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# University–school collaboration as an arena for community-building in teacher education

Rachel Jakhelln <sup>a</sup> and May Britt Postholm <sup>b</sup>

<sup>a</sup>Department for Education, UiT the Arctic University of Norway, Tromsø, Norway; <sup>b</sup>Department of Teacher Education, Norwegian University of Science and Technology, Trondheim, Norway

## ABSTRACT

**Background:** In many settings internationally, initial teacher education (ITE) relies on cooperation between schools and universities. When these institutions collaborate on teacher education, the shared work can form a basis for community building. This article focuses on experiences in Norwegian ITE of the Change Laboratory (CL), a form of participatory data analysis workshop, as an arena for such work, and hence community building, in teacher education.

**Purpose:** Contextualised within the framework of cultural historical activity theory (CHAT), the research aimed to understand participants' experiences of collaboration in CLs, and how the CLs functioned as an arena for community building. We asked: *in what way was the work in CLs during the first year of an intervention research project in teacher education experienced as community building?*

**Method:** The research was conducted within a four-year teacher education research and development project involving two ITE institutions. We carried out focus group interviews with three groups engaged together in shared work: teacher educators in university ( $n = 10$ ), teacher educators in school ( $n = 5$ ), and student teachers ( $n = 20$ ). Data were analysed qualitatively.

**Findings:** During the project, all participants gradually felt that they had a voice and were listened to. Their mutual engagement on the project work, and the use of CHAT also brought them together. Overall, the findings were encouraging and suggested that a focus on community building in CLs in the start-up phase of a project can lay the foundation for collaboration between teacher education and schools, contributing to the co-construction of knowledge, and to learning and development. However, the challenge of disseminating the work to colleagues in universities and schools was perceived as a hindrance.

**Conclusions:** The development and sustaining of collaboration in teacher education is an important goal, ultimately benefitting the entire learning community. Crossing boundaries can lead to joint learning, as in this project, and to further development and learning in teacher education.

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Cultural historical activity theory (CHAT); change laboratory (CL); teacher education; school–university collaboration; community building; participatory data analysis workshop

## Introduction

In many countries, initial teacher education (ITE) relies on cooperation between two institutions – schools and universities. Each of these has different tasks and knowledge bases: whilst the main job of the school may be regarded as to educate children and young people, and nurture their development as citizens, universities have responsibility for students' higher education, through the acquisition of theoretical and research-based knowledge, and higher-level training and professional development. When these institutions collaborate on teacher education, *boundary crossing* – where 'practitioners must move across boundaries to seek and give help' (Engeström, Engeström, and Kärkkäinen 1995, 332) – can be a basis for community building. This article focuses on project work experiences in Norwegian ITE of the Change Laboratory (CL) as an arena for such boundary work, and hence community building, in teacher education. It reports on a study that sought to understand participants' experiences of university–school collaboration in CLs, and investigate how CLs can function as an arena for community building.

### *What are change laboratories (CLs)?*

Within the framework of cultural historical activity theory (CHAT) (Engeström and Engeström 1986), Change Laboratories (CLs) are defined as participatory data analysis workshops (Engeström et al. 1996). Within CHAT, community is a central concept that, according to Engeström (1987, 1999), refers to all the people in a community who share the same object or overall goal for the work they will accomplish together. In a community, people can develop an understanding of each other and learn from one another. Edwards (2010, 64) argues for the concept of relational agency as a useful addition to the analytic toolbox in CHAT, describing relational agency as 'recognizing the motives and resources that others bring to bear as they, too, interpret it' and furthermore '[a]ligning one's own responses to the newly enhanced interpretations, with the responses being made by the other professional as they act'. As it is important that the relationships are set up 'so that the voice of the other is given weight' and should be 'recognised that all share strong motives for resourceful work when the tasks are complex' (Edwards 2010, 77), Edwards suggests bringing to the fore the relational aspect of collaboration on complex work tasks. The relational aspect is central in our study of the CL as an arena for community building in Norwegian ITE.

