandings, expectations, and considerations behind the practices observed (Silverman, 2014). The interviews were semi-structured and lasted from 60 to 75 minutes. The interview guide consisted primarily of open questions; for example, asking the participants to describe how they prepared for campus-based teaching (see the interview guide in Appendix 3). I did not strictly follow the interview guide but was open for other directions during the conversation. The questions were concerned with the hybrid educators' work on campus, asking for example, how they planned a campus-based lesson, what resources they made use of, and what they found particularly challenging in their work as educators. I also asked more specific questions regarding episodes that I had observed. For instance, I had observed that the hybrid educators made use of several resources from their work in lower or upper- or secondary schools, such as evaluation criteria and pupil texts, so I asked them to explain their use of these.

In addition to the three hybrid educators, their closest leaders on campus were also interviewed. This informant group was considered appropriate because they could provide valuable information about the expectations and intentions with hybrid educator positions more in general, as well as insights about the organisational layer, including the facilitation of hybrid educator positions in the HE context. The leader interviews lasted between 45 and 70 minutes and were conducted at the beginning of the fieldwork. The interview questions were primarily concerned with hybrid educator positions at the institution in general. For instance, I asked the leaders to describe how they recruited hybrid educators, and expectations and demands associated with hybrid educator positions.

I transcribed all interviews verbatim and translated them into English when writing the articles. Pauses, laughter, and small comments were also transcribed. I strived to be thorough and precise during translation to maintain the original meaning.

4.4 Analytical process

4.4.1 Initial analyses

From the onset, my analytical interest was directed towards the *epistemic aspects* of hybrid educators' work in the HE context. Due to this interest, the initial analyses had to some extent already begun during the fieldwork, as I directed particular attention towards how the three hybrid educators made use of and talked about knowledge.

After the fieldwork was conducted, the first step of the analysis entailed repeated readings and mappings of the entire data corpus. This step was followed by an initial thematic sorting (Braun & Clarke, 2006): Even though this stage was strongly linked to the data, and I was open for the "unexpected" and "mysterious" (Alvesson & Kärreman, 2005), I was not a completely passive reader who allowed for themes to "emerge" (Braun & Clarke, 2006). Rather, my initial analyses were shaped by my interest in what the hybrid educators did with knowledge and my insights into already existing research on the field. Thus, the initial reading can be described as a combination of a deductive and an inductive approach (Creswell & Poth, 2013). At this stage, three overreaching aspects of the hybrid educators' work stood out, comprising the foundation for three overreaching themes that were further pursued in the more detailed analyses: 1) what the hybrid educators perceived to be their epistemic contributions and responsibilities in the HE context, 2) how they interpreted and engaged with knowledge demands in the HE context, and 3) how they made use of knowledge from the school context. At this stage, I decided to analytically approach these aspects as *boundary work.*

After the initial thematic sorting, the analytical process moved from a focus on the whole to detailed analyses for the specific purposes of each empirical study. At this stage, partial aspects that emerged as important for the research questions of the three articles were traced. Throughout the analytical process, I read both the observation material and the interview data: While the observational material provided insights into the hybrid educators' everyday work *in situ*, the interviews contributed to shedding light on the hybrid educators' own perceptions and explanations. To analytically handle the diversity in the overall data corpus and grasp the complexity of the epistemic aspects that stood out in the material, I used the strategy of "zooming in" and "zooming out" on the data (Nicolini, 2009). This strategy entailed, a close reading of the material to trace how the epistemic aspects of boundary work emerged in the data, while at the same time keeping track of how these aspects could be linked to institutional

practices at the macrolevel. This analytical "double movement" was conducted in various ways through the analytical process: For instance, I examined both the details of micro-practices of campus-based teaching trough an analytical focus on hybrid educators' engagement with *research* (zooming in) and how these were linked to broader contexts of *institutional practices*, such as the knowledge demands of research-based teacher education (zooming out).

Next, I describe the process of moving from the overall data corpus to the empirical and analytical focus of each article (see Table 4 for a summary of the analytical steps).

4.4.2 Detailed analyses

The analysis of *Article 1* was directed by an analytical interest in what the hybrid educators perceived to be their epistemic contribution, or *expertise*, in the HE context, including the work involved in negotiating this expertise. Because these negotiations emerged as interesting in the observation material from collaborative settings where the hybrid educators became notably more passive, I initially focused on identifying all episodes where the hybrid educators interacted with campus-based actors. Next, I extracted parts in the interviews where the hybrid educators described their educator activities and perceptions of their epistemic expertise in relation to campus-based colleagues. I also identified extracts in the leader interviews where they described hybrid educators' relations to campus-based staff, as well as their perceptions of the epistemic expertise hybrid educators brought into the HE context.

In the next step of the analysis, I conducted a more fine-grained analysis of the selected fragment chunks, focusing on identifying similarities and differences within and between the informants and the informant groups. At this stage, several contradictions and ambivalences stood out between the informant groups: For instance, the hybrid educators repeatedly expressed confidence in having something valuable to contribute to the HE context, but they also expressed the perception of having little to contribute in various settings. Moreover, whereas the leaders tended to describe hybrid educators' knowledge contribution as self-evidently valued in all HE-practices, an opposite tendency was evident in the observational material and in the interviews with hybrid educators.

To further identify and conceptualise negotiations of the hybrid educators' expertise, I applied *boundary work* as an analytical entry point and drew on categories suggested by Langley et al. (2019) and Liu (2015); *boundary maintenance* and *boundary bridging.* At this point, extracts

from the data material that foregrounded *divisions* and *differences* between hybrid educators and campus-based actors were categorised as *boundary maintenance*, and extracts in which *connections* and *similarities* were emphasised were categorised as *boundary bridging*. The category of *rejecting boundaries* further illuminated the contrast between the leaders' tendency to downplay or reject differences and divisions, on the one hand, and the complex boundary work hybrid educators conducted, on the other.

While Article 1 focused on negotiations of expertise in collaborative settings and applied *boundary work* as an analytical entry point, I directed the analytical attention in *Article 2* to how the hybrid educators interpreted and engaged with knowledge demands in the HE context. In particular, the analytical process was concerned with identifying hybrid educators' engagement with research-based practices. As a first step of the analysis, both data sets were read with the intention of identifying segments where research-based knowledge was mentioned in the interviews or applied in the observation material. It became evident that hybrid educators encountered research-based knowledge through participation in all HE-based activities, including their students' research and development projects (R&D), students' reading lists, or research group seminars. These segments were re-read and coded to capture the perceived expectations associated with research, relevance given to research in conceptualisation and enactment, and the resources drawn on as research.

In the next stage of the analysis, I applied *institutional practices* (Edwards, 2010; Hedegaard, 2012, 2014) as an analytical entry point. This analytical level enabled me to illuminate and conceptualise how hybrid educators interpreted institutional expectations and demands of being research-based on the one hand, and, on the other, how they engaged with these expectations. To analyse hybrid educators' engagement with research-practices, I also directed analytical attention towards the resources they drew on as research and how they engaged with these resources.

The analytical focus in *Article 3* was directed towards how hybrid educators made use of knowledge from the school context in their work in the HE context. In particular, the analysis was directed by an interest in how practice-based artefacts were used in the pursuit of creating relations between the two knowledge domains. To examine this, the analytical process was initiated by identifying all instances where practice-based artefacts were used in hybrid educators' campus-based teaching. I then completed a thick description (Geertz, 1973) of how

these artefacts were used, with an emphasis on how relations between "practical" and "theoretical" knowledge were created.

Two prominent and recurring patterns emerged: One pattern was characterised by episodes when knowledge relations were explicitly made relevant for a practice-based artefact, the other was characterised by episodes where relations were mentioned but not further pursued. To enable a more detailed exploration of knowledge relations, I employed two intermediate concepts to the analyses: The concept of *knowledge mobilisation* was used to highlight how different forms of knowledge were mobilised and made relevant when a practice-based artefacts was introduced, while the concept of *knowledge relations* was used to identify how these forms of knowledge were put in specific relations to each other through the use of the artefact. These concepts helped pinpoint how these relations were either made *explicit* or remained *latent*.

4.4.3 Summary

Overall, the analyses were concerned with capturing the epistemic aspects of hybrid educators' boundary work that were most prominent in the data material: Hence, the analyses in the three articles illuminate how the hybrid educators negotiate their epistemic contribution and expertise, how they relate to and engage with institutional knowledge demands, and how they make use of knowledge from schools in the HE context. By combining different analytical approaches and foci, the thesis as a whole sheds light on the key epistemic characteristics of boundary work from different perspectives and in different settings.

The following table attempts to summarise the steps of the analyses:

Table 5: *Summary of the steps of analysis*

Analytical strategy	Focus
Initial analyses during data collection Transcriptions and repeated readings of observations and interview data	Considering potential analytical approaches. Developing the research design and research-questions. Gaining an overview.
Initial thematic sorting.	Identifying recurring themes, brainstorming the focus of each article.

Detailed analysis for the specific focus of each article	*Article 1* *Analyses focusing on:* negotiations of expertise through boundary work *Rationale for selecting data extracts:* episodes from the observation data of collaborative settings between hybrid educators and HE actors, interview extracts with leaders and hybrid educators regarding collaboration and expertise	*Article 2* *Analyses focusing on:* relations to and engagement with "research" *Rationale for selecting data extracts:* episodes from the observation data where resources are drawn on as "research", interview extracts concerning research	*Article 3* *Analyses focusing on:* constructing knowledge relations *Rationale for selecting data extracts:* episodes from the observation data where practice-based artefacts are used, interview extracts concerning knowledge
Analytical entry points	*Zooming out on;* boundary work, *Zooming in on:* negotiations of expertise	*Zooming out on:* institutional practices, forms of knowledge *Zooming in on:* research-based practices	*Zooming out on:* knowledge domains, forms of knowledge *Zooming in on:* practice-based artefacts, theory-practice linkages

4.5 Ensuring methodological quality

The qualitative research approach applied in this study is interpretive in nature; hence, it is important that the analyses and findings are *credible*. Credibility can be defined as the degree of rigor and quality identified in the methodology employed (Lincoln & Guba, 1985). In the following, I discuss the means used to ensure methodological quality, focusing on validity and reliability, generalisability, and ethical reflections related to this research.

4.5.1 Validity and reliability

A key concern in research is whether the findings can be considered valid and reliable. The reliability of research can be assessed based on its degree of consistency and the

appropriateness of the data and analytical approaches for the stated research objectives (Silverman, 2014). In this thesis, validity has been addressed, for example, through the choice of theoretical perspectives, through the selection of the participants, and through the presentation of the findings. Thus, validity can be viewed as continuous choices that are made throughout the research process to make the study consistent, transparent, and valid (Kvale & Brinkman, 2009). To ensure validity, I have focused on being transparent and thorough throughout the whole process: I have particularly given space and attention in both the three articles, and this extended abstract to selection processes, methodology and the analytical tools, and I have elaborated on the different steps of the analyses. In the following, I discuss validity in more depth based on Maxwell's (2002) three notions of validity in qualitative research: *descriptive*, *interpretive,* and *theoretical* validity.

Descriptive validity refers to whether the researcher's account is factually accurate and whether researchers "are not making up or distorting what they saw or heard" (Maxwell, 2002, p. 45). The descriptive validity of the present research is strengthened by the recording of the interviews and the verbatim fieldnotes made during observations. When working with the articles, it has for instance been important to provide enough contextual information to ensure that others from different contexts and traditions comprehend what is going on (Geertz, 1973). This is, for instance, done both in the articles and in the extended abstract through descriptions of Norwegian teacher education programs and descriptions of the participants' responsibilities and tasks on campus.

Interpretive validity is concerned with the participants' own understanding of settings, concepts, and practices. Although my research was somewhat guided by particular analytical interests, identifying participants' orientations and concerns remained an important basis for the analyses. As the interviews were conducted near the end of the fieldwork, this offered an opportunity to validate and correct the understandings I had developed from observing my informants' work through *member checking*: During the interviews, I discussed my initial interpretations and conclusions with the participants and asked for elaborations to gain a deeper understanding (Johnson & Christensen, 2017). However, the findings are ultimately based upon the interpretations of a "solitary researcher", and the validity of these interpretations defines the quality of my work (Creswell, 2013; Hammersley, 2005). In the three articles, analyses have been presented without the possibility to go into detail on alternative categorisations or interpretations. To further ensure validity, excerpts, article drafts

and preliminary findings have been subject to validation and peer reviews in formal and informal situations, for example, at conferences, research group meetings, and journal review.

The concept of *theoretical validity* addresses the theoretical constructions that the researcher brings to, or develops during, the study (Maxwell, 2002, pp. 50-51). Maxwell differentiates this further regarding two components of a theory: 1) the concepts and categories within a theory and, 2) the relationships that are constructed among them. In this regard, I have expanded on the relations between my theoretical and analytical perspectives and the analytical process. In these accounts, I have sought to demonstrate the appropriateness of my theoretical approach to for examining the objectives of this thesis. Furthermore, I have been cautious not to force my findings into theoretical preunderstandings or a predefined theoretical framework.

4.5.2 Generalisability

Generalisability is concerned with how research findings can be applied to other people and settings in time and space. Qualitative research risks becoming too context-bound and too specific, so generalisations or comparisons may not possible (Hammersley, 2005). To avoid these perils, it is important to provide systematic and transparent descriptions of the data and analytical processes. These descriptions may in turn help readers decide whether the findings are transferrable to their own contexts (Creswell, 2013).

The fieldwork for this study was undertaken within a limited time period and with a limited number of participants from one country. Given the research design of this study—and the limited number of participants in particular—claims of generalisability are not based on specific populations or contexts, but rather, on what is broadly described as *analytical generalisation* (Smith, 2018). Analytical generalisation implies that it is the concepts or theories of a study that are potentially generalisable. Thus, the generalisability of the findings must be considered in relation to the theoretical and conceptual bases and empirical contexts of the study. By being transparent about theoretical assumptions, analytical perspectives and the analytical processes informing the analysis, I have attempted to explicitly describe how my perspective aligns with and differs from other approaches. Combined, these aspects may help the reader determine how the theoretical and conceptual perspectives might be applied in other empirical settings.

4.5.3 Ethical considerations

A key ethical obligation in research is to protect informants' privacy and anonymity. This project was reported to the Norwegian Social Science Data Services (NSD) and followed their guidelines for processing personal data. To ensure general anonymity, all data that could identify participants were kept in a secure location and deleted at the end of the research project, and all names of participants used in this thesis are pseudonyms. Written information about the research was given participants in advance, and participation has been voluntary. Furthermore, I always asked the leaders to approve my presence at staff meetings and seminars in advance; only once was my request rejected, as the leader considered the seminar to be irrelevant to my project.

Reflexivity has been an important part of the research process, inspiring me to reflect on my position, perspectives, and presence as a researcher throughout the research process. Through reflexivity, I have aimed to engage in what Finlay (2002) described as "an explicit, self-aware meta-analysis of the research process" to increase the integrity and trustworthiness of the whole research process (p. 531). Furthermore, attention to reflexivity entails being sensitive towards how I, as a researcher, construct social phenomena and towards my role as a researcher in the production of knowledge (Kvale & Brinkman, 2009). Neumann (2001) referred to these aspects as the researcher's *cultural competence* and emphasised that a critical perspective on one's own analysis is necessary.

Reflexivity also involved reflecting on my position, perspectives, and presence as a researcher during the fieldwork. For instance, when conducting observations, I tried to be sensitive to how my presence in meetings, seminars or lessons might influence other participants' behaviours. Overall, however, my research topic is not very sensitive; the fieldwork was concerned with the informants' professional lives, and my impression was that the hybrid educators enjoyed scrutinising their own work, practice, and reflections through participation in the research project. My role as a researcher was, however, somewhat more challenging in relation to the leaders: During the interview with the first leader, it became clear that the leader had perceived the intention of my research as one of *evaluating* hybrid educator positions, rather than exploring the epistemic aspects of their work. Thus, I learned the importance of making my intentions and motives as a researcher explicit and transparent for the interviewees not only before but also during the interview.

Reflexivity has made me reflect further on my own motivations and interests in the research. For instance, one of the most pressing ethical considerations in the research process has been the benefits and dangers of the "insider perspective". As a former student teacher and teacher, I could be considered an "insider" who might not be able to see things that would be obvious to a researcher with an outsider perspective (Kvernbekk, 2005). For example, I knew prominent terms that were used, I did not need to spend time getting to know the field of teacher education as such, and I experienced trust from the hybrid educators from the onset. Thus, there was the pressing risk that a researcher who is familiar with the context might accept and apply interpretations without sufficiently challenging participants' interpretations. Moreover, there could be aspects of teacher educators' work that were familiar to me and therefore did not emerge as an important analytic point in the beginning of the fieldwork.

As the dangers of the "insider perspective" could affect the validity of my findings, I have strived to provide thorough methodological and theoretical overviews to make the whole research process transparent (Creswell, 2013). I have also presented and discussed my findings with researchers who are unfamiliar with the site of research (Creswell, 2013). As I conducted my PhD at an interdisciplinary research centre, my perspectives and interpretations have been thoroughly questioned and scrutinised by other researchers—perhaps more so than if my work had been conducted in a teacher education department.

4.5.4 Methodological limitations

I conclude this chapter with some reflections on methodological limitations. As explained in Section 4.2.1, one methodological limitation was that the observation material was not video-recorded as it was difficult and impractical to obtain prior written consent from all the student teachers and colleagues involved in the different settings. Even though video-recordings are deemed critical for conducting micro-level analyses of work (Little, 2012), I argue that the extensive observation material collected in this study provide valuable insights into work *in situ.*

A further limitation is that the fieldwork was undertaken within a limited period of time, with a limited number of participants from one country. The inclusion of additional participants and informant groups—such as campus-based educators or student teachers—would have provided valuable insights into hybrid educators' work in teacher education. However, the current study provide valuable examples of hybrid educators' activities in the context of HE, and thus, demonstrates ways of approaching new educator roles in teacher education.

5. Summary of the articles

In the following section, I summarise the three articles. As the theoretical and methodological approaches have been described in previous chapters, this section focuses on the main findings and discussions in each article.

The overarching aim of this study has been to investigate *the epistemic characteristics of hybrid educators' boundary work in the HE context.* This aim has been investigated through three separate articles that each shed light on different aspects of hybrid educators' boundary work.

5.1 Article 1

Risan, M. (2022). Negotiating professional expertise: Hybrid educators' boundary work in the context of higher education-based teacher education. *Teaching and Teacher Education, 109*. DOI: https://doi.org/10.1016/j.tate.2021.103559

The first article directs attention to how hybrid educators negotiate and establish their knowledge contribution in relation to already existing expertise in the HE context. Drawing on observations of collaborative settings, interviews with hybrid educators, and interviews with leaders, the following research questions are pursued: *What characterises hybrid educators' boundary work in the context of higher education-based teacher education? How is their professional expertise as educators negotiated through that work?*

The findings demonstrate how hybrid educators' expertise is enabled through *boundary bridging* efforts that involve both demarcating professional boundaries of differentiated expertise and seeking connections from these established positions. Demonstrating how hybrid educators and campus-based actors take on different roles and positions in collaborative settings, the findings suggest that emphasising and making use of what differentiates them from other educators seem to provide hybrid educators with a sense of confidence.

The findings further illuminate an interesting ambivalence in the negotiation of expertise, as hybrid educators are also found to take on a more passive role in collaborative settings due to perceptions of hierarchies and power imbalances. In particular, the analyses reveal that these perceptions are most prominent when hybrid educators are positioned in established practices where their knowledge contribution seems redundant, and their presence becomes merely symbolic. These notions can be viewed as *boundary maintaining*, as the emphasis placed on

differences and divisions restricts hybrid educators' enactment of expertise as they perceive themselves as "outsiders" with little to contribute.

The analyses also identify a contradiction between teacher education leaders' tendency to reject and downplay boundaries on the one hand, and hybrid educators' experience of lacking inclusion into HE practices on the other. These findings suggest that despite the good intentions of teacher education leaders who point to hybrid educators as equals who do not require boundary-bridging efforts, more attention should be directed towards hybrid educators' integration into HE practices that are unfamiliar to them. Ultimately, teacher education institutions need to acknowledge the importance of positioning hybrid educators in practices where their unique expertise can be utilised.

5.2 Article 2

Risan, M. (Under review). Schoolteachers as educators in higher education: Making sense of "research" in the context of research-based teacher education. Under review in *Teachers and Teaching: Theory and Practice.*

The second article investigates how hybrid educators relate to and engage with HE-based practices. More specifically, the study explores how hybrid educators' make sense of "research" in the context of research-based teacher education. Foregrounding the complex interplay between institutional knowledge demands on the one hand, and individual actions in engagement with these on the other, the following research questions are pursued: *How do hybrid educators interpret and relate to expectations associated with "research" in the context of research-based teacher education? How do they engage with these expectations?*

The findings identify research as a vague and taken-for-granted expectation that hybrid educators are given few directions in approaching. This further suggests that research is a taken for granted part of institutional practices in the higher education context. As a consequence of lacking instructions, hybrid educators' research engagement is primarily influenced by the perceived expectations from student teachers, their own experience as student teachers, and the perceived mandate of providing "practice".

The analyses highlight two distinct, yet overlapping, ways of research engagement: Communicating a view of research as something that they are unfamiliar with and unqualified for, hybrid educators tend to distance themselves from research. Consequently, research becomes something to merely mention or something that is outsourced to academic staff. This

distanced engagement may have several undesired implications on prospective teachers, as research risks begin foregrounded as knowledge that "belongs" to academic contexts rather than to the teaching profession. By contrast, the findings also provide examples of how hybrid educators engage with research when they explicitly identify aspects that are relevant for their own professional practice, and demonstrate how research can be foregrounded as an integrated and influential part of professional practice.

The findings provide a foundation to further discuss how hybrid educators should be better supported in making sense of and relating to practices that campus-based staff may take for granted. The discussion further raises the question of what the intention of including schoolteachers in HE-based teacher education is. If it is to promote research-based teacher education by demonstrating the relevance of research for students' future work as teachers, teacher education institutions should actively involve hybrid educators in research processes in order to better utilise the expertise they bring into HE practices and strengthen the conception of schoolteachers as more than distanced consumers of research.

5.3 Article 3

Risan, M. (2020). Creating theory-practice linkages in teacher education: Tracing the use of practice-based artefacts. *International Journal of Educational Research, 104.*
DOI: https://doi.org/10.1016/j.ijer.2020.101670

While Article 2 directs attention to how hybrid educators engage with HE practices, Article 3 directs attention to how they make use of the knowledge they bring from the school context. Tracing how artefacts from the school context are mobilised in campus-based activities, the following research questions are addressed: *How are relations between theoretical and practical knowledge created when hybrid educators use artefacts from professional practice in their campus-based teaching? What are the implications for how we understand and conceptualise efforts to strengthen theory–practice linkages in campus-based teacher education?*

The analyses identify how *theory* and *practice* are put in relation to each other for different purposes and in different ways, including exploring the theoretical underpinnings of a practice-based artefact, validating the practical use of an artefact with claims of research, and putting claims of theoretical knowledge to the test with practice-based artefacts.

