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Chapter 13

Examining Contradictions for the Development of Competencies in School Leadership



Lauri Lantela, Ville Pietiläinen, and Saana Korva

Abstract This study examined the challenges school principals face at work, and their support needs for professional development. The study drew on cultural-historical activity theory (CHAT) and approached as contradictions principals' work, the schools in which they operate as activity systems and the challenges they face. The research data consists of three data sets collected from principals: data from a quantitative survey ($n = 47$), data from workshops for principals ($n = 8$) and data from individual interviews ($n = 5$). Three main contradictions were formed from the data and named as (1) inadequate tools in relation to the object of activity, (2) hierarchical structure and tradition of schools and (3) fragmentation of the subject. The results reveal that the work of the principal and the organizational environment are increasingly complex—principals must solve unique problems that are new both to them and in society. The results point towards a shift in problem-solving and learning from an individual perspective towards the communal and inter-organizational view. A CHAT framework can be used as a tool in the development of these collaborative structures, practices and culture.

Keywords Activity theory · Leadership competencies · Principals' professional development · Complexity

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257

Introduction

The idea of a desirable school system has always varied over time and across countries. Due to these different trajectories, no universal definition of the nature of school (educational) leadership has been proposed. Researchers have offered many propositions on the concept. For example, Miller (2018) highlighted personal, socially focused, relational and environmental leadership aspects. Leithwood (2021) presented equitable school conditions that contribute to a deep understanding of different cultures, values and expectations of leadership. The ongoing COVID-19 pandemic has also led to the emergence of new crisis management issues, such as tension navigation and life support (Harris & Jones, 2020). This chapter delves deeper into school principals' competencies and the context beyond the Finnish school system, which the OECD considers to be a best-practice country in terms of leadership (Hargreaves et al., 2007).

According to the latest Teaching and Learning International Survey (TALIS), which gathers the most extensive data on principals in 48 countries, school leadership and practices must be distributed among organizations (OECD, 2020). There are two primary levels of distribution. First, teachers engage in professional collaboration. According to the TALIS (OECD, 2020), teachers commonly share responsibilities related to their students but rarely utilize deeper cooperative working procedures concerning professional development. Second, distribution is associated with teachers' involvement in pedagogical decision-making processes. The TALIS (OECD, 2020) results reveal that teachers do not extensively participate in school management teams, policies, instructions or curriculum work.

Regarding school leadership, Finland appears to have some unique features compared to most TALIS countries. Following the success of PISA, the OECD characterized Finland as an instance of "positive deviance" and chose it as a case of desirable school leadership. In a case report (Hargreaves et al., 2007), the researchers praised Finnish societal structure at the general level, highlighting the attractiveness of teachers' profession, decentralized decision-making and the low teacher-student ratio in the classrooms as distinct elements of its success. Furthermore, the researchers characterized freedom and evidence-based steering, as opposed to standardized student testing or inspections, as unique features of Finnish school leadership. High levels of teacher professionalism and independence, in turn, enable a genuine distribution of responsibilities between the school principal and the teachers.

In the leadership context, schools can be viewed as complex environments (e.g. Lipscombe et al., 2021, Morrison, 2012). The educational system is part of a larger complex, continually changing system consisting of other public sectors (Sahlberg et al., 2021); therefore, principals must constantly face problems new to themselves and the rest of society. Societal and systemic changes such as the current reforms to regional government and social and health services being implemented in Finland particularly affect schools and principals; schools are critical operators in the lives of children and young people, and the support for their well-being takes place

through multiagentical cooperation between the school, different administrative branches of the municipality and the surrounding community (Deschesnes et al., 2003, Leinonen et al., 2021). Cooperation requires school leadership to have systemic, cross-border thinking and shared leadership practices. In Finland, principals have various duties and responsibilities and must make decisions that may affect multiple stakeholder groups, including students, parents, teachers and other school personnel (see, e.g. Holappa et al., 2021). Thus, due to such complexity, the demand for new leadership competencies is constantly high.

Leadership in complex environments, as well as in changing and unexpected situations, requires consideration of diversity and the dynamic interactions therein instead of just controlling and managing; leadership should also be seen from a complex perspective that includes relationships and network interactions (Marion & Uhl-Bien, 2007; Uhl-Bien et al., 2007). In current leadership theories, leadership is understood not just as an individual characteristic but as a collective phenomenon manifested in various interactions (Denis et al., 2012). Leadership models that emphasize collective leadership forms, such as distributed leadership, have been widely recognized as prevalent and ideal in educational organizations (e.g. Gumus et al., 2018). In Finland, distributed leadership is considered a solution to the increasing responsibilities of principals and problems regarding the division of labour by involving and engaging teachers in various leadership processes (Tian & Risku, 2019). In practice, distributing leadership is not simple, but it can be realized in many ways, from the delegation of tasks to genuine interaction regarding leadership action (Lahtero et al., 2017). However, it can also be quite complicated due to formal leadership structures and, in contrast, due to the informal relationships and hierarchies prevailing in the school community, which can prevent members of the community from participating in leadership. Hence, distributed leadership requires the principal to understand the multidimensional nature of leadership and to have the ability to develop practices and a culture that support the school community's participation in leadership (Lahtero et al., 2019).

Competencies are at the heart of principals' professional development. Competencies can be defined as the knowledge, skills, values and attitudes that lead to humane and effective actions in the work of a principal (Sergis et al., 2018). As the definition suggests, competencies can be understood through principals' overall work, and the contents and qualifications of it determine the competencies, information and resources relevant to the principal's work and professional development. However, the perception of leadership as (individual) competencies has been criticized (Carroll et al., 2008). This is because, on the one hand, competencies are bound to the context and are often considered to be somewhat general and transferable. On the other hand, competencies can also be understood as community competency, as in the professional learning community (PLC) theory, in which a community learns in various ways to support student learning together (Antinluoma et al., 2018). Understanding competencies from the perspective of PLC presents a broader perspective from which to perceive professional development. However, approaching leadership competencies as dynamic and distributed, rather than as individual phenomena, demands a flexible, context-dependent examination. In

addition to traditional learning methods, flexible and agile methods based on principals' cooperation are needed to support the latter's professional development.

In this introduction, we have described the multifaceted contradictions related to school leadership that make such leadership challenging in many ways. However, few tools are available to tackle this complexity. In this study, we approach competencies through complexity and contradictions and show that contradictions can be seen as a source for school leadership development. To structure this complexity, we use the cultural-historical activity theory (CHAT) (Engeström, 2001, 2005, 2015) to implement the research and analyse data. The following sections introduce the theoretical and methodological CHAT framework, followed by a presentation of the research questions and design.

