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## **WHEN THE PROJECT ENDS**

### **- Initiatives to maintain development in educational settings**

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#### **Abstract**

This study aims to increase our knowledge about how the main ideas in a national educational project concerning mathematics are implemented into ordinary activities. The original model included having a leadership form in common that involves local politicians, municipality administration, school leaders and teachers; creating joint routines; and adopting a common perspective that places high expectations on all pupils. In contrast to the original project, which was only for compulsory school, the selected local organizer engaged with preschool, compulsory school and upper-secondary school. The idea of having a common theme running throughout all school forms functioned for preschool and compulsory school but was hampered by the variety of choices of programs in upper-secondary school. The common perspective that high expectations should be placed on all pupils was accepted, but it was difficult to reach a common understanding of the concept, and there were continuous discussions of what it meant in practice. Results from this exploratory study suggest that the local organizers created organizational ownership in different ways. However, a challenge was posed by the conceptual, didactic ownership of placing high expectations on the pupils. There were no problems with grasping the general idea, but during discussion it was difficult to reach a useful and relevant joint understanding of the concept. When a didactic perspective is included in a national change initiative, personnel in the education system need to translate the national perception, if any, into local terms.

**Keywords:** development work, school, organization, ownership

#### **1. Introduction**

The aim of the article is to present and discuss how development efforts in schools, which started in project form, are being continued and implemented in Sweden. School development work is framed not only by national comparisons but also by international ones. When Sweden became a member of the EU in 1995, membership also entailed working within the EU for a European education system of high quality. One of the documents regarding education states the need for “measurement of progress through agreed instruments, comparing achievements both between European countries and with the rest of the world” (European Council, 2002). This underlies the interest in participating in international testing like PISA organized by the OECD, and Trends in International Mathematics and Science Study, TIMSS. Both test mathematical ability, and Swedish pupils in compulsory school achieved good PISA results until 2003. Since 2009, the Swedish scores have gradually decreased, and they were below average in 2012 according to test results from PISA (Skolverket, 2013). That is, over a period of ten years, a large group of pupils emerged in compulsory school who were not reaching the learning goals. This sparked local and national discussion, both about how education was carried out and how education could be supported. To understand the roles of national and local actors, a brief presentation of the Swedish education system is needed.

Sweden has national curricula for compulsory school and upper-secondary school, including both common values and subject content. At the national level, the Swedish National Agency for Education follows up and supports development work and undertakes large-scale initiatives. Another national organization, The Swedish Schools Inspectorate, assesses applications to start new schools and conducts regular evaluations of existing ones. There are no local divisions of the National Agency for Education or the Swedish Schools Inspectorate. K-12 education is provided by both public and private organizers.

The public organizers are the 290 municipalities in Sweden. It is the organizers who are responsible for developing K-12 educational activities according to the Education Act (SFS 2010:800). All municipalities are gathered in the national organization, the Swedish Association of Local Authorities and Regions, SKR (until 2019 called the Swedish Association of Local Authorities and Counties, SKL). A school principal answers to both the state (laws and curriculum) and the organizer (public or private).

It is against this background that SKL undertook a large-scale initiative. They provided funding to municipalities around Sweden to create a special working model to support the development of mathematics teaching (SKL, 2018). The question is whether this model was actually implemented after the project, or if it just faded out.

The article continues with earlier studies of change and then presents the model *SKL Matematik PISA 2015*, the design of which incorporates different levels of responsibility. The frame of analysis is presented, and the method of data collection is described. The results are then summarized, after which the article ends with a final discussion.

## 2. Carrying out change

There are many models of change and suggestions for how to successfully achieve it.

A summary of steps proposed in earlier models and an additional new design have been given by Mento, Jones, & Dirndorfer (2002). They suggest twelve steps, which can be perceived as comprising a linear sequence, but that can be performed in parallel or iteratively in practice. First, they underline the importance of defining why change is needed. Then the actors that should be involved in the change efforts can be decided upon and a plan for change designed. To support the plan an alliance is needed with a sponsor who holds power in the organization, those who are the target of the change must be addressed, and a change team must be assembled. The change process needs to be aligned with the organizational culture to make the change lasting, and every achievement should be communicated and noted. During the course of the program progress must be measured, and afterwards lessons learned should be integrated.