The findings also demonstrate that even though different forms of knowledge are mobilised and made relevant, relations between these are not necessarily explicitly made use of when practice-based artefacts are approached. Thus, rather than revealing how theoretical and practical knowledge are related to each other beyond the specific artefact, practice-based artefacts become instrumental examples of professional practice without clear relations to the HE context. This use of practice-related artefacts is seen in light of hybrid educators' expressed wish to provide student teachers with *authentic* examples that they can transfer to their own professional practice. These findings highlight the challenges involved in translating practice-based artefacts to a new context in ways that make theory–practice relations available for student teachers on campus.

The study contributes to an understanding of the creative and constructive work required by hybrid educators to actively make relations between different forms of knowledge transparent at the micro level of educational activities in campus-based teacher education. It further demonstrates the value of analytically foregrounding the role of artefacts in such work.

6. Discussion and conclusion

In the previous chapters, I have demonstrated how this thesis addresses and extends existing research, accounted for the theoretical and analytical perspectives made use of, addressed methodological issues, and presented the main findings of the three articles. These chapters form the basis for the following discussion.

In this chapter, the overall research question for the thesis is addressed: *What characterises hybrid educators' epistemic boundary work in the higher education context?* The discussion explores the overall research question more specifically in relation to the three sub-questions: The first section is primarily concerned with *how hybrid educators engage with institutional practices and knowledge demands in the HE context.* The second sheds light on *how knowledge relations are created through hybrid educators' boundary work.* The third responds to the last sub-question and discusses the most prominent *tensions hybrid educators encounter in the HE context, and how these are negotiated.*

Following the discussion of the key characteristics of hybrid educators' boundary work, the chapter turns towards theoretical reflections, before suggesting the most central practical implications of this thesis and paths for future research.

6.1 Key characteristics of hybrid educators' epistemic boundary work

6.1.1 (Dis)Connecting with HE practices

As schoolteachers with co-employment in HE, hybrid educators are expected to bring knowledge from schools into their campus-based work and provide *professional relevance*; this expectation is explicitly articulated both by hybrid educators themselves and their leaders throughout the data material. What comes across as less evident, however, is how hybrid educators are expected to engage with institutional practices and knowledge demands in the HE context. Rather, it emerges that a significant part of their boundary work is concerned with identifying what aspects of HE-practices and knowledge demands to *connect* with—or *distance* themselves from.

The findings demonstrate how hybrid educators' engage with HE-based practices and knowledge demands by creating linkages to their own professional practice as schoolteachers This tendency is especially illuminated by their approaches to knowledge demands associated

with being "research-based" in Article 2 and by the linkages that are created between practice-based artefacts and "theory" in Article 3. The analyses further reveal that the boundary work that hybrid educators conduct to *connect* with research-based knowledge contribute to provide them with an increased sense of legitimacy and authority as educators in certain settings (Article 2). However, the findings also identify a contrasting tendency: The hybrid educators in this study are, in many respects, *distanced* from HE practices. Whereas studies on university-school collaboration emphasise the necessity of facilitating schoolteachers' inclusion as "active participants" in aspects such as planning, instruction, and evaluation of activities (Zeichner et al., 2015, p. 127), the findings in this study indicate that hybrid educators are distanced from such activities. For example, they point at a lack of introductory courses or seminars that explain how "things are done" (Article 1), the hybrid educators work primarily alone, and collaboration with other HE-based educators happens mostly on their own initiative (Article 1). As one leader explains, hybrid educators have to "be persistent and get in touch with others and offer their services, so to speak, instead of just sitting there waiting for someone to get in touch, because that won't happen" (Article 1).

These contrasting tendencies reveal existing ambivalences: Teacher education leaders express a wish to promote hybrid educators as competent, equal educators, and thus, seem to assume that they are prepared for the tasks of HE-based teacher education. However, several HE practices are unfamiliar to hybrid educators, such as, participation in research groups, as they lack the time and resources to prepare for such settings (Article 1). Thus, despite good intentions, the analyses suggest that the necessity of facilitating hybrid educators' inclusion into HE practices is neglected due to teacher education leaders' tendency to downplay and reject the existence of divisions between HE-based educators and hybrid educators. Indeed, the findings materialise how notions of territories and hierarchies shape hybrid educators' engagement with HE practices and determine whether their knowledge contribution is silenced or mobilised. These aspects are particularly evident in Article 1, where the extensive emphasis placed on differences in terms of power and whose knowledge matters the most in HE-settings makes hybrid educators emerge as "passive outsiders" in collaborative settings. Hence, as several studies have warned that work at epistemic boundaries is likely to be shaped by power imbalances (e.g., Daza et al., 2021; Zeichner et al., 2015), this study contributes through specific empirical examples of how these aspects influence hybrid educators' everyday work *in situ*.

An evident potential of hybrid educator positions is that of highlighting relations between knowledge associated with HE and professional practice in schools. However, to demonstrate such relations, they must engage with knowledge from *both* sides. The findings suggest that too little attention has been directed towards the complex task of establishing hybrid educators' position in a new institutional context. Rather, institutional practices and knowledge demands in HE appear as vague and taken for granted assumptions that hybrid educators are somehow expected to relate to and engage with (Article 2). For teacher education institutions, this pinpoints the importance of acknowledging that unclear expectations and existing perceptions of hierarchies and power imbalances may hinder hybrid educators' engagement with HE practices, and thus, *boundary-bridging efforts* (Martin et al., 2011) are needed to facilitate their inclusion into HE-based practices. In addition, the findings highlight the importance of acknowledging that experienced schoolteachers may be unfamiliar with HE practices and therefore need supporting structures that include them in practices where their competence can be explicitly valued and mobilised.

6.1.2 Establishing divisions and creating relations

As an evident intention of employing hybrid educators in HE-based teacher education is that of demonstrating connections between the two knowledge domains for prospective teachers, a central question becomes how hybrid educators work to create *knowledge relations*. The three articles shed light on this question by demonstrating how the creation of knowledge relations involves boundary work concerned with both building epistemic boundaries, on the one hand, and seeking epistemic connections, on the other.

The findings identify an important aspect of hybrid educators' boundary work to be that of *building boundaries* that establish and clarify their epistemic responsibilities in the HE context. The creation of professional boundaries has traditionally been a central part of boundary work literature (e.g., Abbot, 1988; Gieryn, 1983); however, this aspect illuminates an interesting ambivalence in the context of teacher education: While policy documents and educational research tend to promote *building* and *blurring* boundaries as ideals of work between different epistemic communities in teacher education, these findings suggest that the importance of *creating* and *establishing* boundaries should not be downplayed. Rather, demarcating boundaries emerges as a crucial prerequisite for creating relations. The demarcation process helps materialise the unique strengths that hybrid educators bring to the fore: This is, for instance, highlighted through *collaborative boundary work* (Langley et al., 2019) between hybrid educators and HE-based educators in Article 1, where knowledge

relations are created from clearly differentiated positions as the hybrid educator provides examples from practice, while the HE-based educator draws on research. However, the demarcation of epistemic boundaries also seems to restrict hybrid educators' sense of legitimacy as educators in the HE context. This pattern is especially evident in Article 1 and Article 2, where the extensive emphasis placed on differences in terms of power and whose knowledge matters the most in HE-settings makes hybrid educators emerge as passive "outsiders" who distance themselves from certain HE-practices. Thus, there seems to be a fine line between, on the one hand, emphasising different epistemic strengths through collaborative boundary work, and on the other, promoting a distanced relationship to HE-practices through *competitive boundary work* (Langley et al., 2019) that reinforce the notion of a "two-worlds pitfall" (Anagnostopoulos et al., 2007; Jakhelln et al., 2019).

The empirical analyses in Articles 1-3 demonstrate that it is not enough to recruit schoolteachers as hybrid educators and assume that they can easily demonstrate relations between the two knowledge domains. Rather, the findings illuminate how more attention should be directed towards understanding the work involved in making knowledge from one domain available—or *studyable* (Ghousseini & Sleep, 2010)—in a different context. This work is especially materialised through the focus on hybrid educators' use of practice-based artefacts in Article 3: When such artefacts are introduced in a HE-setting, it is not necessarily clear how relations are to be made between the artefact and the knowledge that is valued in HE, or how the artefact can be mobilised to make meaningful relations explicitly available to students. If a practice-based artefact is simply *transferred* from one context to the other, potential linkages may remain latent and hybrid educators end up providing student teachers with instrumental recipes of what Ellis et al. (2011) refer to as "something you do".

In line with these notions, hybrid educators' explicitly point to the challenges involved in *translating* practice-based artefacts from one domain to the other in ways that make them meaningful for student teachers (Article 3). The findings further provide examples of how hybrid educators translate artefacts in ways that make embedded knowledge relations relevant in the HE context; for instance, by asking student teaches to identify theoretical underpinnings of a sheet of evaluation criteria. The findings also provide examples of how the creation of knowledge relations between two domains is not necessarily concerned with identifying similarities: Hybrid educators make knowledge relations explicit by demonstrating how the two knowledge domains *challenge* each other by mobilising practice-based artefacts to put

research-claims to the test, or by scrutinising the theoretical underpinnings of professional practice (Article 3).

Ultimately, the work that hybrid educators conduct in order to establish epistemic boundaries confirm existing research by emphasising the importance of articulating explicit expectations for those who work across institutional boundaries (e.g., Clark et al., 2005; Goodlad et al., 2010; Williams et al., 2008). Illuminating how the demarcation of boundaries can be seen as a prerequisite for creating knowledge relations, this boundary work nuances metaphors of "building bridges" by demonstrating that *differences* must be identified and established before *connections* can be sought.

6.1.3 Tensions encountered

Even though they are recruited as "super teachers" (Jelstad, 2018) who are expected to create linkages to professional practice, this study suggests that hybrid educators' expertise is somewhat lost on their way to campus. Being in an ambivalent in-between position as both experts and novices, hybrid educators have to conduct daunting tasks of negotiating what their knowledge contribution should be, how their knowledge contribution relates to already existing expertise, and how they are expected to engage with knowledge demands in the HE context.

One of the evident benefits of employing hybrid educators with co-employment in schools is that it explicitly fosters *teacher authority* (Engle, 2010) by promoting and acknowledging schoolteachers as competent educators of student teachers—beyond the role of school-based mentors in the school context. To this end, the findings clearly confirm that hybrid educators are considered to provide valuable expertise to the HE context: They are recruited to bring relevant knowledge from the school context to prospective teachers on campus. This notion is expressed by teacher education leaders and hybrid educators; teacher education leaders emphasise hybrid educators' valuable ability to provide professional relevance, while hybrid educators themselves express confidence in offering relevant knowledge that complements the "idealistic" expertise of HE-based staff. The implications of these expectations can also be traced in the lack of instructions with which hybrid educators are provided: As previously discussed, they are entrusted with conducting their educator tasks primarily alone, with few instructions and little support. For two of the hybrid educators, this entailed, for instance, making a reading list for their subject didactics class, and evaluating student papers.

By contrast, the findings also highlight how hybrid educators tend to become novices in the HE context. This notion is particularly prominent in collaborative settings, where hybrid educators describe themselves as feeling *humble* and *ignorant* (Article 1). It is also evident in hybrid educators' perceptions of being *outsiders* in established HE practices where different ways of expressing and making use of knowledge are dominant (Article 1). It may be argued that the transition from expert to novice is a self-evident consequence of working in a new domain and can be ascribed to the socialisation process that takes place in a new institution through, for example, the notion of *peripheral participation* (Lave & Wenger, 1991). Furthermore, as the hybrid educators in this study are all relatively new to their work as educators in the HE context, they may be assumed to view themselves as entering someone else's *territory* (Article 1). An interesting question to ask in this regard, however, is whether the tensions that arise due to this ambivalent position could have been better mediated by fostering hybrid educators' *hybrid* expertise.

Hybrid educators are, after all, not employed to become academics; they are supposed to provide something *different* to HE-based teacher education. They are supposed to strengthen the epistemic linkages between professional practice and professional education. Hence, being a *hybrid* professional demands a complex expertise: They are expected to make professional skills and professional knowledge explicit and to further reveal the linkages between these aspects and academic knowledge; all this while modelling for prospective teachers how to be teachers (Murray & Male, 2005). To make things even more complex, this hybrid expertise is conducted in a research-based HE context, where all educators are expected to be research-active (Norwegian Ministry of Education and Research, 2017).

As demonstrated by the review in Chapter 2, literature on work at epistemic boundaries in teacher education tends to foreground the removal of hierarchical structures and binaries as ideal aims (e.g., Jackson & Burch, 2019; Zeichner, 2010), and such ideals are echoed by teacher education leaders in this study. However, the analyses suggest that teacher education leaders' tendency to downplay and reject the existence of divisions between HE-based educators and hybrid educators neglects the potential of fostering their *hybrid* expertise. This is for instance demonstrated by the lacking collaborative structures where hybrid educators' knowledge contribution can be put in fruitful relations with other HE-based actors. For teacher education institutions, fostering hybrid expertise would, essentially, involve more actively work to reshuffle perceptions of what knowledge has the most value in the different settings of teacher education and better promote what several scholars have coined

"horizontal expertise" (e.g., Anagnostopoulos et al., 2007, Zeichner et al., 2012). The ideal of horizontal expertise, in contrast to vertical expertise, is to recognise the unique knowledge that each professional bring to the fore, and to treat their knowledge as equally valuable, relevant, and important (Anagnostopoulos et al., 2007, p. 139). Hence, acknowledging and fostering hybrid expertise would essentially entail embracing differences.

One of the core challenges of professional educations such as teacher education, is how to develop *hybrid institutions* with "one foot in the academy ... and one in the world of practitioners" (Sullivan, 2005, p. 25). Working in schools and HE, hybrid educators work in two institutions where knowledge has traditionally had very different status and priority. In this study, the tensions that hybrid educators encounter due to their ambivalent position as both experts and novices is illuminated through the boundary work they conduct to negotiate and establish their epistemic contribution in relation to unclear expectations and knowledge demands. Negotiating and establishing their hybrid expertise is, however, a daunting task that should, ultimately, be facilitated at a structural level.

6.2 Theoretical reflections

A central question within studies addressing relations between education and professional practice is how to conceptualise these relations. This thesis demonstrates the usefulness of applying the *boundary work* construct to illuminate such relations.

6.2.1 Negotiating and creating relations as boundary work

As demonstrated in Chapter 2 and 3, notions of *coherence*, *core practices,* and *third spaces* have commonly been used to conceptualise relations between different epistemic communities in teacher education. I argue that the analytical perspectives applied in this thesis provide tools that have proven useful for illuminating the complex and dynamic work that professionals conduct to establish relations between two domains through everyday work activities in general, and the epistemic aspects of such work in particular.

The findings demonstrate how the boundary work construct can be applied to illuminate *negotiations* conducted in the pursuit of creating relations. As previously discussed, hybrid educators cannot simply enter the HE context and "build bridges" between two domains. Rather, creating relations entails negotiating their position in the HE context, negotiating their epistemic contribution and expertise, negotiating different ways of articulating knowledge and knowledge demands, and negotiating how to engage with such demands. This study

demonstrates that the boundary work-categories suggested by Langley et al. (2019) offer fruitful lenses to illuminate how relations are negotiated and created: Hybrid educators conduct competitive boundary work to demarcate and build boundaries that clarify that the differences they bring to the fore. Hybrid educators' competitive boundary work can also be seen as a response to vague knowledge demands and lacking configurational boundary work, as highlighted by the teacher education leaders' tendency to downplay the existence and importance of differences and divisions. The findings further pinpoint a surprising lack of collaborative boundary work between hybrid educators and HE-based educators. Rather, there seems to be a self-evident assumption that these schoolteachers are alone prepared for the daunting task of making relations explicitly available to prospective teachers. These distinctions help unpack an understanding of what boundary work consist of by emphasising the dynamic process of creating and maintaining boundaries on the one hand and negotiating connections and relations on the other.

By directing attention towards boundary work, this study further demonstrates how *boundaries* can be analytically foregrounded as resources that both enable and hinder hybridity: For instance, hybrid educators risk becoming restricted to the boundaries of *schools* if they are merely positioned as contributions in the HE context who add examples from practice "if necessary" (Article 1). Establishing hybrid practices in teacher education requires configurative boundary work from teacher education institutions that direct attention towards how structures can be reshaped to better facilitate hybrid practices (Beck, 2018; Forgasz et al., 2018). As this study demonstrates, configurational boundary work should legitimate *co-existence* at boundaries (Akkerman & Bakker, 2011) by both clarifying professional boundaries and organising activities where relations can be built.

By foregrounding how those who work at teacher education boundaries engage with different institutional practices and knowledge demands, and how they relate to and make use of artefacts associated with different knowledge domains, I seek to further develop the conceptual potential of boundary work by strengthening the focus on the epistemic dimension of such work. While existing research has recognised the challenges involved in bringing knowledge from one domain to the other, the three articles in this thesis provide nuanced examples of the challenges involved in making *meaningful relations* (Hatlevik, 2014) between two knowledge domains in everyday work activities. The focus on institutional practices highlights how professionals who are expected to "bridge" two domains must make sense of and engage with different sets of knowledge demands. The analytical focus on

artefacts illuminates the complex task involved in bringing knowledge from one context to the other and using these artefacts in ways that make potential linkages explicitly available. Furthermore, the analytical focus on artefacts helps illuminate how knowledge cannot simply be "transferred" from the school context to HE context. Rather, artefacts need to be *translated* (Article 3) and *recontextualized* (Hermansen, 2014) by those who work with them in the *in-situ* activity.

Taken together, the analytical framework applied in this thesis has proven useful to shed light on what professional who work at epistemic and institutional boundaries of teacher education *do* with knowledge through boundary work. Thus, the study demonstrates that more attention should be directed towards further developing a shared vocabulary to conceptualise and investigate work across teacher education boundaries. Whereas a growing body of studies focuses on *third spaces* in teacher education, I argue that we need to direct more attention to the substantial work that is conducted *outside* such arranged spaces in the pursuit of relations. Furthermore, this study indicates that to learn more about the work of educators in general, and of hybrid educators specifically, analytical attention should be directed towards how educators' make use of teaching materials *in situ*. This dimension is important, as knowledge relations are ultimately created and sustained through everyday work.

6.3 Practical implications

The articles and the discussion section have indicated several implications of this study, which will be further explored in the following section. Even though the findings are based on a limited number of participants and can only be analytically generalised (Kvale & Brinkman, 2009), the new insights can be followed up by pointing at indications of what could be improved and taken into account by different actors.

6.3.1 Establishing hybridity?

Even though several researchers have encouraged the establishment of *hybrid practices* in teacher education (e.g., Ellis and McNicholl, 2015), the review in Chapter 2 demonstrates that existing literature says little about how to include school-based actors in everyday activities in the HE-based teacher education context. This study contributes with new knowledge of the opportunities involved in including schoolteachers in the education of future teachers beyond school-based practice. Hence, it provides an example of what Ellis and McNicholl (2015) refers to as "hybrid practices of knowledge production" (p. 139) where the knowledge that is

valued in schools to a larger degree contributes to shaping the academic discipline of teacher education.

This thesis has several implications for *teacher education practice*. First, it provides examples and models of how hybrid educators can be employed in the context of teacher education. Based on the findings, I argue that teacher education institutions may benefit from directing more attention towards utilising hybrid educators in ways that foster *hybrid expertise* that make use of the different knowledge perspectives that they bring to the fore. In this study, establishing hybridity emerges as an individual responsibility; however, hybridity is not something that should be designated solely to individuals. Rather, facilitating hybridity would require teacher education institutions to conduct configurative boundary work (Langley et al., 2019) that establish stronger hybrid structures around these educators. Rather than facilitating what Akkerman and Bakker (2011) referred to as *coexistence* at boundaries, teacher education leaders in this study tend to articulate a wish to downplay divisions and are mainly concerned with emphasising how hybrid educators' knowledge is valued in the HE context. However, the findings indicate that the wish to downplay the existence of differences and divisions stands in strong contrast to hybrid educators' boundary work—which is to a large extent concerned with establishing and clarifying their epistemic responsibilities as educators. For teacher education institutions, this implies that rather than viewing the divisions and differences that hybrid educators' bring to the fore as "troubling binaries" (Jackson & Burch, 2016, p. 140), explicit demarcation of epistemic boundaries may help utilise the potential of hybrid educators and may make the different strengths that exist in schools and in HE visible for prospective teachers.

For teacher education practice, the findings further reveal an unfulfilled potential in terms of establishing collaborative structures between hybrid educators and HE-based actors. While the analyses reveal that notions of hierarchies and power relations shape collaborative settings, the findings also demonstrate how knowledge relations between the two domains can be created in such activities. Closely related to this implication, the thesis may further contribute to encourage reflection amongst teacher educators about how to develop instructional practices that make connections between what they learn in the HE-context and work in schools s*tudyable* for prospective teachers. For instance, collaborating with practice-based artefacts that hybrid educators bring from schools could, potentially, turn these artefacts into *boundary objects* (Akkerman & Bakker, 2011) that fulfil a bridging function between the two epistemic communities.

With relevance for teacher education institutions, the tensions that the hybrid educators encounter also have important implications for *prospective teachers* and their transitions between the HE context and the school context. For instance, the boundary work that hybrid educators conduct when "translating" knowledge to identify and highlight research-based underpinnings of their professional knowledge could to a larger extent be explicitly problematised and scrutinised as learning resources for prospective teachers.

For *policymakers*, these findings imply that more attention should be directed towards the intentions and aims of hybrid educator positions. An increasing number of policy documents in the Norwegian context direct attention towards partnerships and collaborative structures between schools and HE; however, hybrid educator positions are merely mentioned as a tool to create stronger relations between professional practice and HE (Advisory Panel for Teacher Education [APT], 2020; Askling et al., 2016; Norwegian Ministry of Education and Research, 2017). Currently, hybrid educator positions in Norwegian teacher education are provided with various titles and are filled with different content at each teacher education institution. Thus, different models and experiences with hybrid educator positions should be further explored. Furthermore, hybrid positions poses several questions regarding the qualifications of such educators and the potential for alternative career paths and continuing education.

This study also has implications for the *teaching profession*. Hybrid educator positions provide opportunities to create stronger connections between the teaching profession and the education of prospective teachers. Being familiar with what students learn on campus would be particularly beneficial for schools when mentoring prospective teachers in their school-based practice and when employing newly qualified teachers. Furthermore, as previously mentioned, hybrid educator positions could potentially offer an alternative career path and professional development for teachers. Central questions in this regard, however, are what kinds of qualifications hybrid educators should have and how their hybrid role could be utilised in ways that benefit teacher colleagues. In addition, working in both schools and HE is a demanding task that requires resources and appropriate reward systems—especially if such positions are to be viewed as beneficial alternative career paths that are worth the extra workload.

