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Mapping The Logics in Practice Oriented Competence Development

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In this paper we investigate the role of the local supervisor when implementing a mathematics teacher training program based on Action Learning (Misfeldt et al. 2014, Plauborg et al. 2007). Using data from interviews of teachers, local supervisors and school managers we examine the arising expectations on the local supervisor and how these expectations influence the program's ability to support teachers in their professional development. We do so by using Clarke's (2009) Situational Analysis and Arcform notation (Allsopp 2013) to map the actors' relation to the supervisor. We see that the local supervisor is caught in a tension between expectations from the Action Learning method and the school managers. This hinders schools in anchoring Action Learning as a teacher training method and thereby benefitting its full potential.

Keywords: Teacher training, Action Learning, theory and practice, Arcform.

Implementing teacher capacity building through collaboration

A crucial aspect of a number of initiatives to improve mathematics education is the ability for teachers to collaboratively question and improve their own teaching (Stigler 1998), sometimes involving resource persons such as researchers or teacher educators. For such in-service training or capacity building to be efficient and scalable it is important that they are anchored in the school organization and not solely dependent on enthusiasts. Initiatives like Lesson Studies and development of own practice (alone or in collaboration with researchers), are examples that requires systemic and organizational attention (Lewis, Perry & Murata 2006). Systematic approaches often mean that teachers take on certain roles in relation to each other's practice in order to maintain initiatives. Such structures and roles that connect in-service training to practice and build directly on the school organization and culture are important. Research has found that it is very difficult to make sustainable changes with teacher training initiatives (Shear, Gallagher & Patell, 2011; Henriksen et. al 2011), and Maurer (2010) has estimated that 70% of teacher training projects fail in changing teachers' practices within the given time frame of the project. This is a major challenge to the mainstream implementation of research findings in mathematics education. According to research literature the difficulties with changing teacher practice through in service training are associated with a lack of connection between training programs and teachers' existing practices (Fixsen et. al. 2005) as well as with the fact that teacher training programs often lack a focus on establishing active, collegial relations among teachers, which are crucial in order to build sustainable development (Hargreaves 2000, Sølberg, Bundsgaard & Højgaard 2013). When trying to address these concerns certain employees often take on certain roles towards their colleagues in the sense that they advocate for, manage and nurture certain projects. In this paper we explore this challenge by investigating a case where the distance between training activities and day-to-day

teaching is very small and where the collegial relations are supported in a direct fashion. We do so by describing an Action Learning case as it has been implemented in a Danish municipality.

Context

In 2012 a municipality in Denmark launched a teachers training program aimed at developing teaching practices and enabling schools in the municipality to develop teacher competencies independently from external resources. The training program involved every school in the municipality and a total of 3500 participating teachers. The program consisted of a combination of a summer university in which teachers where given thematic lectures on a variety of subject-specific and pedagogical topics (implemented at 80% of the schools) and a method called Action Learning (implemented at approximately 20 % of the schools). Action Learning is a teacher-training program developed as an alternative to traditional course based in-service training. It draws on inspiration from Action Research in that it is based on an assumption that solutions to practical problems require practical understandings, which must be gained though iterative attempts to solve the actual problem (Plauborg et. al. 2007). The "action" in Action Learning refers to a pedagogical or didactical intervention that address *real* classroom issues as the individual teacher experiences them. While the "problem" is defined by the individual teacher the intervention is developed collaboratively by a group of teachers engaging in a so-called "team-conversation". Local supervisors from each school were designated the responsibility to facilitate professional discussions among the teachers in the team conversations. The local supervisors were teachers from the school who had a mathematics supervisor education, and who provided didactical support on a daily basis. The local supervisors also had the responsibility of anchoring the collaborations among the teachers at the schools to enable their ongoing professional development. The characteristics of Action Learning therefore seem to counter many of the challenges identified in the research literature about teacher training programs; active collegial teams are established, the team conversations are facilitated by the local supervisor in order to maintain an academic focus in the conversations and the starting point is the teachers' existing practices. In this context these initiatives however relied heavily on the local supervisors who were designated a key part in facilitating the team conversations and in anchoring team collaboration at the schools. In our research we therefore investigate the expectations arising to the local supervisors in the implementation of Action Learning and their possibilities meet these expectations (for further information about the program see the full evaluation report (Misfeldt et al. 2014).

