Knowledge Discourses and Coherence in Professional Education

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Abstract

In recent years, significant attention has been paid to the relationship between different knowledge domains in professional education, based on the assumption that achieving coherence between domains is important for student learning and educational quality. In particular, much research has addressed questions of knowledge integration across different sites of learning. However, less attention has been paid to the epistemic diversity of the campus-based programme context and to how relationships between knowledge domains are constructed within epistemically diverse professional programmes. This article addresses this gap by examining how programme leaders discursively position disciplinary knowledge in relation to the mandate of teacher education. The data consist of interviews and logs from 20 programme leaders at four higher education institutions. The analysis identifies four accounts of the role of disciplinary knowledge in teacher education. The article concludes by discussing implications for efforts to achieve coherence and knowledge integration in professional education.

Keywords

Coherence, professional education, programme development, teacher education, knowledge discourses

Epistemic logics in professional education

Much research has highlighted the need for stronger integration between knowledge domains and sites of learning in teacher education (e.g., Buchmann & Floden, 1992; Grossman, Hammerness, & McDonald, 2009; Hammerness, 2006; Smeby & Heggen, 2014; Zeichner, 2010). A general assumption is that the configuration of different forms of knowledge in an educational trajectory is consequential for student learning. Designing programmes that are "integrated" or "coherent" is therefore seen as important for strengthening educational quality.

This field of research is thematically diverse. One strand has examined conceptualisations of coherence and their empirical manifestations (Canrinus, Bergem, Klette, & Hammerness, 2017a; Hatlevik & Smeby, 2015; Heggen & Terum, 2015). Others have foregrounded practical approaches to coherence, including principles for programme design and pedagogical implications (Hammerness, 2006; Jenset, Hammerness, & Klette, 2018). Other concerns include the need to combine research-based education with professional relevance (Afdal, 2017; Munthe & Rogne, 2015) and the importance of equal partnerships between schools and higher education institutions (Lillejord & Børte, 2016; Zeichner, 2010).

The role of disciplinary knowledge domains in professional education has received less attention. Professional education is characterised by epistemic pluralism, in which courses with disciplinary and professional orientations coexist. For example, a student teacher may take courses in sociology or history at disciplinary departments, while simultaneously studying pedagogy and educational policy at a teacher education unit. A nursing student may attend courses in anatomy or microbiology taught by faculty that have never practiced nursing, while qualified nurses teach public health nursing or professional ethics. More generally, professional education programmes are composed of knowledge domains that are organised according to two contrasting logics. Disciplinary knowledge domains are typically organised according to a self-referential logic that emphasises conceptual coherence. By contrast, "professional" knowledge domains tend to be organised around the conventions of professional practice.

Such differences in knowledge domains can be described through the terms conceptual and contextual coherence (Muller, 2009). These differences in epistemic logics imply that it is not always obvious how different knowledge domains are to be "integrated" for educational purposes. The creation of relationships between knowledge domains will also depend on how educators conceptualise their purpose in professional education. Consequently, it is of empirical and analytical interest to examine how such relationships are constructed by educators, since they are likely to inform practical efforts toward programme coherence.

This article examines how relationships between knowledge domains and the mandate of teacher education are constructed in a Norwegian teacher education programme. Known as Lektorprogrammet 8-13, this five-year master's programme qualifies teachers for lower and

upper secondary school. The programme is characterised by epistemic pluralism. Multiple faculties contribute to the programme, and students simultaneously take courses offered by disciplinary departments and teacher education units. With its combination of courses with disciplinary and professional orientations, this programme represents an interesting site for examining questions of knowledge integration in professional education.

The objective of the analysis is two-fold: to generate empirical knowledge about how the relationship between different knowledge domains can be manifested, and to contribute to our conceptual understanding of knowledge integration in professional education. The following research questions are addressed: How is the role of disciplinary knowledge in teacher education discursively framed and constructed? and What are the implications for efforts aimed at achieving programme coherence?

The data consists of individual interviews and participant logs from 20 programme leaders assigned with specific responsibilities for programme design and development at four higher education institutions. Their work involves negotiating multiple knowledge domains and academic identities. Additionally, a national reform requires these institutions to develop so-called "integrated" teacher education programmes (Ministry of Education and Research, 2013). The data therefore provide insights into a programme context where notions of knowledge integration are in the making.

