

Understanding leadership and change in schools: Expansive learning and tensions

Abstract

This study examines the effects of schools' implementation of a new system for testing on student reading. Data on seven Norwegian primary schools were obtained through participant journals and interviews conducted throughout a period of five years. The analyses draw upon Cultural-Historical Activity Theory, especially the framework for expansive learning and contradictions. The findings reveal several discursive struggles in the interactions between the principals and teachers during the developmental process. The data analysis indicates that the initiatives to implement testing as a collective school practice were underlain by tensions concerning student learning (e.g. individual versus collective testing), and teachers' working conditions (e.g. individual versus collective practice). Even though these tensions are short term, they are part of a long-term activity and point to the need to address questions of leadership in schools. Revealing such tensions can help leaders defuse such strained conditions and improve learning.

Keywords—Change, Educational Leadership, Assessment and Instructional Planning

Introduction

This study examines school development from within, paying special attention to the tensions that evolve as part of a change process. It draws on the framework for expansive learning and contradictions as driving forces in development (Engeström, 2001, 2007). Under such a framework, tensions are revealed as historical and empirical contradictions. The analysis unit

is the implementation of a system for testing on student reading in seven primary schools, and the study was conducted over a period of five years. Although the study relates to one regionally implemented approach, it has a number of issues in common with international policy agenda, notably, concerns regarding leadership, learning and student testing. Therefore, the research question addressed here is: What tensions emerge when a school implements a system for testing on student reading, and how do leaders respond to these tensions'?

The context of the study is Norway, a long democratic society and a school system building on equality and inclusiveness for all students. With equal and collaborative relationship between leaders and staff and expectations from parents and the society as a whole, student testing and system level accountability demands. In practice this implies balancing the democratic idea of involvement and exerting influence with necessary decision-making, and to act in a democratic way when dealing with dilemmas, paradoxes and challenging situations.

Some general patterns in the literature on leadership and change are recognisable at the international level (Hallinger & Bryant, 2013). For example, change is seen as facilitated by the alignment of policies and processes by stakeholders at multiple levels of a system (Fullan, 2007). Practitioners tend to treat change as an 'event' rather than a process, and therefore, tend to underestimate the time frame required for system-wide change (Hall & Hord, 2002). The complexity of system-wide reforms that require change in the embedded behaviours of professionals significantly impedes change (Fullan, 2007). Because negotiation and internal conflicts are part of the developmental and learning processes in schools (Gunter *et al.* 2007; Roth & Lee, 2006; Stoll & Louis, 2007), in-depth examinations of school leader and teacher behaviours and practices are essential for understanding change.

In what follows, the context and case study are presented, after which the methods are outlined. A theoretical framework related to change and expansive learning is discussed as an example of a theoretical process model for innovative learning and knowledge creation in organizations. The model emphasises systemic change, especially the tensions that occur in mediating and controlling change dimensions. I analyse and discuss the findings as a longitudinal narrative of the change process and include a closer look into two of the seven schools studied: Waterfall School and Hillside School (school names were changed for confidentiality). Although the change processes used in these schools differ to a certain extent, significant similarities exist in terms of the questions discussed and new practices implemented. The narratives of Waterfall and Hillside schools illustrate the main findings across all the schools in the study and provide responses to the research question. Finally, the potential implications of the study are presented.

Context and case study

Background

In 2003, Norway's below-average result in the Program for International Student Assessment served as a revelation for Norwegian policy-makers and resulted in increased interest in student testing (Elstad, Turmo & Guttersrud, 2011). To improve student achievement results, educational authorities implemented a national strategy called 'Make Space for Reading'. With a budget of US\$1.7 million and numerous examples of best practices, schools were invited to implement projects designed to improve reading instruction. The research reported in this article is based on a regional project that was part of the national strategy. In this project, reading experts and researchers supported principals and teachers at seven schools in the development of their reading instruction programmes (Aas, 2009). The team that supported the participants comprised reading experts from the University of Oslo, the

University College of Buskerud and the County Library. Participation in the project was voluntary, with the seven schools having applied to participate in competition with 29 other schools. The motivation for participation was financial support for each school (US\$17,000) to assist with the purchase of books and reading materials and to provide stipends for teachers. Each school was also offered support from reading experts through seminars and coaching sessions. The principals served as project leaders in their local schools and worked alongside one or more teachers in a project group. Over a two-year period, the participants met at eight seminars, four conferences and four school meetings. New ideas about reading were introduced, and the participants shared their experiences. Subsequently, the participants discussed their ideas in detail and implemented change at the individual schools.

Student testing

One topic that constantly arose during the project was the idea of implementing a school system for testing on student reading. Norwegian schools have a long tradition of providing teachers autonomy in planning, managing and evaluating reading instruction; in recent years, however, increased focus has been directed towards teamwork. Until recently, testing had not been a major focus, and the first national reading tests were not conducted until 2004 (during the reading project). Increasing attention has been given to accountability in Norway, with the introduction of national testing on reading, mathematics and English (Elstad *et al.*, 2011; Sandberg & Aasen, 2008; Skedsmo, 2011). These tests include both formative and summative aspects, but the efficacy of this two-fold purpose remains debated. Several Norwegian studies indicate that student testing with increasing external control leads to negative discourses and tensions within schools (Aas, 2009; Lie, Linnakylä & Roe, 2003; Mausestagen & Granlund, 2012; Møller, 2006, 2009)—a situation equally true for the current study.

