

Design for learning: teacher educators as policymakers?

Kristine Haugen Rubilar

University of South-Eastern Norway – Campus Drammen, Drammen, Norway

Received 1 October 2024
Revised 2 February 2025
8 March 2025
Accepted 14 April 2025

Abstract

Purpose – Since 2017, partnerships between teacher education and schools have been prioritized to enhance competence development in Norway. In this context, teacher educators are tasked with designing different kinds of learning resources for schoolteachers. The study aims to shed light on the process of designing a learning resource for interdisciplinarity in schools, which is a core element of the National Curriculum LK20.

Design/methodology/approach – The participants in this study were three teacher educators who collaborated digitally over a period of 16 months. The data are based on transcripts of six of the 10 meetings and supplemented by notes and minutes. By using frame analysis as the theoretical framework, the analysis zooms in on the microprocesses that evolved during the collaboration and the course of the design process.

Findings – The findings show how the teacher educators framed interdisciplinarity in the learning resource and how they focused on reflexivity as a way to ensure robust competence development in schoolteachers' praxes. The study also shows that without the opportunity to collaborate directly with the schoolteachers may have been regarded as local policymakers instead of partners in the learning process. These insights suggest that there was a gap between the goal of mutual benefit from the collaboration articulated in the decentralized strategy and the design realities with which the teacher educators were faced.

Research limitations/implications – This paper illuminates a partnership with minimal contact between teacher educators and teachers in schools. Other forms of cooperation will be able to show examples of competence development that, to a greater extent, form the basis for more equal partnerships. Also, the study does not pay attention to how partnerships or the design of the learning resource contribute to raising competence within teacher education.

Practical implications – The paper questions an approach to partnership where dialog and interaction between the partners are limited, and whether the design of generic learning resources can be accurate enough to contribute sufficient learning opportunities for schools without sufficient knowledge about the local context.

Originality/value – The paper shares explicit insight into teacher educators' collaborative practices and processes of meaning making behind a learning design.

Keywords Competence development, Teacher education, Frame analysis, Design for learning, Practitioner research

Paper type Research paper

Introduction

In this study I examine how three teacher educators, including myself, participated in meaning-making processes throughout the course of designing a learning resource on interdisciplinarity for schoolteachers. In 2017, Norwegian educational authorities introduced a decentralized program for competence development in schools ([Norwegian Directorate for Education and Training, 2023](#)). This program involves, among other things, schools cooperating with universities or university colleges to plan, implement, and evaluate

© Kristine Haugen Rubilar. Published in *School-University Partnerships*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) license. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this license may be seen at <http://creativecommons.org/licences/by/4.0/legalcode>

Funding details: This study was supported by the Research Council of Norway, under Grant number 301180/20.

Disclosure statement: The author reports there are no competing interests to declare.

Ethics approval: The study is approved by Norwegian Agency for Shared Services in Education and Research. ID/Approval number: 242497



competence-enhancing initiatives based on local needs. Although teacher education and practice intersect at several points and have long traditions of cooperation, the decentralized competence model involves new ways of working together. The relationship between the field of practice and universities has traditionally been based on the former as a “customer” and the latter as a “provider” of various forms of professional development courses (Borg *et al.*, 2023). In the new model, the term partnership is frequently used, and reciprocity is regarded as both an objective and a condition for cooperation (Norwegian Directorate for Education and Training, 2023). In a partnership, teacher educators in universities or university colleges are given the task of designing learning resources to meet the local needs of partner schools.

The role of a teacher educator is complex, diverse, heterogeneous, and, in some sense, ambiguous (Smith & Flores, 2021), but a core activity is teaching how to teach. This activity usually takes place on campus or in a digital classroom, and the student body often lacks a skilled background within the schoolteacher profession. In Norway, the context created by the decentralized program, in which teacher educators are tasked with creating learning resources for schools and schoolteachers, is a fairly new endeavor that differs from preparing and executing teaching on campus or online. Frameworks, prerequisites, and the experiences of learners are different and require that teacher educators immerse themselves in unfamiliar contexts. In many ways, teacher educators who collaborate with schools and schoolteachers move in unfamiliar landscapes and must balance several different considerations and expectations. This study therefore takes as its starting point the following research questions:

- (1) How do teacher educators frame competence development for schoolteachers when designing a learning resource on interdisciplinarity?
- (2) What challenges and opportunities do teacher educators face in the design process when direct collaboration with schools is limited?

The research questions are discussed by examining the process in which we, as teacher educators, designed a learning resource on interdisciplinarity in schools. The negotiations underlying decisions made in the design process have received little attention in previous research (Goodyear & Dimitriadis, 2013). Using frame analysis as a tool, this article examines the perspectives of teacher educators on the process of designing competence-enhancing learning resources for teachers in schools. The objective is to share explicit insight into teacher educators’ collaborative practices and processes of meaning making behind a learning design. The data underlying the analysis are recordings of six digital collaborative meetings. A central argument is that, when direct collaboration between university and schools is limited, teacher educators enter the role as policymakers instead of becoming partners in a mutual learning process. Also, when the expectations to be part of a genuine partnership are not met, a sense of inadequacy prevails. As this article identifies, the historical and culturally embedded synergies between teacher education and schools can be an obstacle for new forms of collaboration to develop and make it difficult to identify the core problems a learning design should target. Since I was one of the three teacher educators who contributed to the design process, this study is also a contribution to practitioner research.

Context for the design process

Interdisciplinarity, both within and across subjects, plays an important role in the updated Norwegian curriculum (LK20), which was introduced in the fall of 2020. The new curriculum emphasizes three interdisciplinary topics: *sustainable development*, *health and life skills*, and *democracy and citizenship*. These topics are described in detail in the curriculum and are included in the subjects for which they comprise a central part of the academic content (Norwegian Directorate for Education and Training, 2020) [1]. In practice this means that at least one topic is included in every subjects. In the process of reforming the curriculum, the three topics received much public attention, which spurred a renewed interest in

interdisciplinarity in schools. As partners in the decentralized program, two colleagues and I were assigned the task of designing a learning resource on interdisciplinarity specifically for three elementary schools in one Norwegian municipality. The municipality was part of a larger network of municipalities, which expressed a need for the development of learning resources on interdisciplinarity. The network leader narrowed down this focus on interdisciplinarity to encompassing *connections within and between subjects*. This again was based on a perceived need for the schools to spend time familiarizing themselves with the (new) curriculum as a whole. Interdisciplinarity and connections in and between subjects thus formed the pegs onto which we, as teacher educators, hooked our learning design.