The next section reviews relevant existing research followed by a presentation of the theoretical and methodological approaches. The empirical analysis identifies four knowledge discourses that constitute the relationship between disciplinary knowledge and the mandate of teacher education: i) disciplinary knowledge as strengthening the teacher education programme; ii) the teacher education programme as strengthening the disciplinary knowledge domain; iii) the teacher education programme as challenging the disciplinary knowledge domain; and iv) disciplinary knowledge as being separate from the teacher education programme. The final section addresses implications for efforts aimed at knowledge integration and programme coherence.

Coherence and knowledge integration in teacher education

Considerable attention has been paid to notions of integration and coherence in teacher education. The two terms are often used interchangeably, but some differences can be delineated. Whereas "integration" is often used to denote relations between knowledge of different types (Lehmann, 2020), the concept of "coherence" has been applied more broadly to address different dimensions of teacher education.

One line of research addresses the notion of coherence, including concepts such as structural, conceptual, biographical and transitional coherence (Hammerness, 2006; Heggen & Terum, 2013; Smeby & Heggen, 2014). These concepts analytically emphasise the relations amongst different aspects of professional education, such as the

interconnectedness between programme components, a shared vision amongst teacher educators, and the interrelationships between professional education and work. Notions of coherence have been directed toward programme characteristics, actors' perceptions and visions, student trajectories, and connections across sites.

Another line of research foregrounds the relationship between campus- and school-based education. A particular concern has been how learning across sites can be better aligned and how schools can be positioned as equal partners in teacher qualification (Grossman, Hammerness, McDonald, & Ronfeldt, 2008; Lillejord & Børte, 2016; Zeichner, 2010). This literature emphasises closer cooperation between higher education institutions and schools, and the need to organise on-campus learning activities around teachers' practices (Canrinus, Klette, & Hammerness, 2017b; Darling-Hammond, 2014; Forzani, 2014; Jenset et al., 2018; Windschitl, Thompson, Braaten, & Stroupe, 2012). Within this body of research, the notion of integration often has a spatial framing, examining the interrelationship between two sites of learning (e.g. Lillejord & Bjørte, 2016). Another prominent theme is power relations and (un)equal partnerships between universities and schools (e.g. Zeichner, 2010).

A third line of research addresses the challenge of combining a research orientation with professional relevance (Afdal, 2016; British Educational Research Association [BERA], 2014; Munthe & Rogne, 2015; Tatto, 2015). This body of literature has been concerned with how research-based education can been conceptualised, and how efforts to integrate research in professional education have been operationalised. Within this body of research, the notion of integration has been closely connected to the interrelationship between generically framed research findings and the situated and contextual practices of teachers' everyday work.

This brief review illustrates the complexity associated with notions such as coherence and integration and the multiple dimensions that must be attended to in efforts to improve educational quality. This article contributes to existing research by analytically foregrounding how educators construct relationships between disciplinary knowledge domains and the mandate to educate teachers. This aspect of coherence is important because students in many professional education programmes spend a significant amount of time attending courses that are framed by disciplinary logics. The analysis also foregrounds the centrality of educators' sense-making practices related to epistemic diversity, and how discourses about knowledge generate constraints and affordances for efforts aimed at coherence.

A discourse-analytical approach to knowledge integration

This paper adopts a discourse-analytical perspective (Foucault, 2015), in which discourse is understood as "a particular way of talking about and understanding the world" (Jørgensen & Phillips, 2002, p. 1). A key assumption is that discourses shape social interactions and

identities by providing concepts, categories and representations through which the world is made sense of. Discourse is seen as constitutive of social structures by temporarily "freezing" the meaning assigned to particular activities, materials or social interactions. For the current purposes, this implies that conceptions of knowledge and its role in professional education can inform educational practices. Foucault also emphasises the intertwining of discourse and power. Discourses inform what we deem legitimate social practices and what is defined as inappropriate. This makes discourse a fruitful unit of analysis for exploring contestations over a given phenomenon, in this case programme design in teacher education.

Another theoretical assumption is that subject positions are constructed and contested through the use of language. Subject position refers to how individuals are situated within specific discourses and how these positions are constitutive of their identities (Davies & Harré, 1990). Positioning theory (Davies & Harré, 1990) provides analytical nuance to the traditional Foucauldian emphasis on a single, monolithic discourse acting formatively upon subjects, by highlighting how individuals agentically construct their own and other peoples' identities through language. Such constructions can be fluid; for example, a teacher educator may simultaneously be positioned as "a researcher", "a mathematician" and "a teacher educator". These positions may generate conflicting demands and expectations, but they also provide opportunities for agentic identity construction. Subject positions also inform perceived roles and responsibilities. For example, a disciplinary scholar that assigns disciplinary knowledge a significant role in teacher qualification, may be more likely to think of himself or herself as both a disciplinary scholar and a teacher educator.

