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### **Shared sense-making as key for large scale curriculum reform in Finland**

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## **ABSTRACT**

The national core curriculum is renewed in Finland approximately every ten years, the most recent one being 2016. The core curriculum sets the general goals, providing the foundation for district- and school level curriculum development work (Finnish National Board of Education, 2016). The messages from transnational educational policy (e.g. OECD) are apparent in the core curriculum. However, districts, schools and teachers are highly autonomous in upholding, resourcing and deciding about the curriculum making at the local sites of activity. Accordingly, the curriculum making relies heavily on shared sense-making as a tool for cultivating transformative learning throughout the educational system. The chapter draws on the results of the national "School Matters" research project (2014-2018), to provide the meta-analysis of the sense-making in national curriculum making. Results suggested that the shared sense-making focused on engaging educational practitioners in learning at all layers of the system. However, the means for facilitating shared sense-making between the different layers of the system and curriculum was perceived to be less coherent by the stakeholders at the district and school level, than at the state level. This implies that the educational providers should not only be involved in co-creation of the aims, contents and values of the curriculum document, but also in designing novel and ecologically valid ways for orchestrating the complex and dynamic curriculum making.

## **KEYWORDS**

1. Curriculum reform
2. Curriculum renewal
3. Curriculum making
4. Sense-making
5. Transformative learning

### Introduction: Finland in the global scene

The national core curriculum is renewed in Finland approximately every ten years, the most recent renewal being in 2014 (Finnish National Agency for Education 2014). The core curriculum sets general goals, providing the foundation for district- and school level curriculum development work (Finnish National Board of Education, 2016). Finland has been said to travel its own way (Sahlberg, 2011); for example, it has not joined the global education reform movement (GERM); nor has it embarked on outcome-based education (OBE). Since the 1960s, comprehensive school reforms in Finland have focused on developing the system in a sustainable way (Sahlberg, 2015). Finland is not, however, free from trends like internationalisation, demographic changes, changing labour markets, and global citizenship; nor is it free from supranational influences in education. Finland's success in PISA has influenced, or even dominated its discussion of education in the last ten years, and the recent drop in ratings (PISA 2015; 2018) has caused distress and worried tones in public and political discussion. Moreover, messages from transnational educational policy (e.g. OECD) and 'Global Curriculum Speak' (van Akker 2019; OECD 2018) are apparent in the Finnish educational system, and in the school core curriculum, so one might argue that the Finnish way is constantly challenged by pressures coming from the supra layer of education.

In accordance with the current curriculum discourse, Finland has committed to maintain solid foundations in literacy and numeracy, while simultaneously introducing broader capabilities and competencies, such as social, moral, ethical, physical and aesthetic aspects into the curriculum (Salonen-Hakomäki et al., 2016). In addition, the so-called transversal competencies play a key role in Finnish core curriculum 2016 (Finnish National Agency of Education, 2016). They include skills such as learning to learn, multiliteracy and participating in building sustainable futures, which reflect the discussion on the 21<sup>st</sup> century skills; creativity, collaboration, responsibility, resilience, critical thinking (Ananiadou & Claro, 2009). However, the main architects of the core curriculum emphasise that Finland does not blindly follow the international trends, but makes original interpretation and adapts them to the Finnish context. They refer to international policy trends but also to research on learning and teaching in keeping up with the changing scene of education. As one of the officials in the Finnish National Agency of Education puts it: "I have many times called the core curriculum a cultural condensate; every tenth year we distillate the perspectives and knowledge on good quality learning and teaching that have accumulated from various sources" (interview with FNAE officer 2014 in Salonen-Hakomäki, Soini, Pietarinen & Pyhältö, 2016)

National jurisdictions mediate global trends to meet national needs and policy with different strategies and traditions of curriculum making. In Finland, implementation strategies of the curriculum reforms have varied during the history of Finnish comprehensive school: strategies started out with a rather centralized model (from the 1970s to the 1980s), evolved towards a model that emphasized locality (in the 1990s) and reverted to a more centralized model (in the 2000s) (Nevalainen, Kimonen, & Hämäläinen, 2001; Vitikka et al., 2012). Currently, the system is relatively decentralized and relies heavily on school autonomy and empowering schools and teachers in reform work (Sahlberg, 2010), and curriculum making could be viewed as representing the tradition of process control aiming to develop, not just to deliver, curriculum policy (Molstad, 2015). In Finland, the meso layer especially, that is curriculum making activities in districts, is tailored to meet regional/local needs. In the micro layer of school, teachers are trusted, highly educated agents of change, and they have autonomy to form their final interpretations of the curriculum document and make creative pedagogical choices within the curricular framework (Sahlberg, 2011; Toom & Husu, 2012). For example, teacher communities can decide how widely they apply the integration of subjects in their school, or principals and municipalities can decide on the themes they are focusing on and accordingly, resource allocation, for example using experts outside school locally. Hence,

districts, schools and teachers are highly autonomous about curriculum making at the local sites of activity.

Accordingly, curriculum making relies heavily on shared sense-making as a tool for transformative learning throughout the educational system. This entails building alignment between the strategies for orchestrating the reform, as well as negotiating the degrees of autonomy and trust for the educational stakeholders. Shared sense-making entails constructing a collective understanding about the reform, including its significance and its implications for school. This involves building bridges between the old and new understanding, and designing interpersonal arenas for learning across the layer of the educational system (i.e. a systemic approach). At its best, this results in re-interpretations and shared new understanding of the reform, both inside and between layers, and finally of the pedagogical practices provided by it. In this chapter, we draw on the results of the national “School Matters” research project (2014-2018) to provide a meta-analysis of the shared sense-making in national curriculum making. The project concentrated on developmental processes in large-scale school reform, and was linked with the implementation of the recent national curriculum reform in Finland. The longitudinal design of the project includes data sets from 75 schools and about 1500 teachers, here viewed as micro layer, 550 district layer actors, viewed as meso layer and 117 state layer actors, viewed as macro layer. Data were collected following the curriculum making process in Finland, from the core curriculum policy process in 2014, to adoption in schools in 2016. Different data sets form a nested structure which is utilised in the meta-analysis for this chapter. Data and methods are presented in Appendix A. These are also published as separated original studies which are referred to in the text. Shared sense-making is happening in all of these layers, and in this chapter our aim is to discuss the strategies used in this and, also differences, challenges and success both within and between layers.