Approaching Complex School Leadership Competencies from the CHAT Perspective

In the face of complex problems, solutions are typically sought through bottom-up co-development tools. This is because complex issues require a multifaceted approach, and consultation with stakeholders is essential (Engeström, 2005; Raisio et al., 2018). This study's theoretical–methodological framework draws on Engeström's (2005) research in developmental work and is based on CHAT. In this theory, an activity consists of activity systems embedded in social practices. These systems are historically developed and have distinct social practices, ways of thinking and societal duties that influence people's actions. Historically, principals have had a central leadership and management position in schools: they direct and supervise the teaching and educational work of the school and are also responsible for administrative duties. Furthermore, they are tasked with monitoring the school's finances, drawing up timetables, making a work plan for the school year and granting longer leaves for students. While principals have teaching duties, their work may also include communicating with the school community, such as the parents of their students. Thus, the work of principals requires multiple competencies (e.g. managerial, pedagogical) and an interest in the well-being of the work community. Principals' competencies also include legal "ability", jurisdiction power and leadership.

Engeström's (2001) idea of developmental work research and expansive learning is utilized in the data analysis of the current study. The learning that occurs through activity, which Engeström calls *expansive learning*, is a valuable concept for the current study, as it focuses on principals' professional development and learning, which happen in authentic situations, by examining their daily routines and problem-solving situations. In Engeström's model, learning happens in contradictions. For example, a learning cycle might start with a need for change; in the principals' context, this could be a new curriculum, a new electronic governance system or a new situation with a student, parent or another stakeholder. Learning advances

when a contradiction requires a new kind of action. This is embedded in analysing a situation, weighing different options, implementing a new model and evaluating that model. The goal of developmental work research is to provide employees with concrete observational data about their work and its contradictions that can serve as a “mirror”, thus enabling tasks to be set and conceptual tools designed to deal with the contradictions. This process can help establish new operating models and ways of working.

This study views principals’ work and the schools in which they operate as activity systems. As seen in Fig. 13.1, different parts of the system, such as subjects, objects, mediating artefacts, outcomes, rules, the community and the division of labour, make it possible to describe culturally mediated actions on an individual level—that of a single principal—while also offering the opportunity to examine the relationship between individuals and their community. Here, “community” refers to a group of people (e.g. school personnel) who participate in the same actions and distribute their decision-making powers, responsibilities and benefits.

As shown in Fig. 13.1, the different areas of the operating system and the contradictions within and between them gather information from the competency development of the subject: the principal. For example, the rules area is strongly challenged in a COVID-19 context that emphasizes specific policies and controlled communication. This, in turn, requires new types of tools, such as managing distance-learning environments, subject moves one degree closer from being a familiar pedagogical developer to a crisis manager. A new set of contradictions is emerging in this situation. This can be seen as both a challenge and a learning opportunity when collective or individual problem-solving situations lead to emergent and expansive learning and competency development. Our primary research interest lies in these contradictions. Related to this, the professional planning co-creation process involves activities that aim to reveal contradictions, structure them and ideate new, innovative solutions.

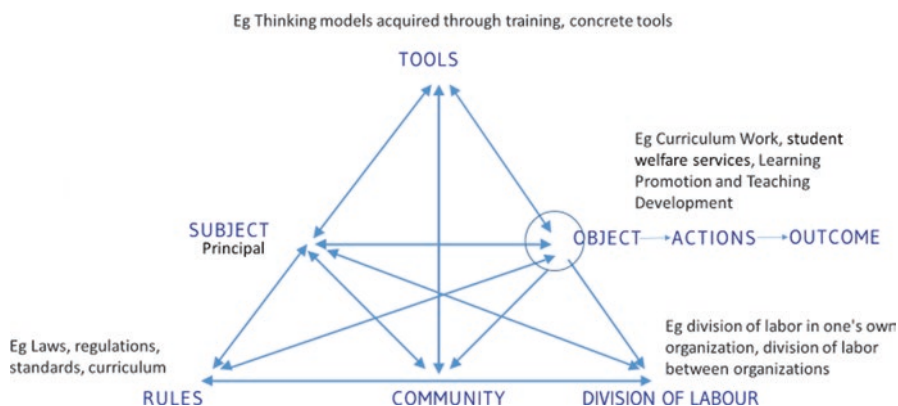


Fig. 13.1 Principals’ work and schools as a distributed activity system. (Adapted from Engeström, 2001)

Research Questions and Research Design

This study examines complex contradictions as a foundation for school leadership development. We address the following research questions:

1. What are the contradictions related to school leadership competencies?
2. In what ways can the CHAT framework illustrate the complex features of these contradictions?

The study was conducted as part of the School Leadership in the Arctic (2018–2022) project. The project researched and developed ways to support the principal's work and professional development, focusing on rural areas and principals working in diverse settings (e.g. long distances, small communities and urban settings). One of the project's objectives was to develop and pilot a mobile professional development plan embedded in principals' daily work routines to plan and evaluate their professional development. This specific development work of the mobile professional development plan, as well as other research and development activities, offered a practical context for this study. The development work, which was carried out using methods based on the theory of action, involved questionnaires, service design and other workshop activities, observation and interviews.

Figure 13.2 illustrates the research cycle intertwined with development work to find new ways to support principals' competency development. The cycle began with an analysis (Phases 1 and 2) which focused on the principals' work and challenges. It was conducted through surveys, workshops and individual interviews. In Phases 3 and 4, the workshops centred on different solutions related to leadership competency development. Phases 5 and 6 concentrated on modelling new solutions and evaluating on new activities.

The principals created various materials during the development process described above. These materials consist of survey data, observational data from the workshops and thematic interviews with the principals (see Table 13.1). As the aim was to develop tools that considered local conditions and unique features, the research and development activities were kept as open as possible to attract participants from all over Lapland. The number of respondents, informants and participants was sufficient for the number of schools ($n = 140$) and principals ($n = 97$) in the region. Different parts of Lapland were well represented in the workshops.

The survey and interview questions and themes were designed based on descriptions of Finnish principals' work from earlier literature (e.g. The Ministry of Education in Finland, 2013; Pietiläinen, 2010). These were also derived from peer debriefing, in which principals from the project steering group ($n = 4$) evaluated the structuring. Accordingly, the principals' work was divided into seven dimensions: (i) pedagogical leadership, (ii) leadership regarding knowledge and information and communications technology (ICT), (iii) leadership of personnel, (iv) leadership regarding financial administration and strategy, (v) project leadership, (vi) leadership on international activities and (vii) change leadership (Table 13.2).