Professional education is understood as a set of institutionalised practices that are partly constituted by discourses about whose knowledge "counts" in professional qualification. Teacher education is characterised by a variety of knowledge discourses. Examples include discourses that emphasise research-based education (Afdal & Spernes, 2018; Munthe & Rogne, 2015), professional relevance and practical knowledge (Afdal, 2017; Wæge & Haugaløkken, 2013), and the importance of schooling as a tool for social justice (Cochran-Smith, 2010; Pantić, 2017). In educational policy, knowledge is increasingly used as a policy tool to shape both teacher education and notions of teacher professionalism (Mausethagen, Prøitz, & Skedsmo, 2017; Mausethagen & Smeby, 2016). These knowledge discourses carry implications for how teacher education programmes should be designed and enacted. In the current analysis, knowledge discourses have implications both for how efforts toward programme coherence are perceived and for what kind of subject positions teacher educators adopt.

Knowledge domains are understood as historically developed bodies of knowledge that underpin ways of organizing knowledge in higher education and work (Jensen, Lahn, & Nerland, 2012; Knorr Cetina, 1999). In the empirical analysis, examples of disciplinary knowledge domains include history, mathematics, political science, biology or religious

studies. These are not just constellations of accumulated bodies of knowledge, but also act as objects of attachment and identity for academics (Knorr Cetina 1999, 2001). Thus, attachment to a given knowledge domain can inform academics' perceptions of self and their position in relation to others. From this perspective, the discursive construction of knowledge not only mediates questions related to programme design (what forms of knowledge should be taught when, how and for what purpose), but also the identities and social interactions of teacher educators.

Conceptually, the notion of coherence is addressed in two ways in this paper. First, it is treated as an emic concept (Hammersley & Atkinson, 2007) based on the participants' own understandings. Frequent terms used by the participants include integrasjon (integration) and sammenheng (which can be loosely translated as a set of productive relations among programme components). Analytically, the notion of coherence is used to explore the relationships constructed by teacher educators between disciplinary knowledge domains and the mandate to educate teachers.

A debated issue within existing literature is whether "coherence" implies the absence of tensions and contradictions (e.g. Buchmann & Floden, 1992). The position adopted here is that tensions and contradictions are an inherent part of human activity (Engeström, 2007), and that coherence should rather be understood as a form of alignment which, in the case of teacher education, is conducive for supporting student learning.

Empirical context and methodology

The Norwegian context is characterised by a plurality of teacher education programs. Broadly speaking, qualification to primary and lower secondary school has historically been carried out at designated teacher education units. These programs are generally organised according to a professional orientation, and students complete their entire degree at the same organisational entity. Qualification to upper and lower secondary school has historically been composed of a combination of disciplinary studies at subject departments and selected courses taken at a teacher education unit. These programs include both disciplinary and professional orientations and are characterised by organisational complexity.

The programme studied here belongs to the latter category, leading to a teaching qualification for grades 8-13. Students study two disciplinary subjects (240 credit points), take courses in pedagogy and subject didactics (60 credit points) and complete a school-based practicum of 100 days. One year of full-time studies equals 60 credit points. The programme organization reflects a national reform put into effect in 2013 (Ministry of Education and Research, 2013), which aimed to create more "integrated" teacher education programmes. An example of a programme structure is presented in Table 1.

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The programme is characterised by epistemic pluralism. For example, one student may take courses in social anthropology, Norwegian grammar, international politics, pedagogy, literary history and subject didactics during the course trajectory for a degree. These courses are distributed across multiple faculties and have typically not been designed to have any relationship to each other.

Table 1: *Example of programme structure*

10. sem	Master thesis			Disciplinary subject 1
9. sem	Project development master thesis	Research methods 1	Research methods 2	Master thesis DS1
8. sem	Pedagogy		Subject didactics DS1	Subject didactics DS2
	40 days practicum			
7. sem	Disciplinary subject 1	Disciplinary subject 1 (master level)		
6. sem	Disciplinary subject 1		BA thesis Disciplinary subject 1	History and philosophy of science
5. sem	Disciplinary subject 1	Disciplinary subject 2	Subject didactics 1	Subject didactics 2
	35 days practicum			
4. sem	Disciplinary subject 2			
3. sem	Disciplinary subject 2		Pedagogy	
	15 days practicum			
2. sem	Disciplinary subject 1		Pedagogy	
	10 days practicum			
1. sem	Disciplinary subject 1	Disciplinary subject 1		