The learning resource we designed consists of eight modules that each address the topics of *curriculum understanding, interdisciplinary active learning, student participation, cooperative learning, self-determination and democratic formation, creative and aesthetic learning processes, and creating lasting change in practice*. Each module consists of three stages—preparatory work, intermediate work, and follow-up work. The competence package was structured in such a way that schools work on four modules in the first half of the school year and the remaining four in the second half. The preparatory work is an individual activity that involves watching a short film about the module's topic or reading research-based texts and then answering questions related to reflections on one's own practice. In the intermediate work, the teachers come together and explore different understandings of the module's theme and share reflections on their own practice. Based on subsequent group discussions, they then agree on something they want to try out with students. The succeeding preparatory work contains a new reflection on how the trial went and the introduction of a new topic. Throughout, the focus is on the teachers' individual and collective understanding, with the aim of using their experiences and collective reflections to make adjustments in their own praxes. The different modules can be used independently of each other, but together, they represent a holistic approach to interdisciplinarity.

In general, there is limited research on teacher educators' work on course development and teaching practices (Smith, 2022; Engelsrud *et al.*, 2023). In the specific context of the decentralized program in Norway, so far only a handful of studies have been conducted on the topic. Fylkesnes and Lindahl (2021) highlighted primary school teachers' feelings of lacking information and influence in collaborations with university partners, suggesting the need for improved partnerships. Folkvord and Midthassel (2021) also stressed equality and good relationships as essential for learning in partnerships, while Hermansen and Mausesthaugen (2023) called for greater insight into operationalizing equality in partnerships. Reinertsen and Hafstad (2021) critiqued the linguistic framing of educational policies, emphasizing the importance of processing understandings rather than defining terms. Bjørnvik and Bratteng (2023) discussed the program's potential for enhancing collaboration but noted that pre-made solutions limit cultural understanding. The Norwegian Work Research Institute (AFI) at OsloMet has been tasked with evaluating the program (2019–2025). Preliminary investigations (Borg *et al.*, 2023) indicated that teacher education institutions already are becoming less involved in local competence development due to entrenched perceptions of their role as course providers. In addition, in a literature review on Nordic teacher education (Forsström & Munthe, 2023) only a handful of the studies targeted teacher educators as professionals, where also Hordvik *et al.* (2020) noticed the lack of research on teacher education practices. Therefore, understanding how teacher educators design competence-enhancing learning resources for schoolteachers contributes to broader knowledge about the role of teacher educators in general and their specific roles in school-university partnerships.

Theoretical approach

Learning design can be described as a cyclical collaborative process consisting of the development, evaluation, analysis, and improvement of the design, with the aim of it being applicable in practice and contributing to the development of theory (Christensen *et al.*, 2012).

The study focuses on the development phase and the underlying reflections and trade-offs. This is a topic that, in research, has received less attention than the outcomes of designs but that is crucial for the final result (Goodyear & Dimitriadis, 2013).

Broadly speaking, design involves creating something new or finding new connections or ways to use something that already exists (Selander & Kress, 2012). The starting point for designing for learning is, paradoxically, that other people's learning cannot be designed, just as experiences or feelings cannot be designed for others (Goodyear & Dimitriadis, 2013). Designing for learning is not about transferring knowledge to a passive recipient but about creating prerequisites for learning that give learners the opportunity to develop understanding and act in meaningful ways in the social contexts in which they take part (Selander & Kress, 2012; Laurillard, 2012). What we can design, then, are suggestions for activities that spur engagement in the form of tasks or artifacts but with an awareness that a correlation between what is designed and the learning activities in which people engage is not always in place. The relationship between what is designed and what the learner ends up doing (and with whom) depends, among other things, on how the learner understands the requirements or expectations that form the basis of a designed task and then enacts accordingly. In addition, within the local context and through interactions with students, schoolteachers create their own social realities (Philippakos *et al.*, 2021). In other words, design for learning should be understood as an indirect practice that enables designers to make more informed decisions about how they design learning activities and interventions (Conole, 2013). Research on learning design includes both empirical studies that can contribute to understanding design processes and the development of various learning design resources, tools, and activities. In both instances, an important task is to make the design process explicit and shareable, to which this study contributes by highlighting how teacher educators collaborate to design competence-enhancing learning resources for teachers in schools.

Goodyear and Dimitriadis (2013) use the term "learn time" when referring to the moment when a design is tested in practice. The actors involved in the design can, as in the case of this study, be different from those who are responsible for what happens during learn time, which has consequences for and affects how and what is designed. If the designer and the teacher are the same person, changes in design or corrections of errors can be made relatively easily. This has clear advantages but also makes it more difficult to see whether the design actually works well in practice. In situations in which a designer's ability to change a design or correct errors and deficiencies is limited or absent, the design is crucial (Goodyear & Carvalho, 2020). Selander and Kress (2012) talked about an offered meaning, the designer's intent or goal, and the learner's perceived meaning. Both the resources constructed, and the perceived meaning of those resources are culturally rooted. In addition, the learner's attention will be directed to what is perceived as significant, which in turn varies according to cultural patterns and personal experiences. Although both teacher educators and schoolteachers are occupied with education, they find themselves in two different worlds (Coburn *et al.*, 2008; Penuel *et al.*, 2015). Understanding school cultures and teachers' practices will impact whether the design improves learning.

In this article, I use frame analysis (Goffman, 1974; Coburn *et al.*, 2008) to examine teacher educators' work with design for learning. To be able to answer the question, "What is happening here?", Goffman (1974, p. 21) started from the fact that we perceive, locate, identify, and sort a situation based on basic frames. In other words, frames are about how humans perceive, organize, and communicate reality. Information by itself does not have an inherent meaning; it is up to individuals and groups to actively create understanding. Understanding is created by placing new information into existing cognitive frameworks, which Coburn (2006) referred to as worldviews. By "framing," different actors can define a situation or problem and determine how best to respond, thereby controlling collective actions. Frame analysis provides us with conceptual tools for examining the ways in which ideas are created and used to mobilize action (Coburn *et al.*, 2008). It helps us understand the process

that underlies a person's interpretation of a problem and potential solutions through social interaction and negotiation.