Accountability in Norway

The expanded expectations and accountability pressures imposed on school and municipality leaders have been extensively documented in recent years (Bush, 2009; Crow, Lumby & Pashiardis, 2008; Huber & Hiltmann, 2011; Portin, 2009). These expanded expectations and pressures translate to time-consuming work related to internal and external tests and evaluations. They emphasise school leadership for quality improvement in schools (Hall, Gunter & Bragg, 2013; Hargreaves & Fink, 2006; Leithwood *et al.*, 2008), with a special focus on improving standardised testing and student outcomes (Day *et al.*, 2008; Robinson, Lloyd & Rowe, 2008). Although the principals and schools in Norway are progressively confronted with external expectations of improved efficiency, better test scores and higher standards (Elstad & Turmo, 2011; Mausethagen & Granlund, 2012; Møller, 2012), accountability policies in the country are described as more lenient than those in countries with more aggressive neoliberal policies, such as the USA and the UK (Mausethagen, 2013). With the comprehensive model ‘a school for all’ as a guiding principle, the emphasis on market mechanisms is downplayed, and attention to students’ learning outcomes is closely linked not only with the promotion of transparency and efficiency, but also with the promotion of equality and quality (Aasen, Telhaug & Mediås, 2006; Moos, 2009; Møller, 2009).

Cultural-Historical Activity Theory, expansive learning and contradictions

In theorising change, two main conceptualizations dominate. The first perspective maintains that change is linear, with clear cause-and-effect connections, or a complex struggle based on competing interests; the second viewpoint indicates that change is about how we understand the interconnections among people or about capturing visible improvements (Gunter *et al.*, 2007). Another approach to change is connected to the process models of organizational

innovative learning (Engeström, 1987; Kolb, 1984; Nonaka & Takeuchi, 1995). Engeström's concept of expansive learning, which is inspired by Cultural-Historical Activity Theory (CHAT), offers an additional perspective to that of Gunther *et al.* (2007). It is based on exploring what takes place during a collective activity (e.g. a school development project) and highlighting evolving contradictions. This approach reflects the importance of focusing not only on what leaders can do, but also on what they apparently cannot and why they do as they do (Thomson, Hall & Jones, 2013). Even though limited CHAT-based research has been devoted to understanding change and leadership in schools, some Norwegian studies use the theory to explore issues such as school data functioning as mediators (Jensen & Møller, 2013), horizontal dynamics in school improvement teams (Jensen & Lund, 2014), constitution and distribution in school leadership (Vennebo & Ottesen, 2012), innovative work (Vennebo & Ottesen, 2014) and tensions in school development (Aas, 2014).

Cultural-Historical Activity Theory

CHAT focuses not on isolated individuals but on collectives and networks (Engeström, 1999a; Engeström & Sannino, 2010; Leont'ev, 1978). An activity system is the key unit of analysis, whose purpose is to establish the relationship between the subject and object of change, thereby explaining the dialectic relationship between the social and individual minds (Engeström & Blackler, 2005; Miettinen, 2005; Miettinen & Virkkunen, 2005; Nardi, 2005). With the help of specific tools and within certain parameters (rules), participants work on a shared object to develop reading instruction. In the current study, the participants explored how reading tests (the tool) can improve students' reading skills (the object). The tool in this case was Carlsten's (1982) reading test. The first test, developed in 1982, measures reading comprehension, spelling skills and language knowledge. This test has been used in Norwegian schools for the last 30 years. The rules (parameters) are the national and local tradition of

student testing on the one hand, and the culture and history of professional practice on the other. The context of the activity is a specific community, which included students, teachers, principals and parents, all playing different roles in the school activities. Engeström (2001) uses the concept of division of labour to illustrate how work is distributed within a school.

Expansive learning

Engeström's (1987) concept of expansive learning explains learning as collective processes among communities of learners. Learning is not depicted as a one-way movement from incompetence to competence; rather, it relies on its own metaphor—expansion (Engeström & Sannino, 2010). Expansion means that learners acquire as-yet uncreated knowledge. In the learning process, learners construct a new, shared object in a collective activity and attempt to implement this object in practice, which, in the present study, refers to discussing and implementing a system for testing on reading in schools. This implies a process of constructing and reconstructing an object of change and looking into both short-term action and long-term activity (Engeström, 2000).

Questioning is a necessary starting point in Engeström's (2001) sequence of actions in an expansive learning circle. If the questions and motivations for change come from the participants within an organization, a leader more easily obtains commitment than if these questions and motivations originate from external sources (e.g. national authorities). Engeström argues that both historical and current empirical analyses should be conducted before a new solution (e.g. a new practice) is framed. The next step is to analyse the new model before implementing the corresponding practice. After implementation, the participants must reflect on the current practice before the new practice can be consolidated. New questions must be asked with regard to current methods to illustrate the constantly changing practice. Expansive learning can potentially produce new forms of work activity; in doing so,

however, the learning process may cease or break down. In real life, few learning processes have gone through the ideal phases of an expansive learning circle (Aas, 2009; Engeström, 1999b; Engeström & Sannino, 2010). Nevertheless, the model is an empirical attempt to move from the abstract to the concrete.

Contradictions and tensions

An understanding of the role of contradictions is crucial to appreciate what happens within a collective activity (Aas, 2013; Engeström, 2007; Roth & Lee, 2006). Contradictions are defined as historically accumulated structural tensions within and among activity systems. They serve as both driving forces and obstacles in a learning process (Engeström, 2001; Foot, 2001, 2002). An expansive learning circle illustrates how development is a non-linear but contradictory process of expected and unexpected outcomes. A core idea in the expansive methodology is that revealing and addressing tensions is necessary to achieve sustainable practice and consolidate new practice. This is an interesting perspective when applied to school change. In the reading project examined in this research, tensions were represented as conflicting voices, or incidents in the discourse, always representing two related and co-existing forces. These tensions originated from the participants' experiences as teachers and leaders and from the theoretical resources involved in developing a system for student reading tests.

Research on expansive learning and leadership

Expansive learning is manifested primarily as changes in the object of a collective activity. In successful expansive learning, these changes eventually lead to a qualitative transformation of all the components of an activity system (Engeström & Sannino, 2010). Expansive learning cycles and learning actions generated with the help of Change Laboratory interventions have

been analysed by Engeström (2001), Ahonen and Virkkunen (2003) and Pihlaja (2005), among others. The studies show that the learning actions taken by participants do not necessarily correspond to the intentions behind the tasks assigned by an interventionist. Time and again, participants assume a leading role in the intervention process, reject and reformulate tasks and perform actions that change the plans of an interventionist (Rasmussen & Ludvigsen, 2009). Research based on or inspired by the theory of expansive learning seems to have reached a transitional phase. The multiplicity and diversity of research applications indicate that the theory, which is the inspiration of this study, has given rise to a rich set of novel research questions and topics.