Method

Our research draws on interviews of key actors in the training program from two schools, namely the participating teachers, local supervisors and school managers. We interviewed 6 teachers, 2 local supervisors and 2 school leaders coming from 2 different schools. Our interviews explored the actors' experiences of the training program and their understandings of the role of the local supervisor in the program. We also collected documents and literature that describes the Action Learning Method and documents from the municipality describing how Action Learning was to be carried out. All of these sources were considered with the goal of identifying how the role of the

supervisor was perceived. We analyzed this data by using Clarke's Situational Analysis (Clarke 2009). Situational Analysis is rooted in Grounded Theory, but modified according to postmodern assumptions that "boundaries are open and porous; negotiations are fluid and usually ongoing" (Clarke 2009). There is no a priori assumption that human actors are of greater importance than either non-human or discursive actors (Clarke 2009), which allows us to view the Action Learning concept as an actor in itself. In Situational Analysis, Situational Maps provide a methodological approach to organize and visualize empirical data by foregrounding situations (Clarke 2009). We initially processed our data by using a sub type of Clarke's Situational Maps: Relational maps (den Outer 2013). Like other situational maps these aim at foregrounding situations rather than individual actors or their actions by mapping all actors (human as well as non-human and discursive) that occur in any situation, but go further than this by showing relations between actors. Relational maps use a type of network notation where actors are represented by labeled nodes and relations are represented by un-labeled lines drawn between the actors/nodes.

We drew our relational maps while reading our transcribed interviews and other relevant documents. We began by listing the relevant actors that appeared in our data and their relation to each other. We produced many versions of some maps, modifying them as some actors and relations grew in prominence in our analysis. The messy nature in our data was easily overviewed with the simple structure of relational maps and thus they played an important part in opening up our data and thereby prompted our analyses. However, beyond a certain point they seemed to counteract rather than support overview. Clarke stresses that though situational maps are useful tools for beginning analyses, they are not necessarily an appropriate end-product of analysis (Clarke 2003, 563). We experienced two related problems: Firstly, it was difficult to draw some types of relations between actors and secondly they became difficult to understand/interpret, especially when returning to the analyses after several weeks. To overcome this limitation of our relational maps, we chose to visualize the situations through Arcform notation (Allsopp 2013). Like relational maps, Arcform maps do not visualize our data, but rather the results of our ongoing analysis. Arcform maps differ from most relational maps, but resemble many network notations by supporting direction and labels on relations (arcs). Thus relations like "local supervisors coach teachers" are clearly visible as an arc labeled "coach" pointing from an actor node labeled "local supervisors" to another actor node labeled "teachers". However, Arcform also differs from most other network notations by allowing arcs to point from or to other arcs. In this way more complex relations like "teachers see local supervisors as coaches" can be drawn as shown in Figure 2.

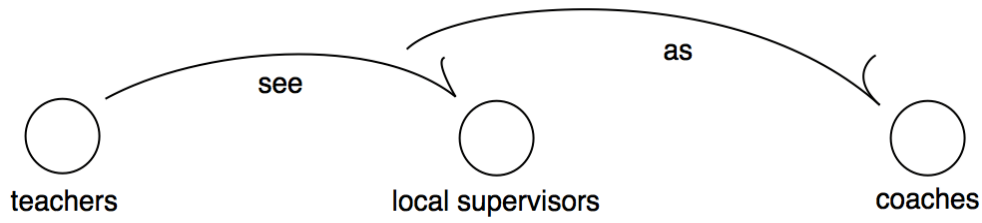

Figure 1. The sentence "Teachers see local supervisors as coaches" expressed in Arcform.

