Coherence in the Greenlandic Education System? Educational Planning & Evaluation in Greenland from a Complexity Theory Perspective

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A solid primary school is an important part of the foundation for creating a strong and sustainable society. Almost every country has undertaken school system reforms during the past two decades, but very few have succeeded in improving their systems from poor to fair to good to great to excellent (Mourshed et al., 2010). History, culture, and context matter for understanding applicability, if any, of one educational innovation over another. This can be said to have been the case in Greenland. One of the fundamental objectives after the introduction of Home Rule in 1979 was to adapt the Danish structures and systems to the Greenlandic conditions and culture. This article aims to analyze the Greenlandic education governance system and how the central level design, organizes and steers education systems across complex multilevel governance arrangements. In governing educational systems, how the central and the decentralized levels interact and communicate and how this affects trust, cooperation and negotiation of conflicts, and ultimately the outcomes of reform, will be discussed.

Introduction

This article is a case study analysis of the Greenland education governance system through the lens of complexity theory. It examines the governance approach with an emphasis on the primary and lower secondary school system (grades 1-10, ages 6-16). *Coherence* in education systems is defined by Fullan and Quinn (2016) as the *shared depth of understanding about the purpose and nature of the work* across governance levels. In terms of enabling better teaching and greater outcomes for students, the focus of this article is on how the governance system coordinates and evaluates the strategies around these efforts.

Unlike other former colonized and Indigenous peoples around the Arctic, the Greenlanders constitute the majority of the population, and also have full law-related decision-making powers in many areas, including education (Darnell & Hoem, 1996). This makes education in Greenland

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unique as to the postcolonial context and society; the policies, perspectives and content of education affect not only the educational situation, but the opportunities for change and development in the society as well. However, the challenges in education that other Indigenous peoples in the Arctic face, can largely be found in Greenland as well. With only 56,000 people, the small and geographically dispersed population poses many political and economic challenges. While the education level within the population of Greenland is increasing,[1] 60% of the workforce has no education beyond primary and secondary school (Statistics Greenland, 2018).

The formal education system and the culture of education in Greenland is still young and with varying specific national and regional challenges. One of the fundamental objectives after the introduction of Home Rule was to adapt the educational systems to Greenlandic conditions and culture. The cultural and economic transformation during the 1950s throughout the introduction of Home Rule resulted in significant challenges in the attempt of adapting frameworks, content and context to the educational system in Greenland.

Greenland is facing the same challenges as education systems outside the Arctic, namely the pressure for better results and an increasing level of education in the population. However, in addressing these challenges, Greenland has a different starting point than most developed countries, and therefore has different opportunities and options available. Exploring developments in the Greenland context highlights what may be crucial to develop policies that both address and reveals some of the challenging cultural, geographic, political, and economic realities. This article examines these differences and opportunities, but also the similarities that cut across nations when it comes to effective education governance.

Literature Review: Education Governance & Complexity Theory Framework

There is a growing body of evidence on the different factors that contribute to education improvement. A number of international reports have reviewed the factors that contribute to quality education (See for example Fullan, 2015; Fullan & Quinn, 2016; Levin, 2010; Hargreaves & Shirley, 2012; Barber & Mourshed, 2007; Mourshed et al., 2010; Schleicher, 2012; Elmore, 2004; OECD, 2015). The takeaways being that to guide reform efforts, education systems rely on evaluation and assessment, and ensuring capacity at the local level to successfully implement reforms.

Currently, many educational philosophers and researchers are focusing on the complex nature of education and offer complexity theory as a useful research paradigm, and a necessary mean for understanding change within complex social systems (e.g. Snyder, 2013, Johnson, 2008). The theory of complexity offers a means to analyze emerging patterns and trends to illuminate how the disparate system parts are, or are not, working together (McQuillan, 2008: 1773). A central concern of complexity theory is *thus* with the relationships *among* the elements or agents that constitute a particular and sufficiently complex environment or system (Mason, 2008: 33). The concepts behind complexity theory give rise to analyze the reform processes retrospectively, as a way to learn more about the elements, power structures and relationships in the complex system, but also as a framework to navigate current reform processes. The successful implementation of a centrally designed reform depends largely on the capacity and the resources on the local level to fulfill the reform goals and put them into practice, as the amount and quality of connections between system elements likewise impact a system's ability to adapt (Trombly, 2014). A key challenge for countries is assuring alignment and consistency in governance approaches to guide

their entire systems towards improving outcomes. Fullan and Quinn (2016) defines *coherence making* in education as a continuous process of making and remaking meaning in your own mind and in your culture, resulting in consistency and specificity and clarity of action across schools and across governance levels, as a way to create consistency and alignment.