6.4 Concluding remarks and paths for future research

The three articles and the discussion in the previous sections have shed light on the key characteristics of hybrid educators' epistemic boundary work in the HE context. More

specifically, this thesis illuminates the characteristic work involved in connecting with—or disconnecting from—HE-based practices and knowledge demands, establishing boundaries of epistemic responsibility, creating knowledge relations, and negotiating their position and contribution in relation to already existing expertise in the HE context.

To move the field of research on teacher education forward, educational researchers need to develop a common agenda, shared methodological tools, and a mutual understanding of terms in the field (Borko et al., 2008; Grossman & McDonald, 2008; Zeichner, 2005). Despite an increased interest in partnerships, third spaces, and boundary crossing in educational research, there is a shortage of studies that provide nuanced empirical insights into educators' epistemic work *in situ*. Through this thesis, I have attempted to make a methodological contribution in terms of how work across epistemic and institutional boundaries can be studied by zooming in on educators' approaches to specific tasks and teaching materials.

I conclude this study by suggesting paths for further research. By directing analytical attention to both institutional demands and expectations and hybrid educators' epistemic work in everyday activities, this thesis points out some connections between professional work and contextual factors. However, future research is needed to better understand how factors at the macro-level shape and inform hybrid educators' work at the micro-level. Furthermore, longitudinal studies should be conducted to better illuminate whether hybrid educator positions influence teacher education practices and alter perceptions of jurisdiction and authority in HE-based teacher education. Further research is also needed to better understand how hybrid educators' knowledge as both practitioners and educators can be put into fruitful collaborations with other actors in order to strengthen relations in teacher education programs. This line of research would also benefit from investigating hybrid educators' work in light of student teachers' perceptions of professional relevance in teacher education in general and in the HE context in particular.

Finally, this thesis raises the more general issue of the knowledge that hybrid educators bring back to the school context. Further research is needed to understand how hybrid educators make use of knowledge from HE-based teacher education in schools, for instance as school-based mentors.

7. References

Abbott, A. (1988). *The system of professions: An essay on the division of expert labor*. University of Chicago Press. https://doi.org/10.7208/chicago/9780226189666.001.0001

Abbott, A. (2005). Linked ecologies: States and universities as environments for professions. *Sociological Theory, 23*(3), 245–274. https://doi.org/10.1111/j.0735-2751.2005.00253.x

Advisory Panel for Teacher Education (APT). (2020). *Transforming Norwegian teacher education: The final report for the International Advisory Panel for Primary and Lower Secondary Teacher Education*. NOKUT-Report 3-2020. https://www.nokut.no/globalassets/nokut/rapporter/ua/2020/transforming-norwegian-teacher-education-2020.pdf

Afdal, H. (2016). "Research-based" and "profession oriented" as prominent knowledge discourses in curriculum restructuring of professional programs. *Higher Education 74*(3), 401-418. https://doi.org/10.1007/s10734-016-9998-7

Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research, 81*(2), 132–169. https://doi.org/10.3102/0034654311404435

Allen, J. M., White, S., & Sim, C. (2017). Project evidence: Responding to the changing professional learning needs of mentors in initial teacher education. *Australian Journal of Teacher Education, 42*(7). 14-25. https://doi.org/10.14221/ajte.2017v42n7.2

Alvesson, M., & Kärreman, D. (2005). At arbejde med mysterier og sammenbrudd: Empirisk material som kritisk samtalepartner i teoriudvikling [Qualitative Research and Theory Development: Mystery as Method]. In M. Järvinen, & N. Mik-Meyer (Eds.), *Kvalitative metoder i et interaktionistisk perspektiv. Interview, observationer og documenter*. Hans Reitzels Forlag.

Anagnostopoulos, D., Smith, E. R. & Basmadjian, K. G. (2007). Bridging the university–school divide: Horizontal expertise and the "two-worlds pitfall". *Journal of Teacher Education, 58*(2), 138–52. https://doi.org/10.1177/0022487106297841

Askling, B., Dahl, T., Heggen, K., Iversen Kulbrandstad, L., Lauvdal, T. Qvortrup, L. Salvanes, K. G., Skagen, K., Skrøvset, S. & Thue., F.W. (2016). *Om lærerrollen, et kunnskapsgrunnlag*. [The teacher role: A knowledge base]. Fagbokforlaget.

Aspfors, J., & Eklund, G. (2017). Explicit and implicit perspectives on research-based teacher education: Newly qualified teachers' experiences in Finland. *Journal of Education for Teaching 43*(4), 400–413. https://doi.org.10.1080/02607476.2017.1297042

Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners: Toward a practice-based theory of professional education. In G. Sykes & L. Darling-Hammond (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 3–32). Jossey Bass.

Beck, J. S. (2018). Investigating the third space: A new agenda for teacher education research. *Journal of Teacher Education, 71*(4), 379e391. https://doi.org/10.1177/0022487118787497.

Borko, H., Whitcomb, J. A., & Byrnes, K. (2008). Genres of research in teacher dducation. In M. Cochran-Smith, S. Feiman-Nemser, D. J. McIntyre & K. E. Demers (Eds.), *Handbook of research on teacher education: Enduring questions in changing contexts* (3rd ed.). Routledge.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Bryk, A. S., & Schneider, B. (2003). *Trust in schools: A core resource for school improvement.* Russel Sage Foundation.

Buchmann, M., & Floden, R. E. (1992). Coherence, the rebel angel. *Educational Researcher, 21*(8), 5–9. https://doi.org/10.3102/0013189X021009004

Bullock, S. M. (2012). Creating a space for the development of professional knowledge: A self-study of supervising teacher candidates during practicum placements. *Studying Teacher Education, 8*(2), 143–156. https://doi.org/10.1080/17425964.2012.692985

Carlile P., R (2004) Transferring, translating, and transforming: An integrative framework for managing knowledge across boundaries. *Organization Science 15*, 555–568. https://doi.org/10.1287/orsc.1040.0094

Chan, C. (2019). Crossing institutional borders: Exploring pre-service teacher education partnerships through the lens of border theory. *Teaching and Teacher Education, 86*. https://doi.org/10.1016/j.tate.2019.102893

Clark, R. W., Foster, A., Mantle-Bromley, C., & Associates (2005). *Hybrid educators and the simultaneous renewal of schools and the education of educators.* Institute for Educational Inquiry.

Cochran-Smith, M. (2005). Teacher educators as researchers: multiple perspectives. *Teaching and Teacher Education, 21*, 219–25. https://doi.org/10.1016/j.tate.2004.12.003

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: *Teacher learning in communities. Review of Research in Education, 24*, 249–305. https://doi.org/10.2307/1167272

Coburn, C. E., & Stein, M. K. (2010). *Building alliances, bridging the divide.* Rowman & Littlefield Publishers.

Cole, M. (1996). *Cultural psychology: A once and future discipline.* The Belknap Press of Harvard University Press.

Creswell, R. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). SAGE.

Creswell, J. W., & Poth, C. N. (2013). *Qualitative inquiry and research design: Choosing among five approaches.* SAGE.

Cuenca, A., Schmeichel, M., Butler, B. M., Dinkelman, T., & Nichols, J. R. (2011). Creating a "third space" in student teaching: Implications for the university supervisor's status as outsider. *Teaching and Teacher Education, 27*(7), 1068-1077. https://doi.org/10.1016/j.tate.2011.05.003

Darling-Hammond, L. (2006). Constructing 21st-century teacher education. *Journal of teacher education, 57*(3), 300-314. https://doi.org/10.1177/0022487105285962

Darling-Hammond, L. (2008). Teacher learning that supports student learning. *Educational leadership, 55*(5), 6–11.

Darling-Hammond, L., Holtzman, D., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. *Education Policy Analysis Archives, 13*(42), 1–51. https://doi.org/10.14507/epaa.v13n42.2005

Darling-Hammond, L., & Lieberman, A. (2012). *Teacher education around the world. Changing policies and practices.* Routledge. https://doi.org/10.4324/9780203817551

Daza, V., Gudmundsdottir, G., & Lund, A. (2021). Partnerships as third spaces for professional practice in initial teacher education: A scoping review. *Teaching and Teacher Education, 102.* https://doi.org/10.1016/j.tate.2021.103338

Edwards, A. (2010). *Being an expert professional practitioner. The relational turn in expertise.* Springer. https://doi.org/10.1007/978-90-481-3969-9

Edwards, R., & Fowler, Z. (2007). Unsettling boundaries in making a space for research. *British Educational Research Journal, 33*(1), 107–123. https://doi.org/10.1080/01411920601104565

Ellis, V., & McNicholl, J. (2015). *Transforming teacher education: Reconfiguring the academic work*. Bloomsbury.

Ellis, V., Blake, A., McNicholl, J., & McNally, J. (2011). *The work of teacher education: Final research report*. https://strathprints.strath.ac.uk/31809/.

Engle, R. A. (2010). The middle-school mathematics through applications project: Supporting productive collaborations during two different phases of curriculum design. In Coburn, C. & Stein, M. K. (Eds), *Research and practice in education: Building alliances, bridging the divide* (pp-20-31). Rowman & Littlefield Publishers.

Eraut, M. (2004). Transfer of knowledge between education and workplace settings. In H. Rainbird, A. Fuller, & A. Munro (Eds.), *Workplace learning in context* (pp. 201-221). Routledge.

Fenstermacher, G. (1994). The Knower and the known: The nature of knowledge in research on teaching. *Review of Research in Education, 20*, 3–56. https://doi.org/10.2307/1167381

Fenwick, T., Edwards, R., & Sawchuk, P. (2011). *Emerging approaches to educational research: Tracing the socio-material.* Routledge.

Finlay, L. (2002). "Outing" the researcher: The provenance, process, and practice of reflexivity. *Qualitative Health Research, 12*(4), 531-545. https://doi.org/10.1177/104973202129120052

Forgasz, R., Heck, D., Williams, J., Ambrosetti, A., & Willis, L.-D. (2018). Theorising the third space of professional experience partnerships. In J. Kriewaldt, A. Ambrosetti, D. Rorrison, & R. Capeness (Eds.), *Educating future teachers: Innovative perspectives in professional experience* (pp. 33-47). Springer. https://doi.org/10.1007/978-981-10-5484-6_3

Forzani, F. M. (2014). Understanding "core practices" and "practice-based" teacher education: Learning from the past. *Journal of Teacher Education, 65*(4), 357–368. https://doi.org/10.1177/0022487114533800

Fournier, V. (2000). Boundary work and the (un)making of the professions. In N. Malin (Ed.), *Professionalism, boundaries and the workplace* (pp. 67-86). Routledge.

Freidson, E. (2001) *Professionalism: the third logic*. Polity Press.

Geertz, C. (1973). *The interpretation of cultures: Selected essays*. Fontana.

Gieryn, T. F. (1983). Boundary-work and the demarcation of science from nonscience: Strains and interests in professional ideologies of scientists. *American Sociological Review, 48*(6), 781-795. https://doi.org/10.2307/2095325

Ghousseini, H., & Sleep, L. (2010). Making practice studyable. *ZDM, 43*(1), 147–160. https://doi.org/10.1007/s11858-010-0280-7.

Goodwin, A. L., & Kosnik, C. (2013). Quality Teacher Educators = Quality Teachers? Conceptualizing essential domains of knowledge for those who teach teachers. *Teacher*

Development: Teacher education futures, 17(3), 334-346.
https://doi.org/10.1080/13664530.2013.813766

Goodlad, J. I. (1994). *Educational renewal: Better teachers, better schools*. Jossey-Bass.

Grimen, H. (2008). Profesjon og kunnskap [Profession and knowledge]. In A. Molander, & L. I. Terum (Eds.), *Profesjonsstudier* (pp. 71-86). Universitetsforlaget.

Grossman, P., Hammerness, K., McDonald, M. A., & Ronfeldt, M. (2008). Constructing coherence: Structural predictors of perceptions of coherence in NYC teacher education programs. *Journal of Teacher Education, 59*(4), 273–287.
https://doi.org/10.1177/0022487108322127

Grossman, P., & McDonald, M. A. (2008). Back to the future: Directions for research in teaching and teacher education. *American Educational Research Association, 45*(1), 184–205. https://doi.org/10.3102/0002831207312906

Grossman, P., Hammerness, K., & McDonald, M. A. (2009). Redefining teaching, reimagining teacher education. *Teachers and teaching: Theory and practice, 15*(2), 273–290. https://doi.org/10.1080/13540600902875340

Grossman, P. L. (1990). *The making of a teacher: Teacher knowledge and teacher education.* Teachers College Press.

Gutierrez. (2008). Developing a sociocritical literacy in the third space. *Reading Research Quarterly, 43(*2), 148-164. https://doi.org/10.1598/RRQ.43.2

Halvorsen, H. (1999). Hundre år på lag med lærerutdanningen 1899–1999 [A hundred years of teacher education 1899–1999] Forskerforbundets Forening for Lærerutdanning.

Hammerness, K. (2013). Examining features of teacher education in Norway. Scandinavian *Journal of Educational Research, 57*(4), 400–419.
https://doi.org/10.1080/00313831.2012.656285

Hammersley, M. (2005). What can the literature on communities of practice tell us about educational research? Reflecting on some recent proposals. *International Journal of Research Methods in Education, 28*(1), 5–21.
https://doi.org/10.1080/01406720500036653

Hargreaves, A. (1994). *Changing teachers, changing times: Teachers' work and culture in the postmodern age.* Cassell.

Harreveld, B., & Singh, M. (2009). Contextualising learning at the education-training-work interface. *Education + Training, 51*(2), 92–107.
https://doi.org/10.1108/00400910910941264

Hatch, T., & Grossman, P. (2009). Learning to look beyond the boundaries of representation: Using technology to examine teaching (Overview for a digital exhibition: Learning from the practice of teaching). *Journal of Teacher Education, 60*(1), 70–85. https://doi.org/10.1177/0022487108328533

Hatlevik, I. K. R. (2014). *Meningsfulle sammenhenger: En studie av sammenhenger mellom læring på ulike arenaer og utvikling av ulike aspekter ved profesjonell kompetanse hos studenter i sykepleier-, lærer- og sosialarbeiderutdanningene* [Sense of coherence: A study of relationships between learning in different arenas and development of various aspects of professional competence among students in initial nursing, teaching and social work programmes]. PhD Thesis. Oslo and Akershus University College of Applied Sciences.

Hedegaard, M. (2012). The dynamic aspects in children's learning and development. In M. Hedegaard, A. Edwards, & M. Fleer (Eds.), *Motives, emotions and values in the development of children and young people* (pp. 9-27). Cambridge University Press. https://doi.org/10.1017/CBO9781139049474.003

Hedegaard, M. (2014). The significance of demands and motives across practices in children's learning and development: An analysis of learning in home and school. *Learning, Culture and Social Interaction, 3*(3), 188–194. https://doi.org/10.1016/j.lcsi.2014.02.008

Heggen, K., & Raaen, F. D. (2014). Koherens i lærarutdanninga [Coherence in teacher education]. *Norsk pedagogisk tidsskrift, 98*(1),3-13. https://doi.org/10.18261/ISSN1504-2987-2014-01-07

Hermansen, H. (2014). Recontextualising assessment resources for use in local settings: opening up the black box of teachers' knowledge work. *The Curriculum Journal, 25(4),* 470-494. https://doi.org/10.1080/09585176.2014.956771

Jackson, A., & Burch, J. (2019). New directions for teacher education: Investigating school/university partnership in an increasingly school-based context. *Professional. Development in Education, 4*5(1), 138-15. https://doi.org/10.1080/19415257.2018.1449002

Jackson, A., & Burch, J. (2016). School direct, a policy for initial teacher training in England: plotting a principled pedagogical path through a changing landscape. *Professional development in education, 42*(4), 511–526. https://doi.org/10.1080/19415257.2015.1052090

Jahreie, C. F. & Ottesen, E. (2010). Learning to become a teacher: participation across spheres of learning, In V. Ellis, A. Edwards & P. Smagorinsky (Eds.), *Cultural-historical perspectives on teacher education and development. Learning teaching*. Routledge. (pp. 131 – 146).

Jahreie, C.F., & Ludvigsen, S. (2007). Portfolios as boundary object: Learning and change in teacher education. *Research and practice of technology-enhanced learning, 2*(3), 299–218.

Jakhelln, R., Eklund, G., Aspfors, J., Bjørndal, K. & Stølen, G. (2019). Newly qualified teachers' understandings of research-based teacher education practices−two cases from Finland and Norway. *Scandinavian Journal of Educational Research.* https://doi.org/10.1142/S179320680700035X

Jelstad, J. (2018). Her blir superlærerne fra lokalskolene satt til å undervise studentene [Here, expert teachers from local schools teach student teachers]. Utdanningsnytt. https://www.utdanningsnytt.no/her-blir-superlaerererne-fra-lokalskolene-satttil-a-undervise-studentene/149238.

Jennings, G. & Peloso, J. (2010). The underutilized potential of the hybrid educator in teacher education, *The New Educator, 6,* 153–162. https://doi.org/10.1080/1547688X.2010.10399595

Jenset, I. S. (2017). *Practice-based teacher education coursework: An examination of the extent and characteristics of how teacher education coursework is grounded in practice across six teacher education programs in Finland, Norway and California, US*. PhD thesis. http://hdl.handle.net/10852/61976.

Jenset, I., Hammerness, K., & Klette, K. (2018). Grounding teacher education in practice around the world: An examination of teacher education coursework in teacher education programs in Finland, Norway, and the United States. *Journal of Teacher Education, 69*(2), 184–197. https://doi.org/10.1177/0022487117728248.

Jerolmack, C., & Khan, S. (2014). Toward an understanding of the relationship between accounts and action. *Sociological Methods & Research, 43*(2), 236-247. https://doi.org/10.1177/0049124114523397

Johnson, R. B., & Christensen, L. (2017). *Educational research. Quantitative, qualitative, and mixed approaches.* (6th ed.). SAGE Publications, Inc.

Jones, M., Hobbs, L., Kenny, J., Campbell, C., Chittleborough, G., Gilbert, A., Herbert, S., & Redman, C. (2016). Successful university-school partnerships: An interpretive

framework to inform partnership practice. *Teaching and Teacher Education,* 60.
https://doi.org/10.1016/j.tate.2016.08.006

Kvale, S., & S. Brinkmann (2009). *Interviews: Learning the Craft of Qualitative Research Interviewing.* 2nd ed. Los Angeles: Sage.

Klein, E., Taylor, M., & Onore, C. (2012). Finding a third space in teacher education: Creating an urban teacher residency. *Teaching Education, 24*(1), 27–57. https://doi.org/10.1080/10476210.2012.711305

Korthagen, F. (2010). How Teacher education can make a difference. *Journal of Education for Teaching, 36*(4), 407–423. https://doi.org/10.1080/02607476.2010.513854

Korthagen, F., Loughran, J. & Lunenberg, M. (2005). Editorial: Teaching teachers – studies into the expertise of teacher educators: an introduction to this theme issue. *Teaching and Teacher Education, 21,*107–15. https://doi.org/10.1016/j.tate.2004.12.007

Kvalbein, I. A. (2003). Norsk allmennlærerutdanning i et historisk perspektiv [Norwegian Teacher education in a historical perspective]. In G. E. Karlsen & I. A. Kvalbein (Eds.), *Norsk lærerutdanning: Søkelys på allmennlærerutdanningen i et reformperspektiv* (pp. 24-41). Universitetsforlaget.

Kvalbein, I. A. (2006). Didaktikk og profesjonsorientering i allmennlærerutdanningen [Didactics and professional orientation in teacher education]. In S. Ongstad (Ed.), *Fag and didaktikk i lærerutdanning.* Universitetsforlaget.

Kvale, S., & Brinkmann, S. (2009). *Interviews. Learning the craft of qualitative research interviewing*. SAGE Publications.

Kvernbekk, T. (2005). *Pedagogisk teoridannelse: insidere, teoriformer og praksis.* [Pedagogical theory-making: insiders, forms of theory and practice]. Fagbokforlaget.

Kvernbekk, T. (2001). Erfaring, praksis og teori [Experiecnce, practice and theory]. In T. Kvernbekk (Ed.), *Pedagogikk og lærerprofesjonalitet* (s. 146-163). Gyldendal Akademisk.

Lampert, P. (2003). Promoting developmental transfer in vocational teacher education. In T. Tuomi-Gröhn, & Y. Engeström (Eds.), *Between school and work: New perspectives on transfer and boundary-crossing* (pp. 233–254). Pergamon.

Lamont, M., & Swidler, A. (2014). Methodological pluralism and the possibilities and limits of interviewing. *Qualitative Sociology, 37*(2), 153-171. https://doi.org/10.1007/s11133-014-9274-z

Lander, B. & Atkinson-Grosjean, J. (2011) Translational science and the hidden research system in universities and academic hospitals: A case study. *Social Science and Medicine, 72*(4), 537–544. https://doi.org/10.1016/j.socscimed.2010.11.019

Langley, A., Lindberg, K., Mørk, B. E., Nicolini, D., Raviola, E. & Walter, L. (2019). Boundary work among groups, occupations, and organizations: From cartography to process. *Academy of Management Annals, 13*(2), 704-736. https://doi.org/10.5465/annals.2017.0089

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University. https://doi.org/10.1017/CBO9780511815355

Lejonberg, E., Elstad, E., & Hunskaar, T. S. (2017). Behov for å utvikle «det tredje rom» i relasjonen mellom universitet og praksisskoler. [The need to develop "the third space" in the relationship between universities and practice schools]. *Uniped, 40*(1), 68-85. https://doi.org/10.18261/ISSN.1893-8981-2017-01-0.

Lemon, N., Wilson, A., Oxworth, C., Zavros-Orr, A., & Wood, B. (2018). Lines of school-university partnership: Perception, sensation and meshwork reshaping of preservice teachers' experiences. *Australian Journal of Teacher Education, 43*(10). https://doi.org/10.14221/ajte.2018v43.n10.5

Lieberman, A., & Grolnick, M. (1996). Networks and reform in American education. *Teachers College Record, 98*, 6-45.

Liljegren, A. (2012). Pragmatic professionalism: Micro-level discourse in social work. *European Journal of Social Work, 15*(3), 295–312. https://doi.org/10.1080/13691457.2010.543888

Lillejord, S. & Børte, K. (2016) Partnership in teacher education – a research mapping, *European Journal of Teacher Education, 39*(5), 550-563. https://doi.org/10.1080/02619768.2016.1252911

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE. https://doi.org/10.1016/0147-1767(85)90062-8

Little, J. W. (2012). Understanding data use practices among teachers: The contribution of micro-process studies. *American Journal of Education, 118*(2), 143e166. https://doi.org/10.1086/663271

Liu, S. (2015). Boundary work and exchange: The formation of a professional service market. *Symbolic Interaction, 38*(1), 1-21. https://doi.org/10.1002/symb.137

Lohman, M. C., & Woolf, N. H. (2001). Self-initiated learning activities of experienced public school teachers: Methods, sources, and relevant organizational influences.