### *The Norwegian ITE context*

Teacher training was reformed in the context of the Norwegian national curriculum in 2017. It evolved from a more general 4-year initial teacher education (ITE) programme at the bachelor's level, with 8–10 subjects, to a 5-year research-based education programme with 3 or 4 subjects at the master's level. The change can be understood as a paradigm shift and has challenged Norwegian teacher education institutions. ITE at the master's level prepares student teachers (STs) for continuing professional development based on knowledge of scientific theories and methods. The ITE is intended to deliver high academic quality and ensure comprehensiveness and coherence among subjects, subject

didactics (subject teaching methods), education, and practice placement, as well as close interactions with professional practice and the communities where the teaching practice schools are located (Ministry of Education 2016a, b).

Within the framework of CHAT, participatory data analysis workshops – known as Change Laboratories (CLs) (Engeström et al. 1996) – have been used to gather together teacher educators in schools (TEs), teacher educators at universities (TEUs), and student teachers (STs). To better understand how the three different groups of actors jointly study their shared work, we examined how they experienced the CL as an arena for community building in teacher education. Before presenting our research in further detail, we first outline the background to our study.

## Background

The study reported here is the result of the first year of a 4-year research and development (R&D) project entitled *Learning, Assessment and Boundary-Crossing in Teacher Education* (LAB-TEd), involving two ITE institutions for primary schools (approx. pupil ages 6–12) and lower secondary schools (approx. pupil ages 13–15). In the project, STs at two sites were in their third year of their study, writing an obligatory practice-based, professionally oriented R&D assignment combining a school subject and subject of pedagogy and pupil-related skills (Ministry of Education 2016a, b). The LAB-TEd project had a twofold aim: (1) to develop collaboration between universities (teacher educators), schools (teachers and school leaders), and STs, in order to build capacity for practice-based, professionally oriented research; and (2) to research these processes using the CL to uncover obstacles and barriers to change that will be more widely useful across the system in Norway and, potentially, internationally. There was a special expectation that the TEUs, as co-researchers, should conduct research on tripartite collaboration outside the CL. The CLs in the LAB-TEd project were understood as *boundary-crossing* CLs (Virkkunen and Newnham 2013), where three different actors jointly study their shared work.

## Theoretical framework

Within the CHAT framework, the arena in which practitioners and the interventionist researcher (IR) collaborate to develop practice is called the Change Laboratory (Engeström 2007; Engeström et al. 1996). Its intention is to develop a new model of collective practice (Virkkunen and Newnham 2013). According to Engeström (2007), the CL is based on separation and embeddedness at the same time. It is located as close to the concrete practice as possible but ‘protected by walls’ from the practice (327). The boundaries between the CL and the practice can be permeable (allowing movement across them), but it is the practitioners who are encouraged to go outside the CL for reality checks (Engeström 2007).

Engeström (1987) refers to Vygotsky’s work as the first generation of CHAT, Leontèv’s contribution as the second, and his own contribution as the third generation of CHAT, focusing on collaboration between two or more activity systems and thus forming networks of interacting systems. The limitation of the first generation of CHAT is that individuals are the unit of analysis. This was overcome by the second generation, which introduced the division of labour and thus described collective activity (Leontèv 1981).

The upper triangle in the activity system is the same as Vygotsky's fundamental triangle, but it is turned upside down, with the mediating artefacts at the top. At the bottom of the triangle, we find the nodes 'rules', 'community', and 'division of labour'. The 'rules' refer to guidelines, norms, and conventions for actions. 'Community' refers to a group who share the same object, and 'division of labour' means that the work or actions focusing on a goal have been distributed among the people in the community (Engeström 1987, 1999).

In networking between two or more activity systems, the subjects in the various systems act on an object that is partially shared between the systems in the network. The CLs serve as a shared meeting ground for participants in a project aiming to move the practice towards a partially shared object (Engeström 1987, 2015). In our study, TEUs, TESs, and STs each represent their activity system with their own object. In tripartite collaboration processes, all participants can come to an agreement on a partially shared object to act on, but then, following Edwards (2010), it is necessary to 'recogniz[e] the motives and resources that others bring to bear'. Leontèv (1981) pointed out that 'the object is "the true motive" for people's actions'. This means that people in educational settings aiming to develop their practice towards a partially shared object for activity systems in a network at least need to know about each other's motives – or, even better, share a collective motive to act on the object (e.g. improved communication between teachers, and between teachers and pupils). Participants in a community, including participants from each their perspective as TEUs, TESs, and STs, need to align their responses to each other to form a community representing relational agency (Edwards 2010).