Students take courses in disciplinary knowledge at the relevant faculties. These courses are also attended by students enrolled in disciplinary degrees, such as a bachelor's degree in

biology or history. Consequently, the courses are not specifically designed to educate teachers, and faculty are simultaneously teaching student teachers and disciplinary students. The distribution of the two student groups differs; student teachers might make up the majority or a small minority. Courses in pedagogy and subject didactics and the practicum are referred to by informants as "professional courses" [profesjonsfag] or as "professional knowledge" [profesjonskunnskap]. These courses are framed by a professional mandate, and notions of professional relevance are important for their design.

As a consequence of this programme structure, faculty members involved in teacher education occupy a range of epistemic and organisational positions. For example, some work at dedicated teacher education units and others at disciplinary departments. This diversity typically informs the extent to which faculty members identify as teacher educators. Previously, I have examined the interplay of these organizational and epistemic factors (Hermansen, 2019). In this article, the analytical focus is on how the research participants relate to the epistemic dimension of this diversity.

The empirical data consists of semi-structured interviews (20) and participant logs (75) from 20 programme leaders at four higher education institutions. At each institution, 4-6 programme leaders assigned with specific responsibilities for programme design and development were selected as informants. The term "leaders" is used in alignment with the literature on distributed leadership (Gronn, 2002). The category not only includes formal leadership positions but encompasses a network of key collaborators involved in programme design and development. Some informants were based at disciplinary departments and others at teacher education units.

The main themes covered in the interviews were approaches to and priorities for programme design and development, along with descriptions of the participants' work. All interviews were audiotaped and transcribed. The interviews comprise the primary data for analysis. Subsequently, participants submitted brief logs (Edwards & Thompson, 2013) over a period of nine months. In these logs, participants described recent incidents in which they worked on programme development and explained what they had tried to achieve, and why. These logs provided important contextual information about programme leaders' work and their reasoning behind specific actions related to programme design and development.

For the purposes of this paper, only the data that explicitly addressed the intersection between disciplinary domains and teacher education were subjected to further analysis. The first step of the data analysis identified all statements in the transcripts and logs that contained talk about different knowledge domains, the relationships among these domains and the relation of these domains to teacher education. This included statements such as "discipline X is characterised by…", "mathematics and pedagogy differ in these ways…" and "as a historian, I am concerned with…".

The next step of the analysis identified how the relationship between disciplinary knowledge domains and the teacher education programme was discursively constructed. Analytical emphasis was placed on identifying recurrent patterns in the talk that related disciplinary knowledge to the mandate of teacher education and examining the underlying premises and logics of these patterns. Repeated readings of the transcripts led to two initial categories of statements: those constructing the relationship between disciplinary knowledge domains and teacher education as inherently positive and desirable, and those that did not. Within these categories, significant diversity remained. To examine this diversity, the subsequent readings focussed on identifying the justifications made to support these relationships. The general framing of such statements would typically be "teacher education is good for discipline X because of Y", "teacher education benefits from discipline X because of Y", "it is problematic that department X is involved in teacher education because of Y", or "at department X, many people are not aware that we educate teachers". Based on this coding, the two initial categories were differentiated into four patterns of discourse. All discourses could be identified across the four programs and the data was therefore treated as a coherent whole during the empirical analysis.

1. Disciplinary knowledge as strengthening the teacher education programme,

2. The teacher education programme as strengthening the disciplinary knowledge domain,

3. The teacher education programme as challenging the disciplinary knowledge domain and

4. Disciplinary knowledge as separate from the teacher education programme.

The final step of the analysis examined the implications of these discourses for teacher educators' subject positions. Each discourse included statements that assigned faculty members with particular roles and responsibilities, including normative statements about how faculty members should relate to teacher education (or not). These statements were coded and summarised within each of the four categories.

Preliminary findings were presented to fellow researchers at three different points in the analytical process. This feedback helped to develop the analytical categories and a more stringent analytical account of the interrelationships between disciplinary knowledge and teacher education. Some respondents had previous experience from this specific programme, and their comments partially served as a form of participant validation.

The next section presents the results of the analysis, organised according to the four discourses and addressing both research questions. When citations are used, research participants are referred to using an individually designated number.