Snow and Benford (1988) divided framing into three core activities. First, diagnostic framing involves defining a problem and simultaneously attributing responsibility. How a problem is framed is important because it directs focus toward some aspects of the problem and not to others and identifies certain individuals or groups as responsible for the problem—namely, those who are accountable for change (Benford & Snow, 2000). Second, prognostic framing offers a possible solution to the problem by setting goals and proposing strategies to achieve those goals (Benford & Snow, 2000; Coburn, 2006). There is usually a direct relationship between diagnostic and prognostic framings but finding the causes and solutions to a particular problem does not automatically lead to corrective actions. Consequently, motivation is the last core activity. Third, motivational framing provides actors with a rationale and incentives to engage in and perform an action (Benford & Snow, 2000).

In the work of establishing new frames, various processes unfold, to which adjustment and resonance are central (Snow *et al.*, 1986; Coburn, 2006). Frame adjustment involves connecting new frames to the interests and values of those to be mobilized or linking goals for change to other known conditions and experiences. The extent to which a frame is able to create such connections depends on resonance, which is understood as a frame's potential to resonate with participants and motivate them to act or support a decision (Coburn *et al.*, 2008). Lane (2020) supplemented the frame processes by adding normative and regulatory frames. Normative frames encompass expectations for interactions or actions, while regulatory frames are related to how behavior should be monitored or controlled. Framing is often a process that is disputed, as the situation or problem is portrayed in different ways, often with conflicting implications for roles, responsibilities, and resources. An individual or collective interpretive frame can also be used strategically to shape others' meaning-making processes, thereby mobilizing action. Benford and Snow (2000) called this frame disputes. Frame processes can also be challenged when participants bring forth counterframes with alternative representations of a situation, which can have implications for roles, responsibilities, and resources.

In social negotiations about interpretation and meaning, not all voices are equal. Coburn (2006) was, therefore, particularly concerned with how different actors have different roles and authority. Negotiations about frames are often shaped by power and authority structures, and frames presented by individuals with greater authority tend to be favored in negotiations of meaning. Lane (2020) built his understanding on the assumption that certain individuals hold a prominent position or are influential enough to frame new messages or guidelines and then impose their definition of the situation on others. It would therefore be legitimate to ask who has access to resources and authority and, thus, how to define problems in specific ways. Furthermore, Lane (2020) was concerned with how messages are framed when communicated across and within institutions. Framing here involves an extension of individual meaning making and can help explain how people together can create meaning. It is also assumed that people usually find themselves in already defined situations and use their existing frames to understand a new situation. Over time, groups form common perspectives or definitions of a situation, enabling socially coherent actions. Agreement on how to proceed can be both explicit and tacit. At the same time, a common perspective dictates that only certain actions are appropriate. Once a perspective is established, the actors have a frame of reference to guide and assess others' actions.

The starting point of frame analysis is that local actors, through their interpretations, are also "local policymakers" (Coburn, 2006). The decisions and actions of local actors shape how policy plays out in practice, and such local interpretations shape the direction of implementation. Local actors—in this case, teacher educators—actively construct their understanding by interpreting new guidelines through their own frames consisting of existing beliefs, practices, and experiences. It may therefore be relevant to view teacher educators as local policymakers in the context of designers of learning resources for teachers. Frame analysis can also provide insight into micro-communication processes in a collaboration

(Coburn, 2006; Iversen & Jónsdóttir, 2018) by focusing on the many interactions and negotiations that take place before the establishment of new action frames. This article explores aspects of the participants' framing of a problem situation, negotiations of understanding, and final solutions to the problem. In this study, "problem" refers to the task of designing a competence development resource for schoolteachers. This article investigates the ways in which teacher educators' framing of the decentralized competence development program influences the direction and outcomes of the collaboration.

Method and data production

The participants in this study were two other teacher educators and myself, who collaborated in designing a learning resource on interdisciplinarity in schools. The fact that the three of us ended up working together was more or less coincidental. Teacher educators engaged in the decentralized program are normally recruited based on their competencies and previous experiences, and the scope depends on the number of working hours allocated to the assignment. Two of the teacher educators, myself included, shared responsibility for the work, while the third participant was included based on the academic background, which was relevant to the entirety of the learning resource. To maintain anonymity, the academic affiliation, gender, age, or tasks of the participants are not described in this article. The decentralized program assignment brought us together, and all cooperation took place digitally due to different campus affiliations and the large distances between the university's locations. Although the subject of this study was learning design and framing, the work should be characterized as insider research (Fangen, 2010) and practitioner research (Heikkinen *et al.*, 2016). As a contributor to the development of the learning resource, along with the other teacher educators, I inevitably investigated my own practice. However, the emphasis of the study was our joint effort, not my personal experiences or reflections.

Insider research or research on one's own practice can be criticized for lacking distance and having unclear roles in the work (Kvernbekk, 2005; Fangen, 2010). Lewis and Quinnell (2024) also highlighted that researching higher education practices as an insider can be ethically complex, especially since the research intersects with professional identities, lived experiences, and the workplace. At the same time, the insights gained from an insider perspective can serve as a foundation for change (Kahn & Anderson, 2019). Therefore, the researcher should aspire to assume the roles of participant and learner, rather than controlling the change process (Fox *et al.*, 2007). To minimize role challenges, Wadel (2014) suggested clearly distinguishing and separating the roles of participant and observer. During the meetings and the work on the learning resource, I participated in conversations and activities on the same terms as the other two participants. Simultaneously, I was conscious of my role and influence on the final result and strived to adopt a critical attitude toward my own assumptions and attitudes toward practice (Fox *et al.*, 2007). The fact that I would also use the collaboration as a basis for research inevitably influenced my behavior, making me careful to let the other two participants have their say and trying not to lead the discussions in certain directions. Because I also researched the field, I had a different engagement in the topic and acquired more knowledge than the other participants about partnerships in general and decentralized programs in particular. This self-awareness could have limited my actions and statements; at the same time, it is speculative to assume that the outcome would have been different if I had not already been in the role of a researcher from the beginning.