Boundary-crossing is an important concept in CHAT. As mentioned earlier, according to Engeström, Engeström, and Kärkkäinen (1995), 'boundary-crossing is characterized as "horizontal expertise", where practitioners must move across boundaries to seek and give help, to find information and tools wherever they happen to be available' (332). The adoption of ideas from one another in a 'shared meeting ground' (Engeström and Toivainen 2011, 35), as in a CL, can lead to developmental transfer (Engeström and Sannino 2010), meaning that people can develop an understanding of each other and learn from one another. Tensions and contradictions within and between factors in the activity system and between activity systems are the foundation for development and change (Engeström and Sannino 2010). However, boundaries can be demanding 'social constructions which define who is included and excluded from interactions and which knowledge or meaning system is considered relevant in those interactions' (Edwards 2010, 43). Forming a community across the TEUs', TESs', and STs' activity systems that advances development for all parties requires relational agency such that everyone can speak and be heard.

According to Engeström (1999), members in a community share the same object. Wenger (1998) states that a community of practice should be viewed as a unit and introduces the concepts of mutual engagement, joint enterprise, and shared repertoire as central to a community. When the members of a community perceive that they share a collective motive, they develop a joint understanding of why and how they conduct various goal-directed actions moving them towards the object, as well as mutual engagement based on negotiations of meanings. Negotiations of meanings in the community can also lead to a joint enterprise, such as when members of a community act on a joint object. Over time, the joint work of an enterprise creates resources for further

negotiations of meanings. The repertoire of a community of practice ‘includes routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practice’ (Wenger 1998, 83).

### **Related research**

The voices of the TEUs are regarded as strong in a triad that consists of the TEUs, the TESs and the STs (Loughland and Thi Mai Nguyen 2018; Olsen 2021; Zeichner, Payne, and Brayko 2015). According to Olsen (2021), the TEUs dominate the joint supervision of the R&D assignment both quantitatively and semantically, and the TESs are positioned in different relations of knowledge with the STs. Additionally, Olsen (2021) observed that the STs’ voices may be less heard than the TEUs’ and TESs’ voices. As Daza, Bjørk Gudmundsdottir, and Lund (2021) make clear, the STs need to be able to reflect and participate in knowledge construction in the tripartite collaboration throughout their studies. Olsen (2021) reports that it is difficult to identify changes beyond that the R&D guidance is organised as a triad, also stating that it is challenging to create new meeting places in teacher education. One important implication of Olsen’s is to improve the interaction among the parties when working on the R&D assignment, in order to avoid the STs having to navigate between different knowledge contributions. Engeström (2008) underlines the need for a framing of the school–university partnership model, which fosters collaboration across stakeholders, in which the different interests, values, and practices that exist are negotiated.

According to Farrell (2021), the TESs should have a key role, and ‘close-to-practice’ research should be conducted in fostering a ‘third space’ in ITE. Farrell (2021) considers that efforts to bridge the theory–practice divide and promote ‘inquiry as a stance’ (Cochran-Smith and Lytle 2009) will only succeed if this is a joint endeavour through ‘democratic pedagogical partnership’ with schools (Farrell 2021, 13).

### **Purpose**

The aim of the study reported here was to understand participants’ experiences with collaboration in CLs (between the TEUs, TESs, and STs), and how the CL functions as an arena for community building. The research question that we addressed was as follows:

*In what way was the work in CLs during the first year of an intervention research project in teacher education experienced as community building?*

### **Methods**

#### **The context of the study**

A premise for our study was that the early phase of an R&D project is of great importance in forming a partially shared object that can function as a driving force for the participants’ actions (Postholm 2008, 2021), and therefore this first year would represent a significant area for research. Developmental work was undertaken at two sites in Norway, in both

cases led by an interventionist researcher (IR, the two authors), who planned and organised the CL. The IR's role in studies framed by CHAT is defined by Engeström and Sannino (2010) as follows: 'In linear interventions the researcher aims at control of all the variables. In formative interventions, the researcher aims at provoking and sustaining an expansive transformation process led and owned by the practitioners' (15).