Teachers and Teaching: Theory and Practice, 7(1), 59-74.
https://doi.org/10.1080/13540600123835

Lunenberg, M., Dengerink, J., & Korthagen, F. (2014). *The professional teacher educator: Roles, behaviour, and professional development of teacher educators*. Sense. https://doi.org/10.1007/978-94-6209-518-2

Luthen, G., & Kolstad, O. (2018). Veiledning i lærerstudenters praksisopplæring - et bidrag til læring og utvikling? [Mentoring in student teachers' professional practice - a contribution to learning and development?]. *Nordisk Tidsskrift i Veiledningspedagogikk, 3*(1). https://doi.org/10.15845/ntvp.v3i1.2655

Martin, S. D., Snow, J. L., & Torrez, C. A. (2011). Navigating the terrain of third space: Tensions with/in relationships in school-university partnerships. *Journal of Teacher Education, 62*(3), 299-311. https://doi.org/10.1177/0022487110396096

Mausethagen, S. & Granlund, L. (2012). Contested discourses of teacher professionalism: current tensions between education policy and teachers' union. *Journal of Education Policy,* 1-19. http://dx.doi.org/10.1080/02680939.2012.672656

Maxwell, J. (2002). Understanding and validity in qualitative research. In M. Huberman & M. Miles (Eds.), *The qualitative researcher's companion* (pp. 36-64). SAGE.

Munthe, E., & Rogne, M. (2015). Research based teacher education. *Teaching and teacher education, 46*, 17–24. https://doi.org/10.1016/j.tate.2014.10.006

Murray, J., & Male, T. (2005). Becoming a teacher educator: Evidence from the field. *Teaching and Teacher Education, 21,* 125–142. https://doi.org/10.1016/j.tate.2004.12.006

Nerland, M., & K. Jensen (2014). Changing cultures of knowledge and professional learning. In S. Billet, C. Harteis & Gruber (Eds.), *International Handbook of Research in Professional and Practice-Based Learning,* (pp. 611–640). Springer. https://doi.org/10.1007/978-94-017-8902-8_23

Nerland, M. (2012). Professions as knowledge cultures. In K. Jensen, L. C. Lahn, & M. Nerland (Eds.), *Professional Learning in the Knowledge Society* (pp. 27-48). Sense Publishers. https://doi.org/10.1007/978-94-6091-994-7_2

Neumann, I. B. (2001). *Meaning, materiality, power: Introduction to discourse analysis.* [Mening, materialitet, makt: En innføring i diskursanalyse]. Fagbokforlaget.

Nicolini, D. (2009). Zooming in and out: Studying practices by switching theoretical lenses and trailing connections. *Organization studies, 30*(12), 1391-1418. https://doi.org/10.1177/0170840609349875

Nicolini, D. 2012. *Practice theory, work, and organization: An introduction*. Oxford University Press.

NOKUT (Norwegian Agency for Quality Assurance in Education). (2006). *Evaluering av allmenn-lærerutdanningen i Norge 2006. Del 1: Hovedraport* [Evaluation of teacher education in Norway 2006: Part 1]. Nasjonalt organ for kvalitet i utdanningen (NOKUT).

NOKUT (Norwegian Agency for Quality Assurance in Education). (2019). *Studiebarometeret 2019: Hovedtendenser* [Barometer of studies 2019: Main trends]. https://www.nokut.no/globalassets/studiebarometeret/2020/hoyere-utdanning/studiebarometeret-2019_hovedtendenser_1-2020.pdf

Norwegian Ministry of Education and Research. (2014). *Lærerløftet. På lag for kunnskapsskolen* [The teacher lift: On the team with the knowledge school]. Kunnskapsdepartementet. https://www.regjeringen.no/globalassets/upload/kd/vedlegg/planer/kd_strategiskole_web.pdf

Norwegian Ministry of Education and Research. (2017). *Teacher Education 2025. National Strategy for Quality and Cooperation in Teacher Education.* Publication number F-4434 E. [Trans.]. Norwegian Ministry of Education and Research.

Norwegian Ministry of Education and Research. (2020). *Faglig råd for lærerutdanning. Partnerskap for kvalitet i lærerutdanningene, Anbefalinger fra faglig råd for Lærerutdanning 2025* [Professional advice for teacher education: Partnership for quality in teacher education. Recommendations from the Professional Council for Teacher Education 2025]. Norwegian Ministry of Education and Research.

NTNU (Norwegian University of Technology and Science). (2019). *Vi ønsker å bygge en bro mellom lærerutdanningen og skoleverket* [We wish to build a bridge between teacher education and schools]. [Job advertisement.] https://www.jobbnorge.no/ledige-stillinger/stilling/168790/universitetslektor-i-norsk-kombinert-stilling-hos-ntnu-og-troendelag-fylkeskommune

Olsen, & Lie (2019). *Lærere i kombinasjonsstillinger - praksisnær teori og teorinær praksis?* [Teachers in combined positions – theory close to practice and practice close to theory]. USN Open. http://hdl.handle.net/11250/2630869

Pedder, D., & Opfer, V. D. (2013). Professional learning orientations: Patterns of dissonance and alignment between teachers' values and practices. *Research Papers in Education, 28*(5), 539-570. https://doi.org/10.1080/02671522.2012.706632

Polanyi, M. (1967). *The tacit dimension*. Doubleday.

Poyas, Y. & Smith, K. (2007). Becoming a community of practice–the blurred identity of clinical faculty teacher educators. *Teacher Development, 11*(3), 313-334. https://doi.org/10.1080/13664530701644607

Rasmussen, J. (2008). Nordic teacher education programmes in a period of transition: The end of a well-established and long tradition of "seminarium"-based education. In B. Hudson & P. Zgaga (Eds.), T*eacher education policy in Europe: A voice of higher education institutions* (pp. 325–344). Faculty of Teacher Education, Umeå University.

Rasmussen, J., & Holm, C. (2012). In pursuit of good teacher education: How can research inform policy? *Reflecting Education, 8*(2), 62–71.

Riessman, C. K. (2008). *Narrative methods for the human sciences.* SAGE.

Schatzki, T. R., Knorr-Cetina, K., & Von Savigny, E. (2001). *The practice turn in contemporary theory*. Routledge.

Shulman, L. S. (1987). Knowledge and Teaching: Foundations of the New Reform. *Harvard Educational Review, 57*(1), 1-22. https://doi.org/10.1080/13639080802018014

Skaalvik, M., Borch, I., Hokland, K., Tande, M., & Foss, I. (2014) *Evaluation of combined positions in healthcare education at UNN and UiT* [Evaluering av ordningen med kombinerte stillinger for helsefaglige utdanninger ved UNN og UiT]. Felles utdanningsutvalg ved Universitetssykehuset Nord-Norge og UiT – Norges arktiske universitet. https://docplayer.me/4388763-Evaluering-av-ordningen-med-kombinerte-stillinger-for-helsefaglige-utdanninger-ved-unn-og-uit.html

Silverman, D. (2014). *Interpreting Qualitative Data.* SAGE.

Smeby, J.-C. & Vågan, A. (2008). Recontextualising professional knowledge – newly qualified nurses and physicians. *Journal of Education and Work, 21*(2), 159-173.

Smeby, J.-C., & Mausethagen, S. (2011). Kvalifisering til "velferdsstatens" yrker. [Qualifying for the professions of the welfare state]. In *Utdanning 2011 - veien til arbeidslivet, Statistiske analyser, 124*. (pp. 149-169). Statistisk sentralbyrå.

Smith, B. (2018). Generalizability in qualitative research: Misunderstandings, opportunities and recommendations for the sport and exercise sciences. *Qualitative Research in Sport, Exercise and Health, 10*(1), 137–149. https://doi.org/10.1080/2159676X.2017.1393221

Sullivan, W. M. (2005). *Work and integrity.* San Francisco, CA: Jossey-Bass.

Tatto, M. T. (1996). Examining values and beliefs about teaching diverse students: Understanding the challenges for teacher education. *Educational Evaluation and Policy Analysis, 18*(2), 155–180. https://doi.org/10.3102/01623737018002155

Taylor, M., Klein, E. J., & Abrams, L. (2014). Tensions of reimagining our roles as teacher educators in a third space: Revisiting a co/autoethnography through a faculty lens. *Studying Teacher Education, 10*(1), https://doi.org/10.1080/17425964.2013.866549.

Tuomi-Gröhn, T. & Engeström, Y. (Eds.), *Between school and work: New perspectives on transfer and boundary-crossing*. Pergamon

Tronsmo, E. (2019). Local *curriculum development as knowledge work: A study of collaborative epistemic practices in the teaching profession*. PhD thesis. University of Oslo

Tsui, A. B. M., & Law, D. Y. K. (2007). Learning as boundary-crossing in school–university partnership. *Teaching and Teacher Education, 23*(8), 1289–1301. https://doi.org/10.1016/j.tate.2006.06.003

UHR, Universities Norway-Teacher Education (2018). *Felleskapittel – nasjonale retningslinjer for lærarutdanningane* [National guidelines for teacher education]. https://www.uhr.no/_f/p1/i4fbd09e0-6a5f-4a13-9e89-3971c57cfa5d/fellestekst-for-retningslinjene-for-alle-typer-av-larerutdanning.pdf

Vogt, W. P. (2005) *Dictionary of Statistics and Methodology: A Nontechnical Guide for the Social Sciences.* SAGE.

Vygotsky, L. S. (1978). Mind *in society: The development of higher psychological processes*. Harvard University Press.

Wang, X. &. Wong, J. L. N. (2017). How do primary school teachers develop knowledge by crossing boundaries in the school–university partnership? A case study in China. *Asia-Pacific journal of teacher education, 45*(5). https://doi.org/10.1080/1359866X.2016.1261392

Wenner, T. A. & Hakim, A.C. (2014). Role transition of clinical nurse educators employed in both clinical and faculty positions, *Nursing Education Perspectives*, *40*(4), 216-221. https://doi.org/10.1097/01.NEP.0000000000000468

Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action.* Harvard University Press

Williams, J. (2013). Boundary crossing and working in the third Space: Implications for a teacher educator's identity and practice. *Studying Teacher Education, 9*(2), 118-129. https://doi.org/10.1080/17425964.2013.808046

Williams, J. (2014). Teacher educator professional learning in the third space: Implications for identity and practice. *Journal of Teacher Education, 65*(4), 89–99. https://doi.org/10.1177/0022487114533128

Williams, J., White, S., Forgasz, R., & Grimmett, H. (2018). Stories from the third space: Teacher educators' professional learning in a school/university partnership. In *Re-imagining professional experience in initial teacher education*, 19-36 https://doi.org/10.1007/978-981-13-0815-4_2

Zeichner, K. M. (2005). A research agenda for teacher education. In M. Cochran-Smith & K. M. Zeichner (Eds.), *Studying teacher education. The report of the AERA panel on research and teacher education* (pp. 737–760). Lawrence Erlbaum Associates.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university- based teacher education. *Journal of Teacher Education, 61*(1-2), 89–99. https://doi.org/10.1177/0022487109347671

Zeichner, K.M., & Noffke, S.E. (2001). Practitioner research. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed., pp. 298–330). American Educational Research Association.

Zeichner, K., Payne, K. A., & Brayko, K. (2015). Democratizing teacher education. *Journal of Teacher Education, 66*(2), 122-135. https://doi.org/10.1177/0022487114560908

Zietsma, C., & Lawrence, T. B. (2010). Institutional work in the transformation of an organizational field: The interplay of boundary work and practice work. *Administrative Science Quarterly, 55*, 189–221. https://doi.org/10.2189/asqu.2010.55.2.189

Appendices

Appendix 1: Letter of consent, leaders

Forespørsel om deltakelse i forskningsprosjekt

Til ledere

Høsten 2018 startet jeg mitt doktorgradsprosjekt ved Senter for profesjonsstudier, OsloMet, der formålet er å utforske kunnskapsarbeidet til de som jobber i delte stillinger i norsk lærerutdanning. Jeg er særlig interessert i å få innsikt i arbeidsoppgavene lærerutdannere i delte stillinger har, og hvilke kunnskapsressurser de bruker når de planlegger og gjennomfører undervisning ved lærerutdanningen.

Datainnsamlingen vil i hovedsak foregå gjennom observasjoner og intervjuer av lærerutdannere med delte stillinger i løpet av høsten 2018 og våren 2019.

Det er ønskelig å intervjue deg som programleder én gang i løpet av denne perioden. Spørsmålene vil først og fremst handle om lærerutdannere med delte stillinger. Det vil i intervjuene bli brukt båndopptaker, mens det under observasjonene kun vil benyttes penn og papir.

Notater og lydopptak vil bli behandlet konfidensielt, og det er kun prosjekteier som vil ha tilgang til personopplysninger. All data vil bli anonymisert, og transkribert materiale vil ikke inneholde informasjon som kan identifisere deg som informant. Analyseresultater planlegges å publiseres i form av 3-4 vitenskapelige artikler. Utdrag fra intervjuene og observasjonsnotatene kan her bli brukt i anonymisert form, dvs. at deltakerne ikke vil kunne gjenkjennes i publikasjonene. Prosjektet skal etter planen avsluttes i 2022, og alle personopplysninger vil da bli slettet. Det er frivillig å delta i studien, og du har når som helst anledning til å trekke samtykket uten å oppgi noen grunn. Studien er meldt til Personvernombudet for forskning, NSD - Norsk senter for forskningsdata AS.

Spørsmål om personvernsrettigheter kan henvendes til:

- Personvernombud ved OsloMet, Ingrid Jacobsen: ingrid.jacobsen@oslomet.no
- NSD – Norsk senter for forskningsdata AS: personvernombudet@nsd.no eller 55 58 21 17

Kontakt meg gjerne på epost eller telefon dersom du har spørsmål om prosjektet: maiken.risan@oslomet.no / tlf. 95929693.

Vennlig hilsen

Maiken Risan
Stipendiat

Samtykkeerklæring

Jeg har mottatt informasjon om forskningsprosjektet og samtykker til deltakelse i prosjektet.

Dato: _____

Signatur: _____

Tlf: _____

Jeg ønsker å reservere meg mot deltakelse i intervju

Jeg ønsker å reservere meg mot observasjoner

Appendix 2: Letter of consent, hybrid educators

Forespørsel om deltakelse i forskningsprosjektet

Til lærerutdannere i delte stillinger

Høsten 2018 startet jeg mitt doktorgradsprosjekt ved Senter for profesjonsstudier, OsloMet, der formålet er å utforske kunnskapsarbeidet til de som jobber i delte stillinger i norsk lærerutdanning. Jeg er særlig interessert i å få innsikt i arbeidsoppgavene lærerutdannere delte stillinger har, og hvilke kunnskapsressurser de bruker når de planlegger og gjennomfører undervisning ved lærerutdanningen.

Datainnsamlingen vil foregå gjennom observasjoner og intervjuer i løpet av høsten 2018 og våren 2019. Det er ønskelig å følge deg gjennom ditt arbeid ved lærerutdanningen - jeg ønsker for eksempel å være til stede i undervisningen og ulike møtesituasjoner du deltar i ved lærerutdanningen. I tillegg håper jeg du vil delta på 1-2 intervjuer i løpet av skoleåret. Intervjuene vil vare i omtrent 60 minutter og være en oppfølging av observasjonene som er gjort. Spørsmålene vil først og fremst handle om ditt arbeid som lærerutdanner med delt stilling. Det vil i intervjuene bli brukt båndopptaker, mens det under observasjonene kun vil benyttes penn og papir.

Datainnsamlingen vil også innebære intervju med lederen for lærerutdanningsprogrammet. Disse intervjuene har som formål å skape et mer helhetlig inntrykk av arbeidsoppgavene og undervisningen til lærerutdannere med delte stillinger.

Notater og lydopptak vil bli behandlet konfidensielt, og det er kun prosjekteier som vil ha tilgang til personopplysninger. All data vil bli anonymisert, og transkribert materiale vil ikke inneholde informasjon som kan identifisere deg som informant.

Analyseresultater planlegges å publiseres i form av 3-4 vitenskapelige artikler. Utdrag fra intervjuene og observasjonsnotatene kan her bli brukt i anonymisert form, dvs. at deltakerne ikke vil kunne gjenkjennes i publikasjonene. Prosjektet skal etter planen avsluttes i 2022, og alle personopplysninger vil da bli slettet. Det er frivillig å delta i studien, og du har når som helst anledning til å trekke samtykket uten å oppgi noen grunn. Studien er meldt til Personvernombudet for forskning, NSD - Norsk senter for forskningsdata AS.

Kontakt meg gjerne på epost eller telefon dersom du har spørsmål om prosjektet:
maiken.risan@oslomet.no / tlf. 95929693

Spørsmål om personvernsrettigheter kan henvendes til:

- Personvernombud ved OsloMet, Ingrid Jacobsen: ingrid.jacobsen@oslomet.no
- NSD – Norsk senter for forskningsdata AS: personvernombudet@nsd.no eller 55 58 21 17

Vennlig hilsen

Maiken Risan
Stipendiat

Samtykkeerklæring

Jeg har mottatt informasjon om forskningsprosjektet og samtykker til deltakelse i prosjektet.

Dato: _____

Signatur: _____

Tlf: _____

Jeg ønsker å reservere meg mot deltakelse i intervju ☐

Jeg ønsker å reservere meg mot observasjoner ☐

Appendix 3: Interview guide, hybrid educators[1]

- First, could you tell me a bit about yourself (work, education, etc.)?
- Can you tell me more about how you became a hybrid educator?
  - Possible follow-up questions:
    - Why did you wish to work as a hybrid educator?
    - How were you employed (how did you apply etc.)?
    - What qualifications and traits do you think are most important for working as a hybrid educator? Why those exact traits/qualifications? Have your perceptions of these traits/qualifications changed over time?
- What expectations did you have for the work as a hybrid educator? Why?
  - Possible follow-up questions:
    - I have observed several campus-based activities, such as campus-based teaching and staff meetings, could you tell me more about your campus-based work?
    - Any aspects of your campus-based work that you find particularly interesting / challenging / etc.?
    - I have observed activities where you teach together with / plan lessons together with HE-based staff, can you tell me more about such activities (who initiated the collaboration, how did you divide tasks and responsibilities etc.)?
    - In your opinion, what are the benefits of collaborating with HE-based educators? Any challenges?
    - From your experience, do HE-based educators view your teaching experience as a valuable resource? Can you describe a situation as an example of that?
    - Do you think your campus-based teaching is any different from that of HE-based educators? Why / why not / how?
    - Could you describe how you prepare for and conduct activities at campus? Follow-up questions:
      - Aim / purpose? Resources made available / used? Directions / instructions?

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[1] The interview guide is translated from the Norwegian original

- Do you work differently when you plan / conduct work at campus vs. in schools? How?
- Have you contributed to making the reading list / lesson plan / exams / student tasks?
- Policy documents often state that Norwegian teacher education should be «research-based» and «close to professional practice»? How do you relate to those expectations? Can you describe activities where you do x / y / both?
  - I have observed that you often make use of resources from the school context (evaluation criteria, pupil texts etc.). Can you describe your use of such resources? Why do you consider such resources relevant for student teachers?
    - Can you tell me a bit more about how you work to relate such resources to other resources – for instance the reading list, research etc.?
- In your opinion, what characterises a good teacher educator? Why?
- What factors could make your work as a hybrid educator even more attractive / beneficial?
  - How can teacher education leaders better facilitate your work?
  - How can school leaders better facilitate your work?
- What are the benefits of working in both schools and HE? Challenges?
- Do you wish to continue working as a hybrid educator? Why / why not?
- Anything you would like to add?

Appendix 4: Interview guide, leaders

- Could you first tell me a bit about yourself (how long have you worked here at x, what does that work entail etc.)?
- What would you say characterises the teacher education here at x?
- Can you tell me more about these hybrid educator positions?
    - Intentions, expectations
    - Activities, tasks
    - Requirement
        - What qualifications and traits do you emphasise when recruiting hybrid educators (teaching experience, master's degree etc.)?
- Can you describe typical tasks that hybrid educators conduct?
    - Do they contribute to the work involved in making reading lists, exams etc.?
    - What are the main differences between the tasks hybrid educators conduct vs HE-based educators?
- How do you think your teacher education program benefits from employing hybrid educators?
    - How do you think they make use of their teaching experience on campus?
    - Who benefits from their teaching experience (colleagues, students etc.)?
    - In what ways do you expect hybrid educators to make use of / engage with research?
- In what ways are hybrid educators integrated into the HE-collegium?
    - Can you give examples of collaborative settings between HE-educators and hybrid educators?
- What factors do you think can contribute to utilise the potential of hybrid educator positions?
    - Do you think they experience any difficulties / challenges in HE?
- Anything you would like to add?

Part II: Articles

Article 1

Research paper

Negotiating professional expertise: Hybrid educators' boundary work in the context of higher education-based teacher education

Maiken Risan

Oslo Metropolitan University, Norway

HIGHLIGHTS

- Hybrid educators are expected to "build bridges" in teacher education.
- Extensive observations and interviews conducted at three teacher education institutions in Norway.
- Analyses identify negotiations of professional expertise through the lens of boundary work.
- Perceptions of a "hierarchy" dictate whose knowledge matters the most.
- Findings demonstrate opportunities involved in embracing differences that hybrid positions bring to the fore.

ARTICLE INFO

ABSTRACT

Researchers and policymakers advocate the need to establish stronger relations between schools and universities in teacher education, but we know little about micro-level practices that professionals engage in to forge connections between these domains. Analytically foregrounding hybrid educators in Norway, this article goes beyond metaphors of "building bridges" by providing nuanced accounts of how expertise is negotiated through boundary work in higher education. The analyses demonstrate how perceptions of a "hierarchy" dictate whose knowledge matters when and in what ways and show the importance of recognising expertise as differentiated and as mobilised or silenced through participation in specific professional practices.

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1. Introduction

Several researchers have emphasised the need for teacher education programs to make better use of the knowledge and expertise that exist in schools, for instance, through new educator roles (e.g., Ellis & McNicholl, 2015; Zeichner et al., 2015). Working at epistemic boundaries between schools and higher education, *hybrid educators* provide an interesting empirical case to study the work of practitioners who are associated with expectations of "bridging" two knowledge domains in general and in teacher education in particular. Within educational research, the term *hybrid teacher educators* usually refers to university-based educators who supervise student teachers in the school context (e.g., Martin et al., 2011; Williams, 2013; Zeichner, 2010); in this study, however, the term is used to denote schoolteachers with co-employment as educators in higher education-based teacher education.