Burnes (2011) agrees with Mento et al. (2002) that there are several models for change. A consequence of this multiplicity of models and contexts is that it is easy to fail to achieve change. It is estimated that over 60–70 percent of change efforts fail. At the same time, it is also difficult to define what exactly failed, and thus the claim of failure can itself be disputed. Clearer definitions are needed because discussions of why efforts failed to achieve change serve as a basis for improving the efforts next time.

The above-mentioned models focus on organizational change, but as By, Burns and Oswick (2011) argue, change can also be connected to changes in the wider society. That is to say, the organizational change that is studied can be viewed as a part of societal processes. In this case it could be a good idea to focus not only on key actors, but also on how change is carried out and maintained by groups of stakeholders. Leadership is thus important but change management can be described as “a micro-situated, everyday, distributed practice” (Todnem By et al., 2011, p. 3).

Engaging stakeholders at four levels – the model *SKL Matematik PISA 2015*

The model is presented in two sections. The basic presentation is based on information available on SKL’s website in 2015 and 2017 (Sverigeskommuner och landsting, 2015, 2017). The presentation of the final national results is based on a summary report from SKL (Sverigeskommuner och landsting, 2016).

### *The model*

A model of change is often chosen from among already tested models (Hughes, 2007), but in this case the model was designed on a national level and has not been fully tested. According to SKL the inspiration derives from reports from municipalities with successful schools, reports from McKinsey, and research by John Hattie (2008). There were three goals, according to SKL. The first was a 50 percent reduction in pupils not reaching the lowest level of the learning goals, the second was for the number of pupils achieving the highest marks (A–F, where F is fail) to increase, and the third was that Sweden should be among the ten best-performing OECD countries. The model was created to achieve these goals.

All municipalities in Sweden were invited and some agreed to participate. The municipalities could choose to include private organizers. The four relevant levels in the municipality are politicians, central administrators, principals and teachers. All four levels should be involved with a focus on persons in leadership positions, and there should be active networking. There should be both national-level networking, with groups of about four municipalities working together, and a network at the municipality level. Three components were essential at the local level :a common leadership form, a common perspective and joint routines. In the common leadership, the leadership levels (politicians, central administration, principals)should be linked. They should have clear assignments and distribution of roles. There should be a common vision placing high expectations on all pupils and viewing the teacher's competence and cooperation as vital for success. Joint routines should include routines for systematic follow-ups and feedback, and for supporting pupils with special needs.

The national-level networks were formed on the basis of geographical location to make it easier for participants to meet. Each network should have participants from each municipality in the network, and all four levels should be represented. In addition, each municipality should have a "home group" with a contact person. The contact persons should participate in the planning of network conferences together with the SKL project leaders. Each network conference had a theme related to the development work, which was decided upon by the contact persons and project leaders. All municipalities contributed a written document to the networks ahead of time. During the meetings, the participants acted as critical friends in mixed groups. The meetings ended with decisions being taken by the municipality groups about relevant concrete activities for their municipalities.

### *National summary*

Apart from documenting all network meetings, each municipality wrote a yearly report on the working process, progress in reaching goals and how the common work was perceived. The final reports from the 86 participating municipalities were summarized on a national level (Sverigeskommuner och Landsting, 2016).SKL was of the opinion that the highest political leadership should engage and involve the school administrators and other staff. In about 80 percent of municipalities the chair of the school board participated, and in about 50 percent the head of administration participated. The representation of teachers was adequate, but the representation of school leaders was low. The work was negatively affected by a substantial (almost 70%)turnover of all participants, especially politicians and administrative leaders. The turnover of politicians can be explained by the national and local elections held in 2014. The results of elections in Sweden can lead to one party or block having a majority on the national level and another on the local level. If the political majority changes in a Swedish municipality, people on that level leave their posts, but not people on other levels such as administrators or school leaders. Despite some challenges, the four-level model was viewed positively. The group reached a common vision and were able to set joint goals. In comparison with the starting point, everyone thought that the work developed in a positive way with regard to coherent leadership, clear roles, routines for gifted and special-needs pupils, and high expectations on the pupils. The least successful area was the development of support for gifted pupils.