I mainly assumed the role of observer in the review and analysis of the recordings. The analysis work was carried out half a year after the learning resource was completed. Creating distance in time is a way to create distance from the material, thereby taking a more distanced approach to the analysis than if it had been carried out immediately afterward. Data for the study were created from six digital collaboration meetings that took place over about 16 months, from spring 2022 to spring 2023. The planning and preparation of the learning resource extended over 16 months, following 10 meetings, six of which produced recordings.

From the remaining four meetings, notes were written that supplemented the reconstruction of the process. The collaboration meetings had a total duration of seven hours, 10 minutes, and 46 seconds, resulting in 84 pages of transcribed dialogue. The number of participants at the meetings varied, but after the meetings, summaries were sent out based on central discussions and decisions for further work. The data constituted a large volume of material with a range of themes, but because in this study I illuminate how we as teacher educators frame competence development for teachers, much of this will be the focus of future work. With frame analysis as the starting point, attention was directed toward various microprocesses that drove the work forward. Microprocesses are related to the exploration of and negotiations about different frames and the establishment of new action frames. The coding work therefore began with a rough sorting of the material based on diagnostic and prognostic framings. The next and final step was to identify instances of resonance, adjustments, and disputes. This work resulted in three overarching issues that were pervasive in the process of designing the learning resource, which I defined as understandings of interdisciplinarity, creating lasting change in praxis, and expectations of collaboration.

Results

The starting point of the study is how teacher educators frame competence development when designing a learning resource on interdisciplinarity, and the challenges and opportunities that arise when direct collaboration with schools is limited. The theoretical framework influenced the analysis and the way I interpreted the material. This study zooms in on microprocesses that evolved through interaction and how we, as teacher educators, worked together to solve the task of designing the learning resource. To ensure transparency and closeness to the data, I include longer excerpts from the collaboration process in the presentation of the results that follow. The excerpts have been translated from Norwegian to English. Minor syntactic and semantic adjustments have been made in order to ensure the content and meaning of the statements. In the continuous text, I both use the “we” form and refer to the two teacher educators and myself as L1, L2, and L3. The latter form of reference applies especially in cases in which only two participants take part of a meeting, or the conversation does not involve all three. For the sake of transparency, I am L2.

Understandings of interdisciplinarity

In the collaboration meetings, interdisciplinarity as a concept naturally became a recurring theme. In the Norwegian context, interdisciplinarity in schools is often associated with project work, theme-based teaching, or problem-based learning (Koritzinsky, 2021). These teaching methods have been widely used in Norwegian classrooms, especially since the introduction of the R94 and L97 curriculum frameworks, for which project work was compulsory. The new curriculum framework, LK20, on the other hand, does not contain methodological guidelines, and the term “interdisciplinarity” is actually not mentioned anywhere. Because interdisciplinarity in various forms is already a well-established practice in Norwegian schools, several conversations revolved around how we should understand the concept in connection with LK20 and how we could establish an approach whereby students’ learning and development of holistic competence were highlighted.

L1: But the problem has kind of become the “walkway” then, between subjects, right? When we work with water, yes, we can work with statistics in Math, we can work with drawing water sources in Geography, and we can work with writing something in a short story about water, but that makes no sense.

L2: No, it doesn’t.

L1: What’s the point, then? It becomes an optical illusion of a connection between things, because those things have no connection with each other.

L2: Yes. At the same time, working in depth with a theme, or project-based, all of these things can have incredibly good learning effects, but it's almost as if . . . there's too little reflection on it—what's really happening when we do this?

L3: And then it's a bit like what I've talked about before; it becomes more like water. Yes, we should read an English text about water. But, that's not interdisciplinary, either. One would think, oh, now we're good—we're working on the interdisciplinary theme, but they're just using the same keyword in different subjects, and don't actually look at something with different glasses on. There's no. . . You have to weave it together if it's going to be interdisciplinary. It must be a task that involves all subjects. So it's very—there's work to do here regarding interdisciplinarity and that concept? What does this mean?

L1: And that, yes, I feel this is a bit like the key to things because, interdisciplinarity itself becomes such a misleading term in school that takes focus away. Because what I think perhaps the intention is, then, is that you should be able to connect what you learn and make it relevant in some way. And I think, okay, what's happening in the world around us now? And then I connect it in such a way that it feels relevant to the surroundings, to the life they're [students] actually living. But yeah, it becomes a new buzzword. There're so many disturbing understandings of how these things should be perceived. I completely understand that they [the teachers] resort to a theme because then they just get it done.

L2: Mmm, right, but then you kind of lose the student because it's exactly what you mentioned there, L1, with connecting it to their life world.

For us, interdisciplinarity as a concept appeared ambiguous, and we tried to define what the challenges concerning interdisciplinarity in schools consisted of and what needs we should address through the learning resource. A conversation between L2 and L3 quickly turned toward the competence concept articulated in the curriculum and the dominant position that reciting knowledge has in school. Based on their own experiences from schools and collaboration with other schools through the decentralized program, L2 had formed the opinion that teachers' focus quickly becomes skewed, where teaching primarily revolves around academic topics and, to a lesser extent, the skills that students are supposed to develop. L2 then called for a more pronounced focus on students' learning processes, and a renewed understanding of interdisciplinarity surfaced, involving a more pronounced focus on skills as an integral part of the competence concept. Our new understanding of and approach to interdisciplinarity spurred us to direct attention toward teachers' understanding of LK20 and the implications of competence-based curricula. In one of the meetings in which all three of us participated, the conversation continued around the need to clarify the connections that L3 and L2 had made between interdisciplinary synergies within the curriculum as a whole.

L2: So, it's just like they haven't quite taken it in that these new curricula, that they are—they are a lot newer than you would think, right? There have been some major changes, and therefore L3 and I talked about how it might be appropriate to have a module that deals with curriculum understanding, which can help them unpack what the curricula are about as a starting point for being able to identify entirety and coherence both within and between subjects. And that's what we've tried here with this learning resource—that it's not just about, right, having a theme that we're going to work on together or that we're going to work on a project that's a kind of classic framing of the interdisciplinary, but that it's more about the holistic development of students' competence over time, which becomes interdisciplinary because this is, in a way, something that concerns, all subjects then.