Despite an increased focus on the positive outcomes of shared responsibility for student teachers' learning, researchers note that partnerships are often built on idealistic models that are challenging to realise, for instance, due to power imbalance and the challenge of creating actual equality between theoretical and practical components (Ellis & McNicholl, 2015; Lillejord & Børte, 2016; Zeichner et al., 2015). Furthermore, it is well documented that those working across professional boundaries face tensions and the risk of being excluded and marginalised (e.g., Edwards et al., 2010; Vähäsantanen et al., 2009; Waitoller & Kozleski, 2013), as they not only act as bridges between two domains but also simultaneously represent the very division between them (Akkerman & Bakker, 2011). It follows that work at epistemic boundaries in education can be assumed to be challenging. However, we know little about the actual practices professionals engage in to strengthen university—school relations, as micro-level analyses—particularly those combining observational data and

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conversational data—are largely missing within educational research (Little, 2012).

Norwegian teacher education is an interesting case to study as it has undergone a series of reforms over the last decades, for instance, by increasingly demanding a master's degree to teach. Despite stronger academisation, teacher education programmes aim at being both "research-based" and "profession-oriented" (Afdal, 2016), but student teachers have repeatedly criticised Norwegian teacher education programmes for being too fragmented (e.g., Lillejord & Børte, 2017; NOKUT, 2019). To address this challenge, policymakers have suggested an increased focus on university–school collaboration, for instance, by expanding the employment of educators who combine their workload between schools and campus (Norwegian Ministry of Education and Research, 2017). These educators are associated with an expectation of being "expert teachers" (Jelstad, 2018) who are brought into campus-based teacher education to "build bridges between teacher education and schools" (e.g., NTNU, 2019). However, research on schoolteachers working in both schools and higher education is lacking, and consequently, little is known about the work they do in pursuit of forging connections between two domains as educators in the context of higher education.

To unpack ideals of "bridging gaps", this article applies the theoretical construct of *boundary work* (e.g., Langley et al., 2019; Liljegren, 2012a) and directs attention towards how hybrid educators negotiate responsibilities and expertise in different contexts of campus-based teacher education. Drawing on extensive observations and interviews conducted at three teacher education institutions, the following research questions are pursued: *What characterises hybrid educators' boundary work in the context of higher education-based teacher education? How is their professional expertise as educators negotiated through that work?* First, I present the literature that contributes to an understanding of work at university–school boundaries before outlining the theoretical framework and methodological approach. Thereafter, findings are presented, followed by a discussion and conclusion.

1.1. Literature review: Working at epistemic boundaries in teacher education

A growing body of research sheds light on work across boundaries in teacher education as situated in *third* or *hybrid spaces* (e.g., Bullock, 2012; Cuenca et al., 2011; Daza et al., 2021; Martin et al., 2011; Williams, 2013; Zeichner, 2010). These studies are relevant for the present article as they often highlight how actors from different domains—such as student teachers, mentors, and educators—come together in settings where boundaries between schools and universities are intended to intersect and overlap in pursuit of learning and transformation. In these settings, the ideal is a democratic collaboration where dichotomies such as "practitioner knowledge" and "academic knowledge" are blurred (e.g., Zeichner, 2010, p. 92).

One set of these studies has examined the challenges associated with work across epistemic boundaries in teacher education by highlighting challenges involved in negotiating epistemic hierarchies and manoeuvring whose knowledge matters when and in what ways. In a study of collaborative activities at various teacher education programmes in the United States, Zeichner et al. (2015) highlight the difficulties of establishing democratic structures across institutional boundaries. Drawing on examples from collaboration among universities, schools, and communities, they argue that work in these spaces requires teacher education institutions to alter existing power relations by rethinking "who is an expert" (p. 132). The authors further point at the need for teacher education to establish less hierarchical collaboration structures

with schools that better facilitate for practitioners' inclusion and encourage educators to work across institutional boundaries. Ellis and McNicholl (2015) also found hierarchical structures to be strongly present in their study on teacher educators' work in England and Scotland, where they found partnership work often divided up on the basis of historically evolved cultural norms between schoolteachers and higher education. For instance, as higher education partners were tasked with "abstracting" knowledge to give it a wider meaning. Thus, the authors argue that higher education partners became responsible for adding value to what schools did, while little acknowledgement was given to the "strong (or even stronger) reverse contribution" (Ellis & McNicholl, 2015, p. 136), suggesting that academics' knowledge tends to be privileged in collaborative contexts.

In line with these findings, Wang and Wong (2017) found relationships between actors working at boundaries between schools and universities in China to be understood in terms of "expert" and "practitioner". They further identified how the participants made few references to the kind of reciprocity that they had predicted to find in teachers' and academics' accounts of partnership work: While the partnership was clearly valued, the study demonstrated a persisting perception of asymmetry, especially prominent in the school-based staff's responses (Wang & Wong, 2017). Combined, this line of research pinpoints the tension that can arise at the intersection of epistemic boundaries between schools and universities. By foregrounding what kind of knowledge emerges as privileged in collaborative settings between practitioners and academics, this line of research identifies persisting perceptions of traditional knowledge hierarchies and divisions.

Another set of studies analytically foreground challenges related to shifting roles and identities of educators who work at epistemic boundaries (e.g., Martin et al., 2011; Poyas & Smith, 2007; Waitoller & Kozleski, 2013; Williams, 2013, 2014). Exploring her own shifting educator identity when mentoring student teachers in schools, Williams (2013) argues that work at educational boundaries is made difficult due to tensions and confusion arising from identity issues and conflicting obligations among teachers, students, and educators. Similarly, Martin et al. (2011) explore the multitude of roles they take on as university-based hybrid educators in pursuit of facilitating collaborative relationships in partnership settings. In this study, the authors point to the task of ensuring an equal power balance between actors, such as student teachers, principals, and hybrid teacher educators, as one of the most challenging aspects of their "boundary bridging efforts" (p. 308). Drawing on interviews and questionnaires, Poyas and Smith (2007) further highlight the complexity of overlapping roles and identities of educators working at boundaries in school–university partnerships, arguing that educators need more explicit definitions of roles and tasks when working in-between expectations from the academic context and expectations from schools. These studies draw attention to the complex register of identities and roles available for those working at epistemic boundaries in education and further pinpoint the importance of explicit expectations and definitions as crucial contextual factors that may mediate that work.

This brief review sheds light on aspects that can be expected to shape hybrid educators' work at epistemic boundaries between schools and universities and indicates what these "boundaries" may consist of: hierarchical power relations, unclear roles and responsibilities, and conflicting perceptions of expertise and whose knowledge matters in different educational contexts. In these studies, boundaries are often viewed as tensions or challenges that should be bridged or blurred to achieve learning and development. The current study takes a different approach by empirically examining how boundaries can serve as complex resources that both hinder *and* facilitate the enactment of professional expertise

in campus-based teacher education. Furthermore, several of the studies in this review investigate work at epistemic boundaries in education based on interviews or self-studies; there are lacking micro-level analyses based on observations of interaction and practices of educators in general and those of schoolteachers who work in the higher education context in particular. By analytically foregrounding the micro-level practices of a group of hybrid educators, this article goes beyond metaphors of "building bridges" or "bridging gaps" and provides a nuanced account of work at boundaries. The study illuminates how boundaries may both enable and prevent schoolteachers' enactment of expertise when working as educators in the higher education context.

1.2. Analytical perspectives

The school context and the higher education context are associated with different *knowledge domains* that hybrid educators are expected to build bridges between; whereas work in higher education historically has been oriented towards the production and dissemination of research-based knowledge, work in schools combines different forms of knowledge towards the overall purpose of educating children and youth. Both domains are shaped by their respective cultural, historical, and organisational trajectories. Consequently, hybrid educators cannot simply enter the higher education context and "create bridges" between the two domains. Instead, they have to establish their position within a new organisational and institutional context and negotiate their contribution in relation to existing expertise in higher education.

Whereas previous research has frequently described work across institutional boundaries through theories of socialisation processes (e.g., Lave & Wenger, 1991), through the construct of "third" or "hybrid spaces" (e.g., Klein et al., 2012; Martin et al., 2011; Zeichner, 2010), or through the notion of "boundary crossing" (e.g., Akkerman & Bakker, 2011), this article argues that we need to highlight and conceptualise the complex and creative *work* involved as professionals negotiate expertise, jurisdiction, and status at institutional boundaries between schools and universities: The construct of *boundary work* (e.g., Gieryn, 1983; Liljegren, 2012a) offers a fruitful framework to unpack and understand processes and factors that shape this work (Langley et al., 2019; Mørk et al., 2012; Zietsma & Lawrence, 2010).

The notion of boundary work was initially applied by Gieryn (1983, p. 792) to investigate how scientists distinguished their authority from that of "non-scientists". The concept has later been used within studies on different professional groups to analyse how professionals build boundaries to demarcate their own domain of expertise from that of other professions (e.g., Abbott, 1988, 2005). In these contexts, boundary work has primarily been applied to identify the *creation* of professional boundaries, and thus, the concept is often associated with power relations and viewed as an activity of claim-making concerned with the division of labour and establishment of expertise that distinguishes professionals from other groups (Fournier, 2000; Liljegren, 2012b).

Boundary work does not, however, merely provide a framework to conceptualise the demarcation of boundaries. It further enables an investigation of the work involved in negotiating connections and alliances across these boundaries, in other words, bridging or blurring professional boundaries. Langley et al. (2019) describe boundary work as a framework that clarifies differences *and* enables connections, consisting of the *creation, maintenance, blurring,* and *transformation* of boundaries as the target of action (p. 706). Similarly, Liu (2015) emphasises that boundary work has complex varieties of forms and further proposes a distinction among *boundary making, boundary blurring,* and *boundary maintenance* as key tools for analysis. These distinctions help unpack an

understanding of what boundary work consists of by clarifying the complex process involved in establishing divisions through creating and maintaining boundaries on the one hand and negotiating connections and relations through bridging, or blurring, boundaries on the other hand.

Directing attention towards both how professionals demarcate boundaries in relation to other groups and how boundaries are blurred as connections are sought, it follows that boundary work cannot be studied through a focus on individuals in isolation. Instead, *work* is understood as an activity that is embedded in social contexts and thus available to interpretation through participation in these (e.g., Nicolini, 2012; Schatzki et al., 2001). Therefore, this study focuses not only on hybrid educators' own perceptions of their educator responsibilities but also on extensive observations of collaborative settings between hybrid educators and campus-based staff, which are analysed to understand how boundary work is conducted in interactions with others through different institutional practices. Furthermore, interviews with teacher education leaders are included as the leadership perspective provides a better understanding of hybrid educators' inclusion—or lack of such—into organisational routines and practices in the higher education context.

In summary, the concept of boundary work offers a way to unpack ideals of "boundary bridging" and examine the nuances and complexities of work at epistemic boundaries. In this article, it is done through empirically investigating the boundary work that hybrid educators conduct in the higher education context and by capturing how their expertise as educators is negotiated through that work. More specifically, observations and interviews are analysed to trace how differences and divisions on the one hand or connections and linkages on the other hand contribute to enabling or restricting hybrid educators' enactment of expertise and perceptions of what aspects of knowledge are valued the most in collaborative settings between higher education actors and hybrid educators.

2. Data and methods

2.1. Empirical context and informants

The data used in this article are derived from fieldwork across two academic semesters and comprise observations of three hybrid educators' campus-based work and in-depth interviews with hybrid educators and their immediate leaders on campus.

In Norway, teacher education programmes at all levels are primarily delivered by universities or university colleges with at least 100 days of school-based practicum. The informants in this study work at teacher education programmes for Grades 1–7, 5–10, or 8–13; from 2017, these are all five-year MA programmes. In addition, some universities and university colleges provide a one-year practical-pedagogical education programme (PPU)—from 2019, this programme is for students who have already obtained an MA. To ensure a balance between research-based teacher education and professional relevance, several teacher education institutions have established various hybrid educator roles—often referred to as *delte stillinger* (divided positions) or *kombinasjonsstillinger* (combined positions)—for instance, as part of university–school partnerships. However, the utilisation of hybrid educator positions varies from institution to institution; for instance, hybrid educators may be schoolteachers or school leaders who have co-employment in higher education, or they may be campus-based educators who are tasked with collaborating with schools; they may participate in university–school research projects, or they may be tasked with teaching seminars on topics concerning the teaching profession. Thus, it was of interest to recruit hybrid educators from more than

one institution. The selection criteria for choosing informants for this study were that they worked at different institutions, that they worked both in schools and at campus-based teacher education, and—as this study is concerned with hybrid educators' work in the context of higher education—it was of interest to recruit informants who had a workload of at least 20% related to teacher education.

While recruiting informants, leaders at eight teacher education institutions across Norway were contacted, and four of these confirmed that they had employed hybrid educators for the 2018−2019 academic school year. These institutions provided contact information, and three of the educators agreed that they were willing and interested in participating in the study. Their closest leaders at the teacher education institution also confirmed to be interviewed; these leaders are responsible for recruiting hybrid educators at their institutions and were thus considered an appropriate informant group to elicit information about intentions and expectations associated with hybrid educator's work in the higher education context and how the institution facilitated their inclusion into the higher education context.

The three hybrid educators work as schoolteachers at lower or upper secondary schools in different parts of Norway and as educators at three different universities. As this study is concerned with work in the context of higher education, hybrid educators' school-based work is not considered. The informants were primarily recruited as educators due to their teaching experience, their familiarity with the teacher education programme through work as school-based mentors, and/or their subject-specific competence. They all have teaching degrees, yet unlike a growing number of educators in the Norwegian teacher education context, they have not obtained a PhD and do not conduct research as part of their educator tasks. The three educators are employed by the university primarily to teach; both Linn and Dina teach subject didactics, and Marie teaches seminars that focus on various aspects of the teaching profession (see Table 1 for an overview). Whereas Marie often conducts teaching and planning together with campus-based educators—mostly on her own initiative, Linn and Dina only occasionally collaborate with campus-based colleagues.

The hybrid educators were observed in the campus-based activities they participated in throughout the academic semesters of 2018−2019, and the observation material makes up approximately 100 h of observations. The semi-structured interviews with the

hybrid educators and their leaders lasted 1 h each; they were audiotaped and subsequently transcribed. The interviews with the hybrid educators intended to elicit perceptions of their work as educators, asking, for instance, what they considered when planning and conducting campus-based teaching and their perceptions of collaborating with campus-based colleagues. The interviews with the leaders focused on eliciting intentions and expectations that they associated with the hybrid position. One of the benefits of combining observational data with interviews when exploring boundary work is that actual practices are observed as they happen, as micro-level studies of work processes and relationships are crucial for grasping institutional practices (Little, 2012), and interview data provide a deeper insight into interpretations for decisions and actions (Riessman, 2008).

2.2. Analytical approach

The analysis was guided by the research questions and performed in several steps (see Table 2 for an overview of data sets). First, I focused on identifying episodes in the observation material where hybrid educators interacted with campus-based actors, for instance, when co-teaching or in staff seminars. Next, I focused on extracting parts from the interviews where hybrid educators described their educator activities and perceptions of their responsibilities and contribution in relation to campus-based colleagues. Fragment chunks from all interviews were subsequently extracted and grouped into broad categories; for instance, text segments when leaders or hybrid educators talked about expectations associated with the hybrid educator position were categorised as "expectations", and segments when they talked about collaboration with campus-based staff were categorised as "relations".

Next, I conducted a more fine-grained analysis of the selected fragment chunks from all data sets, focusing specifically on identifying similarities and differences within and between the informants. At this stage of the analysis, several prominent patterns stood out in the observation material, and the interview material was read and re-read with the intention of identifying hybrid educators' explanations and perceptions of episodes in the observation material. For instance, the hybrid educators often took on a more passive role when teaching together with campus-based educators than when teaching alone, and this was explained in

Table 1
Overview informants.

Name of hybrid educators (pseudonyms)	Marie		Linn	Dina
Workload	20% as a teacher educator		50% as a teacher educator	30% as a teacher educator
	80% as a secondary schoolteacher		50% as an upper secondary schoolteacher	70% as an upper secondary schoolteacher
Main campus-based task	Teaching seminars focusing on various aspects of the teaching profession, mostly together with campus-based educators		Teaching social science didactics	Teaching religion and ethics didactics
Experience as a hybrid educator	First year		Fifth year	Third year
Other teacher educator tasks	Mentoring students in their practicum		Participating in research group meetings	Mentoring students in their practicum
			Evaluating student papers	Participating in research group meetings
			Visiting students in their practicum	Evaluating student papers
Name of immediate leaders at the teacher education institution (pseudonyms)	Anna		Peter	Sara
Name of campus-based colleagues included in the observational material	Karen		David, Hans	Amanda, Freya, Alfred

Table 2
Overview of data sets.

Data set	Observations of hybrid educators	Interviews with hybrid educators	Interviews with leaders
Focus on	Interaction with campus-based actors Division of tasks, knowledge mobilised	Perceived mandate What they emphasise when planning and conducting campus-based tasks Talk about their work as educators, challenges, and advantages with their work	Expectations associated with the hybrid position Talk about hybrid educators' campus tasks, collaboration with campus-based actors
	Emphasising similarities and connections or differences and divisions	Talk about collaborative settings with campus-based actors Experienced inclusion in organisational routines on campus	Talk about organisational routines on campus and hybrid educators' position in these

the interviews as being a consequence of feeling "humble" or like "outsiders" in collaborative settings. Furthermore, several contradictions and contrasts stood out between the informant groups, especially concerning perceptions of hybrid educators' inclusion into organisational routines.

The next step of the analysis involved identifying boundary work in the selected data material by drawing on categories suggested by Langley et al. (2019) and Liu (2015): *boundary maintenance* and *boundary bridging*. To identify these processes, extracts from the interviews or observation material that foregrounded divisions and differences between hybrid educators and campus-based actors were categorised as *boundary maintenance*, and extracts when connections and similarities were emphasised were categorised as *boundary bridging*. For instance, segments when a hybrid educator described the higher education context as "someone else's territory" were categorised as *boundary maintenance*, and segments when a hybrid educator and a campus-based educator were co-teaching and explicitly pointed out the relevance of each other's' epistemic contributions were categorised as *boundary bridging*. However, it became clear that the category of *boundary maintenance* did not sufficiently pinpoint the work of demarcating boundaries that was prominent in the material and consequently, and this category was therefore divided into two recurring and prominent themes (Creswell & Poth, 2017): *boundary maintenance* and *rejecting boundaries*. The category of *rejecting boundaries* pinpoints the connection between the leaders' tendency to downplay or reject boundaries on the one hand and the complex boundary work hybrid educators conduct to demarcate their responsibilities as educators on the other hand.

To ensure validity and consistency in the study, preliminary findings were presented to fellow researchers, who provided feedback and commentary (Cohen et al., 2018; Kvale & Brinkmann, 2009). The analysis is based on observations and interviews with a limited number of informants and thus not generalisable to all hybrid educators. However, as the analyses reveal a range of common trends, it is possible to point to characteristics that have conceptual and empirical implications beyond these hybrid educators and their specific workplaces.

3. Results

In the following, hybrid educators' boundary work is presented in three categories: (1) boundary bridging, (2) boundary maintenance, and (3) rejecting boundaries. The three categories demonstrate how boundaries both facilitate and hinder hybrid educators' enactment of professional expertise. In the extracts below, hybrid educators interact with other campus-based actors (see Table 1); the campus-based educators in these extracts are primarily associate professors or professors who conduct research activities and campus-based teaching. All names are pseudonyms.

3.1. Boundary bridging: establishing differentiated expertise and seeking alliances

The boundary work in this category is characterised by efforts to seek connections across established positions of differentiated expertise and responsibilities. This boundary work is especially prominent in observations of collaborative settings between hybrid educators and campus-based educators, as the following observation extract demonstrates. Here, Marie teaches a group of student teachers together with a campus-based educator, Karen. The two have co-planned the lesson, but they have never taught together before. Discussing the topic of adapted education, Marie and Karen clearly position themselves and each other with differentiated expertise:

> Marie says that it is important to know pupils' home conditions and gives an example from her own class, a boy who strongly dislikes going to school. Marie explains how she let the pupil take pictures instead of writing about himself, and he was excellent at it. "And that*, that's* adapted education." Karen says that is a good example. Karen: "What does research on adapted education say? Well, that variation is important." Karen says that research has found student teachers to lack a vocabulary to talk about adapted education. She says they need to be able to talk about adapted education. Marie says that is important. Marie: "For example, sometimes you have the quiet class and other times you have the class where no one can sit still; is it the teacher or the pupil that determines that?" Marie says they must be able to adapt what they do in the classroom to a multitude of pupils and shows an example of adapted teaching material from her social science class on the whiteboard. Karen adds that research shows that creativity and drawing can be important tools.

Drawing on cases and examples from her own teaching practice, Marie positions herself as an "expert teacher" who solely provides knowledge from the school context. Karen, on the other hand, draws on research, taking on a position as the "academic". However, this extract does not only demonstrate how the two actors establish positions of differentiated expertise; it further illustrates how they build on each other's contributions and explicitly establish relations between their expertise. For instance, Marie mobilises examples from practice to confirm and exemplify Karen's research claims, and the other way around. Thus, this example identifies bridging as a double process of boundary work, entailing both the demarcation of differentiated expertise and bridging efforts that are made from these clearly defined positions.

In the interview, Marie elaborates on what she emphasises when teaching on campus and points to the ability to provide specific examples from school as her perceived mandate:

Marie: Because the goal is practice, that I have to give specific examples, all the time, that is where it becomes concrete. Because theory they get here this year and next year, and I have to get it down to the specifics […] That is my strength. That is why I am employed here, I think.

In this account, the ability to provide specific examples is pointed to as something that gives Marie confidence and authority in the higher education context. As she explicitly differentiates her strengths from those of campus-based educators—tasked with teaching "theory"—Marie demarcates her expertise and simultaneously foregrounds her contribution as valuable in relation to that of campus-based educators.

This notion can also be identified in Linn's account, where she emphasises that she has something valuable to offer student teachers and positions herself as an "ally":

Linn: Of course, campus-based educators are familiar with practice in schools, they have been out there collecting empirical data for their research. But I still think it's something else standing out there and teaching and tackling the challenges that arise in the classroom, seeing why a lesson succeeds, what makes pupils eager, when do they learn something. That's something I think student teachers like to get insight into. That they can compare themselves and what they experience in their practicum—because they can have awful days and good days—and getting to know that's normal, I think they find a … yes, an ally in me. Campus-based educators are more, perhaps, idealistic. And that is good, I think, with both.

Linn emphasises that she has something different to offer student teachers than other educators, and this could be interpreted as reinforcing divisions between the two educator groups. However, she also points to the benefits of providing student teachers with both versions of expertise and thus foregrounds the establishment of clearly differentiated strengths as a prerequisite for working side by side.