Knowledge discourses in teacher education

Disciplinary knowledge as strengthening the programme

In this discourse, disciplinary knowledge was positioned as a strength for the teacher education programme. A key assumption was that educational quality was enhanced by "offering the best possible disciplinary-based knowledge and competencies" (2-2) based on up-to-date research. Disciplinary scholars were positioned as "experts" and "specialists" and contrasted to teacher educators at programmes for primary and lower secondary schools, where faculty typically teach a broader range of subjects. The "generalist" teacher educator, who needs to know a little bit about everything, was compared to the "specialist" teacher educator who facilitates a different learning process:

> So, the learning dynamics are strong in this programme, and I think that's our strength in comparison to other programmes, where you have to learn and to teach a lot of subjects at the same time. They are strong on integration, but when you are teaching fractions, and how to teach fractions, and the importance of fractions for professional practice at the same time, it can become an educational challenge to facilitate deep learning around all those themes simultaneously. (3-1)

This way of relating disciplinary knowledge to the mandate of teacher education had implications for how coherence was understood. In this quote, knowledge integration is framed as something that might undermine student learning by presenting students with too many issues to attend to simultaneously. Deep learning is facilitated through immersion in the disciplinary domain, and this learning process is facilitated by a subject specialist. In terms of programme design, a temporal sequence was constructed in which students first had to become subject experts and then attend to "professional" knowledge. Expectations of integration and professional relevance should not interfere with ideals of subject specialization:

> What should the practicum consist of? Many people in this teacher education programme, particularly those who have a strong background in disciplinary subjects, think that the practicum takes up too much time. And, they kind of think that, "this training, that's all very well, but it should not under any circumstances interfere with the subjects we are teaching here on campus". (3-3)

Finally, the research-intensive nature of disciplinary departments was seen to contribute to teacher professionalism by exposing students to up-to-date research: "This is what I think our teacher education model is good at. If something new happens within research in [disciplinary field X], then this type of teacher education programme will be the first to integrate it" (3-1). Engagement with research was also seen to prepare teachers to critically examine and renew existing practices in schools, rather than merely reproducing them. This

was, again, contrasted to the teacher education programme for primary and lower secondary schools,

> …which has historically had a closer relationship to schools and to the field of practice, but sometimes that relationship can become too close – if teacher education only reflects current practices in schools, we don't move forward. (3-1)

In this statement, the criticism of teacher education being disconnected from professional practice is reconstructed as an advantage. Research is positioned as a tool that could help students maintain a critical distance from professional practice and renew established conventions for work.

In summary, strong disciplinary domains and subject specialization were positioned as strengthening the teacher education programme, providing a competitive advantage over other types of teacher qualifications. This framing of disciplinary domains afforded disciplinary scholars a sense of ownership and purpose in relation to the programme. At the same time, this discourse implied particular perspectives on knowledge integration and programme design, through which established policy discourses on knowledge integration were challenged. Rather than reinforcing political expectations of increased integration across disciplinary and professional knowledge domains, keeping disciplinary knowledge at arm's length from professional practice was construed as necessary for student learning and for developing critical and reflective practitioners. The most salient subject position was the disciplinary subject expert who is up-to-date on current research and facilitates subject specialization and deep learning.

The programme as strengthening the disciplinary knowledge domain

This discourse was characterised by an underlying assumption that involvement in teacher education provides disciplinary knowledge domains with increased legitimacy and societal relevance. Part of this legitimacy was related to the high academic achievement of student teachers. In several departments, this was contrasted to the students enrolled in disciplinary programmes, who entered university with significantly lower grade averages:

> What has really contributed toward creating interest and respect for the teacher education programme is the high academic quality of the student teachers. They often perform much better than the disciplinary students. And, the academics really like that, and it helps strengthen the respect for the teaching profession. (3-2)

Talk about the "academic quality" of student teachers served both to position teacher education as beneficial for disciplinary departments, and as something that helped programme leaders to strengthen the legitimacy of teacher education amongst disciplinary scholars. Teacher education was also seen to strengthen the disciplinary domains through

increased recruitment. This was particularly the case within the humanities, where several subject areas had seen a decrease in student numbers:

> [Teacher education] is important for our department now, it's important for the future recruitment of students and it's particularly important for the subject of history, which has traditionally been a sizeable discipline, but we have lost many master students over the past years. And, we are competing with [the local university college], and they have been actively profiling themselves as a professionally relevant teacher education programme. So, of course, we also need to market ourselves as teacher educators if students are going to select us. (2-1)

Here, recruitment to the teacher education programme helped disciplinary scholars protect the status of their knowledge domain. However, this required that the department position itself as a teacher education provider, competing on criteria such as "professional relevance". While the disciplinary domain was being protected, it was simultaneously being reframed in line with students' expectations toward professional education.