Methods and analytical approach

This work examined a qualitative, longitudinal study of development processes in seven primary schools. On the whole, the participants explored how seven mediating tools can improve students' reading skills (object of change). These tools were testing, curriculum, differentiation, organization, materials, methods and evaluation. In this article, the mediating tools were testing, studying reading tests. To document how the project groups from the schools worked on the object of change, two kinds of data were collected from each school. The first data source was the journals kept by the participants (project groups) throughout the project, in which they recorded their discussions and reflections about the newly implemented practices. The participants detailed their current practices, reflected on how and why they should introduce new ideas to an entire teacher group and reflected on the actual implementation. Each school documented its planned process after each of the four school meetings during 2005 and 2006 (28 documents from each school, altogether 165 pages). The journals served as a means for gathering short-term data (Engeström, 2000).

The second data source was the group interviews with the project groups from each school, during which reflections on the process were obtained. The interviews with the project groups were conducted in the fall of 2007 and a year after project completion; these were then replicated in the fall of 2009 (224 pages altogether). In addition, logbook entries and observation notes were written, preliminary interpretations were formulated and all the project groups were asked to comment on the interpretations (160 pages). This form of ‘member-checking’ (Postholm, 2009) was used to enhance the quality of the research and to reduce the occurrence of bias from the project leaders and researchers (Carr & Kemmis, 2005; Gustavsen, 2003; Kvernbekk, 1999; Lewin & Cartwright, 1951). Together with the short-term data from the participants’ journals, the interviews in 2007 and 2009 and the research log provided data on the longitudinal aspects of the project (long-term activity) (Engeström, 2000), and possibilities for studying expansive learning and examples of consolidated practices.

After the data on the seven topics outlined above were organized, each category was analysed to identify new practices. In this study, identification as a new practice necessitates that the object be developed and implemented in the institution as a new consolidating routine or organizational change. The changes must also reflect some kind of social interaction among the leaders and teachers. The schools varied in terms of the discussion topics that led to new practices. Examples of new practices implemented in at least three of the seven schools (with the number of schools implementing each new practice specified) were a system for student testing (7 schools); a common reading plan (7 schools); reading courses across classes (6 schools); regular daily reading (3 schools); a new school library (3 schools); new methods (5 schools); and new organizational structures (6 schools). Testing was chosen as the issue for examination because all the schools implemented systems for testing student reading

during the project and because the topic was linked to the international discussion on accountability.

The next analytical step included thematic investigations of the change process, especially evident tensions, at each school. To understand the relationship between the evolving tensions and cultural and historical resources (the rules, the community and the division of labour), two schools were chosen for closer investigation: Waterfall School and Hillside School. The two schools represent differing contexts and captured the variety among the schools. One is situated in a city and the other in the countryside; one has a female principal and the other has a male principal. In the succeeding section, excerpts from the case studies from Waterfall School and Hillside School reflections are used to illustrate the main topics of discussion, tensions and reflections across the seven schools. As project leaders the principals wrote all the reflection papers on behalf of the project groups. The excerpts reflect the discussions from the moment student assessment was introduced as a key to school development to the point where the participants began to investigate their schools' practices, followed by a re-organization of practices and an examination of longitudinal effects to assess whether the changes were superficial or in-depth in nature.

Findings

Student assessment as a key to school development

In the first seminar, one of the reading experts introduced the idea of implementing a system for testing student reading. Two critical issues were highlighted: the time involved in testing and the problems that testing can generate for students with special needs. A class teacher, Elisabeth, was uncertain about why more time should be spent on student testing. She claimed, however, that if more time were allotted, her aim would be to use the results for her own instructional practice:

What are the aims and need for testing all students? I think I already know the reading achievement of every single student in my class; most teachers often do, so what is the idea of using a lot of time on testing? I am not sure that more testing is the answer. If we are going to have more testing, I am most interested in how the test results can be used to develop my instructional practice (Elisabeth, teacher at Hillside School).

A teacher, Jane, works with students who suffer from learning difficulties. She was concerned about how the assessment system can affect students with special needs and how to address the issue of motivation:

As a teacher of students with special needs, I am concerned about how this testing would impact our work on equity and comprehensive education. Bad test results give the students with reading difficulties bad feelings, and then it is difficult to motivate them. Currently, I adapt tests to the individual student's achievement level, so that we can use the test results for learning rather than just control (Jane, teacher at Waterfall School).

The comments above reflect the teachers' concerns regarding how testing can influence students' learning conditions and their motivation to learn. A principal, Frida, had a different opinion. She was positive that a system for student testing can improve the overall quality of reading instruction in the school:

I think it is very important for schools to establish a collective test system where students' reading skills are tested each year. It is a quality assurance [exercise] for the school, and it gives the school an opportunity to inform parents about their child's literacy level (Frida, principal of Waterfall School).

According to Engeström (2001), the questioning phase represents an important point of departure for further developmental work. Although the schools applied for participation in the project, the quotes above demonstrate differing opinions and aims regarding the implementation of a system for student testing. As Miettinen (2005) pointed out, the complex and contradictory nature of the object of a collective activity means that individuals contribute to the construction of the object with their different competencies and expectations. Principal Frida's interests reflect her governing position in the school system within a regime of growing accountability, whereas the teachers' pedagogical interests reflect their positions in a national system with strong emphases on democracy and learning, students with learning difficulties and the idea of assessment for the purpose of learning (Black & Wiliam, 2006).