When the present study began, the model had been in use for two years and the project was about to end. One of the participating municipalities wanted to follow up on the activities and got in contact with a researcher (the author). During our discussions, two research questions became prominent. The first had to do with how well the model had worked, and the second with finding ways to preserve positive aspects of the model and incorporate them into the everyday work of the municipality.

### **3. Framework for analysis**

The success of change depends on many factors and on the context. As is mentioned in the section about the SKL project, the model is based on increased communication and engagement between actor son several levels: politicians, administrators, school leaders and teachers. One interpretation of this experimental model developed by SKL is that designing the model with several levels should increase the sense of ownership and thereby support the development of teaching in mathematics. The idea that ownership can reduce resistance to change and thus support change is supported in the research.

Ownership of the change by all stakeholders is one of the principles of development, together with participation, empowerment, learning, adaptability to needs during the process and making changes step-by-step for the sake of simplicity, according to Queen-Mary and Mtapuri (2014). According to Angus and Loudon (2005) ownership can be more or less shared. Ownership can be affected by the level on which initiatives are taken. National initiatives or ideas from researchers may lack support from professionals. Professionals, in turn, can have ideas, but whether they benefit the public interest is not always discussed (ibid). To support ownership, a first step can be to identify the stakeholders. Who might be affected as staff, users, customers? A second step can be to design arenas where the stakeholders can meet and discuss. Elizondo-Montemayor, Hernández-Escobar, Ayala-Aguirre and Aguilar (2008) argue that the main challenge is not finding stakeholders or designing arenas for communication and discussion; it is getting work done during the process of change. Agreement among stakeholders and a division of roles and assignments between them are supportive factors. In conclusion, a sense of ownership is shown to reduce resistance. This kind of ownership can be compared with ownership that changes from external to internal ownership (Rutledge, Brown and Petrova, 2017). External design, from the national level, can be accepted at the district and local levels and become internal, especially if the idea can be connected to already existing ideas and structures. Commitment at district level can be perceived as giving legitimacy to the change. This becomes a transfer of ownership from policy to practice. The districts and local school staff must first integrate the idea, and then the design and implementation, and this is supported by reporting about the process and sharing findings with the district and local levels. This is also a way of acknowledging the autonomy of the schools. Part of this autonomy consists of underlining the importance of the local school leadership, according to Jones, Forlin and Gillies (2013). As Meyers and Hitt(2016) argue, the school leaders must be interested in change processes and skillful in conducting them. The leaders need to facilitate the change process and include everyone who is affected by the decision. A context for shared ownership must be created. This context must include ongoing meetings for discussing issues and providing information.

However, a focus on ownership can also be problematized. Even though capacity and ownership are key factors, Smith (2005) argues that change can be driven on different levels. Moving the decision-making to different levels and groups of stakeholders might strengthen ownership, but one can ask what the ownership encompasses. Is it capacity building or the process of change? Smith argues that the most important level for educational change is the local level, and it is local capacity building more than local ownership that will make the change possible and drive it. Higgins and Rwanyange (2005) agree that local ownership is a key factor, but argue that there also must be integration between different levels of the education system. Even with good intentions, decisions from the central level can be poorly suited to local everyday life and culture. There needs to be knowledge of the needs and capacity of stakeholders at all levels of the education system. Sometimes locals can perceive themselves more as contributors, implementers and recipients when decisions and designs are already made. Ownership should be discussed in combination with voice, communication, trust and accountability. Local ownership is crucial, but a form of ownership at higher levels is also important. Rincón-Gallardo (2016) discusses how political decisions that support all levels and create change locally during a certain time period can quickly change when a new government is elected. When the new regime is not in favor of the change, it is difficult for actors at other levels to sustain the model, despite approval and good results. Changes among stakeholders are also highlighted by Postholm(2011). As there often is turnaround on different levels, not least among teachers and school leaders, there needs to be a plan for introducing and integrating new stakeholders.