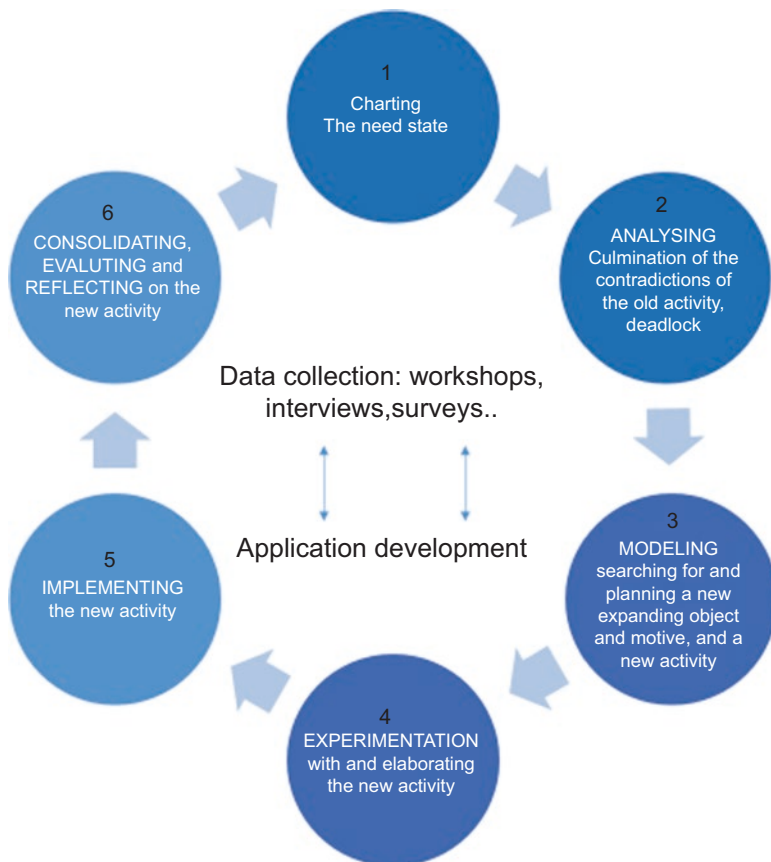


Fig. 13.2 The cycle of expansive learning and developmental work research in this study

Table 13.1 Description of the research data

Means of data gathering	Description	Data
Survey (<i>n</i> = 47)	The survey respondents evaluated their competencies, including their development and importance, both now and in the future. Survey had both open-ended and Likert scale questions	Quantitative and qualitative survey data
Workshop (<i>n</i> = 8) materials and observations	The workshops mapped the principals' (<i>n</i> = approx. 20) work, their need for professional development and their opportunities in support of such development	Observational data and workshop notes, materials produced in the workshops and application prototypes
Interviews (<i>n</i> = 6)	The interviews were guided by the preliminary results from the survey and the workshops. The interview questions were based on the division of principals' work and Engeström's (2005) activity system model	Interview data

Table 13.2 Work structuring and related tasks

Human resource management tasks	Issues relating to hiring and employment; work community and staff development; leading people; organizing work and division of labour
Information and communications technology (ICT) tasks	Developing a strategy for digitalization; creating a pedagogical ICT operating culture; ICT competence development; personal ICT skills
Pedagogical leadership tasks	Organization of curriculum work; student care; own training; promotion of learning and development of teaching; work planning
Financial, administrative, and strategy tasks	Budgets and appropriations; financial and action plan; strategy work; cooperation with boards and management team
Project tasks	Schools' internal and external projects; international projects; small-scale projects; teachers' planning and training days
International tasks	International educational cooperation; international funding; cultural awareness; language skills
Change management tasks	Visioning, communicating and motivating for change; organization and implementation of change; evaluation and monitoring of change processes

A survey was designed and sent to all regional principals based on these themes. The data analysis ($n = 47$) was performed, and information was obtained about their work, its challenges and the opportunities presented. This knowledge guided the workshops and was further explored in the interviews. The survey questions, interview questions and workshops focused on the principals' work, the challenges involved and the support they needed in their daily work. The interviewees ($n = 6$) were selected from those who expressed ($n = 9$) in the questionnaire their willingness to participate in the interviews. The selection of interviewees considered the regional coverage, as well as the size of schools and principals' work experience. The interviews were conducted to confirm and gain a more in-depth understanding of the survey results and the workshop outcomes.

To protect the anonymity of the interviewees, the study did not report any further information about them. The interview request indicated that the interviews would address the same themes as the survey. The interview framework included seven aspects of principals' work in the survey. For each area, the respondents were asked to describe the following: (a) the work and the challenges involved ("Describe your work as a principal in the current area of responsibility and where the possible challenges lie, in particular"), (b) the means to meet the challenges ("What means and tools does the principal have to meet the challenges?") and (c) the changes that should be made to reduce these challenges in the future ("What changes should be made [e.g. operating culture, tools, division of labour, own competence] to overcome challenges in the future?"). Moreover, the importance of networking was discussed, as it was identified as an essential theme in the survey and workshops. The question was framed as follows: "The importance of and the need for networking had been repeatedly highlighted in project meetings. What do you think is the reason for this?"

Qualitative analyses of the interview and observational and open-ended survey data were conducted following theory-driven content analysis, alternately guided by theory and data (Schreier, 2012). Here, the analysis units emerged from the data, but the theory guided their interpretation or grouping. The first steps of the analysis emphasized a data-driven approach, as the survey material was grouped according to the principals' mentions of concrete challenges and their observations. These results were then categorized and interpreted through theory, as well as according to theoretical themes from the competency model and the activity systems areas and dynamics. The quantitative analysis consisted of a simple descriptive analysis (e.g. means, medians and other descriptive statistics). The size of the municipality was examined as a sociodemographic factor, as it can be assumed to be relevant to the opportunities and challenges of professional development, thereby serving as an approximate indicator of the impact of the principals' circumstances.

Results

Framing the Contradictions Using Survey and Workshop Data

The process of charting current needs related to professional development support started with a survey, wherein the principals assessed their work and the challenges involved by structuring their work and competencies. In the survey, the most significant areas for development were competencies related to change leadership, financial administration, governance and strategic leadership. Within these areas, the principals evaluated their skills as weak compared to the demands of their jobs. Competencies related to pedagogical leadership were emphasized in the survey. The principals viewed these competencies as their strongest, as necessary now and in the future and as a significant area for development. The main results of the quantitative analyses are summarized in Figs. 13.3 and 13.4, which provide a broad picture of Lappish principals' competencies and those competencies' importance.