Investigating school practices

Despite differences of opinion among the participants, all the principals were ultimately responsible for determining any further action and all of them decided to implement test systems in their schools. Prior to the first school discussion, the project groups were asked to describe the tradition of student testing at their schools. In the **subsequent** excerpt from Principal Frida's reflection papers (completed on behalf of the project group), she describes her school's policy on using Carlsten's (1982) reading test: 'We have been using Carlsten's reading test for several years. The teachers are supposed to use the test results in conversations with parents' (Frida, principal of Waterfall School).

In the school discussion, Principal Frida was surprised when the teachers in the project group told her that most of them use the test results primarily to inform their instructional practices and that they do not share the results with other professionals or parents. The teachers characterised the test results as their 'private property', partly because they never

were obligated to report on the test results to the principal. Principal Frida reflected on how the differences between the formulated practice and actual practice (Schön, 1991) affected her leadership:

I thought all the teachers used results from Carlsten's reading test as a starting point for a conversation with parents. After a discussion in the project group, I understand that some of the teachers actually do this, but others do not. I really do not wish [for] such a private practice. The teachers have to collaborate more (Frida, principal of Waterfall School).

Principal Frida indicated that she wished to make some adjustments in the collaboration among the teachers, although she was aware that a more collective practice can affect the tradition of 'private' practice in the school community. The two teachers in the project group supported Principal Frida. In Hillside School and in the five other schools, investigations of the schools' test practices (empirical analysis) also reveal differences between the teachers' practices and the principals' expressed willingness to implement changes (historical analysis).

Re-organizing practice

After the school discussions, the project groups focused on how the schools can improve test results. In the new model, both the principals' and teachers' perspectives were included. From the principals' points of view, testing is important in obtaining information about the school-wide success of reading instruction. By contrast, the teachers identified reading instruction within their own classrooms as the most important component of practice. These contrasting positions are reflected in an excerpt from a Hillside School paper composed after the first school discussion:

Our position is that the test material ought to be a tool for measuring the students' progress and to help the students in their own learning processes. The test material shall help the teachers in their planning process, to map out students for special training, to give information to the parents, and, finally, to report the reading level of the whole class to the principal (Dag, principal of Hillside School).

In the excerpt above, Principal Dag demonstrates how he includes his own and the teachers' desired outcomes in a new system for reading assessment: to improve and control test scores at the school level and to improve the teachers' reading instruction. The other six principals also seemed to listen to the teachers' voices in their preparation of new test systems, believing that working on shared objects will lead to outcomes that are acceptable to all the participants (Engeström, 2001). The interactions between the principals and teachers in the modelling and implementing phases are illustrated in an example from Waterfall School. A month after the school discussion, the project group held a meeting with the staff to introduce the idea of reading tests for all students. The teachers appeared to support the new ideas and began to implement the new assessment practices, even though the new model required more teacher collaboration and several new routine practices. For Waterfall School, the new test practice represented enormous changes, especially for the teachers. In the evaluation report, principal Frida summarised and reflected on the changes that occurred over the past two years:

We have made BIG changes in the school organization. All the teachers are organized in teams. We decided that all the teachers had to test the students in reading during the same week, discuss the results with each other and organize specific reading courses after testing.

They also had to report the results to me as the principal. This gave me an opportunity to obtain information about the reading achievement level in the different classes and to figure out what sort of special training was needed (Frida, principal of Waterfall School).

As the excerpt illustrates, Principal Frida, with support from the project group, carried out adjustments to the organizational structure by assigning the teachers to reading teams and asking these teams to discuss the test results and organize special reading courses. As indicated by the comments expressed by various teachers speaking for different students, the testing improved both test scores and reading instruction. A notable issue is that Principal Frida used the phrase ‘we decided’ in referring to the changes. From her point of view, her decision was not an individual act but one that involved cooperation with the teachers and other school leaders, and the annual reports of the achievements’ results provided useful information for professional discussions among the teachers.

Principal Dag also implemented changes to the organization of Hillside School to support the new test practice, especially in the form of teachers’ professional team discussions. Although he was proud of the changes applied to the test practices, he reflected on the long-term effects and the need to spend time following up on the newly implemented practice:

The work development takes time, a lot of time, and we have to give the working teams more time for discussions. Discussions in the whole collegium are important to make sure that what we decide is followed up by all the teachers (Dag, principal of Hillside School).

Although the teachers had previously collaborated on improving the test practices, such cooperation was primarily voluntary, fragmented and based on coordination more than

collaboration. When the principals implemented administrative decisions to re-organize the teachers into reading teams and implement new routines for conducting, summarising and discussing tests and test results in teacher teams, new divisions of labour and altered power relations emerged. Instead of merely analysing the test results, the teachers were required to carry out analysis within a teacher team, which meant involving not only their own students, but also the students from the other groups. At the same time, the principal became occupied with following up on the teacher discussions. By organizing the teachers into teams, the principals hoped to develop more collective practices that can improve reading instruction. This means that working on the tests as a collective object of change first of all influenced the teachers' professional practice, which in a longer term might lead to an increased test results. Despite the potential of this approach, however, the schools are characterised by a long tradition of private practice and professional autonomy (Lortie, 1975), and not all the teachers were pleased with the new structure.

Superficial or in-depth changes?

A year after project completion, I returned to the schools to interview the project groups. The Hillside and Waterfall schools had changed, or consolidated the new practice, in two significant ways: (1) students now underwent reading tests twice a year and (2) discussions were conducted regarding the results within the teacher teams. The project groups characterised these changes as improvements in the students' learning. According to the achievement of Carlstens' reading tests the overall testing score had increased, the teachers were more aware of students' reading difficulties and they used the test results to carry out adjustments to reading instruction in accordance with individual students' needs. Nevertheless, the teachers in the project group were uncertain about whether all the teachers

continued to strictly abide by the new routines, especially discussing the results with other teachers. A teacher at Waterfall School, Jane, expressed her concerns thus:

If you ask me if everybody is loyal to what we decided three years ago, I do not know. Not all teachers are happy spending a lot of time on this new test practice; they feel they have got extra workload (Jane, teacher at Waterfall School).