Results

As our analysis progressed it became clear that the actors in our data articulated their relation to the local supervisor quite differently, and that they had different conceptions of the main job of the supervisors in the action learning project. Though these actors were all engaged in the same project at the same school, their ways of participating and their relation to the supervisor was rather different and seemed at first glance to be related to their role in the school outside the project. Besides being a part of a project, the actors were respectively also teachers, supervisors and school managers, and this fact seemed to be of importance. Our maps also revealed that this meant that the actors had different expectations on the supervisor and that these expectations could intersect with problematic consequences. In order to refine our analysis of these preliminary results we decided to use a notion of cultural logics developed by Nielsen (2012), which we will introduce below.

In a study on teachers' learning from collaboration in teams, Nielsen develops a view of teacher collaborations as having a dynamic stability (Nielsen 2012). It is dynamic because it involves numerous ongoing activities that are oriented towards one or more objectives. It is stable because it involves a perceived regularity in actors' actions suggesting a stable understanding underlying these activities. Such logics effect peoples' objectives and can be difficult for externals to change, because they reflect the every-day phenomena which are experienced as urgent by the actors involved. For example, although teachers most likely find the learning processes of students an important objective to orient their collaboration towards, so too may they find the practicalities that make a well-settled lesson (Nielsen 2012). In situations where there are multiple cultural logics we can expect actors sometimes to be caught in a tension between these logics.

The notion of cultural logics is highly useful in our context as the Action Learning training program is a project in which several actors', who occupy diverse positions, participate. Viewed this way the role of the supervisor is at risk of being caught in a tension between multiple cultural logics. As the local supervisor is a key actor in implementing and anchoring the Action Learning method, such tensions and their implications are of particular interest in this study. We identified three dominant logics. We refer to these as the workplace logic, the curriculum logic and the project logic. The cultural logics are characterized by situations in which certain aspects of the training program are foregrounded over others which translate into a set of expectations on the local supervisor. In brief the logics translate in to the following expectations:

- In the **workplace logic** the supervisors are expected to manage the project and to avoid delays in the project.
- In the **curriculum logic** the supervisors are expected to be willing and able to guide the teachers academically in their professional development.
- In the **project logic** the supervisors are expected to initiate and support the teachers' professional development in a coaching-manner where an equal relation between supervisor and teacher is crucial.

The map below illustrates how the role of the supervisor is formed by the different cultural logics.