L3: Yes, it's what you're talking about there, eh—that is, LK20, the entirety of it—that is, the competence goals cannot stand alone. They must be seen in light of the rest [of the curriculum].

L2: And if you don't get that approach to planning teaching, you won't create connections, either within subjects or between subjects. And I hear it everywhere; everyone talks about themes. We're going to work on this and that theme. And it's just declared that it contributes to much better learning.

This passage shows how we, through the framing of interdisciplinarity, create a connection between the concept and curriculum understanding, whereby interdisciplinarity is about

finding connections in and between subjects as an entry to put students' learning at the center of teaching.

How do teacher educators frame competence development for schoolteachers when designing a learning resource on interdisciplinarity?

What challenges and opportunities do teacher educators face in the design process when direct collaboration with schools is limited?

Creating lasting change in teaching practices

An objective of the decentralized program is that participation should contribute to increased quality in schools by strengthening collective competence. In addition to addressing a locally anchored professional need, one ambition for the learning resource was to spur collective learning processes. Throughout the duration of our collaboration, a major concern was whether our design would be clear enough to serve as a starting point for initiating local developmental processes.

L1: But if there are some small grains—seeds that are sown and that can start to grow out there—then that would be absolutely fantastic, really.

L3: Absolutely.

L2: But how can it be put into practice? How can we get hold of these trigger buttons for the teachers so that they get these eureka moments? Like, oh, this is something the students are engaged in and want to work on.

L3: Yes, what kind of first step should, I think that the first step is reflection on how things are. Maybe a bit of critical awareness of where the shoe presses. And then I think that most teachers are quite rational, so you ask some open questions that allow these reflections, right? Because just as we have come to recognize these things through reading, talking about, and discussing. I think that others probably will, too.

According to [Philippakos et al. \(2021\)](#), paying attention to reflection processes related to experiences with current and alternative practices is crucial for taking seriously the role of teachers as learners. The solution we settled upon was to integrate reflection as a red thread through all the modules, where the idea was that teachers would become more conscious of their own pedagogical understanding in meeting new understandings and experiences. At the same time, another recurring concern in the design process was how we could make sure that the work on the learning resource and the modules did not just become a “‘happening’ but would leave lasting traces in the teachers” praxes, visible as different ways of conducting their teaching, approaching cooperation, and engaging students in their learning processes.

L1: And then it may be that this is the main message: Create lasting change in praxes.

L3: That they take some notes for themselves and then sit in groups and summarize, because then you sort of air it a little.

L1: And something must actually happen in their praxes. It must challenge existing praxes and dare to challenge each other.

L3: Hm. Do you think of it as something they need to be aware of before they go in and discuss how they can create lasting change?

L1: Yes, maybe so.

L3: Yes, but that's clever, because then it's not just, yes, we can share more, or we can. . .

L1: Yes.

L3: That is also good, but, but it's systematic; how to systematically make changes, then.

L1: Yes. That's where . . . that's often where it stops, isn't it?

This passage shows how we came to understand the overall purpose of the learning resource: to create a lasting change in praxis. We agreed that the last module should be about establishing a common approach to the development work by making visible changes in plans for the next school year and setting goals for the practice community. Our common understanding of teachers' learning was therefore about experiencing something in practice, reflecting on what consequences the experiences would have for future work with planning and conducting their teaching, and making visible changes in the school's plans.

Navigating the challenges of partnership

In the analysis, I identified a normative frame related to our expectations of being able to cooperate directly with schools. An ambition of the decentralized program is to strengthen cooperation between teacher education and schools and to establish more equal partnerships. Our understanding of the concept of partnership was based on the idea that the partners, through negotiations about meaning, jointly define and delimit a goal for cooperation. Using the conceptual apparatus of [Benford and Snow \(2000\)](#), the normative framework resulted in a kind of unarticulated dispute in which we, as teacher educators, had a desire and need to position ourselves to cooperate directly with teachers to be able to develop a learning resource based on the schools' needs. This dispute was presented from our perspective and the framing of the situation and did not illuminate the schoolteachers' experiences and thoughts. Schools were invited, both directly and via email, to participate in the design of the learning resource, which created the expectation that a collaboration would be established. However, communication with the schoolteachers and access to information about the schools remained limited throughout the period, and the expectation we had of being able to collaborate with the teachers was not met. A few months into the work, we were invited to attend a meeting between the school principals, the school owner, and the network leader, which we hoped would be a door opener for further dialog. In a subsequent collaboration meeting, we discussed the outcomes of the meeting.

L1: I think then, like these modules, where you are collaborating with the schools, you have been there and talked to them, and discussed what they need.

That at least sets the bar much lower. There's an open invitation to participate.

L2: Yes, I really wish it was like that, but it didn't result in any further input apart from the topic. [. . .] And they [the teachers] have also been invited to get in contact to express their wishes or thoughts on what they want us to focus on. We would like to have that feedback. But, what I have experienced in another network as well is, that we invite them, but don't get any feedback at all.

This passage may seem trivial, but it is illustrative of the persistent uncertainty that characterized our work. When it was not possible to align expectations, adjust, and change along the way, as collaborative partners, we attained disproportionate ownership of the intentions and ambitions underlying the learning resource without any insight into how this would be received and understood by the other party. Various assumptions about why we did not position ourselves to establish dialog and cocreate with the schools circulated at the collaboration meetings, and one assumption was that the distance between teacher education and schools as institutions and cultures was too great.

L3: Yes, because I'm thinking a bit like this: If we're going to look at it a bit from a teacher's perspective, it's—it's all about . . . Just like students, it's a bit about relationships. So, going out and meeting people and having professional conversations and discussions is a very good idea. Because then you're not that intimidating; you're not that distanced. I think a bit less straitjacket and more dialog-based development.

L2: And *that* is so much easier; like the visits we've been on, it's so much easier to identify that, you guys are working on this; you need this; we can help you with that. But when you only get [a topic], and it should be the same for everyone, it's like, how do we do that?