Four CLs took place during the project's first year at both sites. In terms of participants, in addition to the IRs, there were a total of 10 TEUs, five TESs from two lower secondary schools and one primary school, and 20 STs. The TEUs supervised the participating STs' assignment. The TESs were the mentors during the STs' practicum placement period. There were several meetings between the participants in the everyday activities framed by the ITE, in addition to the CLs. We invited Yrjö Engeström and Annalisa Sannino to lead a two-day capacity-building seminar on CHAT for all the participants. STs, TEUs, and TESs each formed their activity systems and a network of systems representing the third generation of CHAT (Engeström 1987, 2015), and a partially shared object was formulated for the network at both sites (in-depth focus on the subject, contributing to research-competent school development, and better teachers with R&D competence for school development). These objects could constitute a shared enterprise for the participants if they were perceived as their 'true motive' (Leontèv 1981, 59).

The work in the CLs alternated between *homogenic* groups, in which STs, TEUs and TESs each formed their group, and *heterogenic* groups consisting of STs, TEUs, and TESs. When working in heterogenic groups, the STs, TEUs, and TES were divided into groups based on which school subject was their main focus. The work on the CLs was led by the IR. The main focus of the first CL (CL1) was to gather the experiences of the STs, TEUs and TESs, which was related to earlier assignments attempting to connect the practices in school and university studies. The participants had prepared themselves for CL1 by answering some questions given by the IR in advance. All the teacher educators reflected on previous experience with R&D work, and the STs considered written assignments from their first 2 years of their teacher education. CL1 was also used to review the main terms of CHAT and how CHAT and the expansive learning cycle could be used in school development. Towards the end of CL1, the groups shared their reflections from the group work then had a collective discussion regarding possibilities, tensions, and contradictions.

CL2, CL3, and CL4 followed the same structure as CL1, with the participants working in homogenic and heterogenic groups focusing on the theme and design for the R&D assignment, making it relevant and useful for all. The activity system became the unit of analysis in attempts to identify tensions and contradictions both within and between the systems and, thus, discover possibilities for development. In addition to the activity system, the expansive learning cycle (Engeström 1987, 2015) was used as a tool during the CLs to plan actions connected to work on the R&D assignments.

### **Ethical considerations**

Permission to conduct this study was sought from and granted by the Norwegian Ethical Research Committee, as well as by the TESs, TEUs, and STs. All participants signed an informed consent form. They were told that their names would be anonymised and that they would be given full confidentiality (NESH 2016). The schools have, therefore, been assigned pseudonyms, and the participants are unnamed.

## *Data collection*

The research was conducted as a qualitative interview study (Kvale and Brinkmann 2015). One year into the project, we carried out focus group interviews (Fontana and Frey 2000; Kamberelis and Dimitriadis 2011) with the TEUs, TESs, and STs in small groups of three to five persons. The language of the interviews was Norwegian. The interviews lasted for about one hour each. In the interviews, we posed the same questions to all groups. The participants were asked about how they experienced the development of their ownership and belonging to LAB-Ted throughout the year, and how they would describe the process of developing the overall goal and their motivation to work towards it. We asked them to detail how they experienced the object (see objects presented above) as a driving force for the whole group's commitment to the work in the CLs. Further, they were asked about the different voices present and their importance to the work during the first year, the development of their understanding and the theory used in the CLs, their assessment of the processes throughout the year, and the outcome of the project for their institution and for themselves. These questions were the starting point for the dialogue, but both the participants and the researchers could bring in perspectives or themes that we had not previously considered. The analysis had already begun during the interviews, helping us to increase our understanding of the participants' experiences. The interviews were then transcribed, and the analysis intensified as we continued the investigation of the transcribed interviews.