This discourse was also shaped by the increased institutional emphasis on teacher education. Several informants described university rectors who were actively promoting teacher education, which was seen as strategically important. Contributing to a teacher education programme provided a tangible basis for arguing that a specific knowledge domain was useful for the university. This also generated additional resources:

> We have new academic positions that are legitimised because of the teacher education programme, and we have political expectations from Parliament and also from the university through the Rectorate and the Deanship. Really great, thumbs up, high spirits. (1-1)

Finally, the importance of teacher education for the disciplinary domain was constructed around the idea of their organic interrelationship. In this account, the mandate of qualifying school teachers was closely connected with the future development of the discipline:

> One of the arguments I use is that I talk about the ecology of the knowledge society. We live in a knowledge society where everything is interconnected. So, if we don't educate good teachers, then we undermine our connections with schools. And, it's in the schools that our future students are being prepared. So, I try to say that, if you [disciplinary academics] want good students, then you need to educate good teachers who can educate the school students. And then, they can come here and be good university students. (3-2)

This line of reasoning positioned the mandate of educating teachers not just as a strength but as a precondition for the future development of the disciplinary knowledge domain.

Thus, a mutually constitutive relationship was discursively established, in which the interests of disciplinary scholars cannot be considered separately from educational quality in schools.

In summary, this discourse emphasised the advantages of being associated with the teacher education programme for safeguarding the disciplinary knowledge domains by increasing the legitimacy of the discipline, facilitating access to highly qualified students and generating resources. Implications for programme design were typically not articulated explicitly, but the disciplinary domain was often framed in relation to notions of societal and professional relevance, rather than discipline-specific criteria. This discourse went some way toward recontextualising the disciplinary domain in relation to the mandate of teacher education. It also positioned faculty with clear responsibilities for qualifying teachers, both for societal purposes and for ensuring the long-term development of the disciplinary domain.

The programme as challenging the disciplinary knowledge domain

This discourse was characterised by an underlying assumption that teacher education represented a threat to the disciplinary domain. This relationship was constructed as a zero-sum game: an increased focus on teacher education would come at the expense of safeguarding disciplinary knowledge and identities.

One reason for these tensions was attributed to an increased number of student teachers. Students enrolled in teacher education and disciplinary degrees attended the same courses. Historically, teaching had been organised according to a disciplinary logic, and no special affordances had been made to relate disciplinary subjects to professional practice. However, as the number of student teachers increased, sometimes outnumbering disciplinary students, disciplinary scholars were faced with expectations to cater more specifically to teacher education. The data contained several examples of such adaptations: for example, the literature lists in English language courses had been revised based on their relevance to work in schools, and a history course had become web-based to avoid timetable conflicts with the practicum. Another example related to the master's thesis. The national steering document specified that the master's thesis should be "professionally relevant". This had caused concern amongst disciplinary scholars:

> This was a very important issue for many people. Because, what does it mean? "Professionally relevant"? And, of course, within the disciplinary departments, they had a strong fear that this would mean that, in all subjects, students would have to do classroom-based research. And that wouldn't have been very well received, and they probably wouldn't be very well placed to supervise such theses, either. (3-2).

These examples illustrate how an increased focus on teacher education meant that key elements of disciplinary knowledge became "at stake" issues: course content, the organization of teaching activities and the master's thesis. Such developments resulted in

tensions between the mandate of educating teachers and maintaining the disciplinary programmes:

> So, the Faculty Board has decided that we need to accommodate [our course offerings] to the teacher education programme. They are going to explore the option of designing specific courses within the disciplinary subjects that are targeted to teacher education students. And, of course, that's something that's… it's not necessarily that easy to do, when you are a disciplinary scholar located within a disciplinary department and you have your academic identity and pride, and then you are expected to adapt to a teacher education programme. (4-1)

He continued to recount how he was once asked, "Are we all going to be teacher educators now?" at a meeting where customization of disciplinary courses to the teacher education programme had been discussed, and elaborated on the implications for disciplinary scholars' academic identity:

> Sometimes I can understand it, if you look at the type of language that is in use and the official decisions that are made, that it's difficult for the disciplinary scholars. And, that it can even be experienced as a threat. Because what happens to our identity in all of this? (4-1)