### Curriculum renewal in Finland

Finnish curriculum reforms are carried out via a participatory approach, engaging a wide range of different stakeholders from the different layers of school system into collaborative building of the new core curriculum (van den Akker, 2003; Sullanmaa, Pyhältö, Pietarinen & Soini, 2019; Pietarinen, Pyhältö & Soini, 2017; Tikkanen, Pyhältö, Soini & Pietarinen, 2017). Participatory reforms, in contrast with political or technocratic reforms, offer opportunities in considering different viewpoints when reforming education. When teachers, principals, administrators, policy makers, parents, pupils and various professionals are seen as core possessors of wisdom and competences (Hargreaves, 2007; McLaughlin & Mitra, 2001), the conditions for wide collaboration have to be carefully considered. The final aim during the participatory process is to build ownership among the educational practitioners<sup>1</sup>, who are committed to sustain, deepen and spread the principles of the reform in their work in the field of education (Coburn, 2003; Fullan, 2007). Particularly, the latest Finnish curriculum reform process (2012-2016) embraced the participatory reform approach, calling educational stakeholders to design interpersonal arenas for learning across the layers of the educational system (see e.g. Sahlberg, 2011; Salonen-Hakomäki et al. 2016).

In the Finnish school system, the core curriculum is the central system-wide steering strategy of basic education (Vitikka et al., 2012), and state-led reform occurs approximately every ten years. The document constitutes—in addition to the core content of subjects—the general

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<sup>1</sup> We use the term practitioner here to refer to multiple professionals working the field of education and using curriculum as directing or advising document in their work, e.g. teachers, principals, chiefs of education in municipalities, and people who work in school related clubs.

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principles and approaches to themes like learning, learning environments, welfare, and special needs. A central and much discussed aim of the new curriculum is to promote instruction with an integrative approach, to help pupils to combine the knowledge and skills provided by different subjects, by describing seven transversal competence areas. To support teachers in the assessment, the core curriculum provides the criteria for good performance for assessment at the end of grade six and the final assessment in grade nine. The assessment emphasizes encouraging pupil learning, not comparing with each other, and self-assessment of that learning.

Core curriculum reform work is a process that finally leads to writing the core curriculum document. It is based on the Finnish Parliament's decision on the distribution of lesson hours: the Ministry of Education and Culture prepares and presents the proposal and the Finnish Parliament makes the final decision about which subjects are included in curriculum, and how many lessons per week at the minimum these subjects are taught in each grade level and every classroom. This political decision acts as a basis for the core curriculum reform work, which is allocated to the Finnish National Agency for Education (FNAE). The FNAE has the total responsibility and power over preparing the core curriculum reform work (Finnish National Board of Education, 2016), based on the performance agreement with the Ministry of Education and Culture. Thus, the central macro layer school administrators—i.e. the FNAE officials—hold a key position in the reform as both decision-makers and central executors of the reform. Compared to many countries, Finnish curriculum reform is then actually led by officials specializing in basic education, not politicians, possibly enabling a more sustainable development that is less vulnerable to changing political influences and interests. Moreover, FNAE officials in the area of basic education work in collaboration with officials coordinating early education, pre-school and upper secondary and vocational education in order to form coherent educational paths. Hence, the core curriculum reform is an overarching, system-wide process.

In the latest curriculum reform (see Finnish National Board of Education, 2015a), hundreds of stakeholders—for example, representatives from universities, schools, and associations, such as the Finnish Parents' League—were invited by the FNAE to participate in the core curriculum reform working groups and seminars. The steering group, composed of different stakeholders and led by the head of FNAE, commented on and guided the work of the working groups regularly, to ensure that various perspectives were taken into account when compiling the final core curriculum document. There were also wide opportunities for public comments; indeed, all citizens were encouraged to comment freely on the drafts online, and more structured feedback was collected from schools and municipalities as well. The finalized core curriculum document then serves as the basis for local interpretation at the district, municipal and school layer.

The school district sites of activity, that is the meso layer curriculum making and collaboration were particularly essential in the latest curriculum reform process. The local curriculum work was orchestrated by coordinating groups at the districts consisting of municipal actors and educational practitioners from the schools (Sahlberg, 2015; Vitikka et al., 2012). More specifically, these coordinating groups played a central intermediary role in interpreting, integrating, and transforming the general goals of the core curriculum into the school development work. Their task was to facilitate learning, communication and collaboration in and between the schools, and orchestrate the curriculum work in the school districts. In practice, the coordinating groups ensured that written local curricula in districts was based on the national core curriculum. Moreover, they ensured that curriculum work followed the agreed form of collaboration. Since the districts had high autonomy in organising the work, the forms of collaborating ranged from groups involving representatives from several municipalities, especially in the areas including small neighbouring municipalities, to the groups carrying out the reform work within the municipality or in one city. Compared to the previous curriculum reforms in Finland, the schools in the district did not construct school-based curricula, but they were engaged in contributing to the process of district's- curriculum making (Mølsted, 2013). This change is both a consequence of an increase in municipality responsibility in organising basic

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education and of the feedback from previous reforms, where the responsibility and workload of curriculum making in schools has been experienced as too heavy. Autonomy and participation of teachers in districts' curriculum making have been emphasised in the latest reform, and most of the curriculum makers in that meso layer were teachers (Palomäki, Soini, Pietarinen & Pyhältö, 2020).