## *Data analysis*

Based on the data collected, we constructed a narrative text (Riessman 2008) for each participating group (TEUs, TESs, and STs), describing how the participants had experienced the work in the CLs as community building. These narratives helped us to summarise the participants' utterances. With these narratives as a starting point, we conducted an open coding process, as presented in the constant comparative method of analysis (Strauss and Corbin 1998), to develop categories across the narratives and thus across the various roles. We conducted these analyses to develop a skeleton based on the narratives that could lay the foundation for theoretical analysis of the findings. A mutual analysis process helped us to be sensitive to the presence of our own prejudices and subjectivity (Glesne 2011; Kvale and Brinkmann 2015; Lincoln and Guba 2000). As the analysis was jointly conducted, we managed to nuance and broaden our understanding by asking and commenting on each other's preliminary analysis. The analysis process resulted in the following five categories: 'voice', 'R&D assignment', 'CHAT', 'research', and 'tripartite cooperation'. The categories developed across the participating groups structured our analysis and discussion related to the problem formulation of the study. To ensure research quality, we strived to make the research process transparent (Merriam 2015; Postholm 2019) and have used member-checking (Lincoln and Guba 1986). The participants recognised the findings outlined as being in accordance with their experiences.



## Findings

In the sections below, the findings from the analysis are presented, grouped by participant grouping (i.e. the TEUs, TESs, and STs). Where relevant, translated (from Norwegian into English) and anonymised quotations from the interviews are included to illustrate and illuminate key points.

### *The teacher educators at the university (TEUs)*

The teacher educators at both universities valued the collaboration processes with the STs and the TESs. In the collaboration processes, they felt that all parties' voices were heard, and they appreciated the ideas voiced by the STs and the TESs. One teacher educator, stating that they appreciated encountering the different voices for their own learning, illustrated the equality and good relations between teacher educators and STs, reflecting as follows:

I can feel how everybody wants to go forward, to listen to each other, wants the best for each other. I feel, without exception, that we all endure disagreement ... we have trust in each other ... We really want to succeed ...

Another TEU remarked that it was 'Very useful to gain insight into the routine schooling, quite a different insight than we get in an ordinary visit to school in the practicum period'. The TEUs emphasised the value of collaboration with the TESs and observed that the tripartite collaboration was something that, they felt, must continue in the community.

It is interesting to note that the TEUs thought that their ownership developed throughout the year. They considered that they had all shared ideas and learned from each other in the CLs, which functioned as a 'shared meeting ground' (Engeström and Toivainen 2011, 35) for analysis and reflection, and thus led to developmental transfer and learning (Engeström and Sannino 2010). According to Engeström (1987, 1999), a community comprises people who share the same object. The TEUs felt that the partially shared object they constructed truly framed and guided the collaboration processes between the activity systems, referring to the activity systems of the STs, the TESs, and their own system. From the perspective of these teacher educators, it was apparent that the STs and teacher educators (both TEUs and TESs) had developed a mutual engagement and a collective motive acting towards a common object in their joint enterprise (Wenger 1998). The teacher educators developed an understanding of CHAT and used the model of expansive learning in the planning of projects with the STs. They developed a common understanding of the theory but also made clear that they wanted to expand their understanding and thus their shared repertoire (Wenger 1998) of CHAT.

According to the analysis, the TEUs observed that they found CHAT complex and challenging but wanted to learn more about it. They were happy with the TESs demonstrating an understanding of the theory, which was something they had in common as a shared repertoire in the community that was continuously developing. In addition, the TEUs found their many roles to be challenging. They were responsible for the content of the subjects, for the supervision of STs, and for doing research on the developmental

processes and publishing their studies. Research was not a mutual engagement (Wenger 1998) or an object to act on (Leontèv 1981) for all the participants in the project, but as employees at the university, teacher educators were expected to publish. However, for them, the possibility of publishing was a motivation for taking part in the project. The TEUs strived to find time to do research on the project and were not used to conducting practice-based research founded on the developmental processes of which they themselves were a part. The TEUs clearly thought of themselves as a community but wondered how their practice in the project could be disseminated to the whole teacher education institution.