Adjustments in the division of labour in the form of the specific work tasks require new actions for teachers working independently and together. Although Principal Frida was informed of this problem at the beginning of the project, she did nothing to smoothen the transition, and a year after project completion, these problems became apparent. The teachers' experiences with increased workload are attributed to the traditional division of labour within the school organization—principals administer and teachers teach (Møller, Vedøy, Presthus & Skedsmo, 2009). Summarising test results is seen as administrative work. In the Norwegian context, teachers working with students who suffer from learning difficulties are given extra resources for them to be able to summarise and interpret diagnostic tests. The new test practice at Waterfall School requires all teachers to carry out this type of administrative work as part of their daily teaching routines. This issue illustrates that organizational changes require follow-up systems, with a shift in leadership focus from learning to compliance. This shift can be a possible consequence of making test scores the main focus of schooling (Skedsmo, 2011). Principal Frida was uncertain about sustainability. She summarised the challenges by raising certain questions:

Do the teachers really discuss the test results, or do these discussions become routine operations for them? How shall I deal with the teachers who do not follow the new test

practice? What sorts of unintended results have resulted from focusing on testing at the school level (Frida, principal of Waterfall School)?

An interesting finding emerged from the leadership team's account of a meeting with the local Counselling and School Psychology Service. At this meeting, they were asked to present a list of students who achieved poor results and needed help from the expert team. The Counselling and School Psychology Service asked why so many students were on the list: 'On this list you have students who read fewer than 80 words per minute, but it should only list students who read fewer than 50 words per minute'. The principal and assistant principal were surprised. The assistant principal expressed her reaction thus: 'suddenly we understood that we had higher expectations for students' test results'. A similar experience of unexpected outcomes was reported by Principal Dag at Hillside School. He shared how the teachers had begun to train the students ahead of testing. This approach illuminates how a school system for student testing can take teachers and school leaders in unexpected or conflicting directions. Cizek (2001, p. 20) refers to Smith and Rottenberg (1991), Lattimore (2001), and Meisels (2000) who have identified several unintended negative consequences of high-stakes testing including reduction of time available for ordinary instruction; neglect of teaching material not covered by tests; a press toward methods of instruction and assessment in the classroom that mirror those implied by tests; limits on students instructional opportunities; undesirable effects on teacher morale; imposition of "cruel and unusual punishment" on students- younger ones; the potential for tests to foster students' negative attitudes toward tested content; and (h) to diminish students' self-esteem. According to Cizek (2001) there are also positive consequences of the high-stakes testing. However, the power of tests as mediating tools may be underestimated. Paying excessive attention to testing can influence teachers' reading instruction in a more instrumental manner, and can thereby

influence students' opportunities to participate in expansive learning circles that incorporate critical investigations and reflections.

Discussion

Understanding change as expansive learning (Engeström, 2001) illustrates how a testing tool is used to mediate improved students' reading skills (object). The findings show that tensions evolve in all the phases of expansive learning. In this section, tensions that are related to three turning points are addressed (Kärkkäinen, 1999).

The first turning point

The first tensions arose in the discussion about different approaches to teaching. A binary opposition exists in teaching: motivating students to achieve and teaching them how to accomplish a test. The school leaders were influenced by international accountability discussions on the use of tests as tools for mediating improved student scores in reading achievement. Conversely, the teachers' were interested in the capacity of tests to mediate learning and improve reading skills on a general level. The school leaders resolved this tension by ensuring that the teachers use the assessment results to motivate students and plan further learning. This is an example of how an object changes in an expanded version throughout the process of a collective activity and confirms the findings of Engeström and Sannino (2010). In addition, the current study demonstrates how the different participants hold varying views on how and what the testing tools can mediate. This variance depends on how they define the object of change.

According to Coburn and Turner (2012) we know little about how people in schools are interacting with student tests, interpreting them, responding to them, and how these

responses contribute to various outcomes of interest. Understanding the practice of testing can provide insight into when and under what conditions testing acts as a productive mediating tool to educational improvement and when it does not. In relation to an expansive learning circle (Engeström, 2001), the discussion about the questioning and empirical and historical analysis phases can be characterised as qualitative turning points (Kärkkäinen, 1999) because these phases may reveal changes in both an object and tool, and provide insight into one of the most central questions in social theory: the interrelationship between macro-social structure and micro-level action.

The second turning point

The next turning point emerged when the participants worked on the new models and solutions for implementation. As Engeström and Sannino (2010) argue, these phases qualitatively transform all the components of an activity system. The tensions are reflected in a school's traditions (rules), its community, and the division of labour in the organization. In the Norwegian democratic and inclusive school tradition wherein 'a school for all' is the guiding principle, a system for student testing represents a contradictory perspective on learning and development. This tension is that between 'use value and exchange value' (Engeström, 2001, p. 137). That is, schools are historical institutions intended to resolve both a society's need for work and people's need for learning and development. Education has a dual purpose: the exchange value is a student's value in the labour market, and the use value is the satisfaction that the student gains from taking part in learning.

In a short-term activity, a system for student testing can mediate a student's value in the labour market, as well as the value of daily learning. As part of a longer-term activity, increased attention to students' learning outcomes can be argued as primarily preparing students to compete in the labour market in the future (Engeström, 2000), thereby changing the Norwegian focus on promoting equality and quality. As earlier mentioned, several

international studies have documented how high-stakes testing threatens the purposes and ideals of the education system. Nichols and Berliner (2007) and Hopmann (2008) show that the pressures of high-stakes testing might lead to destroy the validity of test scores and mislead the integrity of the education system. However, as explained in the theory of expansive learning (Engeström 2001) negotiations between school leaders and teachers in the modelling and solution phase reflect tensions on an individual level, as well as a society level. This means that the dual purpose of schooling will influence school leaders' decision making in modelling and implementing new test practices in their schools.