### **Shared sense-making as a tool for transformative learning in curriculum making**

Educational change is inherently complex and non-linear, and even a very systemically sophisticated curriculum reform will produce non-linear, back-and-forth processes and emerge in a patchy and incomplete manner (Spillane, Reiser, & Reimer, 2002). Therefore, coherence and ownership require shared sense-making in every phase of the curriculum reform and in every layer of the system. The meanings for the reform goals have to be created and recreated as it proceeds. Shared sense-making entails processing and building new understanding about the reform together and using it to determine future actions in a way that is meaningful for those who are involved (Weick, Sutcliffe & Obstfeld, 2005; Hargreaves, Lieberman, Fullan & Hopkins, 2009). Further, it involves building bridges between old and new understandings. Accordingly, shared sense-making entails constructing a collective, context-sensitive meaning for reform, its significance and its implications for schools through dialogue and negotiation (März & Kelchtermans, 2013; Pietarinen, Pyhältö & Soini, 2017; 2016) and hence applies a socio-cognitive approach to policy implementation (Coburn, 2005; Spillane, Reiser, & Reimer, 2002).

The approach emphasizes interpreting, adapting, and transforming policy messages in an interactive process that is influenced by participants' cognitive efforts whilst simultaneously embedded in social and structural conditions (Coburn, 2001). The reform is re-constructed at each layer of the educational system, as it is interpreted by different stakeholders and then mediated to the next layer (Coburn, 2005). At its best, this results in re-interpretations and shared novel understandings of the reform under construction, and anticipating new practices required to achieve the reform aims. Especially in curriculum reform aiming to develop, not just to deliver curriculum policy, implementation should be understood as a two-way interaction, shaping and shaped by the mediators (Mølsted, 2015; Spillane et al., 2002).

In the case of Finland, the way that curriculum making was organised nationally forced the meso layer of the districts to construct collective understanding of the reform and its implications for schools. That promoted the district layer actors'—the members in the coordinating groups—capacity to develop more systemic, connected and holistic perceptions of implementing the curriculum work at the grassroots sites of activity. In other words, coordinating the local curriculum making triggered learning in the groups; sense-making took place first in the interpersonal arena, between the educational stakeholders involved in the coordinating work, then triggered more profound changes at the intrapersonal layer, in individuals' thoughts and actions. This created a sense of ownership and agency in terms of the intended curriculum reform and allowed group members to perceive themselves as subjects of the development work (Pyhältö, Pietarinen & Soini, 2018).

Yet, shared sense-making does not automatically result in functional or novel understandings, and in the development of related practices. For instance, Gawlik (2015) showed that school leaders were inclined to adopt approaches that reinforced their pre-existing understandings, rather than employed interpretative frameworks that sought to enact policies that they deemed to be the most crucial at the micro layer of schools. Shared sense-making can also result in justified resistance, if the reform is deemed to be counterproductive by the educational practitioners (e.g. Berkovich, 2011). Teachers may also resist reforms due to feeling ambivalent and under-represented in curriculum

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development at the macro layer. The kinds of strategies employed in shared sense-making, to a large extent, determine the quality of the sense-making, stakeholders' opportunities to engage in it, and hence the extent to which opportunities for new learning occur (Coburn, 2005; Nordholm, 2016; Priestley, Edwards, Priestley & Miller, 2012).

The strategies of shared sense-making eventually contribute to whether the educational practitioners embrace, reject, adapt to or adopt the reform. Different strategies can be employed in different purposes in shared sense-making. Management strategies are often needed in complex reform processes, typically to provide a structure for the reform work and to allocate resources, whereas navigating strategies, such as maintaining the focus of the reform, are needed in keeping it on track between the layers of the educational system. Engaging collaborative strategies that facilitate collaboration between layers of the education system, promote active participation and knowledge sharing among the reform stakeholders and facilitate construction of a holistic understanding of the reform, promote collaborative learning and, hence sustainable school change (Guhn, 2009; Petko et al., 2015; Priestley, Biesta, Philippou & Robinson, 2015; Pietarinen, Pyhältö & Soini, 2016; Ramberg, 2014). On the other hand, it has also been shown that curriculum reform stakeholders may also avoid critical learning characterised by open-ended and problematising discussion, as a strategy to reduce the complexity of curriculum reform work (Nordholm, 2016).

The strategies can be employed for different purposes in the course of the reform work, depending on the task at hand, the sub-goals to be achieved and the expertise of those involved in the process. They can also be more or less intentional, systematic, and coherent in terms of goals. However, the strategies utilised in orchestrating the curriculum work always reflect the orchestrators' understanding of the means to carry out the reform (i.e., their theories of changing in terms of the curriculum reform). Moreover, they are affected by the organisational values, traditions, norms and professional practices, providing the multiple lenses through which those involved in curriculum reform within their districts make sense of the reform, and shape appropriate responses to it. Hence, the orchestration of shared sense-making always also incorporates power relations and influences the conditions of participation and learning of those involved in it (Coburn, 2005).

In large scale educational reforms, both the shared sense-making and the orchestrating of it at the subsequent layers of the system have an effect on reform goals and ideas, as they are transformed in the process changing the whole system. In the end, the relevance and potential of curriculum making for schools (i.e., school impact) depends on the ways in which the collaboration between the layers of the education system have been organised and sustained. For school impact, the core question is to what extent the shared understanding of the aims of the reform and local needs and characteristics of the schools can be fitted together (Alvunger 2015; Fullan, 2007; Petko et al., 2015). Hence, understanding sense-making inside and between layers of an educational system is highly important.