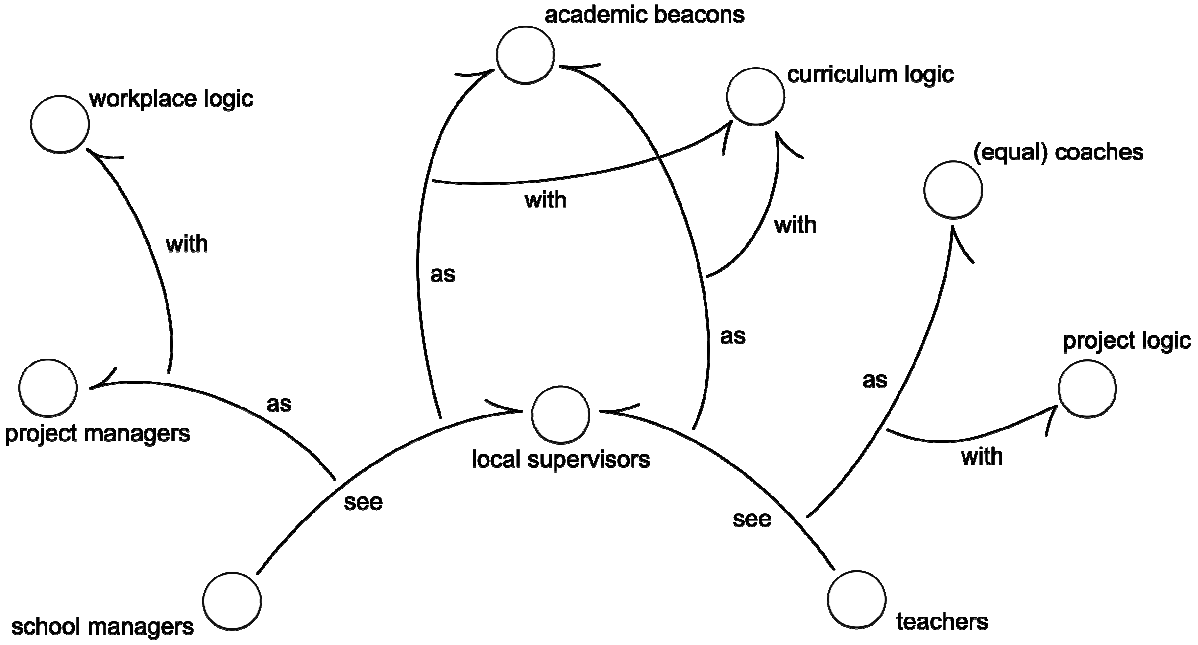

Figure 2. An Arcform map showing how two actors (school managers and teachers) see local supervisors as three different roles (project managers, academic beacons and (equal) coaches) with three different cultural logics (workplace logic, curriculum logic and project logic).

The goal in the project logic are progress and development of the school, while the curriculum logic foregrounds the quality of teaching. Though these logics can be complementary, our mapping revealed that the supervisors are faced with a tension due to a collision between the project logic and the workplace logic. In the following two sections we will therefore further describe the dynamic stabilities of the two latter cultural logics and unfold the tension emerging from here.

The project logic

The project logic concerns the cultural logic of the Action Learning training program as it occurs in documents describing the Action Learning concept and the expectations to the role of the supervisors emerging from it. In the Action Learning concept, the primary priority is the competence development of the teachers participating. In this, the supervisors are first and foremost expected to have the will to develop the school and the teachers and to do so as an equal coach rather than as a managerial authority. The supervisor is expected to initiate the Action Learning collaboration and to support the teachers in their development - not to lead/manage them. This is crucial as it is an acknowledgement that it is the teachers themselves who are experts on their own practices – the role of the local supervisor is therefore to facilitate conversations that creates the best setting for this knowledge to be shared (Plauborg et. al. 2007). The statement below from a local supervisor illustrates her view of the Action Learning project suggesting that she embraces the project logic and that she is capable of seeing the potentials in the method.

Local supervisor: (…) there were some 3rd grade teachers who said: "We have already tried this method. Why do we have to go through it again?" And my argument

was that even though we have tried the method before, it is not implemented at our school. We don't use it as a method as things are now.

The statement indicates that the supervisor views competence development as ongoing and Action Learning as a way to enable such ongoing developments. She therefore argues to her colleagues that Action Learning is not a syllabus which you only have to read once and then move on – rather, Action learning is a concept that involves specific ways of collaborating which are not implemented at the school. The statement thereby demonstrates a will to develop the school that resonates with the expectations embedded in the Action Learning concept. It also tells us that the supervisor has the skill needed to spot and to articulate that the crux is to integrate Action Learning as a way of collaborating.

The workplace logic

The workplace logic concerns the main objective of the training program from the school managers' view and their expectations to the local supervisors' role in the project. From the interviews with school managers the training program appears as a project among many other projects in which the main priority is to safely navigate the school through it and to avoid any delays. Though the school managers presumably also have an interest in developing the competencies of their teacher staff, safely getting through the project appears as the dominant cultural logic. Interviews with school managers show that this logic translates into an expectation that the local supervisors will be managers of the project due to high trust of the professionalism of the supervisors. The statement below from a school manager illustrates how the supervisor is referred to through the workplace logic.

School manager: I highly trust my supervisor's skills. Our supervisor is very professional and she is currently going through a pre-leader course. (…) and I thought that she therefore was better qualified to manage the project than I was.