The third turning point

When principals apply significant changes in schools' divisions of labour, they compel teachers to shift from a tradition of private individual practice to more collective practice. The resistance from some of the teachers in this work can then be explained from a cultural-historical perspective, wherein the teachers are regarded as autonomous professionals with responsibility for their students' learning. School leaders have fragmented information about teaching in a classroom, which is one reason for them to listen carefully to teachers' perspectives. The extent to which contextual and historical resources influenced the principals' leadership is also reflected in the fact that all the leaders in this study considered the democratic tradition, the culture of involving and interacting with the teachers and the tradition of delegating administrative tasks to the principals in their efforts to implement an expanded system for student testing. This finding was also a significant result in the second visit, three years after project completion (in 2009).

In literature of school leadership the tension between systemic and individual needs is significant (Dempster, 2011). The importance of preparing school leaders to find a balance between the authorities' needs and the teachers' needs of using data from students' achievements to develop the education is also demonstrated in a review of successful

leadership programs, (Darling Hammond et al. 2007). In relation to this literature school leaders have to take into account how implementing a new testing system, including a new division of labour in the schools must meet the teachers need. Timperley (2011) suggests a process of using students' achievement tests to identifying teachers own professional learning needs. When teachers can take control, setting goals and monitoring progress towards them, they also become more motivated, with concomitant improvements in their own and their students' learning. Her research supports the importance of including the teachers in developing new models and solutions for using student testing in their reading instruction.

However, even though the principals in this study collaborate with the teachers of how to use the test results there still remained unexpected outcomes and some possibly negative consequences which suggest the limitations of Timperley's advice. If implementation of testing regimes in democratic educational practices is going to be successful, the process has to start with investigating the students' achievement within the school. Using the student data for developing the education requires a disciplined approach led by the school leaders. This means that the leaders have to be hands on in the investigation process and not leave this important work to the teachers alone, as the principals in this study did.

Limitations of the study

Engeström's (2001) expansive learning model creates opportunities to capture the complex interactions and expectations of commitments and actions when implementing change in schools (Fullan, 2007). The multi-orientations of the model provide analytical potential for the study of systematic changes that involve internal conflicts and the need to negotiate with professionals (Gunter *et al.*, 2007; Stoll & Louis, 2007). Revealing and addressing tensions in short-term actions can help school leaders develop expansive learning, which can exert long-term effects. A limitation of the model is that it is an oversimplification of reality and that its

analysis is static (Roth & Lee, 2007). Furthermore, the complex model requires clarification on which aspects are to be foregrounded and which should be relegated to the background. A further limitation in Engeström's model is its silence on the concept of power and power relations within the model. Finally, because Engeström (2001) primarily used the model in a health care context, a question arises as to whether the transformation and translations of the concepts and terminologies for educational practices affect the generalizability of the results. Despite these limitations, I argue that CHAT and the expansive framework add to our understanding of leadership and change in schools.

Conclusion: Student testing—short-term actions within a long-term activity

The main argument advanced in this study is that change initiatives for increased student testing reveal tensions between leaders and teachers and among teachers concerning student learning and teachers' working conditions. Cultural and historical analyses, as suggested in the framework of expansive learning, are helpful in identifying and understanding the types of tensions that emerge at the action level and how these tensions are rooted in the history of a school at the local, national and international levels. Although these tensions are short term in nature, they are part of a long-term activity and have implications for leadership in schools. Revealing tensions can help leaders defuse such strained situations and improve learning. Further research on exploring tensions in change processes may enhance the understanding of change as a consolidated practice with longitudinal effects.

References

- Aas, M. (2009). *Diskusjonens kraft. En longitudinell studie av et skoleutviklingsprosjekt der leseeksperter/forskere støtter rektorer og lærere ved sju skoler i utvikling av skolens leseundervisning*
[The power of discussions. A longitudinal study of a school development project where reading

- experts/researchers support principals and teachers in developing the reading education in their schools] (Unpublished doctoral thesis): University of Oslo. Oslo.
- Aas, M. (2013). *Ledelse av skoleutvikling* [Leading school development]. Oslo: Universitetsforlaget.
- Aas, M. (2014). Towards a reflection repertoire: Using a thinking tool to understand tensions in an action research project. *Educational Action Research*, 22(3), 441–454. doi: 10.1080/09650792.2013.872572.
- Aasen, P., Telhaug, A. O. & Mediås, A. (2006). The Nordic model in education. Education as part of the political system in the last 50 years. *Scandinavian Journal of Educational Research*, 50(3).
- Ahonen, H. & Virkkunen, J. (2003). Shared challenge for learning: Dialogue between management and front-line workers in knowledge management. *International Journal of Information Technology and Management*, 2(1–2), 59–84.
- Black, P. & Wiliam, D. (2006). Assessment for learning in the classroom. In J. Gardner (Ed.), *Assessment and learning* (pp. 9–27). London: Sage.
- Bush, T. (2009). Leadership development and school improvement: Contemporary issues in leadership development. *Educational Review*, 61, 375–389.
- Carlsten, C. T. (1982). *Observasjonsprøve i lesing/skriving for 1. klasse introduksjon og lærerveilednin* [Observation test in reading/writing for first class. Introduction and teacher guidanc]. (2nd ed.). Oslo: Universitetsforlaget.
- Carr, W. & Kemmis, S. (2005). Staying critical. *Educational Action Research*, 13(3), 347–358.
- Cizek, G. J. (2001). More Unintended Consequences of High-Stakes Testing. *Educational Measurement: Issues and Practice*, 20(4), 19-27. doi: 10.1111/j.1745-3992.2001.tb00072.x**
- Coburn, C. E., & Turner, E. O. (2012). The Practice of Data Use. *American Journal of Education*, 118(2), 99-111. doi: <http://www.jstor.org/stable/10.1086/663272> .**
- Crow, G., Lumby, J. & Pashiardis, P. (2008). Introduction: Why an international handbook on the preparation and development of school leaders. In G. Crow, L. Lumby & P. Pashiardis (Eds.), *International handbook on the preparation and development of school leaders* (pp. 1–17). New York, NY: Routledge.
- Darling-Hammond, L., LaPointe, M., Meyerson, D., & Orr, M. (2007). Preparing school leaders for a changing world: Lessons from Exemplary Leadership Development Program. Stanford, CA: Stanford University, Stanford Educational Leadership Institute.**