### **Empirical findings and lessons learned in Finnish curriculum reform**

The meta-analysis of the separately published empirical findings (data and methods, see App A) from our research project showed that the shared sense-making in the current Finnish curriculum reform focused on engaging educational practitioners, such as teachers, teacher educators and administration staff, in learning by designing participative forums and forms of collaboration for educational stakeholders at all layers of the system. More specifically, curriculum making in an educational system, that is relatively decentralized and relies heavily on school autonomy and empowering schools and teachers in reform work, seems to contribute to the participatory learning process in which the balance between the steering (i.e. top-down approach) and dialogue (i.e.

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bottom-up approach) is crucial. Moreover, it seems that the participatory implementation strategy in Finland triggers and develops the practitioners' expertise in the management, navigation and collaborative regulation of the reform as a two-way interaction, where the goals of the reform as well as strategies of curriculum making are shaped by the multiple educational stakeholders (Mølstad, 2015; Spillane et al. 2002). However, the means of facilitating shared sense-making between the different layers of the system (i.e. state–district–school) varied; transformation (i.e., envisaging future schooling) was the primary navigating strategy for shared sense-making in developing the national core curriculum document, as an officer from the Finnish National Agency for Education describes:

So, in a way, it is all about this pedagogical change.... It would bring about pupil-centeredness and working methods that support learning by doing, change the teacher's role, enable the utilization of new technology, make it possible to get away from the rush. It would meet the various challenges that we have here now and focus on what is done and how to do it. ... And then, we are pretty much getting under the skin of the teachers. (Interview of FNAE officer in Salonen-Hakomäki et al., 2016.)

At the districts, capacity building was perceived as key for orchestrating and disseminating the curriculum work across the steering groups, schools, and teachers. Therefore, local curriculum making emphasised the strategy of engaging educational stakeholders (Pietarinen et al., 2017). Meso layer actors in districts also relied more heavily on comparison, such as contrasting the new core curriculum against the previous iteration.

Also, the earlier curriculum focused on controlling the content of a subject and going through the issues to be covered during the course. Now the focus has shifted, it has been turned upside down. This new curriculum focuses on the operating culture and methods of the school, on doing things together, and on participation. (Participants in municipal coordinating group in focus group interview in Pietarinen et al., 2017)

Furthermore, more dynamic, integrated and complex strategies of shared sense-making were applied at the more advanced stages of local curriculum making. This entailed connecting the curriculum making into the other school development initiatives and integrating the curriculum process with previous and ongoing local development work. Coordinating groups facilitated learning in districts' sites of activity, for example by creating spaces for teachers' professional development, and aimed to identify the social resources available for enhancing the development work. These findings imply that orchestrating the shared sense-making process during the curriculum reform was more intentional, systemic, and holistic in terms of what should be changed and how the curriculum would contribute the transformation of school practice, at both meso layer of the districts and micro layer of schools rather than at the state layer.

Participant 1: We had the chairpersons of all subject and topic groups present, we looked at the final touches on where we are now and what future needs there are with the introduction of this curriculum and what kind of training and support is needed for that, so those are the kinds of things we were checking with them yesterday.

Participant 2: And the chairpersons have considered these joint meetings of ours very important, that there has been peer-to-peer discussion there and sharing of experiences of



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this kind. Then we have had, for principals...Meetings for principals, so the principals, school leaders in this area have been called together at certain intervals and they have been told where things stand now with the curriculum work.

Participant 3: And also the educational management. (Participants in municipal coordinating group in focus group interview in Pyhältö et al., 2018)

...teachers have really had to think about what it is that I have to, like, change and they have now suffered there this year and blustered and kicked at corners and asked if they have to do it, do they have to do it if they don't want to. But, like, quite many have already been able to get started (N2: Yeah.) and I thought that the day stipulated in the collective bargaining contract [in-service training day] there was very good, when people from different municipalities talked to each other too, it always brought some of that added value and then perhaps it was noted that well, we have done this before, that this is nothing, I just maybe have to, like, consciously think about things in a different way... (Participant in municipal coordinating group in focus group interview in Pyhältö et al., 2018)

The empirical findings also showed that the perceived capacity and success in individual and joint sense-making, aimed at creating new knowledge from prior knowledge, experiences, values and beliefs through dialogue and negotiation in the curriculum work, differentiated between the educational actors operating in state, district or school sites of activity. More specifically, the educational stakeholders responsible for generating the new written core curriculum within the set timetable (i.e. state layer actors) perceived the change management that provides sufficient frames and guiding for the shared sense-making in curriculum work more positively [Mean=5.09] than actors at the meso layer of districts [Mean=4.10] or micro layer of schools [Mean=4.12] (see Table 1.) (Tikkanen et al., 2019).

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Moreover, there were observed differences between the macro layer [Mean=5.26], meso layer [Mean=4.60] and micro layer [Mean=3.97] actors perceived capacity to regulate an intentional knowledge sharing that promotes the transformative dialogue, negotiation and agency within each layer of the system. The empirical findings further showed that there was variation between the layers of educational system, in the extent to which the stakeholders experienced that the curriculum making was carried out by utilizing management and engaging collaborative strategies; these included change management and knowledge sharing, including exercising participative leadership and activating stakeholders' shared sense-making in each layer of the system (Tikkanen et al., 2019).

Educational stakeholders also evaluated the perceived school impact, including the relevance and potential of the curriculum reform work to support locally functional school development to be relatively high (see Table 1.) The micro layer practitioners, teachers and principals perceived the relevance and potential of the curriculum work for locally functional school development significantly lower [Mean=4.43] than it was perceived among the meso layer [Mean=4.76] or macro layer [Mean=5.16] actors. It seems that maintaining shared sense-making gets more challenging when reform proceeds from the macro to meso and micro layers of the system. However, the dynamics and intertwined relations ( $r^{(min-max)} = .49-.76$ ) between the change management, intentional knowledge sharing and school impact, which contribute to the success in

shared sense-making and maintain the balance between the steering and dialogue in the curriculum work, were perceived similarly in each layer of the system (see Table 1)(Sullanmaa 2020; Tikkanen et al., 2019).