Figure 13.3 shows the scattering between and within the competency areas. For example, international and financial, administrative and strategy competencies have significant scattering. As can be seen, there are apparent differences when the means between the areas are compared, such as international competencies ($M = 2.8$, $SD = 1.1$) compared to pedagogical competencies ($M = 4.5$, $SD = 1.3$). This can be explained partly by the differences in conditions, such as the size of the municipality, as shown in Fig. 13.4. Figure 13.4 also suggests that the size of the municipality might create different profiles. When moving to workshops, these findings provided important background information and helped us mine solutions for supporting professional development.

The main findings from the qualitative survey material gave us a broad picture of the challenges involved in principals' work. When the participants were asked openly about these challenges, most of the responses referred to the breadth and

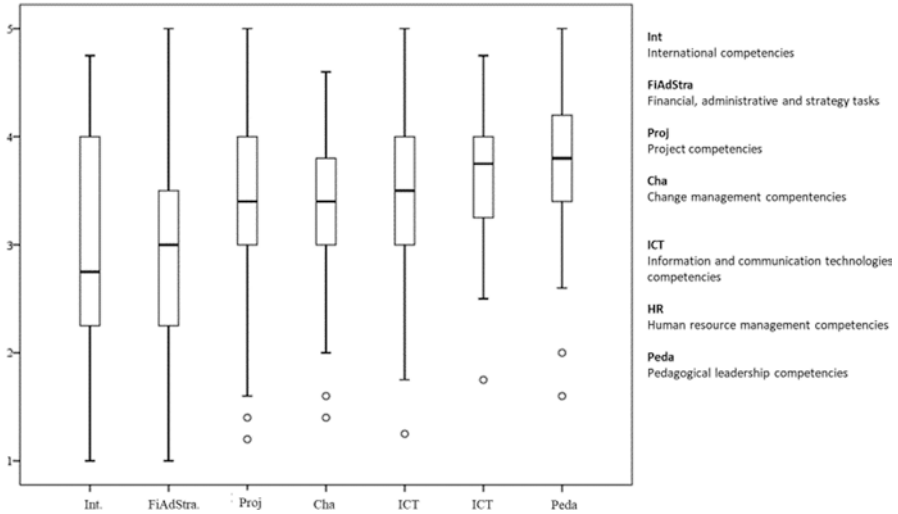


Fig. 13.3 Scatter plots illustrating the variance in competencies

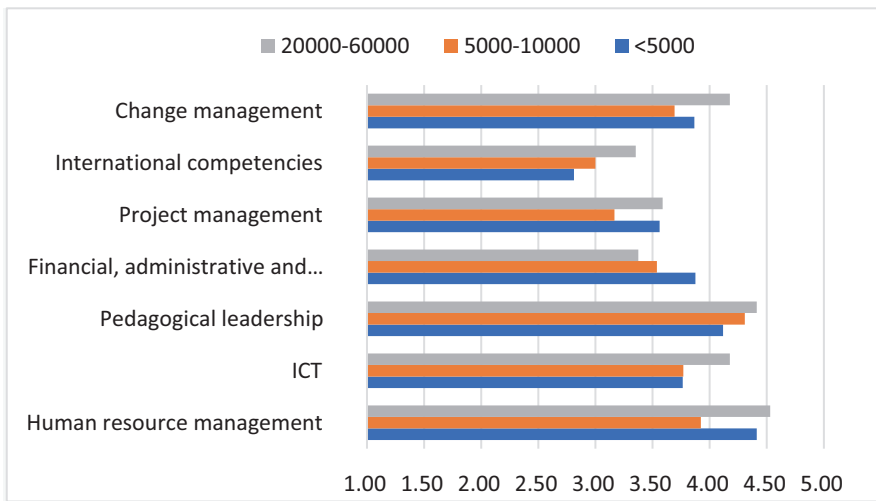


Fig. 13.4 Importance of competency areas according to municipality size

fragmentation of their work. Of the 118 issues that the principals reported, 73% were categorized under the three most prominent themes. The most significant sub-categories were *excessive workload and lack of time* (37 mentions), *complex problems in communication, interaction and relationships* (21 mentions) and *fragmentation of work* (23 mentions). This result gave us insight regarding the culmination of the contradictions, as the principals clearly expressed that they did not have the tools to deal with the problems in their current situations. The rest of the

responses (35) seemed like random notices, such as notices on the economic situation of their schools and on dissatisfaction with school facilities.

The research continued with the workshops, which focused on deepening the understanding of the contradictions and deadlocks and on modelling new solutions based on the derived information. The activities included researching and planning new expanding objects, motives and a new activity, as well as experimenting with and elaborating on this new activity. We started by listening to the principals talk openly. Then, we derived the main themes from the discussions, which later became our focus. The principals' work challenges were also explored. The workshops aimed to function as a "mirror" by producing data about the principals' work and the possible contradictions therein. We aimed to set tasks and conceptual tools to deal with the identified contradictions and ultimately ideate new operating models and working methods. In utilizing different dialogical workshop methods, the workshops' goals were to outline the principals' work challenges and specify the information produced through the survey.

The workshops outlined the overall picture by discussing the principals' work year and mapping out the challenges and emotional stages during the year. After mapping the challenges, the necessary kinds of support that we identified were then considered. The principals' challenges and needs were prioritized by voting, and possible solutions were devised and voted on. The results were validated and supplemented between the workshops and the preliminary findings (the survey). Accordingly, the main themes were as follows: (1) the fragmentation of work and the narrowness of one's competence (competence as power), (2) inadequate tools in relation to the object of work and (3) the hierarchical structure/tradition of the school. Figure 13.5 shows the process of utilizing the theory of activity, in which the