Finally, concerns had been raised about the academic achievement of student teachers, because 60 credit points of their degrees were assigned to pedagogy and subject didactics. Combined with the 100-day practicum, these courses were seen as interfering with student teachers' capacity to immerse themselves in disciplinary studies. Some academic staff were reportedly reluctant to supervise student teachers because they perceived the students' knowledge base to be deficient:

> It's a misunderstanding that I think we've now managed to get rid of, but for many years, my colleagues in the English department had this idea that the student teachers who were about to write their master's thesis had fewer English language courses than the disciplinary students. They don't. They have exactly the same courses. The only difference is that they write a 30-credit point master's thesis instead of 60.… So, we used a lot of time discussing this because there was this perception that the student teachers were not academically prepared for the thesis. (3-2).

In summary, this discourse was characterised by an underlying tension between the mandate of educating teachers and the safeguarding of the disciplinary domain, where the notion of a zero-sum game prevailed. Within this discourse, an increased focus on programme integration implied a threat to scholarly quality and established academic identities. Efforts aimed at adapting disciplinary courses to the teacher education programme were therefore met with resistance. Faculty were positioned as having their

academic integrity and identities challenged as a result of efforts aimed at increased integration.

Disciplinary knowledge as separate from the programme

The final discourse was characterised by the notion of a disconnect between disciplinary courses and the teacher education programme, expressed in a variety of ways. In one account, the separation was constructed as a natural consequence of the programme structure, which placed natural limits on the extent to which disciplinary knowledge could be integrated with professional courses. Rather than advocating increased coherence, it was emphasised that student teachers needed to be informed about the limitations of the programme design and to learn how to navigate its epistemic diversity. This was sometimes legitimised with reference to students' future work: "this is how teachers work in real life, they run from one subject to another" (1-1). In brief, the disconnect was constructed as a "natural" state of affairs and something that students needed to learn to live with.

Another manifestation of the disconnect appeared in accounts of disciplinary scholars who were completely unaware of the teacher education programme, even though they had student teachers enrolled in their courses. One programme leader recounted how a significant part of her job was to simply make her colleagues aware that they were teacher educators:

> I think I have been quite active in this regard, more than my predecessor… I have worked a lot within this department to make people aware that we are actually teacher educators. We just don't know it, haha. (2-3)

In this account, the disconnect was not necessarily intentional, but a result of ignorance or of the invisibility of the teacher education programme in disciplinary departments. This extended to formal decision-making fora, where the teacher education programme was described as falling off the radar. One informant described an important part of his role as reminding the leadership that the department had responsibilities for teacher education in addition to disciplinary degrees:

> And then my role [in the meetings] is always to say "so, what do we think about this in relation to the teacher education programme?" or "yes, but if we should be strategic, perhaps we should promote the teacher education programme". (1-3)

This type of disconnect was attributed to ignorance or lack of awareness. Thus, efforts toward increased programme coherence or knowledge integration centred on increasing the visibility and general awareness of the programme.

A third version of the disconnect appeared through an othering of student teachers as a group that did not organically belong in the disciplinary departments:

> Because, even if the student teachers write a master's thesis within [the disciplinary subject]… then faculty think of them as students belonging to the teacher education programme. Even when the majority of the students attending lectures in Nordic languages and literature, history or German are student teachers, even when they enrol in courses that belong to our departments and they are students that belong to us… the faculty still think that, "Oh, it's those student teachers". And, that's where a lot of the tension lies… So, now we are quite consciously talking about them as students who belong to the disciplinary knowledge domain. To make it clear that they are not other people's students, they are our students. (4-1)

In this case, the separation is expressed by student teachers being positioned outside of or on the margins of the disciplinary domain. The informant emphasised the contradictions associated with this discourse, given that student teachers take the majority of their credit points in disciplinary departments. However, through their enrolment in the teacher education programme, a distance was constructed between them and students taking disciplinary degrees.

A final version of the disconnect concerned the relationship between the disciplinary domain and the related school subject, and more specifically, how the knowledge domain was organised and enacted. An example is this account of different approaches to "doing history":

> So, history as a school subject has developed and separated itself somewhat from history as a university discipline. [In schools], they are concerned with historical consciousness and how we are both a product of history and producers of history, rather than accounts of what actually happened. That's how history is taught in schools. But, nobody here [in the disciplinary department] knows that. Everyone thinks that history in school is the same as what they are working on, and that students arrive here with the same knowledge about the First World War that they had when they left school. (3-4)

In this case, the disconnect was constructed between history as a university discipline and as a school subject, assigning the two domains different epistemic logics and scholarly identities. This has implications for efforts aimed at integration, in that the knowledge domain that could have acted as a bridge between higher education and school was discursively divided.