The empirical findings at the micro layer also revealed that there was an indicative variation in the schools' capacity to conduct the shared sense-making in terms of curriculum making. In other words, the extent to which the professional communities utilized change management and knowledge sharing, as a route for enhancing learning-oriented sense-making in their communities, varied. This, in turn, was reflected in the extent to which school communities perceived gaining concrete benefits from the large-scale curriculum reform (Soini et al, forthcoming).

Overall, the empirical findings showed that the macro, meso and micro layer actors' perceptions of change management and knowledge sharing, which are crucial means for sustaining the shared sense-making and which further contribute to the perceived school impact of the curriculum reform, differed from each other. The experiences were more negative towards the micro layer of schools. Strategies of management, navigating and regulating learning intensive and engaging collaboration were used in all layers. However, in meso and micro layers, strategy use was more diverse, and the focus of joint negotiation and dialogue was in both goals and means, that is in thinking about what should be in the curriculum document and how the process of curriculum implementation should happen. Moreover, results suggest such strategy use can be intentionally learned. Consequently, strategies may develop and hence may be utilized more efficiently for the benefit of the professional community (Pyhältö et al., 2018).

## Conclusions

Our findings imply that even though sense-making was apparent in all sites of activity of the system, orchestration and focus of it varied in different layers. Sense-making focused more on how to process the intended curriculum transformation in practice and impact of the curriculum renewing for school communities at the meso and micro layers than the macro layer. This is a very crucial question that practitioners working in the grassroots layer of reform cannot avoid. In the end, changes in the school's everyday life require, for example, principals to make decisions that not everybody in the teacher community agrees with, and sometimes ignore even strong resistance in order to keep the schoolwork rolling. This change in focus is illustrated in Figure 1 and it reflects the findings in Table 1 above.

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FIG 1 HERE  
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Differences in the objects and dynamics of the shared sense-making naturally reflect the differing roles, resources and conditions in different layers of the system. Finland, compared to many countries such as the United Kingdom, is rather a homogeneous culture and hence there has been relatively broad agreement in main directions of educational development (Sahlberg, 2011). Actors in the macro layer have been able to find consensus in process of curriculum making, however variety increases towards the micro layer. Current developments in the Finnish society – migration, growing socio-economical differences – adds to this. Differences both in experiences of used strategies and focuses in sense-making may produce gaps and incoherence, and hence challenge the intended goals of the curriculum reform as a whole. It may be argued that in participatory curriculum reforms that rely on successful shared sense-making, not only within the layers of the school system, but particularly between them, requires a systemic approach. That means, that

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educational providers should not only be involved in the co-creation of the aims, contents and values of the new core curriculum, but also in designing novel and ecologically valid ways for orchestrating the complex and dynamic curriculum making. This calls for developing specified strategies of sense-making within and especially between different sites of activities in layers of the educational system that enable and very intentionally design, interpersonal arenas for learning.

We argue that, if shared sense-making is not successful and actors in the educational system from top to bottom are unable to construct meaning about abstract meta-goals drawn for example from a supra layer of education, these will not translate into meaningful pedagogical practices. Hence, these supra or macro layer goals will not fit into the every-day contexts where education happens and will not benefit the micro and nano layer of schools, teachers and pupils. In these cases, there will be challenges of ownership and sense of coherence in terms of the intended direction of the curriculum reform (Sullanmaa et al., 2019; Tan & Nashon, 2015). However, this leads to a more profound principle of using (or wasting) human capacity in identifying ecologically valid educational development; in true democracies the intentions, initiatives and new ideas in education should be placed under rigorous sense-making in every layer of the educational system to become evaluated, developed and modified in a meaningful way. Shared sense-making both translates the reform goals to meaningful action in schools and acts as a filter against initiatives that do not fit or are assessed as non-functional in the real-life school settings.

Moreover, to facilitate a sense of coherence and ownership, systemic approaches should penetrate all the layers of the educational system, not just as a strategy of leading, but as a way of thinking of individual actors. Systemic approaches cannot be designed from top-down, since the actors in different layers see a different landscape of reform and sometimes things appear clear and functional at the top, but actually create chaos at the bottom (Fullan, 1996). Sense-making in every layer of the system should include systemic orientation; thinking and trying to understand the other layers and consequences that actions and interpretations in one layer has to others. For example, even though macro layer actors are mostly focusing on sense-making of the varying initiatives from supra and macro layers of the system, there should be intentional and well-informed sense-making on the possible consequences and ways of implementing these in the meso and micro layer. Conversely, even though the schools are focusing on everyday practices of teaching, they should be well enough informed and aware of the sense-making behind visions, intended direction of the curriculum reform and long-term goals coming from the macro layer.

Leadership that focuses on sense-making in every layer, aiming to make sure that as many participants as possible have the opportunity to create meaning and make sense about the reform goals, requires top-down and bottom-up balancing and using diverse and apt strategies. In the Finnish case, the meso layer of district seems to have succeeded in developing managing, navigating and engaging collaborative strategies that help them balance and lead curriculum making in a meaningful way, focusing not only on *what is changing* but also on *how the change can be brought about*. Accordingly, at the meso layer considerable amount of time and energy was used in making sense about how to anchor changes in schools' everyday practices (Pyhältö et al., 2018) and hence, facilitate sense-making and understanding between layers of the educational system. It also seems that school communities which have learned to learn from reforms are able to utilize them as a fuel for sustainable school development. Therefore, schools that already have a high capacity for school improvement are more efficiently able to develop into a rich learning environment for teachers and integrate reforms into their practices (e.g. Thoonen et al. 2012). A balanced school leadership at the micro layer seems to be the key in this kind of capacity building, and Finnish schools somewhat differ in terms of leading the shared sense-making in school (Soini et al. submitted).