In sum, this category identifies boundary bridging as a double process; first, it involves a process of demarcating boundaries of differentiated expertise and responsibilities, and second, it involves a process of seeking alliances and connections from these established positions. The examples further demonstrate demarcation processes that enable hybrid educators' enactment of expertise, as they express confidence in having different, yet valuable, expertise that complements that of other educators.

3.2. Boundary maintenance: becoming passive and humble outsiders

Even though establishing differentiated expertise could be seen to provide hybrid educators with confidence in having something "different" to contribute, an opposite tendency is also prominent across the observation material. The hybrid educators were often found to take on a more passive role when teaching together with campus-based educators than when teaching alone.

When asked about her perceptions of teaching together with other educators in the interview, Dina explains her passive role as a consequence of a perceived hierarchy, where the campus-based educator is "above" her:

Dina: I take on a passive role when I teach together with campus-based educators, I guess I do. Consciously or unconsciously. Because, like the week you observed, I could have taken control and led everything, but I didn't know the group of

students and he [the campus-based educator] … I don't know. It has something to do with the hierarchy, where it is more his territory than mine, for instance.

Even though she expresses confidence in having the expertise to lead campus-based activities alone, Dina's account suggests that the knowledge she contributes as an educator is somewhat restricted by perceptions of a power imbalance between herself and campus-based educators that come to the fore in collaborative settings. Thus, this pinpoints boundary work that contributes to maintaining notions of barriers where the higher education context is perceived as the "territory" of academics. This is a notion that is prominent in interviews with all three hybrid educators, for instance, as Marie explains how she feels "humble" in relation to campus-based educators' expertise:

Marie: Of course, when you work with someone here, you get humble, in regard to their competence […] So, I've just let them—in a way—just decide, and I just add. Of the simple reason that they have done this before, and I'm not here to wreck something that works, I'm just supposed to be a contribution.

Marie's account suggests that her engagement in collaborative settings with campus-based educators is shaped by perceptions of their expertise and her own responsibility as limited to merely being a "contribution" that adds to established practices when—or if—necessary.

The following extract provides an example of how Dina's educator work is shaped by perceptions of what kind of expertise matters the most on campus. Here, Dina and two campus-based educators, Freya and Amanda, are preparing a group activity that they have been asked to present at a staff seminar for everyone working at the teacher education institution later that week.

Dina works with Amanda and Freya at the office that the two campus-based educators share: Amanda says that they should put staff with different subject areas into groups. Dina agrees and says the task is relevant for all subjects. Freya asks who wants to introduce the task to the other educators at the seminar. Amanda says no, she has too much to do. Dina says that she would like to do it. She says that she has never been to a teacher educator seminar before, that she is such an outsider and wants to challenge herself by introducing the task […] *After the staff seminar, I [the interviewer] ask Dina how she felt about introducing the activity to the other educators. She says that the seminar was a bit awkward because she has such a weird position. "Here, you know, you have experts on that subject area, and then I'm supposed to supervise that activity. That's just weird." She explains that she was the only hybrid educator at that seminar, and she feels like "such an outsider".*

Despite explicitly pointing out that she wants to challenge herself and contribute to the staff seminar, Dina positions herself as an "outsider" who has little to contribute in that context. Thus, perceptions of campus-based educators' expertise can be seen as an important factor that shapes hybrid educators' position by reinforcing a notion of a hierarchy between the two domains; Dina perceives her own expertise to have little value among campus-based staff. This extract further suggests that divisions become especially prominent when hybrid educators enter institutional practices that are new to them; for instance, as Dina emphasises, this is the first time she has participated in such a seminar.

In the interview, Dina elaborates on aspects that make her feel

like an outsider in collaborative settings with campus-based actors:

> Dina: Now, I can see that some of the campus-based educators are very theoretical, they speak on a theoretical level, and I say the same thing in a more everyday language. And in that setting it becomes weird, because I'm not familiar with the academic language. And in the classroom it's not, and I think that's always been my strength—both here and when teaching at the school, that I can talk about things in a way that makes students and pupils say "Oh yes!"—that I put it down to a level where they get it, but that I still relate it to the more overreaching level. But it's strange, that feeling—I'm used to be the one that understands things, and suddenly I'm sitting there with three campus-based educators, feeling like the, eh, like the one who has no idea what they're talking about.

Dina describes feeling somewhat ignorant in settings where the "theoretical language" that belongs to higher education is applied. However, she simultaneously expresses confidence in having a valuable ability to translate the academic language into an "everyday-language" that is more appropriate in relation to students and pupils. Thus, this extract pinpoints language use as an important factor that can contribute to maintaining a notion of divisions between schools and higher education: Work at epistemic boundaries involves a complex translation process of adapting language and articulating knowledge in a context where other ways of expressing knowledge are valued the most.

In sum, the examples in this category demonstrate how hybrid educators tend to take on a more passive role when working together with campus-based actors due to notions of hierarchies and authority in the higher education context. These notions can be viewed as boundary maintaining, as the emphasis put on differences and divisions makes hybrid educators perceive themselves as "outsiders" in established practices where they feel that they have little to contribute to. Consequently, the boundary work highlighted in this category may contribute to restricting their enactment of expertise.

3.3. Rejecting boundaries: being self-reliant equals?

This category highlights how hybrid educators' boundary work is shaped by how their leaders facilitate their inclusion into higher education practices. The extracts pinpoint strong contrasts between leaders' and hybrid educators' perceptions of inclusion and suggest that leaders' tendency to downplay boundaries may create challenges for hybrid educators' boundary work.

The use of metaphors such as "bridging the gap" and "building bridges" is prominent across the three leader interviews when they discuss hybrid educators' mandate in higher education. However, when elaborating on hybrid educators' responsibilities on campus more specifically, their accounts are characterised by downplaying and rejecting boundaries. The three leaders tend to emphasise notions of equality and reciprocity in their accounts of hybrid educators' work, positioning them as valuable members of staff:

> Sara: The people we recruit, they become part of the campus-based staff, and we work with that cultural understanding of reciprocity. So, many hybrids have explicitly expressed that they feel very included by their campus-based colleagues, and they are very sought after to collaborate with […] Campus-based educators nearly fight to work with them.

Characterising hybrid educators as included in institutional practices and sought-after colleagues, Sara positions hybrid

educators as having an established professional authority in the higher education context. In line with this, she further points to a generation change that has altered traditional hierarchical structures in teacher education, thus expressing a notion of boundaries as blurred or non-existing:

> Sara: Because campus-based educators, we have been through a generation change, and they work together in teams and plan lessons together. And in my opinion, I hear that those that have hybrid educators in their teams, they see that as very valuable, because they need to learn about this and that, and then the hybrid from the practice site comes in and pulls it down, right? Or, they contribute with the examples and cases and grounds everything in the school-classroom, and that is very very valuable.

Describing hybrid educators' competence as differentiated from that of campus-based educators, the leader emphasises a perception of successful collaboration where different expertise is recognised and effortlessly used to complement each other.

Further demonstrating how the leaders view hybrid educators as successfully included in campus-based practices, Peter explains that hybrid educators make valuable contributions to research groups:

> Peter: And what we have experienced, is that [hybrid educators] can be important contributions to research groups […] because they check that what we do is relevant.

This perception stands in strong contrast to the hybrid educators' responsibilities and contributions in a research group setting. In this extract, Linn attends a research group meeting with campus-based staff: her leader Peter and two associate professors, David and Hans.

> David says that Linn could be part of a new research project. Linn says that would have been interesting, but it is not possible—she has no available time. David says they can wait and see if she may be able to join later. *After the meeting, Linn explains [to the interviewer] that she spent most of the meeting working with other things on her laptop. She says it's interesting to listen to associate professors talk about their conferences and their articles, but her work at campus does not include research activity; if she agreed to participate in a research project, she would have to use her own spare time to do that work.*

As this extract illustrates, Linn is included in the research group but does not have the resources to contribute to research projects. This highlights how structural and organisational factors contribute to shaping hybrid educators' boundary work. On the one hand, Linn is included, her colleagues express expectations that she will participate in research projects, and the leader explicitly assigned her a role in making research projects more "relevant". On the other hand, her formal contract does not allow for time to engage in research, and as a result, her participation in the research group emerges as symbolic. Rather, she is unable to enact her expertise in the context of a specific research project and resorts to doing other work while in the meeting. Thus, this extract demonstrates how a setting that somewhat rejects existing boundaries between the two domains leads to a reinforcement of boundaries, as the only expertise that can be used in the context is that of campus-based staff.

Despite emphasising reciprocity between hybrid educators and campus-based staff, Marie's closest leader, Anna, simultaneously

emphasises that hybrid educators' inclusion into higher education practices depends on their own initiative:

> Anna: I think [hybrid educators] have to be persistent and get in touch with others and offer their services, so to speak, instead of just sitting there waiting for someone to get in touch, because that won't happen.

Expressing an expectation of hybrid educators being able to establish connections to campus-based staff themselves, the leader dismisses the notion of differences and divisions that may hinder hybrid educators from initiating such connections. However, it is prominent across hybrid educators' accounts that the task of getting access to organisational routines and practices is challenging.

> Marie: It's a lot of walking around in the hallways, saying "Hello, who are you?" … to really understand how things are connected. And many of the kind, competent campus-based staff understand the confusion, and they tell me, "I do this and that and you could pop in there and you could pop in here." And then we have established contact.

Marie points to lacking structures in higher education, saying that she has to establish contact with campus-based staff herself by walking around; thus, attempts at bridging boundaries become her responsibility alone.

Similarly, Dina expresses a wish for clearer expectations, hinting that even though leaders may expect hybrid educators to easily integrate into structures of higher education, their inclusion needs facilitating:

> Dina: Well, the first thing the teacher education institution could do was ask me to be here one day each week, for instance, give me an office space. Explicit expectations. Now, getting involved has been up to me. And more explicit … a … well, maybe, sit down with me and tell me about the structure, the workplace, "this is how things are done". An orientation-meeting.

Here, Dina calls for clearly defined expectations and expresses a wish to be explicitly included in the higher education context, for instance, with an office space.

In sum, this category identifies hybrid educators' boundary work as shaped by contradictions between their leaders' tendency to reject and downplay boundaries on the one hand and hybrid educators' experience of lacking inclusion on the other hand. Even though leaders foreground a view of hybrid educators as equals that do not require boundary-bridging efforts, the examples demonstrate how these notions stand in strong contrast with the complex boundary work hybrid educators conduct to demarcate their responsibilities and expertise as educators and establish connections with campus-based staff.

4. Discussion

Illuminating the complex *boundary work* involved in negotiating professional expertise and responsibilities, this article contributes to unpacking expectations of "bridging gaps" associated with hybrid educators that work at epistemic boundaries of teacher education. More specifically, the findings demonstrate how boundaries are bridged, maintained, and rejected as hybrid educators negotiate their contribution in relation to existing expertise in the higher education context.

The findings align with previous research when it comes to

identifying how actors from schools and universities conduct boundary maintenance when they take on differentiated positions as "practitioners" and "academics" in collaborative settings (Wang & Wong, 2017), where campus-based actors are tasked with "abstracting" knowledge with theoretical perspectives to give it wider meaning (Ellis & McNicholl, 2015). The analyses further identify perceptions of hierarchies and power imbalances in the higher education context as influential factors of boundary maintenance that may lead hybrid educators to become passive "outsiders". Even though these findings somewhat confirm former research (e.g., Ellis & McNicholl, 2015; Zeichner et al., 2015), the current study provides specific empirical examples of how such dynamics materialise in micro-level practices. Specifically, the analyses reveal that perceptions of hierarchies and power are most prominent when hybrid educators are positioned in established practices on campus where their knowledge contribution seems to be redundant. For instance, Dina feels that she has nothing to contribute with among other "experts" at the staff seminar, or Marie's perception of merely being a "contribution" that adds to established practices when—or if—necessary. Thus, the analyses show the importance of recognising expertise as situated and as something that is mobilised or silenced through participation in specific institutional practices. This, in turn, implies that teacher education institutions should better facilitate hybrid educators' integration into higher education practices that are unfamiliar to them and acknowledge the importance of positioning hybrid educators in practices where their expertise can be utilised.

Interestingly, the findings also identify a contrasting tendency: Making use of and maintaining boundaries by emphasising what differentiates them from other educators were also seen to provide hybrid educators with a sense of confidence that in turn facilitated boundary bridging efforts. For instance, when Linn highlights that her expertise as a practitioner is very valuable for student teachers and complements the more "idealistic" contributions of other educators, or when connections are made explicitly relevant as Marie and the campus-based educator co-teach and build on each other's contributions from differentiated positions of "academic" and "expert teacher". The importance of establishing differentiated expertise is further materialised in the strong contrast between teacher education leaders' tendency to reject and downplay boundaries and differences on the one hand and the complex work hybrid educators conduct to demarcate responsibilities as educators and establish connections with campus-based staff on the other hand. This tendency is, for instance, demonstrated by Linn's participation in research-group meetings that becomes merely symbolic due to lacking organisational and structural aspects that would enable her participation.

Thus, the findings pinpoint an interesting contradiction: Even though researchers, policymakers, and teacher education leaders tend to advocate the removal of dichotomies between the two domains as an ideal for collaborative settings between schools and higher education, the analyses reveal that perceptions of dichotomies and binaries are not only very much present among the participants but also seem to provide hybrid educators with a sense of confidence in offering "different" expertise. It is therefore relevant to ask if the rejection of binaries such as "theory and practice" (e.g., Zeichner, 2010) should be an assumed aim of university–school collaboration in general and the employment of hybrid positions in particular. Rather, the findings provide nuanced demonstrations of opportunities involved in including hybrid educators in practices that emphasise and make use of the unique strengths and expertise that these positions bring to the fore. For instance, the findings demonstrate the potential of establishing co-teaching sessions between hybrid educators and campus-based educators where differentiated responsibilities are explicitly

articulated and made use of. This may in turn help prospective teachers recognise and capitalise on the different strengths that exist in universities and schools (Jones et al., 2016). This implies that teacher education leaders need to clarify their intentions with employing hybrid educators in the higher education context. Furthermore, they may make better use of existing binaries by directing attention towards how differences can be brought into interaction in ways that promote what Akkerman and Bakker (2011) refer to as "coexistence at boundaries" (p. 143).

By highlighting the *work* conducted at epistemic boundaries of teacher education through analyses of micro-level practices, this study provides nuanced accounts of how boundaries are demarcated or bridged in ways that both enable and prevent hybrid educators' enactment of expertise in higher education contexts. As a growing body of research directs attention towards university—school collaboration, partnerships, and work in "hybrid" or "third" spaces, this study demonstrates the relevance of applying *boundary work*. This construct helps conceptualise and illuminate complex processes that provide affordances and constraints for those expected to forge connections at organisational and institutional intersections in teacher education.

5. Conclusions

Targeting schoolteachers with co-employment in higher education-based teacher education, this article illuminates aspects not yet identified in educational research by pinpointing how school—university boundaries are not "bridged" or "blurred" with well-meaning intentions of equality. The findings highlight opportunities involved in embracing and making use of the differences and tensions that hybrid educator positions bring to the fore. As it is likely that the employment of educators who work across institutional boundaries will be further promoted in pursuit of balancing "research based" and "professional relevance" in the context of teacher education, it is important to gain a better understanding of the opportunities and limitations involved in employing educators that work at these epistemic intersections.

This study is not without limitations. The empirical material was generated with a limited number of informants in one country. Thus, the empirical and conceptual implications should be developed through further research. Furthermore—yet beyond the scope of this study—other contextual features and the inclusion of additional informant groups, such as campus-based educators or student teachers, would have provided valuable insights into hybrid positions in the higher education context.

References

Abbott, A. (1988). *The system of professions: An essay on the division of expert labor.* University of Chicago Press. https://doi.org/10.7208/chicago/9780226189666.001.0001

Abbott, A. (2005). Linked ecologies: States and universities as environments for professions. *Sociological Theory, 23*(3), 245—274. https://doi.org/10.1111/j.0735-2751.2005.00253.x

Afdal, H. (2016). "Research-based" and "profession oriented" as prominent knowledge discourses in curriculum restructuring of professional programs. *Higher Education, 74*(3), 401—418. https://doi.org/10.1007/s10734-016-9998-7

Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research, 81*(2), 132—169. https://doi.org/10.3102/0034654311404435

Bullock, S. M. (2012). Creating a space for the development of professional knowledge: A self-study of supervising teacher candidates during practicum placements. *Studying Teacher Education, 8*, 143—156. https://doi.org/10.1080/17425964.2012.692985

Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education.* Routledge Falmer.

Creswell, J. W., & Poth, C. N. (2017). *Qualitative inquiry and research design: Choosing among five approaches.* SAGE Publications.

Cuenca, A., Schmeichel, M., Butler, B., Dinkelman, T., & Nichols, J. (2011). Creating a "third space" in student teaching: Implications for the university supervisor's

status as outsider. *Teaching and Teacher Education, 27*, 1068—1077. https://doi.org/10.1016/j.tate.2011.05.003

Daza, V., Gudmundsdottir, G. B., & Lund, A. (2021). Partnerships as third spaces for professional practice in initial teacher education: A scoping review. *Teaching and Teacher Education, 102*, 103338. https://doi.org/10.1016/j.tate.2021.103338

Edwards, A., Lunt, I., & Stamou, E. (2010). Inter-professional work and expertise: New roles at the boundaries of schools. *British Educational Research Journal, 36*(1), 27—45. https://doi.org/10.1080/01411920902834134

Ellis, V., & McNicholl, J. (2015). *Transforming teacher education: Reconfiguring the academic work* (Bloomsbury).

Fournier, V. (2000). Boundary work and the (un)making of the professions. In N. Malin (Ed.), *Professionalism, boundaries and the workplace* (pp. 67—86). Routledge.

Gieryn, T. F. (1983). Boundary-work and the demarcation of science from non-science: Strains and interests in professional ideologies of scientists. *American Sociological Review, 48*(6), 781—795. https://doi.org/10.2307/2095325

Jelstad, J. (2018). *Her blir superlærerne fra lokalskolene satt til å undervise studentene [Here, expert teachers from local schools teach student teachers].* Utdanningsnytt. https://www.utdanningsnytt.no/her-blir-superlaererne-fra-lokalskolene-satt-til-a-undervise-studentene/149238.

Jones, M., Hobbs, L., Kenny, L., Campbell, C., Chittleborough, G., Gilbert, A., Herbert, S., & Redman, C. (2016). Successful university-school partnerships: An interpretive framework to inform partnership practice. *Teaching and Teacher Education, 60*, 108—120. https://doi.org/10.1016/j.tate.2016.08.006

Klein, E., Taylor, M., & Onore, C. (2012). Finding a third space in teacher education: Creating an urban teacher residency. *Teaching Education, 24*(1), 27—57. https://doi.org/10.1080/10476210.2012.711305

Kvale, S., & Brinkmann, S. (2009). *InterViews. Learning the craft of qualitative research interviewing.* SAGE Publications.

Langley, A., Lindberg, K., Mørk, B. M., Nicolini, D., Raviola, E., & Walter, L. (2019). Boundary work among groups, occupations, and organisations: From cartography to process. *The Academy of Management Annals, 13*(2), 704—736. https://doi.org/10.5465/annals.2017.0089

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge University Press.

Liljegren, A. (2012a). Pragmatic professionalism: Microlevel discourse in social work. *European Journal of Social Work, 15*(3), 295—312. https://doi.org/10.1080/13691457.2010.543888

Liljegren, A. (2012b). Key metaphors in the sociology of professions: Occupations as hierarchies and landscapes. *Comparative Sociology, 11*(1), 88—112. https://doi.org/10.1163/156913212X621041

Lillejord, S., & Børte, K. (2016). Partnership in teacher education—A research mapping. *European Journal of Teacher Education, 39*(5), 550—563. https://doi.org/10.1080/02619768.2016.1252911

Lillejord, S., & Børte, K. (2017). *Lærerutdanning som profesjonsutdanning — forutsetninger og prinsipper fra forskning [Teacher education as a professional education — preconditions and principles from research]. Kunnskapssenter for Utdanning.*

Little, J. W. (2012). Understanding data use practices among teachers: The contribution of micro-process studies. *American Journal of Education, 118*(2), 143—166. https://doi.org/10.1086/663271

Liu, S. (2015). Boundary work and exchange: The formation of a professional service market. *Symbolic Interaction, 38*(1), 1—21. https://doi.org/10.1002/symb.137

Martin, S. D., Snow, J. L., & Torrez, C. A. (2011). Navigating the terrain of third space: Tensions with/in relationships in school-university partnerships. *Journal of Teacher Education, 62*(3), 299—311. https://doi.org/10.1177/0022487110396096

Mørk, B. E., Hoholm, T., Maaninen-Olsson, E., & Aanestad, M. (2012). Changing practice through boundary organizing: A case from medical R&D. *Human Relations, 65*(2), 263—288. https://doi.org/10.1177/0018726711429192

Nicolini, D. (2012). *Practice theory, work, and organization: An introduction.* Oxford University Press.

Norwegian Agency for Quality Assurance in Education (NOKUT). (2019). *Studiebarometeret 2019: Hovedtendenser [barometer of studies 2019: Main trends].* https://www.nokut.no/globalassets/studiebarometeret/2020/hoyere-utdanning/studiebarometeret-2019_hovedtendenser_1-2020.pdf.

Norwegian Ministry of Education and Research. (2017). *Nasjonal strategi for kvalitet og samarbeid i lærerutdanningene* [National strategy for quality and collaboration in teacher education] https://www.regjeringen.no/contentassets/d0c1da83bce94e2da21d5f631bbae817/kd_nasjonal-strategi-for-lærerutdanning_nett.pdf.

Norwegian University of Science and Technology (NTNU). (2019). *Vi ønsker å bygge en bro mellom lærerutdanningen og skoleverket [We wish to build a bridge between teacher education and schools].* Job advertisement. https://www.jobbnorge.no/ledige-stillinger/stilling/168790/universitetslektor-i-norsk-kombinert-stilling-hos-ntnu-og-troendelag-fylkeskommune.

Poyas, Y., & Smith, K. (2007). Becoming a community of practice — the blurred identity of clinical faculty teacher educators. *Teacher Development, 11*(3), 313—334. https://doi.org/10.1080/13664530701644607

Riessman, C. K. (2008). *Narrative methods for the human sciences.* SAGE Publications.

Schatzki, T. R., Knorr-Cetina, K., & von Savigny, E. (2001). *The practice turn in contemporary theory.* Routledge.