In what appear as an acknowledgement of a supervisor's skills, this supervisor is given the responsibility to manage the project. At this particular school a group of teachers refused to participate in the training program due to short notice and discomfort about having to be observed as a part of the project. As the school managers had distributed the responsibility to manage the project, this became an issue for the local supervisor to handle. Consequently, the supervisor was obliged to "persuade", as she puts it, another group of teachers to participate in the project.

Local Supervisor: I didn't lure them but… I just told them that it wasn't optional. They just had to do it, you know.

As the responsibility of managing the project was designated to the supervisor through the workplace logic, these project management issues become a task for the supervisor to handle. This implies that the supervisor is required to draw on a formal leadership mandate by reminding the teachers that participation in the project is mandatory. As the supervisor describes in the following excerpt, this incident resulted in an uncertainty among the teachers about the role of the supervisor:

Local Supervisor: I think that this made it very unclear for the teachers what my part in this project was. Am I here to check if they are doing a bad job? Will I go to my

> manager and say: "That teacher does a bad job. She is really bad at teaching math". Or whatever it might be.

The supervisor's task of managing the project is not necessarily problematic in itself. But as a group of teachers refuse to participate in the training program, this is an issue that becomes a task for the supervisor to handle. In order to handle this issue, the supervisor is obliged to find another group of teachers that are willing to participate. As no other teachers were willing to participate in the project the local supervisor was obliged to emphasize to a specific group of teachers that they were obliged to participate as this was necessary for the Action Learning project to carry on.

Implementing research findings in practice – emerging problems and prospects

Our analyses have identified three cultural logics, two of which we have unfolded above. Each of these cultural logics produces a certain set of expectation to the supervisor in terms of how he or she adequately should participate in the project. What becomes evident from our analyses is that the local supervisors are met by mutually exclusive expectations as a consequence of these logics; the project logic expects the supervisor to support the teachers as an equal peer whereas the workplace logic expects the supervisor to manage the project as a superior. This has at least two consequences. Firstly, the supervisor's delegated management role triggers an uncertainty among the teachers of the intentions of the supervisor and raises the questions of whose errands he or she is running. Is the supervisor's main task to support the teachers in their professional development or to monitor their work on behalf of the management? This uncertainty makes it difficult to draw on the supervisor as an equal facilitator. A key component in the Action Learning concept is the joint observations of each teacher's practice, which subsequently are meant to be the starting point for a conversation aiming to develop the teachers' understandings of their own practices. Such an uncertainty among the teachers in respect of the supervisor's role represents a substantial barrier in creating a safe environment in which the teachers can learn from their own practices. Secondly, the coexisting logics cause a tension on the supervisor as he or she is expected to fill many roles at the same time. Each of the cultural logics influence the actors' expectations to the role of the supervisor according to their own dynamic stability, thus tying the supervisor to different, incompatible priorities at the same time. As the potential for anchoring the Action Learning concept is closely connected to the role of the supervisor, there seem to be little chance that the supervisors are capable to do so under such difficult circumstances.

Our analysis also points to more general issues related to implementation of research findings in practice. Though Action Learning addresses what seem to be the main challenges in gaining long-term results from teacher training programs, the different expectations arising on the local supervisor complicates the implementation and the anchoring of the training program. The training program investigated in this paper exemplifies how many actors are at play in a school setting and that each participating actor may have different agendas in and around such projects. Though this perhaps is no surprise, our research suggests that difficulties in implementing research informed training programs can be the result of the differing actors' agendas outside the project. In Action Learning, as in many other training approaches, some actors are of immense importance in order to harvest the potential results of research informed approaches. The professional development of

teachers involves and affects many others than the participating teachers and enters the professional lives of actors, which may have different priorities, agendas and available resources. A main problem about the issues identified in our research is that the co-existing cultural logics and the expectations arising to the supervisor thereof largely remain tacit. Though different agendas and the effects of such cannot be eliminated by simply making them explicit, an increased awareness and joint management of expectations would most likely be a step towards overcoming such hurdles.

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