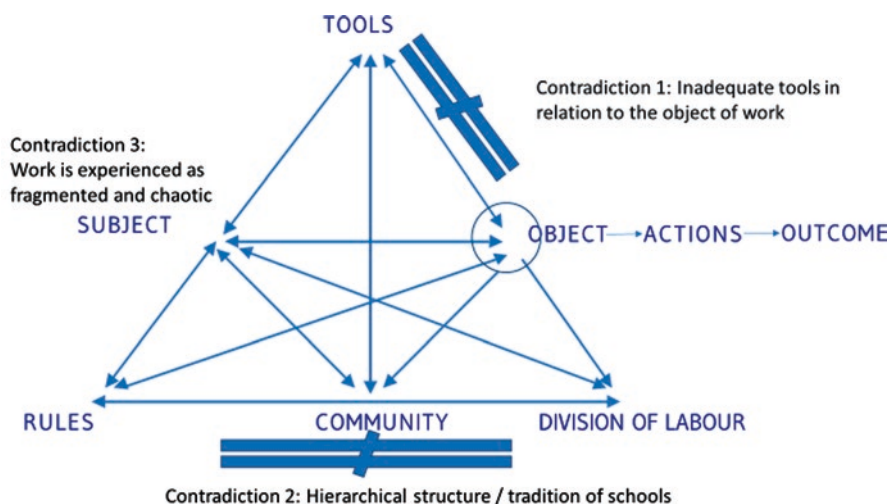


Fig. 13.5 The main professional development challenges in the principals' work (according to interviews and workshop data) identified as contradictions in the activity system

results are summarized into three main themes according to the structure of the activity system.

As shown in Fig. 13.5, the central theme regarding the community aspect of the activity system is the contradiction between rules and division of labour, while the central theme regarding the tools aspect is the lack of adequate tools in relation to the object of activity. The object, of course, is the focal point to which all other aspects are mirrored. However, the principals most often explicitly pointed this out when reflecting on the challenges of their work with respect to the available tools. The following chapters present and interpret the findings more thoroughly, using the interview data to answer the research question. The chapters first introduce the critical competence dimensions related to the contradictions and then illustrate them with appropriate quotes and explanations. Finally, the following chapters identify potential areas in which to provide support or address the contradictions recognized from the data.

In-Depth Understanding of the Contradictions Through the Interview Data

Contradiction 1: Inadequate Tools in Relation to the Object of Activity

One of principals' essential experiences was having inadequate tools at their disposal. The principals usually reflected on these tools in relation to the object of work, and the most commonly discussed ones were concrete physical tools, such as textbooks or facilities where work was usually done. The discussion of the theme of *human resource management*—a contradiction between the purpose of work (supporting the growth and development of children's and young people's learning) and the lack of tools—could strain human resource management. For instance, one principal described the general working conditions and means of doing the work in Lapland as deficient.

This inadequacy illustrates why teachers become tired of a situation in which inadequate tools prevent them from achieving their pedagogical goals. In such situations, principals must take care of the pedagogical operating conditions and the well-being of the staff from the perspective of human resources management. This challenge demonstrates how problems in principals' work can be multifaceted and co-occur among different parts of the operating system, even in unexpected ways; thus, the principal must possess unique new knowledge, skills and competencies. The following quote describes this phenomenon in detail:

I know rightly from experience what is currently big and challenging in human resources management in schools in Lapland. I mean, it's that a pretty big part of us (schools in Lapland) has to work in some temporary facilities ... the fact that quite a lot of teaching has to be arranged in these kinds of spaces and places that are not designed for school work ... In our municipality, we have an indoor problem in all schools. It kind of requires the principal to plan the whole thing ... how everything revolves around that exceptional

situation. And then, on the other hand, the fact that the staff gets tired. They're really tired of it. (Interviewee 1)

According to the principals, this situation would require both training and peer support in discussion with other municipal principals. The problems of human resource management and pedagogical leadership arising from this complex change situation do not seem to be solvable only with competencies produced by traditional training. Instead, they are unique, such that targeted and agile problem-solving processes are also needed. In this case, the facility problem cannot be solved, but it would be possible to solve the resulting management problems and achieve expansive learning, as well as professional and competence development, as can be seen in the following interview excerpt:

It is not just teacher training, teacher experience and the education administration exam that prepare people for the real, realistic situations where that leadership occurs. ... For example, these temporary facility situations require a lot from leadership. ... People get frustrated, and they get tired. They dismantle it with the supervisor. Principals would need much more training. We need more of that peer support and the place where they can then unravel the different situations they have, both with subordinates and, of course, with the students, carers—everyone. (Interviewee 2)

The next extract(s) explains how the available tools do not allow the conduct of efficient activities with students or staff that are aligned with ICT leadership objects. Accordingly, it seems that small municipalities have difficulty providing supportive training for teachers and implementing teaching and other activities for students under the national core curriculum. The current tools and conditions are such that no suitable training can be found. There are also different preconditions for staff development in municipalities where no substitute teachers are available. In response, certain schools have found relief from the challenges brought on by online learning, peer learning and tutoring; these solutions to the problems faced by teachers in their classrooms make it possible to learn in authentic situations, as the following quote explains:

All the trainings organized by the National Board of Education are [held] in Rovaniemi. Our municipality cannot send teachers to training because it means three days off, and because we have no substitute teachers, we would need to put the kids home. So, even though it is crucial, and even if the principal sees it as a long-term investment to support enthusiastic young teachers who want to develop their ICT skills ... Those web-based trainings have been terribly important to us. (Interviewee 1)

I see our students as having very unequal treatment compared to their peers from other municipalities. For example, how much information technology we can utilize and how many computers per student. We have about 300 students at the moment and 30 computers. Then, there are schools with great resources and opportunities ... The curriculum says that students should go outside to learn. However, we do not have sufficient financial resources to order a bus and go somewhere. (Interviewee 2)

Peer support with other municipal principals in a similar situation would be vital in developing the principals' leadership competencies in solving problems related to ICT tools. Peer support could also be useful in networking with other municipalities with similar plans and with the kind of equipment that would provide a broader

basis for solving management problems and supporting a larger pool of teachers. This can be seen as a kind of boundary-crossing between different activity systems to overcome contradictions arising from the rules, thus achieving a common, similarly defined goal. Thus, through the expansion of the object, it is now possible to achieve expansive learning, as shown in the excerpt below:

In fact, what we are entirely missing ... is that it would be terribly helpful if you talked to the neighbouring municipalities about what to focus on, what software, what equipment and what to do. The same can also be said about the population of teachers who can then be trained in something that could result in a much bigger pool of experts. There may always be someone who can answer a question that your municipality is not able to answer. (Interviewee 4)