Understanding the origins of the dynamics of educational systems from a complexity lens opens up a fresh perspective for thinking about and managing these systems. As according to Trombly (2014: 48), complex systems whose *agents and* elements are isolated from one another are both slower to adapt and less likely to achieve genuine learning; *while* those whose *agents and* elements regularly engage *and coordinate* with one another are far more *capable* to learn and thrive (Trombly, 2014: 48). In complex systems, by not *rather than* assuming *such* predictable and linear interactions among discrete elements *in an educational system*, complexity *theory* instead draws attention to the evolving inter-relationships among system elements at various levels of the system (McQuillan, 2008: 1773). This focus on interrelationships is especially important in the Greenlandic multilevel educational governance setting, as coherence between stakeholders in various levels of the governance layers is decisive for planning in implementation. The assumptions that lead to stability of educational systems are deeply rooted in the overlapping structures that comprise the system (Model 1 is an example of a complexity model of the Greenlandic primary and lower secondary school) and indeed, within the social and cultural context in which they operate. It is essential to understand the micro-structural relationships that shape the macro behavior of the system if change efforts are to be successful.

Model 1. A complexity model of the Greenland primary and secondary school system
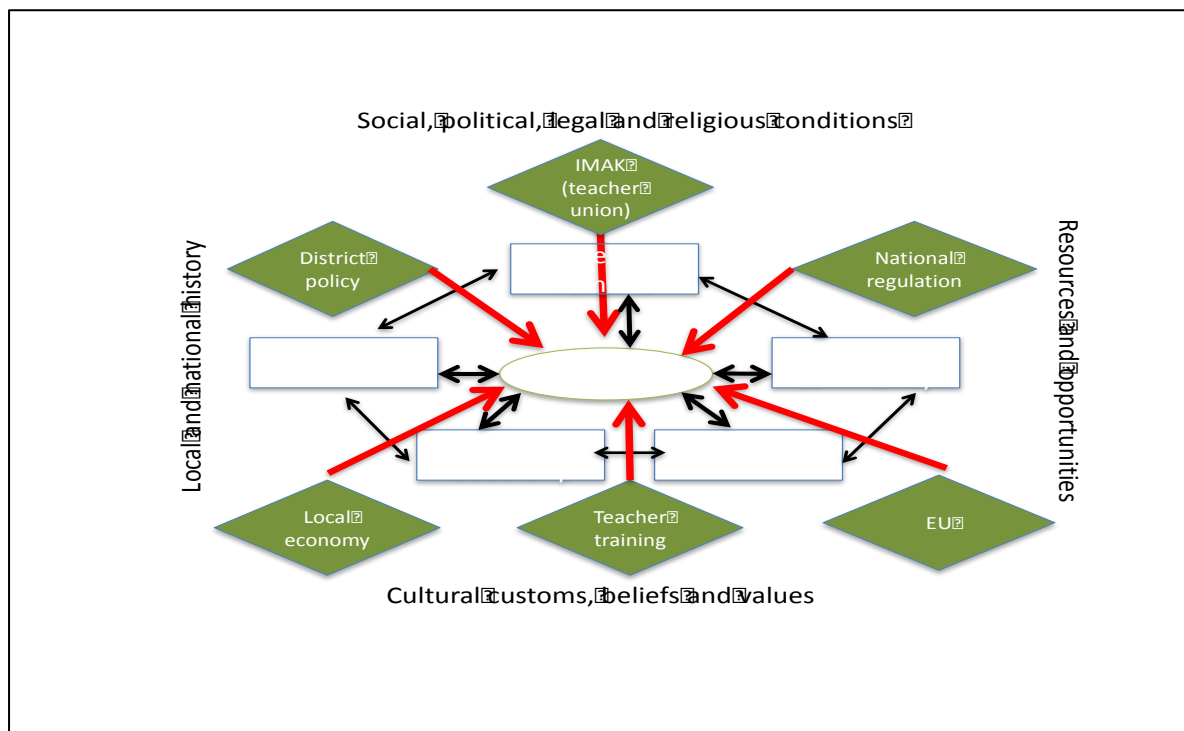
The figure illustrates how groups and organizations affect the everyday life of the school in question, but also how they affect each other.[2] Schools and education systems are self-organized in that their structure and function often spontaneously shift as the actions and reactions of

autonomous agents become interlinked. Schools and *education* systems are also emergent in that, as *the continual evolution and communication between actors* transcends the sum of the component parts (Johnson, 2008), while, however, the communication that takes place between actors within schools and the education systems is often dependent on the coherence of the short-range relationships and constructive communication within the system.

Research Problem

According to Fazekas and Burns (2012) policy making needs to be aligned to its governance structure and take into account the respective responsibilities of different actors. This article analyzes how Greenland addresses the challenges and opportunities to the educational system, and how stakeholders work for system improvement. How do the different primary stakeholders implement education policies in a complex environment and how are they supported in this process? The role of national government versus local government and school boards in countering the quality of teaching provided is examined.

Methodology

The research design, inspired by the Governing Complex Education Systems case study structure (Burns & Köster, 2016), emphasizes the analyzing of reform processes with a focus on planning, evaluation and coherence between the different actors. The present study takes a qualitative case study approach to analyze the Greenland primary and lower secondary school governance system.

Case study data collection provides the opportunity to employ multiple sources of evidence. As such, rich and descriptive data reveals the complexity involved within the selected case site. Qualitative methodology encourages detailed description and fits the objectives to document the circumstances surrounding educational policies and practices in Greenland. Practice, *or the way of doing things*, is defined by Bennett and Checkel (2014: 241) as socially meaningful and organized patterns of activities. As practice can differ from policy intentions, inquiries into 'the way of doing things' among the different actors in the governance system provides important information for understanding the context of the reform processes in the education system in Greenland.