Vähäsantanen, K., Saarinen, J., & Eteläpelto, A. (2009). Between school and working life: Vocational teachers' agency in boundary-crossing settings. *International Journal of Educational Research, 48*, 395—404. https://doi.org/10.1016/j.ijer.2010.04.003

Waitoller, F. R., & Kozleski, E. B. (2013). Working in boundary practices: Identity development and learning in partnerships for inclusive education. *Teaching and Teacher Education, 31*, 35—45. https://doi.org/10.1016/j.tate.2012.11.006

Wang, X., & Wong, J. L. N. (2017). How do primary school teachers develop knowledge by crossing boundaries in the school—university partnership? A case study in China. *Asia-Pacific Journal of Teacher Education, 45*(5), 487—504. https://doi.org/10.1080/1359866X.2016.1261392

Williams, J. (2013). Boundary crossing and working in the third space: Implications for a teacher educator's identity and practice. *Studying Teacher Education, 9*(2), 118—129. https://doi.org/10.1080/17425964.2013.808046

Williams, J. (2014). Teacher educator professional learning in the third space: Implications for identity and practice. *Journal of Teacher Education, 65*(4), 89—99.

https://doi.org/10.1177/0022487114533128

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education, 61*(1—2), 89—99. https://doi.org/10.1177/0022487109347671

Zeichner, K., Payne, K. A., & Brayko, K. (2015). Democratizing teacher education. *Journal of Teacher Education, 66*(2), 122—135. https://doi.org/10.1177/0022487114560908

Zietsma, C., & Lawrence, T. B. (2010). Institutional work in the transformation of an organizational field: The interplay of boundary work and practice work. *Administrative Science Quarterly, 55*(2010), 189—221. https://doi.org/10.2189/asqu.2010.55.2.189

Article 2

Risan, M. (Under review). Schoolteachers as educators in higher education: Making sense of "research" in the context of research-based teacher education. *Under review in Teachers and Teaching.*

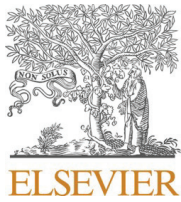**[Article not attached due to copyright]**

Article 3

Risan, M. (2020). Creating theory-practice linkages in teacher education: Tracing the use of practice-based artefacts. *International Journal of Educational Research, 104.*

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Creating theory-practice linkages in teacher education: Tracing the use of practice-based artefacts

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ABSTRACT

Relatively little attention has been paid to how educators actively construct linkages between different forms of knowledge at the micro-level of educational activities in campus-based teacher education. The current article addresses this gap in existing literature by empirically examining how educators construct theory-practice linkages through the use of practice-based artefacts when teaching at campus. By employing analytical tools associated with a sociomaterial perspective, the article demonstrates the value of applying this perspective to examine the role specific artefacts can play in forging linkages between different forms of knowledge, and highlights the creative and constructive work required by educators for such linkages to be made transparent in a higher education context.

1. Introduction

In the field of teacher education, a key challenge over several decades has been to establish relations between different forms of knowledge in ways that support student learning and reduce the "practice shock" of novice teachers. Traditionally, many have characterised the challenge as one of bridging the "theory-practice gap", applying a distinction between so-called theoretical and practical knowledge to denote the knowledge cultures associated with higher education-based and school-based components of teacher education programs (e.g., Carr, 1995; Korthagen, Loughran, & Russel, 2006). Researchers have documented several efforts to strengthen such linkages; for instance, by making professional practice represented and relevant in the higher education context by establishing stronger university-school partnerships (e.g., Zeichner, 2010) or grounding campus-based activities in core tasks of the teaching profession (e.g., Grossman, Hammerness, & McDonald, 2009). However, relatively little attention has been paid to how educators actively construct linkages between different forms of knowledge at the micro-level of educational activities in campus-based teacher education.

The current article addresses this gap in existing literature by examining how educators construct theory-practice linkages through the use of artefacts associated with professional practice in schools when teaching at campus. Typical practice-based artefacts include teaching materials, local curricula, teaching methods and pupil texts. By employing a sociomaterial perspective with analytical emphasis on how these artefacts are mobilised in specific educational activities, this article demonstrates the analytical potential of sociomaterial perspectives for examining the generative role that practice-based artefacts can play in the pursuit of theory-practice linkages. The analysis also highlights the considerable creative and constructive work that is required from educators to successfully re-contextualise such artefacts to learning situations in a higher education context.

Empirically, the article foregrounds the campus-based teaching of a specific group of educators in Norwegian teacher education,

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referred to in this article as *hybrid educators*[1] . Working both as teachers in schools and educators in campus-based teacher education, hybrid educators are particularly associated with an expectation of "building bridges" between the two knowledge cultures they work in (e.g., NTNU, 2019), and unlike campus-based educators, they have a unique opportunity to bring practice-based artefacts from the school-context to the higher-education context.

Norwegian teacher education provides an interesting empirical case, as national strategies require teacher education institutions to provide programs that are both "profession-oriented" and "research-based", for instance as an MA is increasingly demanded to teach at all school levels (Ministry of Education & Research, 2016). Yet; researchers have identified a weak link between campus-based and school-based components (Fosse, 2016; Jahreie & Ottesen, 2010), and student teachers continue to view Norwegian teacher education programs as fragmented (Lillejord & Børte, 2017; NOKUT, 2016). Attempts to address this challenge have led policymakers to introduce strategies aimed at strengthening "integration" between forms of knowledge and the professional relevance of teacher education (Ministry of Education & Research, 2017). One element of this strategy has been to expand the employment of hybrid educators; in this context, hybrid educators represent an effort to bring practitioner knowledge into higher education in order to construct stronger relations between professional practice in schools and campus-based teacher education.

Based on observational data and in-depth interviews, the current article provides an empirical and conceptual contribution to research on constructing linkages in teacher education by studying how different forms of knowledge are mobilised and linked to each other through the use of practice-based artefacts. In this study, the practice-theory distinction is applied to represent forms of knowledge, as this is an established way to talk about these different epistemologies, both in research (e.g., Carr, 1995; Kennedy, 1999; Korthagen et al., 2006; Kvernbekk, 2001) and among educators in this study. The following research questions are addressed: How are linkages between theoretical and practical knowledge created when hybrid educators use artefacts from professional practice in their campus-based teaching? What are the implications for how we understand and conceptualise efforts to strengthen theory-practice linkages in campus-based teacher education?

2. Bridging the theory-practice gap in teacher education

A vast line of literature addresses the challenge of creating meaningful connections between the different sites of learning and forms of knowledge that make up teacher education programs. These strands of literature focus on the construction of knowledge connections at different levels of the education program, for instance by foregrounding curriculum content or program structure. In the following, the body of literature related to how educators work to create theory-practice linkages in the campus-based context will be emphasised.

An extensive body of literature investigates how different forms of knowledge come together in teacher education by applying the concept of a *third space* to denote the merging point between schools and universities (e.g., Bullock, 2012; Williams, 2013; Zeichner, 2010). Zeichner (2010) argues that the third, or hybrid, space is an essential dimension of teacher education where forms of knowledge come together in less hierarchical ways and involves "a rejection of binaries such as practitioner and academic knowledge and theory and practice, and involve[s] the integration of what are often seen as competing discourses in new ways—an either/or perspective is transformed into a both/also point of view" (p. 92). Korthagen et al. (2006) suggest that educators working in the third space must hold three different perspectives simultaneously; the perspective of the individual learning to teach, the perspective of the teacher in a school, and the perspective of the teacher educator in the university setting (p. 1034). Thus, the notion of the third space provides a fruitful conceptual backdrop to study efforts of breaking down dichotomies in teacher education by bringing different epistemologies and practices closer together; for instance, with hybrid educator roles.

A considerable body of literature foregrounds the notion of *coherence* as a means of creating connections between different forms of knowledge. This body of literature has produced several concepts for describing aspects of coherent teacher education programs—such as structural and conceptual coherence—foregrounding meaningful interrelationships between program components and different actor's perceptions and experiences of coherence between these components (Darling-Hammond, 2008; Hammerness, 2006). Even though this literature primarily emphasises connections at the program level of teacher education programs, a few studies have examined coherence by foregrounding the work of educators specifically. Hammerness (2013) conducted a study foregrounding conceptual and structural coherence by examining characteristics of coherence in Norwegian teacher education, and based on documents and interviews with program leaders and educators the study found that many educators and program leaders draw a clear distinction between campus courses and the practical work taking place at schools. The study further points to a lack of opportunities for student teachers to learn in the context of practice, as educators contended that in campus courses, relatively little time was used to analyse pupils' work or other artefacts used in classrooms. A study presenting findings from observations of methods courses in Finnish, Norwegian and American teacher education programs supports findings from Hammerness' study (Jenset, Hammerness & Klette, 2018). Together, these findings confirm the notion of a persisting "gap" between professional practice in schools and higher education courses in the Norwegian teacher education context.

Within literature foregrounding opportunities for student teachers to learn from practice in the higher education setting, a line of researchers has focused on strategies, routines or activities that campus-based teaching should focus on in order to make the connection between campus courses and professional practice in schools more evident. In this literature, the activities of the teaching profession that educators should foreground at campus are referred to as *core practices* (Grossman et al., 2009; Jenset, 2017), *generative*

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[1] In Norwegian policy documents (e.g., Ministry of Education & Research, 2017), teachers working both as teachers in schools and as educators at campus are mainly referred to as *kombinasjonsstillinger* (combined positions) or *delte stillinger* (divided positions).

practices (Franke & Kazemi, 2001), or *high-leverage practices* (Hatch & Grossman, 2009). Presented as a characterisation of quality in teaching preparation, core practices are explained as practices that occur often in the teaching profession, and it is suggested that a focus on these in both teacher education and work placement will make the connection between theoretical aspects of higher education and aspects of professional practice more evident for student teachers (Grossman et al., 2009). In sum, these notions provide valuable foundations for structuring the content of teacher education programs in order to create stronger linkages between different forms of knowledge. However, there has been less empirical attention to how educators work to construct such linkages through their everyday teaching activities in campus-based education. This analytical level is important because structural and conceptual coherence are ultimately supported and sustained by the micro-practices that educators enact in their daily work. Consequently, efforts aimed at closer integration of different forms of knowledge need to be reflected in educators' approaches to specific tasks and teaching materials. More specifically, analytical emphasis needs to be paid to how educators link representations of different forms of knowledge to each other.

In line with this analytical approach, an emerging body of research has explored representations of professional practice at campus by foregrounding how tools or artefacts from professional practice are used in the campus-based setting. A majority of these studies focus on tools as representations of teaching and student learning in mathematical teacher education specifically (e.g. Ghousseini & Sleep, 2010; Herbst & Chazan, 2011; Lampert & Ball, 1998), where the aim is "making practice studyable" on campus by grounding learning in the "real material of teaching" (Ghousseini & Sleep, 2010, p.159). In a study on the use of practice-based learning for students teachers of mathematics, Ghousseini and Sleep (2010) argue that practice should be made studyable in a way that enables learners to become deliberate users of practice beyond that particular artefact, and the study further points out that practice is made studyable when educators explicitly model good teaching by adapting the activities to the background knowledge of student teachers, and by explicitly articulating goals and intentions that allow a study of practice where the educators do not "do the work for the learners" (Ghousseini & Sleep, 2010, p. 159). Even though these studies point at the potential of applying activities at campus that visualises the practical tasks of teaching, a report on partnership teacher education in England and Scotland identified missed learning potential as student teachers tended to interpret artefacts that educators applied from the professional field as "a rule" or "something that you do", rather than engaging in a learning process of discovering the conceptual underpinnings of such artefacts (Ellis, Blake, McNicholl, & McNally, 2011, p. 20). In this report, educators were found to primarily apply artefacts from the professional context, and researchers identified a tension in how these artefacts could function as a "tool" that mediated learning of student teachers or perceived with more instrumental motives as a "rule" (Ellis et al., 2011, p. 19-22). Combined, these findings both emphasise the opportunities of learning that may arise when artefacts from professional practice are applied, but also the challenges involved in applying these artefacts in a way that they are not merely interpreted as instrumental recipes for completing particular tasks of teaching.

In sum, these strands of research provide valuable perspectives on how to research and conceptualise theory-practice connections in campus-based teacher education by emphasising efforts made to make professional practice represented and relevant in the higher education context. The current article further expands on existing literature by analytically foregrounding the micro-practices involved when educators attempt to re-contextualise practice-related artefacts to campus-based teaching, demonstrating the different roles specific artefacts can play in forging linkages between forms of knowledge, and highlighting the creative and constructive work required by educators for such linkages to be made transparent.

3. Theoretical perspectives

A sociomaterial perspective offers a fruitful framework to investigate linkages between forms of knowledge in campus-based teacher education by highlighting knowledge as embedded in the routines and materials of professional practice (e.g., Carlile, 2004; Fenwick & Nerland, 2014; Knorr Cetina, 1999). From this view, professional practices are considered to be processes that take place within social systems that have evolved culturally and historically, and the *artefacts* (e.g., Cole, 1996; Fenwick, 2010) professionals make use of in these processes are historically laden and carry specific constraints and affordances that shape and guide interaction with them. Thus, the task of forging stronger relations between higher education and professional practice is not simply a matter of "bridging theory and practice", but rather involves the bridging of two sets of institutional practices and artefacts that have historically had two different purposes; whereas higher education institutions have been oriented towards the production and dissemination of research-based knowledge, work in schools is oriented towards educating children and youth. Within these two domains, what is considered legitimate and valid knowledge will differ, as they are characterised by two distinct knowledge cultures that serve different purposes (Knorr Cetina, 1999). In brief, universities and schools are characterised by different forms of knowledge that are materialised through the use of artefacts.

In this study, the practice-theory distinction is applied to represent these two forms of knowledge. The "theoretical" knowledge associated with the higher education context is often characterised as formal knowledge consisting of research-based, methodological, theoretical, and codified aspects (e.g., Cochran-Smith & Lytle, 1999; Eraut, 2004; Grossman, 1990; Nerland, 2012; Schulman, 1987). Some typical examples of artefacts associated with this domain include concepts, theories, research articles, general principles or abstract models. Theoretical and research-based knowledge can be viewed as an important aspect of professional practice; however, many researchers have emphasised the challenge involved in demonstrating the relevance of theoretical knowledge for practitioners, and the challenge involved in "translating" abstract knowledge from the higher education context to the specific tasks and requirements of professional practice (e.g., Eraut, 2004; Kvernbekk, 2001).

"Practical knowledge" is primarily associated with the tasks and demands of professional practice and can be characterised as situated and contextual, bounded by time, space and task (Fenstermacher, 1994). Practical teacher knowledge has been described as founded on a less accumulated and structured knowledge base than that associated with higher education (Lohman & Woolf, 2001;

Pedder & Opfer, 2013). In schools, typical artefacts associated with professional practice include teaching materials, pupil texts, local curricula or specific teaching methods. In order to perform school tasks, teachers are found to apply knowledge that can be characterised as primarily tacit and personal, shaped by experience and reflexivity (Cochran-Smith & Lytle, 1999; Nerland, 2012; Schön, 1987). Furthermore, teaching practice has been described as being based on a highly individualised work culture (Klette & Carlsten, 2012; Little, 1990) and a weak theoretical orientation (Ball & Cohen, 1999; Hargreaves, 2000; Grossman, Hammerness, McDonald, & Ronfeldt, 2008).

A sociomaterial perspective assumes that the physical and conceptual artefacts associated with specific knowledge domains carry beliefs, knowledges and logics from the culture they originate from, and offer constraints and affordances for use (Cho & Wayman, 2014; Nerland & Jensen., 2012). This assumption makes the work of hybrid educators an interesting empirical case for examining knowledge relations in teacher education: The hybrid educators literally bridge two institutional cultures by virtue of working both in schools and higher education, and they are specifically tasked with "bridging" this cultural and epistemic gap. They are therefore well positioned to bring practice-related artefacts into higher education to support student learning and forge relations between different forms of knowledge. However, the specific role that artefacts play in teacher education will depend on how they are taken up and mobilised by educators in classroom settings, including how they are related to other conceptual and material artefacts. Furthermore, artefacts that travel from one culture to another typically need to be translated and re-contextualised as they enter a new setting; when practice-related artefacts are introduced in a higher education setting, it is not necessarily clear how linkages are to be made between the artefact and the knowledge that is valued in higher education, or how the artefact can be mobilised to support student learning. Further, artefacts are often complex, can have diverse potentials, and require analysis and creative work to serve specific purposes.

In summary, the perspective adopted here implies an analytical focus on how theoretical and practical knowledge are mobilised and placed in relation to each other when artefacts from professional practice are used in campus-based teaching.

4. Methodology and analytical approach

The data used in this paper is derived from observations and in-depth interviews of three hybrid educators at three teacher education institutions. This group of educators are particularly associated with an expectation of "building bridges" between the two knowledge cultures they work in and have a unique opportunity to bring practice-related artefacts from the school-context to the higher-education context. Even though several teacher education institutions have long traditions of including teachers in campus-based tasks, for instance as part of university-school partnerships, there is not an established tradition in Norway of employing hybrid educators; thus, the tasks they are asked to perform as part of teacher education programs vary from institution to institution, and it was therefore of interest to recruit hybrid educators from more than one institution. The selection criteria for choosing informants to this study were that they worked at different teacher education institutions and that each of them had a workload of at least 20 % related to teacher education.

To recruit informants, leaders at eight teacher education institutions were contacted, and four of these confirmed that they had employed hybrid educators for the 2018–2019 academic school year. These institutions provided contact information and three of the educators confirmed that they were willing and interested in participating in the study. The informants were notified that participation was voluntary and that they could withdraw at any time. The project was approved by the Norwegian Centre for Research Data (NSD).

The informants (see Table 1) were observed in the different campus-based settings they participated in throughout the academic school year of 2018–2019. The observation material consists of field notes, including near-verbatim reconstructions of spoken interaction, and make up approximately 100 h of observations. Due to the geographical distance, it was challenging to observe all of Nina's campus-based activities, and therefore, observations of Emma and Ingrid comprise a majority of the observation material. The observations provided information about how the informants used artefacts in their work as educators, and after observing the informants over time, in-depth interviews were conducted in order to get a better understanding of their intentions and considerations when applying different artefacts. The three interviews were semi-structured and lasted one hour each; they were audiotaped and subsequently transcribed.

The analysis was guided by the following research question: How are linkages between theoretical and practical knowledge created when hybrid educators use artefacts from professional practice in their campus-based teaching? To examine this, the analytical process

Table 1
Overview informants.

Name of informant (fictious)	Ingrid	Emma	Nina
Workload	20 % as teacher educator 80 % as secondary school teacher	30 % as teacher educator 70 % as upper secondary school teacher	50 % as teacher educator 50 % as upper secondary school teacher
Main campus-based tasks	Teaching seminars focusing on aspects of the teaching profession	Teaching religion and ethics didactics	Teaching social science didactics
Other teacher educator tasks	Mentoring students in their practicum	Mentoring students in their practicum Participating in research group Evaluating student papers and exams	Mentoring students in their practicum Participating in research group Evaluating student papers and exams

was initiated by a preliminary open reading of both sets of data, identifying all instances where artefacts were used in the observation material and talked about in the interviews, focusing on the educators' campus-based teaching. The analyses were then conducted through the following steps: First, I identified all episodes in the observational material where the informants used artefacts that could be said to originate from professional practice, focusing on physical artefacts. The analysis revealed that the informants mainly applied a variety of artefacts from professional practice, but also, they were found to use research articles, curriculum extracts and artefacts that could be said to represent other forms of knowledge.

I then completed a thick description (Geertz, 1973) of how these artefacts were used, with an emphasis on how linkages between practical and theoretical knowledge were created. From these analyses, two prominent and recurring patterns emerged (Ryan & Bernard, 2003); one characterised by episodes when theoretical and practical knowledge were explicitly linked to each other through the use of a practice-based artefact, the other when linkages were mentioned but not further pursued. To enable a more detailed exploration of the different ways theoretical and practical knowledge were linked to each other, I employed two intermediate concepts to the analyses (Hermansen & Nerland, 2014; Jahreie & Ottesen, 2010; Vennebo, 2016). The concept of *knowledge mobilisation* is used to highlight how different forms of knowledge are mobilised and made relevant when artefacts are introduced, and the concept of *knowledge linkages* is used to identify how these forms of knowledge are put in specific relations to each other through the use of artefacts. These concepts contributed to identify how theoretical and practical knowledge were made relevant for practice-based artefacts in different ways and helped pinpoint what it entails to make use of these linkages.

The examples included in the empirical analyses do not cover all linkages created; they are chosen as they represent characteristic, yet different ways, that forms of knowledge are linked through the use of practice-based artefacts and reflect the diversity of linkages created. Furthermore, the examples are chosen as they show both how linkages that are initially mobilised are explicitly made use of, and how they remain latent, reflecting the constructive and challenging work that is involved in using practice-based artefacts in ways that make linkages to the higher education context available. Extracts from the interviews are included in the analyses to shed light on how the educators reason about artefacts and different forms of knowledge.

The study has limitations in that it explored linkages by using a limited set of qualitative data sources and does not account for students' perceptions ; thus, this study's empirical and conceptual implications may be further developed through additional empirical research. In order to ensure validity and consistency in the study (Cohen, Manion, & Morrison, 2013), text segments from the analysis were discussed with other researchers, who provided feedback.

5. Empirical analysis

5.1. Example 1: the evaluation criteria

This example illustrates how linkages are created when theoretical knowledge is mobilised as an analytical tool that can be used to scrutinise conceptual underpinnings of an artefact from professional practice, and shows how these linkages are made explicitly available for student teachers when approaching the artefact.

Teaching a seminar on the topic of oral competence and oral activity, Emma initiates a task where a sheet of evaluation criteria used in a school subject is the main artefact:

> Emma: "I have used these criteria for oral assessments with my pupils. Remember that the general subject demands are a foundation. Do you remember Bloom's taxonomy?" She explains Bloom's taxonomy, saying it has to do with moving from reproducing information to being able to reflect on a topic and says that the article on this is on their learning platform. "Now, discuss advantages and disadvantages with these evaluation criteria, and suggest changes." The students discuss the evaluation criteria. Emma asks them to share their thoughts and reminds them that these criteria are concerned with oral competence; the subject-specific competence is not explicitly mentioned. A group member says that they discussed that the difference between subject-specific terms and everyday language could be emphasised. Emma agrees and gives an example of a pupil who thought he deserved the top grade, but he did not use subject-specific vocabulary. Emma says that this can be related to Bloom's taxonomy.

When the sheet of evaluation criteria is introduced, Emma makes theoretical knowledge relevant for the practice-based artefact by mobilising knowledge of a specific conceptual framework. By emphasising aspects of Bloom's taxonomy when the artefact is approached, Emma positions theoretical knowledge from campus-based courses as a relevant analytical tool that can be used to scrutinise an artefact from professional practice, and thus makes theory-practice linkages explicitly available for the student teachers through the use of the artefact.