This excerpt is descriptive of the unresolved dispute that followed us throughout the collaboration. Here, L2 refers to the organization of the collaboration in other networks, whereby teacher educators visit schools or use other means to meet teachers face to face. Through such meetings, dialog is pervasive, and a basis is established for developing relationships that enable teacher educators and teachers to jointly identify the schools' development needs. Considering that teachers can take goals and strategies from intention to action, it is crucial for a good design to identify their motivational triggers and incorporate them into the learning resource.

Discussion

This study asks how teacher educators frame competence development for teachers when designing a learning resource on interdisciplinarity in schools and identifies challenges and opportunities that occur in the process when collaboration with schools is limited. Through joint reflection and exploration of each other's experiences and understandings, we identified two primary challenges: understanding interdisciplinarity and creating lasting change in practice. This diagnostic framing was based on the assumption that schoolteachers have much experience with project work and theme-based teaching but need to put interdisciplinarity in a larger context. Therefore, the different modules were therefore built around a broad understanding of interdisciplinarity, which puts the development of holistic competence and students' learning at the center. The approach we agreed upon was to make schoolteachers' reflections on their own practice the key to creating lasting changes in their teaching practices and contributing to competence development. Consequently, the learning resource was designed based on reflexivity and specified a methodology that encourages teachers to think about and adjust their pedagogical understanding and teaching.

Motivation is a central part of a framing process, which we, as teacher educators in our prognostic framing, strived to ensure. An obstacle, though, is that when the modules of the learning resource are made available to teachers, there will be little opportunity to make changes or adjustments. Additionally, if we, as designers, are not present during learn time, when the schools work with the different modules, the opportunity to correct deficiencies or misunderstandings, or to negotiate, will be nonexistent. Therefore, it is crucial to ground the work thoroughly and let both teacher educators and teachers negotiate different frames and express their interests, expectations, and understandings (Bernay *et al.*, 2020). In situations like this, where contact between designers and learners is limited, challenges will arise in establishing structures of accountability (Campanella & Penuel, 2021). How the learn time is organized will be entirely up to the schools to plan and implement. At the same time, in their encounters with the modules of the learning resources, teachers will bring in their own beliefs about and prior experiences with how certain activities should be conducted (Goodyear & Carvalho, 2020). Obstacles, such as misinterpretations, flaws in the design, or organizational challenges, are most likely to occur. In the most extreme cases, the learning resource will be rejected in its entirety if schoolteachers are not onboard and do not experience resonance with their own frames of understanding. In a partnership in which the solutions have been settled or determined by one party in advance, there is little room for negotiating about meaning (Bjørnvik & og Bratteng, 2023). In line with frame analysis, resonance, adjustments, and disputes will likely be outcomes of teachers' interpretations, and both the diagnostic and prognostic framing could be challenged by alternative understandings. These design challenges are further amplified when teacher education and schools have not developed a common understanding of what constitutes a partnership (Borg *et al.*, 2023). The ambition of the decentralized program that teacher education will benefit from the collaboration is difficult

Design for learning

Goodyear and Carvalho (2020) argued that individuals who design for other people's learning must be able to analyze existing learning environments, which involves understanding how real, complex, heterogeneous networks of people, activities, and artifacts actually work. The design of learning resources for teachers takes place outside the usual context of teacher education and requires teacher educators to consider schools' various challenges and needs. As described earlier, the contact we had with schools along the way was minimal, and we had limited information about them. Our frame of reference was, therefore, our own experiences of having worked in different schools, which in turn was informed by varied experiences with local development processes and forms of cooperation. After meeting the principals, the picture we had formed was significantly adjusted. The adjustment was largely related to organizational conditions, whereas at the school, what we had envisioned as a model for our planning had several classes each year, with various teachers teaching the same subject. In real life, the schools had a composite class structure with a low number of students and several teachers employed in part-time positions. Teaching and learning obstacles and opportunities can vary immensely between larger and smaller schools, in addition to the general variation between schools. The way to organize competence development, as we ended up doing in this case, was described by Borg et al. (2023) as a compromise that addresses various challenges related to establishing cooperation. At the same time, designing a learning resource without cooperating with schools resembled a standard solution from which locally anchored competence development was supposed to turn away. Philippakos et al. (2021) argued that not involving teachers in a design process would most likely yield disappointment over lasting change. Without their involvement, it is very difficult to gain insight into the potential problems that will occur. Consequently, teacher education can become more distanced and less directly involved in local competence development. Therefore, there is reason to question the understanding of what competence development entails and how the initiative contributes to learning for teachers. In our design, by consistently focusing on teachers' reflections on their own practices and understanding, we tried to facilitate this. This means that the teachers not only gain knowledge about a topic but also get the tools to make changes in their practices.

Teacher educators as policymakers

As a process, framing involves creating conceptual hooks that make it possible to connect new frames with other experiences, knowledge, and beliefs (Coburn et al., 2008). Thus, framing is influenced by historical conditions and the sociocultural context (Benford & Snow, 2000). This has implications for framing and understanding the partnership between teacher education and schools. It seems that schools base their expectations for cooperation on previous experiences, with the practice field as the demander and teacher education as the provider (Borg et al., 2023). Instead of entering a relationship in which the partners explore each other's understandings and reflect together, teacher educators take on a role as policymakers by highlighting some aspects as more important than others. In the work of designing the learning resource, it is we, as teacher educators, who interpret what interdisciplinarity entails in connection with the curriculum, where the shoe pinches for the schools, and what it takes to create lasting change in the praxis. In their preliminary evaluation of the decentralized program, Borg et al. (2023) identified a general challenge in ensuring that competence needs are anchored locally by involving the professional community in schools, something the findings of this study align with. Without establishing closer collaboration between teacher educators and schoolteachers, the ambition of the program to strengthen cooperation between teacher education and schools and establish more equal partnerships, therefore, seems to be far from becoming a reality.