Leadership at the macro layer of the state happens mainly through the national curriculum as a written and normative document. Hence, it is noteworthy that the written curriculum document itself regulates the success of shared sense-making in reform. In order to initiate and support sense-

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making, the written core curriculum should communicate the big picture clearly, for example be transparent in terms of influences from the supranational layer, and be coherent, for example create sufficient alignment between meta-goals of the curriculum and changes they imply to classroom practices. Moreover, meaningful sense-making throughout the layers of the system requires that macro layer actors allow this re-construction to happen. For example, the goals set in the state layer have to be adjustable and flexible enough. Accordingly, the core curriculum as a normative statement of the nation should scaffold a balanced leadership in the system, providing sufficient steering and allowing interpretation and adaptation. This is especially important in decentralised educational systems where the new knowledge creation and participative learning are seen as the core drivers of educational change.

The current written core curriculum document in Finland has not fully succeeded in curriculum making. In the public debate based largely on some polls conducted by, for example, the teachers' trade union or Finnish public service media company, it has been accused of being too long, rich in content and abstract and therefore leaving too much responsibility to the meso and micro layers' sense-making. However, it could be argued that the Finnish macro layer's attempt to filter, adapt and apply understanding from research, the educational field and from supranational discourse supports ownership and coherence of stakeholders better than just adopting and implementing some supra layer frameworks or regulations as such. In the Finnish case, the participatory reform and sense-making – even sometimes too excessive or forced – seem to have built capacity to balance, construct coherence and find novel educational ways as a nation.

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Appendix A

Data sets used in the meta-analysis. Data is collected following the curriculum making process in Finland from the core curriculum process 2014 to adoption in schools 2016 and forms a nested structure from macro to micro layer.

LAYERS	YEAR	DATA	PARTICIPANTS	ANALYSES
MACRO LAYER	2014	Individual interviews about core curriculum making	FNAE officers n=23	<b>Qualitative</b> Abductive content analysis
	2014	Curriculum Reform Inventory	Participants in core curriculum making work groups n=116	<b>Quantitative analysis</b> One-way analysis of variance (ANOVA)
MESO LAYER	T1 2014 T2 2015	Group interviews about the local curriculum making	Coordinating group members in districts n=12 groups	<b>Qualitative</b> Abductive content analysis
	2015	Curriculum Reform Inventory	Participants curriculum making work groups n=550	<b>Quantitative</b> <ul style="list-style-type: none"> <li>One-way analysis of variance (ANOVA)</li> </ul>
MICRO LAYER	2016	Curriculum Reform Inventory	Teachers and principals, n= 1556 (in 74 schools)	<b>Quantitative</b> <ul style="list-style-type: none"> <li>One-way analysis of variance (ANOVA)</li> <li>Intraclass correlation coefficient (ICC) &amp; multilevel SEM analysis</li> </ul>

## References

Alvunger, D. (2015). Towards new forms of educational leadership? The local implementation of förstelärare in Swedish schools. *Nordic Journal of Studies in Educational Policy*, 1(3), DOI: 10.3402/nstep.v1.30103

Ananiadou, K. & Claro, M. (2009). 21st Century Skills and Competences for New Millennium Learners in OECD Countries, OECD Education Working Papers, No. 41, OECD Publishing.  
<http://dx.doi.org/10.1787/218525261154>

AT21CS (2010). Draft White Paper 1, Defining 21st century skills.  
<http://cms.education.gov.il/NR/rdonlyres/19B97225-84B1-4259-B423-4698E1E8171A/115804/defining21stcenturyskills.pdf>

Berkovich, I. (2011). No we won't! Teachers' resistance to educational reform. *Journal of Educational Administration*, 49(5), 563–578. doi:10.1108/09578231111159548

Coburn, C. E. (2003). Rethinking scale: Moving beyond numbers to deep and lasting change. *Educational Researcher*, 32, 3–12. doi:10.3102/0013189X032006003

Finnish National Board of Education. (2014). National core curriculum for basic education 2014 (Vol. 2016, 5th ed.). Helsinki: Finnish National Board of Education.

Finnish National Board of Education (2016). New national core curriculum for basic education: focus on school culture and integrative approach. Retrieved 31.10.2019,  
<https://www.oph.fi/sites/default/files/documents/new-national-core-curriculum-for-basic-education.pdf>

Fullan, M. (1996). Turning systemic thinking on its head. *Phi Delta Kappan*, 77(6).  
<https://search.proquest.com/docview/218527852?pq-origsite=gscholar>

Fullan, M. (2007). *The new meaning of educational change* (4th ed.). New York, NY: Teachers College Press.

Gawlik, M. A. (2015). Shared sense-making: How charter school leaders ascribe meaning to accountability. *Journal of Educational Administration*, 53(3), 393–415. doi:10.1108/JEA-08-2013-0092.

Guhn, M. (2009). Insights from successful and unsuccessful implementations of school reform programs. *Journal of Educational Change*, 10(4), 337–363. <https://doi.org/10.1007/s10833-008-9063-0>

Hargreaves, A., Lieberman, A., Fullan, M. & Hopkins, D. (Eds.) (2009) *Second International Handbook of Educational Change*. Springer.

Hargreaves, A. (2007). Sustainable leadership and development in education: Creating the future, conserving the past. *European Journal of Education*, 42(2), 223–233.

Kivioja, A., Soini, T., Pietarinen, J. & Pyhältö, K. (2018). Mikä on keskeistä hyvässä opetussuunnitelmaprosessissa? [What is focal in good quality curriculum process?] *Kasvatus*, 49(4).

McLaughlin, M. W. & Mitra, D. (2001). Theory-based change and change-based theory: Going deeper, going broader. *Journal of Educational Change*, 2(4), 301–323.