#### **4. Data collection**

To fulfill the aim of studying how the main ideas from the project were implemented within ordinary activities, several data collections were carried out over the course of one-and-a-half years. In addition, several documents were read. The local work within the project was documented in three reports from the local working group (Katrineholms kommun 2014b, 2015b and 2016d). There were also guidance documents like a strategy for development of mathematics (Katrineholms kommun u.å.), the school plan for 2016–2019 (Katrineholms kommun u.å.) and an action plan for developing mathematics teaching (Katrineholms kommun, 2015a revised 2016c).

During the research, dialogue about the work took place with members of the former project group – which had been transformed into a development group. This group served as a reference group for this study, working together with the researcher to decide on the two overarching questions – how well the project functioned and what aspects of it could be retained –as well as the more detailed questions in two questionnaires. A questionnaire was sent to all school leaders in the municipality and another was sent to all contact persons for mathematics in preschool, compulsory school and upper-secondary school. The questions to the school leaders and the contact persons were similar and concerned perceived changes in the mathematics teaching, how all parties perceived their involvement in the project and the communication of results from the teaching, how well school leaders fulfilled their role as pedagogical leaders, how well the contact persons fulfilled their role of supporting the development of mathematics teaching, and in what ways the action plan contributed to the development. Responses were received from all three contacted school leaders at upper-secondary level, all ten at compulsory-school level and five (out of about 25)at preschool level. (The number of preschools changes frequently due to changes in demographics and preschool choices; the number 25 is an approximate figure for that time.)A total of 23(out of 63) contact persons for mathematics responded. The dialogue and the results from the two questionnaires were presented in a final report (Niklasson, 2017). The final report was read and accepted by the reference group and the presentation was there by group validated (Denscombe, 1998).

The responses from the final report were further summarized and are presented in two sections, the first answering the question of how the project was perceived and carried out, and the second what aspects are possible to continue using. To make the presentation as anonymous as possible exact quotations are not provided, although the name of the municipality is clearly stated. This is in accordance with routine ethical procedures (Vetenskapsrådet, 2011) which also include informing participants that their participation is voluntary, that the study is being done for research purposes and, in this case, that the results from questionnaires and dialogues will be presented at group level.

As described above, the analysis is based on a re-reading of the final report and the summaries of the results. Ownership was not originally included as a conceptual tool when the dialogue and the questionnaire were designed; it is a further development of the study.

## **5. Limitations of the study**

The questions in the study are based on discussions between the participants and the researcher. They are not based on a thorough analysis of earlier research about change processes, even if general ideas, such as the importance of stakeholders' voices, have served as sources of inspiration. Adopting a clear theoretical starting point could have been an alternative but doing so may have disrupted the dialogue and cooperation with stakeholders. Instead, the study is exploratory. A consequence of using an exploratory approach is that the findings generate suggestions for further research rather than presenting conclusions concerning trust (Babbie, 2007; Rosengren, 1975; Stebbins, 2001).

According to Denscombe (1998) it is more difficult to present qualitative data in a structured way than quantitative data. The presentation of the results of the data collection is summarized twice: in this article and in greater detail in the final report. As the agreement with the stakeholders included giving them as much anonymity as possible, quotations from their responses have not been given. Including such quotations to verify the discussion of ownership would have given the study higher credibility. The use of a group-level presentation also affects the credibility of the final suggestion: that ownership can be perceived as organizational and didactic. This statement is not put forward as a settled fact, but rather as a suggestion or hypothesis which needs to be further researched and analyzed. However, it is reasonable based on the presentations. It is also possible to use this suggestion in other educational contexts and thereby contribute to our understanding of change.

## **6. Results–how the project was carried out**

The presentation of the local results is based on yearly reports from the chosen municipality (Katrineholms kommun 2014, 2015, 2016a and b), results from questionnaires, and personal information.

The SKL PISA 2015 project lasted from 2012 to 2016, and the chosen municipality participated from 2013 to 2016. At local level, the chosen municipality organized the project as required, but introduced some local variations. There were representatives from four levels. Although the local group commented on the fact that parents were absent as a stakeholder group, no efforts were made to include them. The national project model only encompassed compulsory school, but the chosen municipality preferred to include preschool and upper-secondary school as well. At the beginning it was difficult to get principals to come to meetings and participate. This problem continued throughout the project period. An organization was set up to perform systematic quality-control follow-ups with a network of contact persons in mathematics units. They analyzed test results on both class and individual level, the principals analyzed the results on unit level, and the central administration summarized trends on municipal level. They all undertook relevant initiatives for improvement on their respective levels. Lastly, all the politicians expressed interest in receiving information about the analyses of the mathematics tests.