### *The teacher educators in schools (TESs)*

The TESs highlighted the significance of being included in the project from the beginning and the experience of being a part of a community (Wenger 1998). They described their role in LAB-TEd as representing the schools' voice and serving as an important part of the project. They felt that their voices were heard in the work done together. These experiences were described as meaningful and giving a feeling of equality. One of them described it as 'a strong sense of ownership in the project'. Regular meeting places and the development of closer relationships also contributed to mutual engagement (Wenger 1998) in the project. These descriptions indicate that the TESs regarded themselves as a part of the 'horizontal expertise' (Engeström, Engeström, and Kärkkäinen 1995). The common work on the R&D assignment gave greater meaning to the tripartite collaboration and the development of a new model (Engeström 2007) for the supervision of the assignment. Working on the R&D assignment contributed to the participants' experiences of being a part of a community (Wenger 1998), giving the participants an experience of reciprocity and relational agency (Edwards 2010). As with the TEUs, the TESs reflected that they learned from the collaboration and that their motivation for the mentoring work increased. The TESs thought that the STs had learned a great deal through forming a closer relationship with them and with the school context. They perceived that the assignments in the LAB-TEd project were more related to the classroom and the school's needs than the TESs had experienced before, and felt that the STs learned about research and developed knowledge useful for work in school. Therefore, 'they want to give something back to the university in return'. The setting seemed to lead to developmental transfer, as described by Engeström and Sannino (2010). According to the analysis of data, the TESs found CHAT demanding but also meaningful for the project and for themselves as professionals.

Overall, the TESs demonstrated that it was possible to establish continuity and a community (Edwards 2010) across the two knowledge fields of schools and universities. One TES remarked that 'contributing to bridging the gap between school and university is motivating, and collaboration on the project is a good basis for further development'. However, they were concerned about the dissemination of the project results to a broader community, in schools and at the university. These concerns seemed to build on former experiences from daily work as teachers and mentors in schools. Being collaborators from different fields also provided opportunities for reality checks (Engeström 2007) from different perspectives.

### *The student teachers (STs)*

Several of the STs commented that their sense of ownership and belonging to the project grew stronger throughout the year. Initially, they felt that they were a part of the project, but only distantly. 'It was very new for all of us in the beginning', one of them explained. During that time, they reflected, there were so many strange theoretical concepts, and all the other participants seemed so clever, while they, the STs, were full of questions; 'So, our ownership in the project grew gradually'. Their feeling of belonging and mutual engagement (Wenger 1998) increased when they started to work on the R&D assignment.

It was clear that the STs felt it was important to work towards a joint object. However, the analysis suggested that CHAT seemed to create a distance between the STs and the other participants. Some remarked that it was challenging to take part in CLs, and others said clearly that the theory included unfamiliar concepts. Despite this, several STs used the expansive learning cycle (Engeström 1999) in their assignments, demonstrating that the theory became part of their work after a while, despite their initial feelings about it being challenging. They were on their way to establishing a joint repertoire (Wenger 1998) when it came to CHAT and theoretical concepts and models.

The STs emphasised that the theme they were working on in their assignment was useful for them, as well as for the school. They regarded their work as useful in 'a real-world context'. Despite the theme that the STs were researching being based on a common agreement, they felt that it was their own project: 'We had the opportunity to decide on things together, and that makes you feel ownership', one of them explained. It was evident that they felt they truly made a contribution: 'We can feel that much more now than in the beginning', another stated. They believed that their experiences were taken seriously and that they learned a great deal from the tripartite collaboration. They also felt that they were more active in the dialogues after a year, than they had been at the beginning of the project.

The analysis showed that the STs focused on their R&D assignment, and they wanted to achieve a good result. The tripartite collaboration was valued and seen as rewarding, but the STs became aware of the challenge of their being the connecting link between the university and schools. As one described it: 'We believe communication among the different parties is extremely important for everyone to achieve common goals'. In essence, the LAB-Ted project afforded them an experience of teachers from schools and the university breaking down the barrier between the different practices (Engeström 2007). All the STs perceived that they found the work in the CLs interesting, and they learned from the collaboration processes in this 'shared meeting ground' (Engeström and Toivainen 2011, 35). They felt that their voices were heard when they shared their experiences in the CLs but, at the beginning of the project, felt that CHAT created a knowledge hierarchy, an idea which Edwards (2010) problematises when referring to the notion of boundary-crossing and the important questions about *whose* knowledge is defined as relevant.

### **Discussion**

In the following discussion, we consider how the analysis allows us to address our research question: *In what way was the work in CLs during the first year of an intervention research project in teacher education experienced as community building?* Based on the five

categories – ‘voice’, ‘R&D assignment’, ‘CHAT’, ‘research’, and ‘tripartite collaboration’ – across the different roles in the project, we consider aspects that may contribute to, or hinder, the building of a community when teacher educators and student teachers collaborate.