Kentän koodi muuttunut

muotoili: suomi

RUNNING HEADER: Shared sense-making as key for large scale curriculum reform in Finland

Mølsted, C. E. (2015). State-based curriculum-making: approaches to local curriculum work in Norway and Finland. *Journal of Curriculum Studies*, 47(4), 441–461. DOI: 10.1080/00220272.2015.1039067.

März, V., & Kelchtermans, G. (2013). Sense-making and structure in teachers' reception of educational reform. A case study on statistics in the mathematics curriculum. *Teaching and Teacher Education*, 29, 13–24. doi:10.1016/j.tate.2012.08.004.

Nevalainen, R., Kimonen, E. & Hämäläinen, S. (2001). Curriculum changes in the Finnish comprehensive school. The lessons of three decades. In E. Kimonen (Ed.) *Curriculum approaches. Readings and activities for educational studies*. University of Jyväskylä. Department of Teacher Education and Institute for Educational Research, 123–141.

Nordholm, D. (2016). State policy directives and middle-tier translation in a Swedish example. *Journal of Educational Administration*, 54(4), 393–408.

OECD (2018). *The Future of Education and Skills. Education 2030*. Retrieved 31.10.2019, [https://www.oecd.org/education/2030/E2030%20Position%20Paper%20\(05.04.2018\).pdf](https://www.oecd.org/education/2030/E2030%20Position%20Paper%20(05.04.2018).pdf)

Palomäki, A., Soini, T., Pietarinen, J. & Pyhältö, K. (2019). Reaching for a new culture of learning in schools – District-level work on the curriculum reform in Finland. *European Journal of Curriculum Studies*, 5(2), 916–935.

Petko D., Egger N., Cantieni, A. & Wespi, B. (2015). Digital media adoption in schools: Bottom-up, top-down, complementary or optional? (2015). *Computers & Education*, 84, 49–61

Pietarinen, J., Pyhältö, K. & Soini, T. (2016). Large-scale curriculum reform in Finland – exploring the interrelation between implementation strategy, the function of the reform, and curriculum coherence. *The Curriculum Journal*, 28, 22–40. DOI:10.1080/09585176.2016.1179205

Pietarinen, J., Pyhältö, K. & Soini, T. (2017). Shared sense-making in curriculum reform – orchestrating the local curriculum work. *Scandinavian Journal of Educational Research*. DOI: 10.1080/00313831.2017.1402367.

Priestley, M., Edwards, R., Priestley, A. & Miller, K. (2012). Teacher agency in curriculum making: agents of change and spaces for manoeuvre, *Curriculum Inquiry*, 43, 191–214.

Priestley, M., Biesta, G.J.J., Philippou, S. & Robinson, S. (2015). The teacher and the curriculum: exploring teacher agency. In D. Wyse, L. Hayward & J. Pandya (Eds.), *The SAGE Handbook of Curriculum, Pedagogy and Assessment*. London: SAGE Publications Ltd

Pyhältö, K., Pietarinen, J. & Soini, T. (2018). Dynamic and shared sense-making in large-scale curriculum reform in school districts. *The Curriculum Journal*, 29(2). DOI:10.1080/09585176.2018.1447306

Pyhältö, K., Soini, T. & Pietarinen, J. (2012). Do comprehensive school teachers perceive themselves as active agents in school reforms? *Journal of Educational Change*, 13 (1), 95 –116.

Ramberg, M. R. (2014). What makes reform work? School-based conditions as predictors of teachers' changing practice after a national curriculum reform. *International Education Studies*, 7(6), 46–65.

Robinson, S. (2012). Constructing teacher agency in response to the constraints of education policy: Adoption and adaptation. *Curriculum Journal*, 23(2), 231–245. doi:10.1080/09585176.2012.678702

Sahlberg, P. (2010). Rethinking Accountability in a Knowledge Society. *Journal of Educational Change*, 11, 45–61.

RUNNING HEADER: Shared sense-making as key for large scale curriculum reform in Finland

Sahlberg, P. (2011). The fourth way of Finland. *Journal of Educational Change*, 12, 173–185. doi:10.1007/s10833-011-9157-y

Sahlberg, P. (2015). *Finnish lessons 2.0: What can the world learn from educational change in Finland?* (2nd ed.). New York: Teachers College Press.

Salonen-Hakomäki, S., Soini, T., Pietarinen, J. and Pyhältö, K. (2016). The way ahead for Finnish comprehensive school? Examining state-level school administrators' theory of change, *Journal of Curriculum Studies*, 48(5), 671–691.

Spillane, J. P., Reiser, B. J., & Reimer, T. (2002). Policy implementation and cognition: Reframing and refocusing implementation research. *Review of Educational Research*, 72(3), 387–431.

Sullanmaa, J., Pyhältö, K., Soini, T. & Pietarinen, J. (2019). Trajectories of teachers' perceived curriculum coherence in the context of Finnish core curriculum reform. *Curriculum and Teaching*, 34(1), 27-49.

Sullanmaa, J. (2020). Coherence making in large-scale curriculum reform: How do educational stakeholders perceive curriculum coherence and why does it matter? Doctoral dissertation. Helsinki Studies in Education, 72. University of Helsinki, Faculty of Educational Sciences.

Tan, Y. S. M., & Nashon, S. M. (2015). Promoting teachers' collaborative exploration of a new science curriculum: the case of a Singapore learning study. *Professional Development in Education*, 41(4), 671-689. doi: 10.1080/19415257.2014.944670

Thoonen, E.E.J., Slegers, P.J.C., Oort, F.J. & Peetsma, T.T.D. (2012). Building school-wide capacity for improvement: the role of leadership, school organizational conditions and, teacher factors. *School Effectiveness and School Improvement*, 23(4) 441–460.