Limitations

Within the decentralized program, there is a variety of approaches to orchestrating competence development for teachers. This study illuminates a strategy for implementation with minimal contact between teacher educators and teachers in schools. However, it does not fully address how partnerships or the design of the learning resource contribute to raising competence within teacher education itself. Teachers in schools are a quite different target group than teacher students, and it can be a challenge to ensure that learning resources address the needs of teachers. In this context, teacher education must deal with challenges in an area in which teacher educators may not be experienced and in a landscape that is partially hidden from them. Without dialog and interaction, it is not given that teacher educators will frame the problem and design solutions that will contribute to learning and the further development of teachers' competence. In the worst case, the diagnostic and prognostic analysis processes may be missed completely. This study shows how this element of uncertainty is particularly exacerbated when a learning resource is developed independent of sufficient insight into the context in which it will be carried out.

Implications and conclusion

This study has explored how teacher educators frame competence development for schoolteachers when designing a learning resource on interdisciplinarity. The findings highlight two primary challenges: understanding interdisciplinarity and creating lasting change in practice. By focusing on reflexivity and encouraging teachers to reflect on their own practices, the designed learning resource aims to foster holistic competence and student learning. However, the study also underscores significant obstacles, such as limited opportunities for direct collaboration between teacher educators and schoolteachers. To ensure that the learning resources are both effective and tailored to local needs, it is essential to create authentic partnerships where teacher educators and schoolteachers engage in mutual learning processes. Future research should focus on developing and evaluating models of collaboration that involve continuous dialogue and engagement between these two groups. Hierarchical barriers and cultural differences are identified as obstacles to advancing the partnership and developing new ways of working together. For schools and teacher education institutions to break out of entrenched patterns of collaboration and find innovative methods of working together, policy development must establish clear accountability structures that address these challenges.

Designing for learning is designing the future (Selander & Kress, 2012, p. 23). However, it is questionable whether the design of generic learning resources can be accurate enough to provide sufficient learning opportunities for schools when the diagnostic frames are based on assumptions about the starting point. The analysis showed that the process of designing learning resources for teachers' competence development is complex and involves more considerations than just the academic content of the resource. In conclusion, while the study highlights the potential of reflexivity and interdisciplinary approaches in competence development, it also emphasizes the need for closer collaboration and a shared understanding between teacher educators and schoolteachers to achieve lasting and meaningful change in practice. Additionally, differing framings of the partnership itself can be a source for disputes or barriers. Without a shared understanding of the concept, the decentralized program's ambition to enhance cooperation and establish equal partnerships between teacher education and schools remains challenging.

Note

1. See for instance the curriculum for Natural Science as an example of descriptions of the interdisciplinary topics: <https://www.udir.no/lk20/nat01-04?lang=eng>.

References

- Benford, R. D., & Snow, D. A. (2000). Framing process and social movements: An overview and assessment. *Annual Review of Sociology*, 26(1), 611–639. doi: [10.1146/annurev.soc.26.1.611](https://doi.org/10.1146/annurev.soc.26.1.611).
- Bernay, R., Stringer, P., Milne, J., & Jhagroo, J. (2020). Three models of effective school–university partnerships. *New Zealand Journal of Educational Studies*, 55(1), 133–148. doi: [10.1007/s40841-020-00171-3](https://doi.org/10.1007/s40841-020-00171-3).
- Bjørnvik, A. M. R., & og Bratteng, S. (2023). Partssamarbeid – utvikling av ny praksis i «det tredje rommet». In B. Forbakk, T. Lekang, & N. O. Nilsen (Eds), *Kompetanse for profesjonalitet og skoleutvikling* (pp. 193–207). Universitetsforlaget.
- Borg, E., Wiggen, K. S., & Restad, F. (2023). *Temanotat 5: Samarbeid og involvering i tilskuddsordningen for kompetanseutvikling i grunnsopplæringen*. Arbeidsforskningsinstituttet AFI. Oslo Metropolitan University. Available from: <https://hdl.handle.net/11250/3111652>
- Campanella, M., & Penuel, W. R. (2021). Design-based research in educational settings. Motivations, crosscutting features, and considerations for design. In Z. A. Philippakos, E. Howell, & A. Pellegrino (Eds), *Design-based research in education. Theory and applications* (pp. 3–22). The Guildford Press.
- Christensen, O., Gynther, K., & Petersen, T. B. (2012). Design-based research: Introduction til en forskningsmetode i udvikling af nye E-læringskoncepter og didaktisk design medieret af digitale teknologier. *Læring and Medier (LOM)*, 9, 1–20. doi: [10.7146/lom.v5i9.6140](https://doi.org/10.7146/lom.v5i9.6140).
- Coburn, C. E. (2006). Framing the problem of reading instruction: Using frame analysis to uncover the microprocesses of policy implementation. *American Educational Research Journal*, 43(3), 343–379. doi: [10.3102/00028312043003343](https://doi.org/10.3102/00028312043003343).
- Coburn, C. E., Bea, S., & Turner, E. O. (2008). Authority, status, and the dynamics of insider-outsider partnerships at the district level. *Peabody Journal of Education*, 83(3), 364–399. doi: [10.1080/01619560802222350](https://doi.org/10.1080/01619560802222350).
- Conole, G. (2013). *Designing for learning in an open world*. New York: Springer.
- Engelsrud, G., Hallås, B. O., Lundvall, S., Nyrnes, A., Olsen, O., & Werler, T. (2023). *Didaktiske praksiser i lærerutdanningen. Steder i et landskap. [Didactic practices in teacher education. Places in a landscape]*. Oslo: Universitetsforlaget.
- Fangen, K. (2010). *Deltaagende observasjon. [Participatory observation]* (2nd Ed.). Bergen: Fagbokforlaget.
- Folkvord, K. A., & Midthassel, U. V. (2021). Partnerskap – en arena for felles læring og kunnskapsutvikling?. *Norsk pedagogisk tidsskrift*, 105(2), 199–213. doi: [10.18261/issn.1504-2987-2021-02-08](https://doi.org/10.18261/issn.1504-2987-2021-02-08).
- Forsström, S., & Munthe, E. (2023). What characterizes Nordic research on initial teacher education: A systematic scoping review. *Nordic Studies in Education*, 43(3), 241–259. doi: [10.23865/nse.v43.5588](https://doi.org/10.23865/nse.v43.5588).
- Fox, M., Martin, P., & Green, G. (2007). Researching your own practice. In M. Fox, P. Martin, & G. Green (Eds), *Doing practitioner research* (pp. 76–94). London: SAGE Publications, Ltd.
- Fylkesnes, S., & Lindahl, A. G. (2021). Grunnskolelæreres opplevelser med Desentralisert kompetanseutviklingsprosjekt (Dekomp): Implikasjoner for implementering av fremtidig utdanningspolicy. *Norsk pedagogisk tidsskrift*, 105(5), 442–454. doi: [10.18261/issn.1504-2987-2021-05-03](https://doi.org/10.18261/issn.1504-2987-2021-05-03).
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Boston, MA: Northeastern University Press.
- Goodyear, P., & Carvalho, L. (2020). The analysis of complex learning environments. In H. Beetham, & P. Sharpe (Eds), *Rethinking pedagogy for a digital age* (3rd Ed., pp. 49–65). Routledge. doi: [10.4324/9781351252805-4](https://doi.org/10.4324/9781351252805-4).
- Goodyear, P., & Dimitriadis, Y. (2013). In medias res: Reframing design for learning. *Research in Learning Technology*, 21, 1–13. doi: [10.3402/rlt.v21i0.19909](https://doi.org/10.3402/rlt.v21i0.19909).
- Heikkinen, H. L. T., de Jong, F. P. C. M., & Vanderlinde, R. (2016). What is (good) practitioner research?. *Vocations and Learning*, 9(1), 1–19. doi: [10.1007/s12186-016-9153-8](https://doi.org/10.1007/s12186-016-9153-8).