According to the interview data, the objects for the action, set by legislation and the national core curriculum, do not recognize the preconditions of sparse population areas and neglect the unique issues of the Sami area. Size and other school features seemed to play a role in the formation of contradictions. For example, in the interviews and workshops, the principals of smaller schools often expressed their feelings regarding inequality in the system, while the principals of larger schools seemed to validate their views. In particular, ongoing core curriculum changes revealed that small municipalities with scarce resources are unequal to larger municipalities. For principals in small municipalities, the content of contradictions might actualize as an experience in which, because of the size of a school and its unique features, a leader has no tools to achieve the goal of students' learning and development. When talking about the theme of pedagogical leadership, one participant said:

We also have this pedagogical leadership's special issue (in the Sami area). According to the National Board of Education, there are no bilingual schools in Finland. Furthermore, there are no bilingual schools in Finnish primary education legislation either ... However, we do have bilingual schools. This is a genuinely complex and big question in pedagogical leadership. Moreover, no one is advising on that in any way. I have raised this matter with the National Board of Education, the Ministry of Education, and the Regional State Administrative Board. Should we require the principal to know the two languages of instruction? According to law, it is necessary to know the language of instruction, and we have two. No one answered. (Interviewee 3)

Inadequate tools regarding financial, administrative and strategy competencies were also discussed. In general, it seems that principals lack competencies due to insufficient education. One participant described how, in her experience, principals generally had too little expertise in financial management. She felt that the matter was the same for the teachers and attributed this to the pedagogical emphasis within principal and teacher education. Specifically, teachers and principals are trained to think about activities from a pedagogical point of view, and they learn the realities of economics only when they enter working life. Thus, the challenges facing principals may be personified by the contradictions caused by inadequate tools, especially if they do not share responsibility and information with the entire teaching community. The following excerpt can be understood as an example of the

contradiction between pedagogical goals and tools and an issue with labour distribution:

The principal is trained to think pedagogically about schoolwork. But ... in fact, the financial drivers in that school planning and pedagogical management are the most significant factors ... The new principal ... does not have enough tools for that reality. This situation is so burdensome for the principal ... because the conflict of pedagogical and financial interests. This is not understood even by the teaching community ... Because of this, it is worth trying to involve at least the teaching staff in the financial framework of the whole municipality. ... Otherwise, those solutions, those pedagogical solutions and financial solutions that conflict with each other, are personified in the principal. (Interviewee 5)

When discussing the experience of contradiction between tools and objects, the principals also highlighted that their competency is a kind of legal “ability” and jurisdiction power. This experience is particularly highlighted when it comes to financial management. The principals know the different conditions in which they operate, what room they have for manoeuvres and how their situation compares to the positions of principals in other municipalities. The potential for the development of competencies is hardly seen or is not relevant when there is no real possibility of effective influence. One principal described the situation by saying that he had good personal skills, an interest in financial management and much autonomy in managing finances. The municipality also had an excellent financial situation, while in many other municipalities, the experience seemed to be to the contrary, as shown below.

That is a crucial area: the economic side. As for myself, I have training and interest, so I haven't experienced it as a burden in that way. Of course, it depends on the municipality's situation, such that if you live with scarce resources, as many do, the more burdensome it will be. ... And it also depends on how it is defined. In some municipalities, it may be that the principal receives a lump sum of money and instructions: Run the school with it. In some other places, it's very much kind of already defined what to do with it. There are significant differences here. (Interviewee 2)

It seems a little funny that I'm on a (several millions' budget), and I can control 2% of it. So, somehow, I do not feel like I am leading the economy. It's more like I am just an inspector of bills, and there is no autonomy there at all. Last year, I saved 20,000€, but then the municipality administration froze all the funds, and I could no longer use the 20,000. I thought I would have made certain purchases with them. (Interviewee 5)

Contradiction 1 clearly shows how principals generally evaluate their work based on the objectives of pedagogical leadership. They set strict standards that may seem impossible to reach. When considering the work, the principals often seem to experience inadequacy and conflict between what is pedagogically necessary and justified and what is possible in their situation and organization. Several examples above show that the resolution of conflict can be facilitated by supporting professional development, such as training, to provide conceptual tools for understanding and handling difficult situations. However, support for professional development and authentic and expansive learning applicable to everyday life would require structures and resources to support and enable problem-solving either independently or with colleagues. Thus, the provision of tools and resources can also be seen as the removal of barriers to facilitate the learning process.

Contradiction 2: Hierarchical Structure and Tradition of Schools

The interviewees often described contradictions arising from the municipal collective bargaining agreement for teaching staff (OVTES). In the activity system, these rules and regulations seemed to limit the principals' activities so that they felt they could not lead the organization efficiently to achieve their goals. From the point of view of human resource management, for example, staff development and distributed leadership are challenging to implement. The principals described the OVTES as outdated and ill-suited to their current situations, in which utilizing and developing the competence potentials of all personnel could better solve complex problems. The principals' general experience is that rules restrict the division of labour, and they generally wish for a change towards distributed leadership. Furthermore, to elicit the best response to complex challenges, schools should use their whole skill potential, as stated below:

... If responsibilities could also be shared, teachers have many different skills and interests and desire to do things. But then, the opportunity given by the OVTES for sharing is terrible. The OVTES is so rigid that you always have to sit down and really use your time: "Well, now we have a teacher who wants to take responsibility for Primus, how in the world can we pay for this, according to the OVTES." It represents a very old model of teaching, where the teacher teaches and attends in the teachers' meeting, and that's it. (Interviewee 1)

I have always said that not all wisdom dwells in this principal's office, nor should it dwell there. The aim is to make use of everyone's knowledge. There is a lot of knowledge from different areas of expertise in our personnel. Young people have the latest information sought from school, and ... the more experienced teachers have that work experience. Together, you can learn and move towards new things. It is always also about committing to those tasks; that is, for some people, the car's taillights are visible as soon as the class is over. (Interviewee 5)

The hierarchical contradiction between the rules and distribution of labour can also be understood from the point of view of tradition, that is, the difference between traditional and changing teachership and between traditional and current (or modern) operating environments. For example, new teachers have different, historically formed perceptions of teaching compared to their colleagues, who have taught for a long time. This can be seen, for example, as a management challenge in personnel development.

... If you want to offer training. For example, we had this kind of work well-being training where there were quite a lot of these activities that required throwing oneself into situations and acting out and all that, so it was really great for the young teachers, just great. However, for the teachers in their sixties, it was a terrible waste of people's working time and a mockery of people. (Interviewee 1)

In addition, the distribution of labour is reflected in the challenge of responding to individual needs that principals have not traditionally addressed so strongly. Teachers' autonomy has traditionally been substantial in Finland; according to the principals, teachers have autonomy and responsibility for their teacherhood, professional development and overall well-being. However, at present, teachers seem to need more support from their supervisors. This poses a challenge for

principals because, on the one hand, the tradition and legal position guide principals to respect the teachers' autonomy, while on the other hand, the principals are also expected to act as modern leaders. They are expected to possess and utilize human resource competencies, including interaction skills, to guide their subordinates in challenging and sensitive situations and to solve complex human interaction problems. This can be understood as a contradiction within the area *Rules* due to legislation and the traditionally honoured positions of teachers and principals.