One important task was to design an action plan for mathematics development. The plan specified which tests all pupils in compulsory school should take in addition to national tests. The plan also suggested special activities for pupils who do not reach the learning goals, as well as for those who find it very easy to reach the goals. This action plan turned out to be a very useful document (Katrineholm 2016b); it was helpful and served as a common framework.

A survey was organized of all teachers qualified to teach mathematics to ascertain their need for further education (Katrineholm, 2014b). The 2014 survey of qualified teachers showed that 97 percent of the teachers in primary grades one to three and 95 percent in grades four to six were qualified to teach mathematics, while in lower-secondary school 91 percent of the teachers were qualified. All teachers in compulsory school had participated in the national further-education initiative *Matematiklyftet* (Math Initiative, organized by the National Agency for Education). After some time, the municipality selected a group of so-called “excellent” teachers, some of them in mathematics. The network of contact persons met regularly. The working process continued as planned but linking the four levels became a challenge. Few principals were involved, and the communication between the politicians and staff in the municipality needed to be improved (Katrineholm, 2015b). When the final report was written for the local project it was stated that working on four levels has strengthened the common vision and understanding of each other’s roles. It was difficult to reach the teachers during the first year, but when contact persons for mathematics were appointed and a fixed time for weekly conferences was set it became easier. However, the problem of motivating principals to participate persisted; few got involved. The networking in the national project was perceived as supportive, and there are plans to keep in touch with the municipalities in the regional network.

However, one feature of the national starting point, the common perspective that high expectations should be placed on all pupils, was continuously discussed during the process. It was defined as meaning that all pupils should reach the learning goals, but how this should be interpreted was critically debated, especially because in reality it was found that such an expectation was not reasonable. It was easy to say, but hard to put into practice (Katrineholms kommun, 2016b).

The aim was to support higher goal achievement. First of all, some pupils do not get passing marks (A–E, F is fail) for all subjects in compulsory school. Therefore, one goal was to increase the number of pupils getting them. In 2013, 62 percent of the pupils got passing marks in all subjects; in 2015, 69 percent did so. Another goal was that the proportion who reached the knowledge goals in the national test in grade nine should increase. In 2013, 77.8 percent reached them; in 2015, 77 percent did so. In summary, the results for passing marks in all subjects have improved, and the proportion of pupils qualified to apply to upper-secondary school has increased, but the results for mathematics did not improve during the selected years (Katrineholms kommun 2014, 2015, 2016a and b).

## **7. Results –implementing the development work**

In the summer of 2016 the project ended. At that time, the local “home-group” still existed, which meant that representative of all four levels were present, the contact persons for mathematics were continuing their work, and the action plan for mathematics was being revised each year.

The idea of engaging local politicians, the municipal administration, school leaders and teachers has been retained and is vital. There needs to be a change in how development work is reported, as the politicians and others cannot find information specifically about mathematics in the digital reporting system. There are only overarching headings, and nothing subject-specific. However, the home/reference group is dissolving; there were no comments or suggestions for further meetings. No structure was built for dialogue, only for “information.” To support school-leader engagement, mathematics should be on the agenda during meetings. To support the contact persons and the routines, two designated “excellent teachers” should work on municipal level with contact persons for mathematics and assist with analysis of the test results.

The contact persons for mathematics in each school unit followed the plan for developing mathematics in the municipality, helped with testing, and reported test results. Some were assisted by school leaders and colleagues, some found it difficult to create dialogue about how to teach mathematics, and some lacked support from school leaders. A number of them found it difficult to follow up on what was happening in the classroom. They thought their role was not clearly defined in relation to the “excellent teachers.” The list of contact persons had to be updated frequently because of constant changes.

Staff in all school forms were supposed to be involved, but it became obvious that the project functioned better in preschool and compulsory school than upper-secondary school. Staff at preschool seemed to be the most enthusiastic, which might be interpreted as indicating they are better informed and more skillful in writing answers. The idea of suggesting development areas for each school form in the action plan was hampered by the variety of programs to choose from in upper-secondary school. It is very difficult to find an idea held in common by all the upper-secondary school teachers. Instead teachers are preoccupied with just helping everyone to “pass” the vocational programs, and it is difficult to find time to promote deeper thinking.