In summary, this discourse was characterised by accounts of separation at various levels: faculty, leadership fora, the student group and the knowledge domain. The subject position of faculty was constructed as disciplinary scholars who have little knowledge or awareness of the teacher education programme, and who are either tacitly or explicitly denying its relevance for disciplinary departments. The implication for programme leaders was that

efforts toward programme coherence and knowledge integration had to be directed at multiple levels, but also had to be generally focussed on awareness raising and information.

Discussion and conclusion

The empirical analysis shows how disciplinary knowledge can be positioned in diverse ways in relation to the mandate of teacher education, with implications for efforts aimed at integration. The first discourse positioned disciplinary domains as significantly contributing to the quality of teacher education, affording disciplinary faculty with clear responsibilities for educating future teachers. However, prevailing notions of integration were somewhat resisted and recontextualised in favour of an emphasis on subject specialization and research-based teaching. The second discourse positioned the teacher education programme as a source of legitimacy for disciplinary knowledge domains, informed by broader policy discourses about societal and economic relevance. To some extent, the mandate of teacher education was discursively subsumed under the broader objective of securing the relevance and quality of the disciplinary domain. At the same time, this positioning required that disciplinary departments "market themselves" as teacher educators, and expectations of "professional relevance" informed how the disciplinary domains were talked about. The third discourse positioned the teacher education programme as a threat to the quality and organization of disciplinary domains, and the relationship between the two was framed as a zero-sum game. Expectations of integration were described as challenging established conventions for work and academic identities. Finally, the fourth discourse positioned disciplinary knowledge domains as separate from the teacher education programme, either in the form of an empirical gap or in terms of "natural" limits to integration. In the first case, separation was framed as an undesirable state that could be overcome; in the second case, separation was constructed as a natural state of affairs.

These findings highlight the constructive and creative work that educators conduct as they actively seek to forge (or deny) specific relations between specific knowledge domains and the professional mandate. The four discourses coexisted across the four programmes, illustrating how the interface between disciplinary knowledge and the professional education programme cannot be taken as a "given", but needs to be understood as a relationship that is contested, open for interpretation and continuously evolving. The ways in which these relationships were constructed were informed by cultural, organizational and political contexts. For example, these discourses were intimately linked with the relational and emotional ties that academics had developed with their particular knowledge domains. They were also informed by themes such as student recruitment, their academic achievement, the strategic priorities of higher education institutions and broader political discourses about the role of higher education in society.

As a consequence, the programme leaders needed to work with and upon these divergent discourses as an integrated part of their efforts toward programme design and development, addressing diverse conceptualizations of "coherence" or "integration" in the process. More generally, leadership of professional education involves navigating multiple epistemic domains and identities. There has been scant empirical attention paid to what this actually entails. Yet, negotiating this complexity and its divergent approaches to professional education appears to be crucial for efforts aimed at strengthening educational quality. This type of leadership involves working with people's perceptions of and attachments to different knowledge domains, as well as to the professional mandate. This can be challenging because it entails working with and upon people's identities and their emotional connections to their work.

A practical implication is that efforts toward increased "integration" in teacher education need to take into account that a diversity of notions may exist within a given programme about what integration "is" and how the relationship between different knowledge domains and the professional mandate should be constituted. Programme leaders needed to develop their own accounts of these issues and relate them to the range of discourses they faced in their work. They also needed to create arenas and processes where these different discourses could be exposed to each other and placed under collective scrutiny (Hermansen, 2019).

Analytically, this article demonstrates the relevance of knowledge discourses as a unit of analysis for examining questions of coherence. By illuminating how knowledge is talked about and related to the professional domain, it is possible to gain insights into how specific educational settings provide affordances and constraints for efforts aimed at programme coherence. Theoretically, the analysis contributes to a conceptual understanding of coherence as a situated and emergent achievement (Hermansen, 2019), as opposed to a set of predefined characteristics.

Limitations of this study include the lack of a longitudinal, developmental perspective documenting changes in discursive configurations over time. A larger participant sample, combined with an ethnographic approach, would also have allowed for a more fine-grained analysis of the historical relationships between specific knowledge domains and teacher education, incorporating the significance of organisational factors. These limitations represent avenues for future research.

Article history

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