As the concept of Bloom's taxonomy is not explicitly mentioned in the evaluation criteria, the extract provides an example of how the educator has worked creatively to identify underlying linkages that the practice-based artefact provides and how these linkages are made relevant for student teachers as the artefact is re-contextualised to the higher education context. In the interview, Emma elaborates on the challenge involved in re-contextualising practice-related artefacts to the higher education context in ways that make them meaningful for student teachers:

> It's easier to deal with the research-based part than the practice-related part because practice-related needs to—I feel—be translated… I think the most complicated thing is doing classroom activities that they can transfer and use in their own teaching, without having to do the exact activity that is made for a fourteen-year-old. Before, I used to just explain classroom activities that they could do, more than actually asking them to do it. Because that translation process is complex, and I felt it myself when I studied teaching—it feels meaningless, as a student, to do activities at the secondary school level… it's enough to

just get it explained. You know, sitting in a Spanish class at university and being told to draw a picture and explain it in Spanish, it feels strange.

Here, Emma expresses a wish to provide student teachers with practice-based activities that they can "transfer" to their own teaching, but suggests that these should not be merely examples of practice as she points to the complexity of "translating" practice-based knowledge to the higher education context.

This example shows how theoretical knowledge is used as a tool to analyse conceptual underpinnings of a practice-based artefact. By positioning aspects of theoretical knowledge as relevant for approaching the practice-based artefact, the two epistemologies are promoted as interconnected forms of knowledge. The example further highlights the educators' awareness of the challenge involved in re-contextualising practice-based knowledge to the higher education context.

5.2. Example 2: the wheels of writing

In this example, theory-practice linkages are constructed when theoretical knowledge is mobilised to challenge existing practice and to validate the use of the practice-based artefact. Linkages are further forged as the educator uses the artefact to position theoretical knowledge as a form of knowledge that can shape and challenge professionalism and professional development.

In this extract, Ingrid teaches a seminar on written competence and initiates an activity with the "wheels of writing" as the foregrounded practice-related artefacts. The wheels of writing are artefacts developed by Norwegian researchers as a tool that can be used in all school subjects to highlight different aspects of written texts. Ingrid foregrounds paper versions of the two wheels; they are made of paper layers that are connected in the middle and can be turned in order to match categories of writing; for instance, purpose of writing and acts of writing (see Fig. 1).

Together with the paper versions of the wheels of writing, Ingrid provides the student teachers with an article that explains the research-based intentions and uses of the wheels:

> After showing the student teachers the two paper-versions of the wheels, Ingrid hands out a research article on the wheels of writing. "We're going to read a lot of theory now, guys. This is so important because teachers are committing sins out there." She says she asked teachers at her school about the wheels, but no one knew them. "And that is just embarrassing." Ingrid talks about the importance of writing in all subjects. "I have become much more aware after reading up on this; I've even become fond of the wheels." She holds up a copy of the first wheel, explains its parts to the students, and reads an extract about the wheel from the article. She says they should read the entire article in order to understand the greater context. The students are asked to cut out and put together a paper version of both wheels, and Ingrid says they should bring it for their school placements. "Remember, you are the future, we cannot continue to think that the focus on writing in all subjects will disappear. I believe that you understand the importance of this, it is really important." After the students have cut out their wheels, Ingrid asks them to discuss how they could use these wheels when teaching.

After introducing the wheels, Ingrid mobilises the research article as an artefact of "theory", and as the article explains the research-based intentions of the wheels, the theory-practice linkages between the two artefacts are easily accessible However, the example shows how theory-practice linkages are further forged as the article is not only used to validate the practical use, but also to challenge existing professional practice and the lacking use of the wheels. By emphasising the importance of the wheels for the student teachers' future practice and by characterising the lacking use of the wheels among her colleagues as "embarrassing", Ingrid creates linkages between the two forms of knowledge through the notion of research-based practice and professionalism.

Ingrid further points to the use of research as important for professional development when noting that she has become fonder of the wheels after reading the article, and thus, her own professional development trajectory is mobilised as a resource to position research-based knowledge as an important part of professional practice.

Fig. 1. An example of a wheel of writing (English version from Berge et al., 2019).

In the interview, Ingrid points to the use of research that is relevant for professional practice when asked what kind of research she includes in her campus-based teaching:

> Research tends to be a bit polarised, and you have professional practice in the middle somewhere. And then you constantly have to consider what personality you are—I do that with students in their practicum—but they have to find their own role as a teacher, and they have to be professional, and to be professional they have to lean on good research that works.

Here, Ingrid emphasises the link between research and professionalism as she describes being professional as applying "good research that works" for individual personalities of teaching. In line with this notion, the research-article in the extract is applied in a way that emphasises the relevance for professional practice.

In sum, this example shows how linkages are constructed when research-based knowledge is mobilised to validate the use of the practice-based artefact. The example further demonstrates how linkages are not only created through the easily accessible link between the article and the wheels, but the example further highlights the creative work of constructing linkages between theoretical and practical knowledge as the educator uses the artefact to position research-based knowledge as a form of knowledge that can shape and challenge professionalism and professional development.

5.3. Example 3: pupil texts and teacher feedback

This extract provides an example of how theory-practice linkages are created when theoretical knowledge is mobilised as a form of knowledge that can be put to the test by practice-based artefacts. The example further illustrates how these linkages remain latent when the artefacts are approached in a way that provides students with an example of solving a task of professional practice without making use of the linkages that are initially mobilised.

In this extract, Nina asks student teachers to read two sets of anonymised pupil texts and her feedback for the first and the final version of the texts. The feedback has been removed from the pupil texts, and the student teachers are asked to find out where the teacher feedback belongs:

> "You are going to look at the first draft, my feedback, and the final text. I have removed the feedback from the text, so you have to find out where in the texts you think the feedback belongs. Do we think that the formative assessment, that research claims is so good, has had any effect?" The students read the text and feedback. After a while, Nina asks if they can discuss the task together. She tells them to focus on the first anonymised pupil text and asks where they think the feedback belongs. No one answers. Nina asks if it was a difficult task, some students nod. She explains where the feedback belongs. They look at the final version of the text. "Here, the pupil has listened to his teacher's advice. He has included other perspectives and moved the paragraph and the sentence that I commented on." Nina shows the feedback she gave for the final version of the text and moves on to the next text. She explains where the feedback belongs. A student says that this pupil was given very specific advice. Nina says that the feedback is adapted to the pupil, and this pupil needs clearer feedback.

As the practice-based artefacts are introduced, Nina mobilises theoretical knowledge by pointing out that research can be used to put claims of formative assessment to the test on these real artefacts of assessment. However, this theory-practice linkage is not made further use of when the students approach the artefact or in the discussion following the activity, and thus, the research-based underpinnings of the practice-based artefacts remain latent. Rather, the practice-based artefacts are used as examples of how to solve a task of practice; more specifically, the task of assessing pupil texts. As the student teachers seem to be quite unfamiliar with the task of assessing, the educator moves on to explain where her feedback belongs, and thus, provides the students with examples of professional practice.

When asked to consider if her campus-based teaching as a hybrid educator is different than that of other educators, Nina emphasises the access to practical knowledge:

> Of course, other educators have a good understanding of professional practice as well, they are often out there researching, but it is something different being out there every day, teaching and tackling the challenges that arise, seeing what works, what makes the pupils motivated when they learn something. That is something I think the students appreciate getting to know more about.

Here, Nina points to the importance of providing students with examples from professional practice, noting that her position as a hybrid educator allows her to provide students with "authentic" practice experience from her own professional practice as a teacher, and this may explain why the pupil texts are used primarily to show student teachers how to assess pupils, without further pursuing linkages that are initially mobilised.

In sum, this example shows that theoretical knowledge is mobilised and made relevant for practice-based artefacts and further demonstrate how the linkages that are initially constructed with the intention of putting theoretical knowledge to the test, remain latent when the practice-related artefact is used to provide student teachers with an instrumental example of how to solve a task of professional practice. The extract further highlights the hybrid educator's wish to provide student teachers with authentic examples from practice.

5.4. Summary

The empirical examples illustrate how theoretical and practical knowledge are mobilised and linked to each other when practice-based artefacts are introduced in the higher education context in ways that promote the two epistemologies as interconnected forms of

knowledge; specifically, with the purpose of scrutinising theoretical underpinnings of evaluation criteria, verifying the practical use of the wheels of writing, or putting research claims of formative assessment to the test. Two of the examples demonstrate that these linkages are explicitly made use of when the artefacts are approached, while the last example illustrates how linkages that are initially constructed, remain latent as the artefact is used to provide an instrumental example of solving a practical task. In line with this use of a practice-based artefact, the analyses identify a wish among the educators to provide student teachers with authentic, relevant examples from practice. In sum, the analyses exemplify the creative and constructive work required by educators when they do what Emma identifies as "translating" practice-based artefacts to the higher education context and illustrate what it requires to identify theory-practice linkages that are relevant for the artefact and make these linkages available when the artefacts are used.

6. Discussion and conclusions

The article set out to examine how educators construct theory-practice linkages through the use of practice-related artefacts when teaching at campus. By employing a sociomaterial perspective with analytical emphasis on how these artefacts are used in specific educational activities, the analyses demonstrate the role artefacts can play in forging theory-practice linkages. Providing empirical examples of how educators put different forms of knowledge in relation to each other when artefacts from professional practice are used, the analyses also highlight the considerable creative and constructive work that is required from educators to successfully re-contextualise such artefacts to learning situations in a higher education context in ways that make knowledge linkages transparent.

The analyses exemplify that an analytical focus on artefacts can help identify how educators work to create linkages between theoretical and practical knowledge in campus-based teaching. Specifically, the examples demonstrate how these forms of knowledge are put in relation to each other in different ways and to different purposes; for instance, to explore the theoretical underpinnings of a practice-based artefact, to validate the practical use of an artefact with claims of research, or to put claims of theoretical knowledge to the test with practice-based artefacts. These examples show how artefacts can be used to promote theory and practice as interconnected epistemologies, and thus, the analyses contribute with specific empirical examples of what it may entail to do what Zeichner (2010) refers to as integrating "competing discourses of theory and practice" when educators work in the merging point between school-based and university-based teacher education and bring practical knowledge to the higher education context.

The empirical analyses further demonstrate that even though different forms of knowledge are mobilised and made relevant for practice-based artefacts, linkages between these are not necessarily explicitly made use of when the artefacts are approached. The analyses pinpoint the challenge involved in making theory-practice linkages available for student teachers by providing an example of how these remain latent when pupil texts are used to provide student teachers with examples of solving a practical task without making use of the linkages that were initially mobilised. This use of practice-related artefacts can be characterised by a tendency to do what Ghousseini and Sleep (2010) refer to in their study as "doing the job for the students", and the findings align with claims from Ellis et al. (2011), as they illustrate how artefacts from professional practice become instrumental "recipes" when educators use these in ways that provide students with examples of what works when completing specific professional activities. The analysis suggests that this use of practice-related artefacts may be a result of the hybrid educators' role as both teachers in schools and educators at campus, and their wish to provide student teachers with what is referred to in the interviews as "authentic" examples that they can "transfer" to their own professional practice. Thus, practice-based artefacts are not used in ways that reveal how theoretical and practical knowledge are related to each other beyond the specific artefact, but rather, to provide instrumental examples of professional practice without clear linkages to the higher education context.

By foregrounding empirical examples of the artefacts educators use and tracing the knowledge linkages that are made relevant with these, the current paper has implications for how we can understand and conceptualise efforts to strengthen theory-practice linkages in campus-based teacher education with an increased focus on materiality. Employing analytical tools associated with sociomaterial perspectives, the article demonstrates the role artefacts can play in forging linkages between different knowledge domains and highlights the work required by educators for such linkages to be made. The analyses further pinpoint an awareness among the educators of the challenges involved in re-contextualising artefacts from one epistemic culture to the other, as one of the educators points out teaching the research-based as a less complex task due to the challenge of *translating* the practice-based in ways that make this knowledge meaningful and relevant in the higher education context.

Whereas the existing lines of research on third space, coherence and core practices highlight ways of structuring the content of teacher education programs in order to promote epistemic connections, relatively little attention has been paid to how educators actively construct linkages between different forms of knowledge at the micro-level of educational activities in campus-based teacher education. This analytical level is important because structural and conceptual coherence are ultimately supported and sustained by the micro-practices that educators enact in their daily work. The sociomaterial conceptualisation of how educators' work to construct knowledge linkages that is demonstrated in this study, is especially helpful as new educator roles—such as the hybrid educator role—are created in the higher education context with the intention of "building bridges" in the third space between higher education components and practice, without a specification of what this work entails for educators when teaching at campus.

A dimension that could benefit from further research is the perspective of student learning, as this article does not account for students' perceptions of knowledge linkages created. The findings raise a more general question of the knowledge hybrid educators bring to the campus-based context, and further research is needed to explore how their knowledge as both practitioners and educators can be put in fruitful collaborations with other actors in order to strengthen connections in teacher education programs.

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References

Ball, D. L., & Cohen, D. K. (1999). Developing practice, developing practitioners: Towards a practice-based theory of professional education. In L. Darling-Hammond, & G. Sykes (Eds.), *Teaching as the learning profession: Handbook of policy and practice* (pp. 3–32). San Fransico: Jossey-Bass.

Berge, K. L., Skar, G. B., Matre, S., Solheim, S., Evensen, L. S., Otnes, H., et al. (2019). Introducing teachers to new semiotic tools for writing instruction and writing assessment: Consequences for students' writing proficiency. *Assessment in Education Principles Policy and Practice, 26*(1), 6–25. https://doi.org/10.1080/0969594X.2017.1330251.

Bullock, S. M. (2012). Creating a space for the development of professional knowledge: A self-study of supervising teacher candidates during practicum placements. *Studying Teacher Education, 8*, 143–156.

Carlile, P. R. (2004). Integrative framework for managing knowledge across boundaries. *Organization Science, 15*(5), 555–556. https://doi.org/10.1287/orsc.1040.0094.

Carr, D. (1995). Is understanding the professional knowledge of teachers a theory-practice problem? *Journal of Philosophy of Education, 29*(3), 311–331. https://doi.org/10.1111/j.1467-9752.1995.tb00363.x.

Cho, V., & Wayman, J. C. (2014). Districts' efforts for data use and computer data systems: The role of sensemaking in system use and implementation. *Teachers College Record, 116*(2), 1–45.

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education, 24*, 249–305. https://doi.org/10.2307/1167272.

Cohen, L., Manion, L., & Morrison, K. (2013). *Research methods in education*. New York: Routledge.

Cole, M. (1996). *Cultural psychology: A once and future discipline*. Cambridge: The Belknap Press of Harvard University Press.

Darling-Hammond, L. (2008). Teacher learning that supports student learning. *Educational leadership, 55*(5), 6–11.

Ellis, V., Blake, A., McNicholl, J., & McNally, J. (2011). *The work of teacher education: Final research report* [Report] Retrieved from https://strathprints.strath.ac.uk/31809/.

Eraut, M. (2004). Transfer of knowledge between education and workplace settings. In H. Rainbird, A. Fuller, & A. Munro (Eds.), *Workplace learning in context* (pp. 201–221). London: Routledge.

Fenstermacher, G. (1994). The Knower and the known: The nature of knowledge in research on teaching. *Review of Research in Education, 20*, 3–56.

Fenwick, T. (2010). Re-thinking the "thing": Sociomaterial approaches to understanding and researching learning in work. *The Journal of Workplace Learning, 22*(1/2), 104–116.

Fenwick, T., & Nerland, M. (2014). *Reconceptualising professional learning. Sociomaterial knowledges, practices and responsibilities*. New York: Routledge.

Fosse, B. O. (2016). Transformering av kunnskap mellom campus og skole i lærerutdanningen. [Transforming knowledge between campus and school in teacher education]. *Acta Didactia, 10*(2), 235–251. https://doi.org/10.5617/adno.2498.

Franke, M. L., & Kazemi, E. (2001). Teaching as learning within community of practice: Characterizing generative growth. In T. Wood, B. S. Nelson, & J. Warfield (Eds.), *Beyond classical pedagogy: Teaching elementary school mathematics* (pp. 47–74). Mahwah, NJ: Lawrence Erlbaum.

Geertz, C. (1973). *The interpretation of cultures: Selected essays*. New York: Basic Books.

Ghousseini, H., & Sleep, L. (2010). Making practice studyable. *ZDM, 43*(1), 147–160. https://doi.org/10.1007/s11858-010-0280-7.

Grossman, P. L. (1990). *The making of a teacher: Teacher knowledge and teacher education*. New York: Teachers College Press.

Grossman, P. L., Hammerness, K., McDonald, M., & Ronfeldt, M. (2008). Constructing coherence: Structural predictors of perceptions of coherence in NYC teacher education programs. *Journal of Teacher Education, 59*(4), 273–287. https://doi.org/10.1177/0022487108322127.

Grossman, P., Hammerness, K., & McDonald, M. (2009). Redefining teaching, Re-imagining teacher education. *Teachers and Teaching Theory and Practice, 15*, 273–289. https://doi.org/10.1080/13540600902875340.

Hammerness, K. (2013). Examining features of teacher education in Norway. *Scandinavian Journal of Educational Research, 57*, 400–419. https://doi.org/10.1080/00313831.2012.656285.

Hammerness, K. (2006). From coherence in theory to coherence in practice. *Teachers College Record, 108*(7), 1241–1265. https://doi.org/10.1111/j.1467-9620.2006.00692.x.

Hargreaves, A. (2000). Four ages of professionalism and professional learning. *Teachers and Teaching, 6*(2), 151–182. https://doi.org/10.1080/713698714.

Hatch, T., & Grossman, P. (2009). Learning to look beyond the boundaries of representation: Using technology to examine teaching. *Journal of Teacher Education, 60*(1), 70–85. https://doi.org/10.1177/0022487108328533.

Herbst, P., & Chazan, D. (2011). Representation of mathematics teaching: Introduction to special issue. *ZDM, 43*(1–2). https://doi.org/10.1007/s11858-011-0306-9.

Hermansen, H., & Nerland, M. (2014). Reworking practice through an AfL project: An analysis of teachers' collaborative engagement with new assessment guidelines. *British Educational Research Journal, 40*(1), 187–206. https://doi.org/10.1002/berj.3037.

Jahreie, C. F., & Ottesen, E. (2010). Construction of boundaries in teacher education: Analyzing student teachers' accounts. *Mind Culture and Activity, 17*(3), 212–234. https://doi.org/10.1080/10749030903314195.

Jenset, I. S. (2017). *Practice-based teacher education coursework: An examination of the extent and characteristics of how teacher education coursework is grounded in practice across six teacher education programs in Finland, Norway and California, US* (Doctoral thesis). Retrieved from http://hdl.handle.net/10852/61976.

Jenset, Hammerness, & Klette. (2018). Grounding teacher education in practice around the world: An examination of teacher education coursework in teacher education programs in Finland, Norway, and the United States. *Journal of Teacher Education, 69*(2), 184–197. https://doi.org/10.1177/0022487117728248.

Kennedy, M. M. (1999). The role of pre-service teacher education. In L. Darling-Hammond, & G. Sykes (Eds.), *Teaching as the learning profession* (pp. 54–85). San Francisco: Jossey-Bass.

Klette, K., & Carlsten, T. C. (2012). Knowledge in teacher learning. New professional challenges. In D. W. Livingstone, D. Guile, & K. Jensen (Eds.), *Professional learning in the knowledge society* (pp. 69–84). Sense Publishers. https://doi.org/10.1007/978-94-6091-994-7_4.

Knorr Cetina, K. (1999). *Epistemic cultures*. Harvard: Harvard University Press.

Korthagen, F., Loughran, J., & Russel, T. (2006). Developing fundamental principles for teaching education programs and practices. *Teaching and Teacher Education, 22*, 1020–1041. https://doi.org/10.1016/j.tate.2006.04.022.

Kvernbekk, T. (2001). *Pedagogikk og lærerprofesjonalitet [Pedagogy and profesionality of teachers]*. Oslo: Gyldendal.

Lampert, M., & Ball, D. (1998). *Teaching, multimedia, and mathematics: Investigations of real practice*. New York: Teachers College Press.

Lillejord, S., & Børte, K. (2017). *Lærerutdanning som profesjonsutdanning - forutsetninger og prinsipper fra forskning [Teacher education as a professional education – preconditions and principles from research]*. Oslo: Kunnskapssenter for utdanning.

Little, J. W. (1990). The persistence of privacy: Autonomy and initiative in teachers' professional relations. *Teachers College Record, 91*, 50–536.

Lohman, M. C., & Woolf, N. H. (2001). Self-initiated learning activities of experienced public school teachers: Methods, sources, and relevant organizational influences. *Teachers and Teaching Theory and Practice, 7*(1), 59–74.

Ministry of Education and Research. (2016). *Forskrift om rammeplan for lærerutdanning for trinn 5-10. [Framework for secondary education]*. Oslo: Ministry of Education and Research.

Ministry of Education and Research. (2017). *National strategy for quality and collaboration in teacher education [Nasjonal strategi for kvalititet og samarbeid i lærerutdanningene]*. Retrieved from: https://www.regjeringen.no/contentassets/d0c1da83bce94e2da21d5f631bbae817/kd_nasjonal-strategi-for-larerutdanningene_nett.pdf.

Nerland, M. (2012). Professions as knowledge cultures. In D. W. Livingstone, D. Guile, & K. Jensen (Eds.), *Professional learning in the knowledge society* (pp. 27–48). Rotterdam: Sense Publishers. https://doi.org/10.1007/978-94-6091-994-7_2.

Nerland, M., & Jensen, K. (2012). Epistemic practices and object connections in professional work. *Journal of Education and Work, 25*(1), 101–120. https://doi.org/10.1080/13639080.2012.644909.

NOKUT. (2016). *Student survey [Studentbarometeret].* Oslo: Nasjonalt organ for kvalitet i utdanningen.

NTNU. (2019). *We wish to build a bridge between teacher education and schools [Vi ønsker å bygge en bro mellom lærerutdanningen og skoleverket]. Job advertisement.* Retrieved from: https://www.jobbnorge.no/ledige-stillinger/stilling/168790/universitetslektor-i-norsk-kombinert-stilling-hos-ntnu-og-troendelag-fylkeskommune.

Pedder, D., & Opfer, V. D. (2013). Professional learning orientations: Patterns of dissonance and alignment between teachers' values and practices. *Research Papers in Education, 28*(5), 539–570.

Ryan, G. W., & Bernard, H. R. (2003). Techniques to identify themes. *Field Methods, 15*(1), 85–109. https://doi.org/10.1177/1525822X02239569.

Schön, D. A. (1987). *Educating the reflective practitioner.* San Francisco: Jossey-Bass.

Schulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1–23. https://doi.org/10.17763/haer.57.1.j463w79r56455411.

Vennebo, K. F. (2016). Innovative work in school development: Exploring leadership enactment. *Educational Management Administration & Leadership*, 1–18. https://doi.org/10.1177/1741143215617944.

Williams, J. (2013). Boundary crossing and working in the third space: Implications for a teacher educator's identity and practice. *Studying Teacher Education, 9*(2), 118–129. https://doi.org/10.1080/17425964.2013.808046.

Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education, 6*(1–2), 89–99. https://doi.org/10.1177/0022487109347671.