- Day, C., Sammons, P., Hopkins, D., Leithwood, K., & Kington, A. (2008). Research into the impact of school leadership on pupil outcomes: policy and research contexts. *School Leadership & Management: Formerly School Organisation*, 28(1), 5-25. doi: 10.1080/13632430701800045.
- Dempster, N., Lovett, S., & Fluckiger, B. (2011). Content and strategies to develop school leadership: a select literature review. Melbourne: The Australian Institute for Teaching and School Leadership.**
- Elstad, E. & Turmo, A. (2011). Obeying the rules or gaming the system? Delegating random selection for examinations to head teachers within an accountability system. *Education, Knowledge and Economy*, 5(1-2), 1-15. doi: 10.1080/17496896.2010.546560.
- Elstad, E., Turmo, A. & Guttersrud, Ø. (2011). Achievement tests in the Norwegian school system: Types and uses. In L. E. Madsen (Ed.), *Achievement tests: Types, interpretations and uses* (pp. 109-124). New York: Nova Science Publishers, ISBN: 978-1-61122-056-8.
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research* (Ph.D. monograph). University of Helsinki, Helsinki. Retrieved from <http://lhc.ucsd.edu/mca/Paper/Engestrom/expanding/contents.htm>.
- Engeström, Y. (1999a). Activity theory and individual and social transformation. In Y. Engeström, R. Miettinen & R.-L. Punamäki-Gitai (Eds.), *Perspectives on activity theory* (pp. 1-16.). Cambridge: Cambridge University Press.
- Engeström, Y. (1999b). Learning by expanding: Ten years after. Introduction to the German edition of learning by expanding. Retrieved from <http://lhc.ucsd.edu/MCA/Paper/Engestrom/expanding/intro.htm>).
- Engeström, Y. (2000). Activity theory and the social construction of knowledge: A story of four umpires. *Organization*, (7), 301-310. doi: 10.1177/135050840072006.
- Engeström, Y. (2001). Expansive learning at work: Toward an activity theoretical reconceptualization. *Journal of Education and Work*, 14(1), 133-156.
- Engeström, Y. (2007). Enriching the theory and expansive learning: Lessons from journeys toward configuration. *Mind, Culture, and Activity*, 14(1-2), 23-39.
- Engeström, Y. & Blackler, F. (2005). On the life of the object. *Organization*, 12(3), 307-330.
- Engeström, Y. & Sannino, A. (2010). Studies of expansive learning: Foundations, findings and future challenges. *Educational Research Review*, (5), 1-24.

- Foot, K. A. (2001). Cultural-historical activity theory as practical theory: Illuminating the development of a conflict monitoring network. *Communication Theory*, 11(1), 56–83.
- Foot, K. A. (2002). Pursuing an evolving object: A case study in object formation and identification. *Mind, Culture, and Activity*, 9, 132–149.
- Fullan, M. (2007). *The new meaning of educational change*. London: Routledge.
- Gunter, H., Rayner, S., Butt, G., Fielding, A., Lance, A. & Thomas, H. (2007). Transforming the school workforce: Perspectives on school reform in England. *Educational Change*, 8, 25–39. doi: 10.1007/s10833-006-9017-3.
- Gustavsen, B. (2003). New forms of knowledge production and the role of action research. *Action Research*, 1(2), 153–164. doi: 038146[1476-7503(200310)1:2].
- Hall, D., Gunter, H. & Bragg, J. (2013). Leadership, new public management and the re-modelling and regulation of teacher identities. *International Journal of Leadership in Education: Theory and Practice*, 16(2), 173–190. doi: 10.1080/13603124.2012.688875.
- Hall, G. & Hord, S. (2002). *Implementing change: Patterns, principles, and potholes*. Boston, MA: Allyn and Bacon.
- Hallinger, P. & Bryant, D. A. (2013). Synthesis of findings from 15 years of educational reform in Thailand: Lessons on leading educational change in East Asia. *International Journal of Leadership in Education: Theory and Practice*, 16(4), 399–418. doi: 10.1080/13603124.2013.770076.
- Hargreaves, A. & Fink, D. (2006). *Sustainable leadership*. San Francisco, CA: Jossey-Bass.
- Hopmann, S. T. (2008). No child, no school, no state left behind: Schooling in the age of accountability. *Journal of Curriculum Studies*, 40(4), 417-456.**
- Huber, S. G. & Hiltmann, M. (2011). Competence profile school management (CPSM) – An inventory for the self-assessment of school leadership. *Educational Assessment, Evaluation and Accountability*, 23, 65–88.
- Jensen, R. & Lund, A. (2014). Horizontal dynamics in an inter-professional school improvement team. *International Journal of Leadership in Education: Theory and Practice*, 17(3), 286–303.
- Jensen, R. & Møller, J. (2013). School data as mediators in professional development. *Educational Change*, (14), 95–112.
- Kolb, D. A. (1984). *Experiential learning experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.