### **Voice**

As explained earlier, the CL is an analytic workshop where the results are dependent on the participants’ contributions and a common motive. The CLs are set up in such a way that all voices are given weight (Edwards 2010) and contribute to the analysis. Engeström (2008) underlines the need for school–university partnerships that foster collaboration. Over the year, the different participants developed an understanding of the project as dependent on *their* voice. Both the STs and the TEs highlighted the experience of their voice being heard throughout the process. The TEs emphasised the value of the different voices and mutual learning. According to Olsen (2021), it is difficult to find new meeting places in teacher education. The CLs seem to be an arena where ideas can be shared, leading to learning for all. In our study, all participants reflected that they had felt listened to. This is noteworthy, as it is not always the case: some research suggests that the voices of the TEs may be the strongest in such settings (see, e.g. Loughland and Thi Mai Nguyen 2018; Olsen 2021; Zeichner, Payne, and Brayko 2015).

In our study, it appears that experiencing the significance of their voice may have influenced how the participants acted. The analysis suggests that participants realised that they were not only representing themselves, but also the voices of a wider community. They represented their role in ITE and demonstrated a sense of growing and shared responsibility. As teacher educators, the TEs felt equality with the TEs, and the STs gained more confidence in their own role in the collaborative work, despite some still feeling that they functioned as a connecting link between schools and the university.

During the development of the work, all the participants in the CLs were crossing boundaries and were introduced to each other’s perspectives. The gradual development of common understandings or repertoires opened for further negotiations of meanings (Etienne, McDermott, and Snyder 2002). In this ‘democratic pedagogical partnership’ (Farrell 2021, 13) a bridge is thus built between school and university, between practice and theory. However, in a reform phase, such as the current paradigm shift in Norwegian ITE, the importance of secure and just settings and processes, opening for the development of collective relational agency, must be recognised (Edwards 2010). It was evident that the broad expectations placed on the TEs, and any feelings of insecurity related to their role and the use of time may indicate tensions between the growing community and the division of labour: these aspects need to be acknowledged and considered.

### **R&D assignment**

The R&D assignment was the critical element in the communication between the participants in the CLs. The assignment and the common engagement in supervision and achieving ‘good results’, not just for the students but also for the schools and the university, contributed to mediating the actions and development of community. Thus, when the TEs talked about giving something back to the university, about reciprocity, and about the relevance of the

R&D assignment, we can understand it as an acceptance of a joint responsibility for the STs' learning and development as teachers, and for teacher education. When the STs talked about a vision for their assignments as contributions to the schools, they demonstrated a growing understanding of and responsibility for the work in schools. This emergent state of mind among the STs can be connected to the vision of the ITE to cultivate a teacher identity marked by an inquiring attitude towards teaching (Ministry of Education 2016a, b), or inquiry as stance (Cochran-Smith and Lytle 2009). Though contradictions were countered through the mediation of the boundary object – the R&D assignment that facilitated boundary-crossing (Engeström, Engeström, and Kärkkäinen 1995) – a reciprocity among all parties was developed in the CLs throughout the year. The R&D assignment functioned as a mediating artefact on the way towards the partially shared object in the community (Engeström 1987).

## CHAT

CHAT, and its concepts and models such as the activity system and the expansive learning cycle (Engeström 1987, 2015), were used in the CLs in the first year of the project. During the capacity-building seminars on CHAT, the participants developed a partially shared object to act upon. This common object had the power to join the participants together in a project if they perceived the object as 'the true motive' (Leontèv 1981, 59), and the participants did perceive that they developed a common ownership of the project throughout the year. During the year, they became mutually engaged in a joint enterprise (Wenger 1998). The TEUs and the TESs considered how the object could direct the practice for the whole community at the university. They evidently thought that there was a tension between the new activity they were developing and the traditional practice for collaboration between universities and schools.