Tikkanen, L., Pyhältö, K., Soini, T., & Pietarinen, J. (2017). Primary determinants of a large-scale curriculum reform: National board administrators' perspectives. *Journal of Educational Administration*, 55, 6, 702–716. DOI: 10.1108/JEA-10-2016-0119

Toom, A. & Husu, J. (2012). Finnish teachers as 'Makers of the many'. Balancing between broad pedagogical freedom and responsibility. In *Miracle of Education: The Principles and Practices of Teaching and Learning in Finnish Schools* (Eds. H. Niemi, A.Toom & A.Kalliomäki). Rotterdam: Sense Publishers.

van den Akker, J. (2003). Curriculum perspectives: An introduction. In J. van den Akker, W. Kuiper & U. Hameyer (Eds.), *Curriculum landscapes and trends* (pp. 1-10). Dordrecht: Kluwer Academic Publishers.

van den Akker, J. (2019). Presentation in AERA conference, Toronto 7.4.2019.

Vitikka, E., Krokfors, L. and Hurmerinta, E. (2012). The Finnish national core curriculum. In Niemi, H., Toom A. and Kallioniemi, A. (Eds.), *Miracle of education: The principles and practices of teaching and learning in Finnish schools*. SensePublishers, Rotterdam, 83–96.

Weick, K.E. Sutcliffe, M.K. & Obstfeld, D. (2005). Organizing and the Process of Sensemaking. *Organization Science*, 16(4), 409–421. <https://doi.org/10.1287/orsc.1050.0133>.

Table 1. The educational stakeholders perceived capacity to activate the shared sense-making and intentions to increase the school impact of the curriculum making at different layers of the educational system



Figure 1: The objects and dynamics of the shared sense-making in the macro, meso and micro layers.

Table 1. The educational stakeholders perceived capacity to activate the shared sense-making and intentions to increase the school impact of the curriculum making at different layers of the educational system

<b>CURRICULUM MAKING SCALES (Likert scales 1–7)</b>	<b>CHANGE MANAGEMENT</b>	<b>KNOWLEDGE SHARING</b>	<b>SCHOOL IMPACT</b>
<b>State layer (n = 116)</b>			
Number of items/ $\alpha$	3/.79	13/.95	12/.93
<i>M</i>	<b>5.09</b>	<b>5.26</b>	<b>5.16</b>
<i>SD</i>	1.34	1.25	0.96
Correlations			
KS	.72**		
SCI	.60**	.70**	
<b>District layer (n = 550)</b>			
Number of items/ $\alpha$	3/.82	10/.91	6/.87
<i>M</i>	<b>4.10<sub>a</sub></b>	<b>4.60</b>	<b>4.76</b>
<i>SD</i>	1.43	1.11	0.96
Correlations			
KS	.71**		
SCI	.45**	.59**	
<b>School layer (n = 1549)</b>			
Number of items/ $\alpha$	3/.81	10/.91	6/.90
<i>M</i>	<b>4.12<sub>a</sub></b>	<b>3.97</b>	<b>4.43</b>
<i>SD</i>	1.23	1.04	0.98
Correlations			

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KS	.76**		
SCI	.49**	.60**	
<b>Statistical differences</b>	$F(2, 2172) = 31.23$	$F(2, 2180) = 128.91$	$F(2, 2205) = 46.46$

\*\* $p < .001$ .

**Note I.** Statistical differences between the observed means were explored with one-way analysis of variance (ANOVA). Due to unequal variances (CM and KS) and sample sizes, Games-Howell test was applied for post hoc comparisons.

**Note II.** Means sharing the same subscript within a column are not significantly different at the  $p < .05$  level.

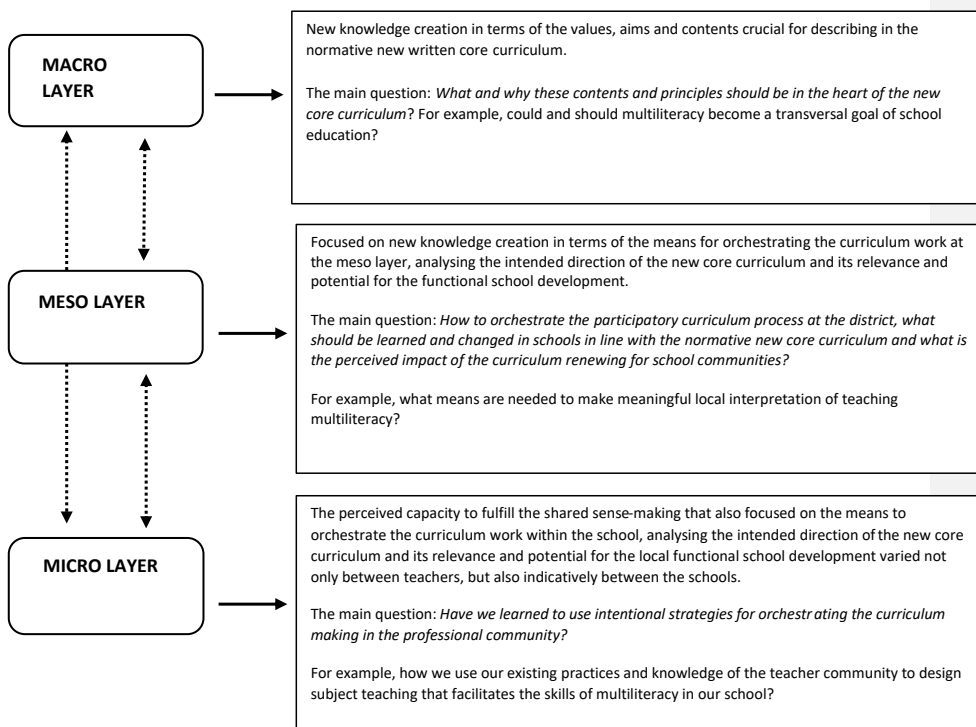


Figure 1: The objects and dynamics of the shared sense-making in the macro, meso and micro layers.