In Finland, teachers have traditionally been entirely independent actors in teaching, and no one else has any business going to their class. But now, however, quite a lot more of the young teachers want that guidance from the principal and want to discuss everything, such as situations with students and the need for special support. They also want feedback and support for their teacherhood. I have noticed that young teachers are different in that way. (Interviewee 3)

... perhaps what has been discussed with colleagues in job supervision is that when a teacher loses that motivation or has problems in their interaction. Or if their mental balance is not good, it produces problems with the students and guardians. Helping there can be difficult ... This may not have been so strongly dared to be brought up in the past. (Interviewee 4)

When principals described their legal position, many used phrases, such as “centre of all” or “the principal is responsible for everything”. According to the interviewees, the position of the principal as the centre of the school leads to certain challenges, as principals are expected to have solutions to all problems. This is especially challenging in certain areas, such as human resource management, where problems might be simultaneously very complex and sensitive. Hierarchy also strains human resource management, as shown when principals described situations in which different groups of personnel had problems with one another or with other stakeholders. Because of their complexity, these challenges were often experienced as the most demanding and straining time-wise.

The next excerpt describes how hierarchism is reflected in the position of the principal in relation to their subordinates and in the hierarchy of different staff groups. Due to principals' legal position, they are subject to expectations that are difficult to meet because they require a wide range of skills, dedication and time. This also conflicts with their human resource management competency, as they would like to use more modern approaches and participatory methods in these problem-solving situations. When asked about solutions to this contradiction, one interviewee felt that collegial support might help:

Our legislation is set very hierarchically, so that the principal is responsible for everything. It creates a setup in which the principal becomes a school's belly button. It is at war with the modern concept of leadership. This is a major contradiction. One place where it shows is in the internal relationships among personnel—between personnel groups and between persons. The school is quite hierarchical ... Resolving conflict situations, that's what it is; it's the principal's job, for the most part. This emphasizes interaction skills. There are many different conflict situations wherein the principal is expected to solve them and deal with them. So, that is where the need arises for you to have a colleague somewhere a little further away, who actually has the same tangle of problems. It kind of dismantles it ... it's a kind of peer-to-peer work guidance. (Interviewee 3)

The theme of change management usually led to discussions wherein leadership and principals' roles were described in a very traditional top-down manner. Change was understood as something inevitable that the principal alone needed to make happen, sometimes in a forced way. The principals described the challenges of change management and the opportunities for success, emphasizing communication, motivation, organization and the implementation of change as critical areas of change management. In particular, they emphasized trust and interaction, as well as the challenges brought about by the conflict between the division of responsibilities and the management responsibilities related to implementation. The necessary changes must be made with determination but in interactive and shared ways. As one principal stated:

There is resistance to change. People are looking for permanent structures and stability. They are important, of course, and then there is much pressure from the outside for changes. For example, new curricula are now coming, and the Upper Secondary School Act has been reformed. ... There are constantly different pressures for change in primary education, and they come quite a lot from outside. The role of the principal is to act as a kind of filter. On the other hand, as an advocate and motivator for change, the principal has to defend a lot the change that comes from the outside, whether at the municipal level or even at the higher level ... the pressure for change. Then, the principal often has to defend and justify the change at the school, such as why something like this is being done. (Interviewee 4)

Contradiction 2 reveals cultural- and rules-related obstacles to the development of competencies. The principals interviewed shared a modern concept of leadership, recognized the expertise and competence of their organizations and preferred to use the expertise and competence in the direction of their organizations' goals for the benefit of their students and staff. Competence is understood as shared competence, and its development is hindered by rules that manually prevent principals from acting as they see fit. This problem was naturally raised in several major areas of work in view of the principals' extensive job description, the extensive activities and development needs of the school and the competence base of the staff, which is, of course, very broad. The possibility of dismantling barriers to learning relied on principals for knowledge sharing and peer learning. According to the principals, developing competencies would require reforming outdated systems, including certain rules and new kinds of teaching, principalship and operating culture.

Contradiction 3: Fragmentation of the Subject

The contradiction of *fragmentation of the subject* can be understood as emerging from role conflict in the principals' work, leading to the formation of Contradictions 1 and 2 described above. In this case, the principals felt that they had inadequate tools to handle the challenges in their work. Furthermore, based on school hierarchy and tradition and the multifaceted nature of their work, they often took a central position in their organizations and dealt with the somewhat chaotic content and requirements of their work. Many principals felt that they did not have enough time for any long-term work, such as pedagogical leadership or strategy work, as they already had their hands full with daily routines. For example, strategy work, offered

as a discussion point under the theme of financial, administrative and strategy tasks, was chosen as a topic by only one principal, and financial tasks were always discussed under other themes. Furthermore, the only discussion (with interviewee 3) on strategy work was short: *Maybe the challenge here is that there should be time for that strategy work. (Everyday work) is too much just living in the moment. It takes so much to run daily work. Summer is a good time because it (...) gives us time to plan.* The principals also described the fragmentation of work in multiple ways, and many of them shared how they had their hands full all the time with daily routines, as expressed in the following excerpt:

The principal should not do routines, but I have to. There are many such things, like school transportation and other things. The principal makes decisions about school transportation, but the school secretary should already be the one planning the transportation and such. Likewise, something like printing certificates or the like ... They take an incredible amount of time. Also, for example, the acquisition of substitutes. I have to do far too much of that, and I don't have anyone to delegate that to. It's a time crunch that is sometimes eating up the whole week. (Interviewee 1)

Of course, pedagogical leadership was viewed as the most crucial aspect of the principals' work. The principals often discussed, in relation to Contradiction 1, the lack of sufficient tools for pedagogical leadership, while Contradiction 2 indicated that, from the point of view of the distribution of work, they had no one to delegate the other tasks to. The centrality of pedagogical leadership was also emphasized when the principals described their rush and workload and the fact that there seemed to be too little time for that most critical issue. They often had to complete daily tasks for which they had no compensation, no training or interest, and could not delegate them to anyone. They often described their work as akin to extinguishing fires, as shown in the following excerpt:

In this everyday life, pedagogical leadership, which should be essential, has the least time. Perhaps, for example, concerning financial management, I would like to see better support from the city's accounts. And then, for example, matters related to property maintenance, which employ a lot, that the facility maintenance service would take care of. Then, I would have time for that, which is the gem in all of this: pedagogical leadership. (Interviewee 2)

This theme was also emphasized when issues of ICT were discussed. Principals had similar experiences regarding the use of ICT to communicate with stakeholders and thought that technology seemed to cause an uncontrollable flood of information, chaos and fragmentation. Thus, paradoxically, it is not the lack of adequate tools that causes the experience of fragmentation but the abundance of such tools and their use. The issue can also be caused by the overall workload and hierarchical culture associated with this phenomenon, in which the principal is seen as "responsible for everything". Then, ICT tools mediate that culture and the accompanying expectations due to the principals' position. The ICT tools are highly effective, increasing principals' availability and lowering the contact threshold. The excerpt below shows how the principals often felt alone in those situations, with many problems to solve and many questions to answer. They also thought that networking might help solve problems and lead to professional development if they were able to turn ICT problems into strengths by establishing channels for interaction:

The principal does not have the means to [solve the problem]. I cannot say I'm not reading the text messages or listening to the answering machine. I don't have the tools to reduce that flood of communication or fragmentation. Then, my communication might seem bad because so many messages will come to me from many different channels and all expect fast answers. This is probably what also increases the need for cooperation; you can't know everything ... We (principals) have different areas of expertise and strengths to be shared. (Interviewee 3)

Contradiction 3 is about the experience of the subject, the principal, which occurs especially when their work is busy. According to principals' experience, this is often the case. From the point of view of competence development, the challenge is that high workloads and reactively living in the moment cause time shortages that prevent perseverance and planning. Reducing the workload and eliminating tasks beyond principals' core competencies could free energy and time for the development of other competencies and enable the principals to strengthen their core areas of expertise, such as pedagogical leadership. Similar to the first and second contradictions, in the third contradiction, cooperation and joint problem-solving that crosses organizational boundaries could reduce workload and fragmentation, thus enabling expansive learning and the further development of core competencies.

Discussion

The analysis of empirical materials offers valuable knowledge of Lappish principals' current challenges and various ways to support their professional development. These findings can be understood through Engeström's (2001) theory of expansive learning and the theory of complexity, as principals must learn things that cannot be acquired from books and that are new to both themselves and society. Furthermore, the findings shift the focus from individual-oriented school leadership competence frameworks (e.g. Sergis et al., 2018) to context system adaptability. Accordingly, the three contradictions can be viewed as a source of disequilibrium that, in turn, is a fundamental entity of necessary school transformation.

Contemporary school leadership research suggests that the most appropriate approach to system adaptability highlights team networks instead of centralized models (Kershner & McQuillan, 2016). From this perspective, the three contradictions are evolving phenomena for collaborative and process-oriented learning. The learning-by-contradictions perspective (CHAT) offers both a framework and a tool for this purpose. However, in addition to the common principles, school leadership systems always contain unique features (Leithwood, 2021). Next, we present conclusions associated with the three contradictions' general and contextual dimensions.

School leadership contradictions are duly recognized phenomena in the literature. The lack of adequate tools concerning the object of activity (Contradiction 1) is the most extensively addressed contradiction in different countries, and it is especially intertwined with opportunities related to the achievement of equitable school

results and the accessibility of learning (Leithwood, 2021). The hierarchy among rules, communities and the distribution of labour (Contradiction 2) can be considered a rather unexpected result in this work. Compared to other OECD countries (OECD, 2020), in Finland, researchers (e.g. Hargreaves et al., 2007) have emphasized high-level teacher professionalism and the distribution of responsibilities between school principals and their teachers. According to the data presented in the chapter, traditional teachership and principalship positions partly explain these hierarchy-related challenges. Furthermore, the municipal collective bargaining agreement appears to support these positions. Accordingly, a potential solution to this contradiction might be a careful comparison of the regulatory and competency-based professional development possibilities.

Finally, the fragmentation of the subject (Contradiction 3) posits a principal within a fragile role instead of a strong character. Along with the ongoing pandemic, the focus on school leadership is shifting towards the navigation of tension and students' mental health issues (e.g. Hume et al., 2021). However, the principal's coping skills and the required support (e.g. professional guidance or supervision of work) are still heavily understudied leadership dimensions, although some researchers (Elomaa et al., 2021) are opening up new avenues on the phenomenon.

In conclusion, this chapter shifts the research focus to the critical issues of distributed leadership and competency. The three contradictions for professional learning we have identified emerge as a collective and contextual phenomenon rather than as singular features or characteristics. Activity systems help to recognize such phenomena and their limits and opportunities. Consequently, we emphasize the more sophisticated use of the CHAT framework in the school leadership context. Hence, distributed leadership requires the principal to understand the multidimensional nature of leadership and to have the ability to develop practices and culture that support the school community's participation in leadership (Lahtero et al., 2019). According to Sahlberg (2021), the success of the Finnish educational system is based on teachers' and principals' high levels of professionalism and autonomy, which allow Finnish schools to operate as constantly learning and improving self-organizing systems. According to this study, from the perspective of contradictions and leadership development, there is still much unused potential in sustainable networks *between* schools and principals (r.f., Hargreaves et al., 2007).

The study has several limitations that should be considered when generalizing and applying the results. First, as a context for this study, the Finnish education system has many unique features. The contradictions identified in this paper are specific to Finland and Lapland. Finland is an egalitarian society with few hierarchies, and Lapland has unique conditions. This context undoubtedly produces unique professional development challenges and contradictions. For example, more distributive leadership is not an option in many countries. In Finland, this may be possible, although it is not a realistic option because of the bargaining agreement. Second, the study design and methodology impacted and influenced the interpretation of the research findings. For example, the open-ended questions and encouragement of the principals to engage in creative ideation during the process produced data that revealed needs and opportunities for professional development that, while

interesting, might not be realistic. Also, the CHAT perspective, the developmental work research process and the survey resulted in a fairly comprehensive view of principals, but the views of other significant figures, such as students, parents and carers and teachers, were not heard in this process. Principals' primary responsibility is essentially to lead the school towards the improved learning and well-being of children and young people. In future CHAT-based research, it would be interesting to implement additional research phases in which other essential stakeholders, such as children, parents and carers, could also participate.

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