The findings indicated that some of the STs perceived a distance between themselves and CHAT at the beginning of the project, feeling that the theory created a knowledge hierarchy and, thus, constituted a hindrance for community building between the participants. However, when working on their R&D assignments, some of the STs used the expansive learning cycle in their planning and in the written presentation of their work. This suggests that they had gained an understanding of the cycle and made it into a mediating artefact in their own work. In this way, the concepts and models within CHAT gradually became part of the participants' shared repertoire (Wenger 1998), such that they could collaborate on a more equal level. If CHAT is to unite people in a community and not create distance, the content of the theory and the use of CHAT as a method for development should follow the processes in the project, allowing CHAT to function as a mediating artefact for community building, as we have seen in this study. Instruction and learning should be intertwined, not separated, as Engeström and Sannino (2012) maintain. The study highlights that CHAT can be learned and appreciated when it is used during analysis, planning, and presentations.

## Research

The TEUs had a many-sided task in this project. In addition to their role as supervisors, they were also expected to conduct research on the development processes, as co-researchers. The research activity was detached from the processes shared with the

other participants – the TESs and the STs in the community – and the TEUs struggled to find time for research. If teacher educators are able to include their research activity in the practice of the community, this may potentially assist with time aspects and make the community even stronger. The current *National Strategy for Quality and Collaboration in Teacher Education* (Ministry of Education and Research 2018, 11) points out that teacher education institutions must carry out R&D work that is closely related to the field of practice. In addition, it is noted that teacher education institutions need to have high R&D competence and that students must be involved in research that is linked to their field of practice. If TEUs include STs and TESs in their projects, or even plan such projects together with them, the research activity can become a natural part of the collaboration work in the community. For example, it opens up the possibilities for STs to conduct small research projects within the frame of larger projects, together with teacher educators in schools and universities. Managing to create such projects including all the participants and both development and research can further enrich the work in the CLs and, in turn, support the community building.

### ***Tripartite collaboration***

Tripartite collaboration is the heart of the common effort in the CLs, and can be described as boundary work. The CLs functioned for the participants by making them feel ‘protected by walls’ (Engeström 2007, 327) and shielded the participants from their daily work. The participants developed mutual engagement (Wenger 1998), spoke well of each other, and built relationships over time. Based on our findings, we suggest that it is the facilitation of the tripartite collaboration in CLs that opens up the use of ‘horizontal expertise’, in which practitioners must move across boundaries to seek and give help (Engeström, Engeström, and Kärkkäinen 1995).

In the CLs, immersed in the tripartite cooperation and ‘protected by walls’, the participants spend time talking, reflecting, providing mutual support, analysing practice, and focusing on a common object. These seemed to be key factors for recognising each other’s motives and resources, and becoming attuned to each other. In this mutual interaction, the participants were taking advantage of the ‘horizontal expertise’; they developed their relational agency by recognising the others’ motives and resources and aligning their own responses to those of the others (Edwards 2010). Despite their differing positions, the participants in the study experienced a shared agency with ‘the wider whole’ (64) – i.e. the development of schools and ITE. However, the time-consuming process concerned them and was seen as a threat to the possibility of implementing the findings of the common work within institutional practices.

### ***Limitations***

The findings presented in this article stem from an in-depth analysis of rich data collected in the context of the LAB-TEd project. The study may, however, have transferability and resonance beyond this project if readers use it to reflect creatively and imaginatively (Geertz 1973). We therefore offer it as a thinking tool (Gudmundsdottir 2001), which could be used to help inform activities in other teacher education contexts. We suggest that

future research in teacher education could helpfully focus on the further exploration and applications of community building, boundary crossing, and on the notion of research being conducted in tandem with development.

## Conclusions

The goal of developing and sustaining collaboration in teacher education is an important and complex one, ultimately benefitting the whole learning community. Initial teacher education (ITE) in many systems internationally is reliant on strong and deep cooperation between schools and universities/teacher development institutions. In this study, the participants were three groups jointly engaged in shared work: teacher educators in university, teacher educators in schools, and student teachers. We investigated the ways in which the work carried out in CLs during the first year of an intervention research project was experienced as community building. It was evident from the analysis that the use of CLs in tripartite collaboration – among TEUs, TEs, and STs – yielded rich possibilities for community building and for further development in school and teacher education. The study suggests that a focus on community building in CLs in the start-up phase of a project can lay the foundation for collaboration between teacher education and schools that meaningfully contributes to co-construction of knowledge and to learning and development in *both* arenas.

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## ORCID

Rachel Jakhelln  <http://orcid.org/0000-0002-9313-2082>

May Britt Postholm  <http://orcid.org/0000-0002-9997-7318>

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