- Hermansen, H., & Mausestaden, S. (2023). Konstruksjoner av «partnerskap» i universiteter og høyskoleers samarbeid med skolesektoren. *Uniped*, 46(3), 189–200. doi: [10.18261/uniped.46.3.5](https://doi.org/10.18261/uniped.46.3.5).
- Hordvik, M., MacPhail, A., & Ronglan, L. T. (2020). Developing a pedagogy of teacher education using self-study: A rhizomatic examination of negotiating learning and practice. *Teaching and Teacher Education*, 88, 1–11. doi: [10.1016/j.tate.2019.102969](https://doi.org/10.1016/j.tate.2019.102969).
- Iversen, E., & Jónsdóttir, G. (2018). A bit more than a fly on the wall: Roles and responsibilities in design-based research. *Designs for Learning*, 10(1), 18–28. doi: [10.16993/dfl.79](https://doi.org/10.16993/dfl.79).
- Kahn, P., & Anderson, L. (2019). *Developing your teaching: towards excellence* (2nd Ed.). London: Routledge. doi: [10.4324/9780429490583-8](https://doi.org/10.4324/9780429490583-8).
- Koritzinsky, T. (2021). *Tverrfaglig dybdelæring: Om og for demokrati og medborgerskap – bærekraftig utvikling – folkehelse og livsmestring*. Oslo: Universitetsforlaget.
- Kvernbekk, T. (2005). *Pedagogisk teoridannelse: Insidere, teoriformer og praksis*. Fagbokforlaget.
- Lane, J. L. (2020). Maintaining the frame: Using frame analysis to explain teacher evaluation policy implementation. *American Educational Research Journal*, 57(1), 5–42. doi: [10.3102/000283121984868](https://doi.org/10.3102/000283121984868).
- Laurillard, D. (2012). *Teaching as a design science: Building pedagogical patterns for learning and technology*. New York: Routledge.
- Penuel, W. R., Allen, A. -R., Coburn, C. E., & Farrell, C. (2015). Conceptualizing research–practice partnerships as joint work at boundaries. *Journal of Education for Students Placed at Risk (JESPAR)*, 20(1-2), 182–197. doi: [10.1080/10824669.2014.988334](https://doi.org/10.1080/10824669.2014.988334).
- Philippakos, Z. A., Howell, E., & Pellegrino, A. (2021). *Design-based research in education: Theory and applications*. New York: The Guilford Press.
- Reinertsen, A. B., & Hafstad, S. S. (2021). Likeverd i partnerskap: Fra bestiller og Tilbyder til prosess. *Norsk pedagogisk tidsskrift*, 105(5), 428–441. doi: [10.18261/issn.1504-2987-2021-05-02](https://doi.org/10.18261/issn.1504-2987-2021-05-02).
- Selander, S., & Kress, G. (2012). *Læringsdesign. I et multimodalt perspektiv*. Frederiksberg: Frydenlund.
- Smith, K. (2022). Lærerutdannere som forsker på egen praksis. In M. Ulvik, H. Riese, & D. Roness (Eds), *Å forske på egen praksis. Aksjonsforskning og andre tilnærminger til profesjonell utvikling i utdanningsfeltet* (3rd Ed.). Fagbokforlaget.
- Smith, K., & Flores, M. A. (2021). Introduction: Teacher educators as teachers and as researchers. in K. Smith, & M. A. Flores (Eds), *Teacher educators as teachers and as researchers* (pp. 1–4). ATEE. Routledge.
- Snow, D. A., & Benford, R. D. (1988). Ideology, frame resonance, and participant mobilization. *International Social Movement Research*, 1(1), 197–217.
- Snow, D. A., Rochford, E. B., Worden, S. K., & Benford, R. D. (1986). Frame alignment processes, micromobilization, and movement participation. *American Sociological Review*, 51(4), 464–481. doi: [10.2307/2095581](https://doi.org/10.2307/2095581).
- The Norwegian Directorate for Education and Training (2020). Hva er tverrfaglige temaer? [What are the interdisciplinary topics?]. Available from: <https://www.udir.no/laring-og-trivsel/lareplanverket/stotte/hva-er-tverrfaglige-temaer/> (accessed 30 November 2023).
- The Norwegian Directorate for Education and Training (2023). Tilskuddsordning fo lokal kompetanseutvikling i barnehage og grunnsopplæring. [Program for local competence development in kindergarten and basic education]. Available from: <https://www.udir.no/kvalitet-og-kompetanse/lokal-kompetanseutvikling/tilskuddsordningene-for-lokal-kompetanseutvikling-i-barnehage-og-grunnsopplaring/> (accessed 20 March 2023).
- Wadel, C. (2014). *Feltarbeid i egen kultur*. Oslo: Cappelen Damm Akademisk.

Corresponding author

Kristine Haugen Rubilar can be contacted at: kristine.h.rubilar@usn.no