The aim of the initiative, for more pupils to reach the learning goals in mathematics, was partly reached. The results are very mixed. The results from a national comparison of marks in mathematics between 2014 and 2016 show that the marks for year three of compulsory school had increased in the municipality and the results for years six and nine had decreased, while those for year one of upper-secondary school had increased substantially.

## **8. Final discussion**

Previous research about change shows that a sense of ownership can be supportive of change because it reduces resistance. This argument can be used as a theory of its own, but there are also other results that can build up a theory of ownership. There are different research directions from which to approach the issue of ownership, and this makes the theory constructed here rather tentative, but it is nevertheless useful for discussing how the results from the SKL PISA 2015 project can be interpreted. The project was a national initiative, but was based on participation from the local organizers of K-12; thus an external ownership structure had to be transformed into a practical, internal one (Rutledge et al., 2017). In a way, SKL had already decided who the stakeholders were (Elizondo et al., 2008). The national ownership had to be encompassed locally, in this case by politicians, central administrators, school leaders and teachers. The results exhibited a sense of shared ownership (Angus and Loudon, 2005) during the project period; SKL never ceased its involvement and the locals participated on all levels. During the project period, both the national and local levels were driving the project (Smith, 2005). Also, although there was an election during the period and staff turnover occurred, we could see that the local participants were able to present and explain the idea of the project to the newcomers (Elizondo et al., 2008; Rincom, 2006).

We also saw, however, that all over the country one stakeholder group posed a challenge, namely the school leaders (Higgins and Rwanyange, 2005; Meyer and Hitt, 2016). The national summary and the local project did not completely succeed in getting school leaders involved, other than those in the local reference groups. One interpretation of this could be that school leaders were the stakeholder group with the least explicitly articulated role. Their voice was not asked for. The joint meetings for the school leaders did not include the SKL project as an important issue on the agenda, which was something that the local project participants wanted to change in the future. The local group also suggested that an important stakeholder group was absent: the parents. However, no suggestion was made about how this group could be brought into the local project.

What aspects of the project can be considered essential and possible to continue pursuing? The local project expanded the scope of involvement. Instead of only engaging compulsory school, the local project followed the idea that the subject of mathematics should have continuity all the way from preschool to year one in upper-secondary school. This change can be perceived as taking more ownership of the issue and resisting the excessive focus on good results in international comparisons that was considered to be SKL's perspective. Instead the local stakeholders wanted to focus more strongly on a didactic perspective, oriented toward achievement of learning goals, and on supporting all school levels, not just compulsory school. Regarding this, they also found support, because the Math Initiative for further education of teachers was offered in parallel to the project. The local administrators sent teaching staff from grade levels to the training, and thereby sought to create a "common language." This common language was also part of the important action plan for mathematics. The action plan stipulated that there should be clear routines, that the same set of tests should be used (to facilitate comparisons between years), and that every year the analysis of the results from the classes should be used to update the most prioritized areas of change. The SKL model, with its ideas of common leadership, common ways of thinking (though open to discussion), and joint routines was used during the project and afterwards. This can be interpreted as indicating that the local project displayed both ownership and capacity (Smith, 2005).

The results from this exploratory study finally suggest that the local organizers created organizational ownership in different ways, such as expanding the scope of the project, combining the project with further education for teaching staff, and making the project more sustainable by developing an action plan for mathematics. The overarching organizational structure of the SKL project functioned well. However, a challenge was posed by the conceptual, didactic ownership of high expectations for the pupils. There was no problem with grasping the general idea of higher expectations, but it was more difficult to arrive at a useful and relevant common understanding of the concept in discussions. This could be interpreted as suggesting that when concepts and didactic ways of thinking are disseminated, challenges can arise if stakeholders, especially politicians and central administrators, take them out of the broader context where they were originally presented (such as Johan Hattie's research). When a didactic perspective is included in a national change initiative, personnel in the education system need to translate the national perception, if any, into local terms.

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