- Kvernbekk, T. (1999). Knowledge that works in practice. *Scandinavian Journal of Educational Research*, 43(2), 111–130.
- Kärkkäinen, M. (1999). *Teams as breakers of traditional work practices. A longitudinal study of planning and implementing curriculum units in elementary school teacher teams* (Doctoral dissertation). University of Helsinki: Helsinki.
- Lattimore, R. (2001). The wrath of high- stakes tests. *Urban Review*, 33(1), 57-67.**
- Leithwood, K., Harris, A. & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School Leadership & Management: Formerly School Organisations and People*, 28(1), 27–42. doi: 10.1080/13632430701800060.
- Leont'ev, A. N. (1978). Activity, consciousness, and personality. Englewood Cliffs, N.J.NJ: Prentice-Hall.
- Lewin, K. & Cartwright, D. (1951). *Field theory in social science: Selected theoretical papers*. New York, NY: Harper & Brothers.
- Lie, S., Linnakylä, P. & Roe, A. (2003). *Northern lights on PISA: Unity and diversity in the Nordic countries in PISA 2000*. Oslo: University of Oslo, Department of Teacher Education and School Development. ISBN: 8290904711
- Lortie, D. C. (1975). *Schoolteacher: a sociological study*. Chicago: The University of Chicago Press.
- Mausethagen, S. (2013). Accountable for what and to whom? Changing representations and new legitimization discourses among teachers under increased external control. *Educational Change*, 14, 423–444. doi: 10.1007/s10833-013-9212-y.
- Mausethagen, S. & Granlund, L. (2012). Contested discourses of teacher professionalism: Current tensions between education policy and teachers' union. *Journal of Education Policy*, 27(6), 815–833.
- Meisels, S. J. (2000). On the side of the child. *Young children*, 55(6), 16-19.**
- Miettinen, R. (2005). Object of activity and individual motivation. *Mind, Culture, and Activity*, 12(1), 52–69.
- Miettinen, R., & Virkkunen, J. (2005). Epistemic Objects, Artefacts and Organizational Change. *Organization*, 12(3), 437–456. doi: 10.1177/1350508405051279.
- Moos, L. (2009). Hard and soft governance: The journey from transnational agencies to school leadership. *European Educational Research Journal*, 8(3), 397–406.
- Møller, J. (2006). Democratic schooling in Norway: Implications for leadership in practice. *Leadership and Policy in Schools*, 5(1), 53–69.

- Møller, J. (2009). School leadership in an age of accountability: Tensions between managerial and professional accountability. *Educational Change*, 10, 37–46.
- Møller, J. (2012). The construction of a public face as a school principal. *International Journal of Educational Management*, 26(5), 452–460.
- Møller, J., Vedøy, G., Presthus, A. M. & Skedsmo, G. (2009). Successful principalship in Norway: Sustainable ethos and incremental changes? *Journal of Educational Administration*, 47(6), 731–741.
- Nardi, B. A. (2005). Objects of desire: Power and passion in collaborative activity. *Mind, Culture, and Activity*, 12(1), 37-51.
- Nichols, S. L., & Berliner, D. C. (2007). *Collateral damage: how high-stakes testing corrupts America's schools*. Cambridge, Mass.: Harvard Education Press.**
- Nonaka, I. & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York, NY: Oxford University Press.
- Pihlaja, J. (2005). *Learning in and for production: An activity-theoretical study of the historical development of distributed systems of generalizing*. (Dissertation defence, University of Helsinki, Department of Education).Retrived from <http://www.helsinki.fi/cradle/documents/Doctoral%20dissertations/Pihlaja%202005%20Learning%20in%20and%20for%20production.pdf>
- Portin, B. S. (2009). Cross-national professional learning for school leaders. *International Journal of Leadership in Education*, (12), 239–252. doi: 10.1080/13603120802688119.
- Postholm, M. B. (2009). Research and development work: developing teachers as researchers or just teachers? *Educational Action Research*, 17(4), 551-565.
- Rasmussen, I. & Ludvigsen, S. (2009). The hedgehog and the fox: A discussion of the approaches to the analysis of ICT reforms in teacher education of Larry Cuban and Yrjö Engeström. *Mind, Culture, and Activity*, 16(1), 83–104.
- Robinson, V. M. J., Lloyd, C. A. & Rowe, K. J. (2008). The impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, 44(5), 635–674. doi: 10.1177/0013161x08321509.
- Roth, W.-M. & Lee, Y.-J. (2006). Contradictions in theorizing and implementing communities in education. *Educational Research Review*, 1(1), 27–40.

- Roth, W.-M. & Lee, Y.-J. (2007). 'Vygotsky's neglected legacy': Cultural-historical activity theory. *Review of Educational Research*, 77(2), 186–232.
- Sandberg, N. & Aasen, P. (2008). *Det nasjonale styringsnivået. Intensjoner, forventninger og vurderinger. Delrapport I. Evaluering av Kunnskapsløftet* [The national management level. Intentions, expectations and assessments. Rapport 42/2008 in Evaluation of Knowledge Promotion] (pp 106): Oslo: Department of School Development and Research and NIFU STEP. ISBN 978-82-7218-598-4.
- Schön, D. (1991). *The reflective practitioner. How professionals think in action*. New York, NY: Basic Books, Inc.
- Skedsmo, G. (2011). Formulation and realisation of evaluation policy: Inconsistencies and problematic issues. *Journal of Educational Assessment, Evaluation and Accountability*, 23(1), 5–20.
- Smith, M. L., & Rottenberg, C. (1991). Unintended consequences of external testing in elementary schools. *Educational Measurement: Issues and Practice*, 10(4), 7-11.**
- Stoll, L. & Louis, K. S. (2007). *Professional learning communities: Divergence, depth and dilemmas*. Maidenhead: McGraw-Hill/Open University Press.
- Timperley, H. (2011). *Using student assessment for professional learning: focusing on students' outcomes to identify teachers' needs. Paper No. 21*. Melbourne: Education Policy and Research Division Office for Policy, Research and Innovation, Department of Education and Early Childhood Development.**
- Thomson, P., Hall, C. & Jones, K. (2013). Towards educational change leadership as a discursive practice—or should all school leaders read Foucault? *International Journal of Leadership in Education: Theory and Practice*, 16(2), 155–172. doi: 10.1080/13603124.2012.693204.
- Vennebo, K. F. & Ottesen, E. (2012). School leadership: Constitution and distribution. *International Journal of Leadership in Education*, 15(3), 255–270. doi: 10.1080/13603124.2011.624642.
- Vennebo, K. F. & Ottesen, E. (2014). The emergence of innovative work in School development. *Journal of Educational Change*. (Published online 02.04.2014).doi: 10.1007/s10833-014-9234-0.