Data Collection and Analysis

Yin (1982) considers three research methods particularly suited for examining public policies: (1) non-structured interviews; (2) documentation study; and (3) participatory observation. Empirical data were collected using in-depth interviews (n=17), informal interviews (n=10), documentary analysis and field observation (over 2 years). Observations at key meetings and interviews with primary stakeholders in different levels of government about their experiences and understandings of roles were conducted. The observation notes and interviews were transcribed and analyzed using the Nvivo software. The interview excerpts were translated by the author.

Table 1. Overview of research techniques and collected data

Research technique	Data
Text analysis of relevant primary documents	Parliamentary/governmental documents and documents produced at local level
Secondary analysis	Internal and external evaluations of policy

Semi-structured elite interviews with key stakeholders	Policy makers Representatives of school boards Heads of schools Teachers
Observation of key meetings between governance levels	Observation notes

Limitations

This study applies an empirical–analytical approach rather than a theoretical–conceptual one. I have chosen not to focus on pedagogy or curricula, however important these subjects might be in themselves, as there is much less focus on the school 'system' itself – the critical infrastructure that underpins performance – and how it creates conditions for great education for every child.

The Educational Context of Greenland

Greenland is a self-governing country within the Kingdom of Denmark. An education system strongly rooted in the Danish system was inherited when the Greenland Home Rule assumed responsibility for the education sector in 1980. In accordance with changing policies over the years the education system in Greenland has gone through an evolutionary process. With the basic political consensus being a need for higher levels of education among the population, planning in the education policy front has been the subject of demands for quick results; partly to minimize imported foreign labor, and later, to achieve more autonomy and independence.

Given that the education system was based on the Danish education system, the reality was, and still is today, that for Greenlandic students to continue studying after primary and lower secondary school it is a prerequisite that they have a working knowledge of the Danish and English language. Greenland has one university, *Ilisimatusarfik*, which offers 11 university degrees. Many Greenlandic students therefore obtain undergraduate and graduate degrees, free of tuition, in Denmark.

Today, the modern public primary and lower secondary school system, which is the focus of this research, has just about 8,000 students in 87 schools along the 4,700 kilometer habitable coast line, from Qaanaaq and Siorapaluk in the far north to Nanortalik and Narsaq Kujalleq in the south, to Ittoqqortoormiit in the East. 2017 statistics from the Ministry of Education show that 40% of the children that complete primary and lower secondary schooling do not directly continue in further schooling. The primary and lower secondary school is one unit.

Background and Outcome of the 2002 Atuarfitsialak[3] Reform

Your starting point in a school reform often has a big impact on where you end up. The work with *Atuarfitsialak* (The Good School in Greenlandic) had shown the necessity that the entire primary and lower secondary school should be redefined from being a copy of another system into an international school based on Greenlandic culture and values. A key person in the reform process wrote:

> We had to tear everything down to build it up again. It is to be a Greenlandic school, which should be competitive, international, and based on research. That has been the task here in Greenland, where there has not been much research. (Hindby in Folkeskolen, 2003, author's translation).

The purpose of *Atuarfitsialak*-reform was to improve primary and lower secondary school education. The teaching method was changed, as it departed from the traditional hourly teaching, which was based on one classroom, one teacher and one lesson, and towards a more project-oriented teaching method with the individual student at the center (Greenland Parliament Debates, Agenda 29, 2002). A major prerequisite for the anticipated success of *Atuarfitsialak* objectives was to significantly improve the physical frameworks of the schools, and more bilingual teachers to lift the task (Greenland Parliament Debates, Agenda 29, 2002).

After the preparatory phase of experience gathering, preparation of a status description, and a nationwide survey of students' wishes and attitudes towards the school, a conference was held in September 1999. The conference expressed a number of recommendations for further reform. The result was a proposal for a legislation, which for the first time in the Greenlandic history included the socio-cultural perspective of education. As something completely new, a 10-year compulsory program was laid out, divided into three clearly defined stages, each with description of purpose and educational profile (Greenland Primary and Lower Secondary School Act, 2002). The school was to be grounded in the Greenlandic culture, values, traditions and facts, but also have an international outlook.

A 'Study of Readiness' conducted by the Agency of Education (Inerisaavik, 2004), a subdivision under the Ministry of Education, was completed at the end of 2003 (same year as the start of implementation). The key results were that 10% of the teachers reported that they had detailed knowledge of formal elements in the reform and teachers reported lack of capacity building, information, teaching materials, cooperation and trained teachers as barriers for implementation.

In 2015 the primary and lower secondary school was evaluated by an external consultancy (EVA, 2015). The evaluation concluded that the municipal school authorities, including school leaders, have not been able to create or support intended changes in leadership, teaching and practice that are needed to create the educational environments that support the demands of modern society on the professional and human competencies of our children. Conclusions from the 'readiness study' (Inerisaavik, 2004) and the external evaluation (EVA, 2015) conducted 12 years later indicate that the necessary clarity and capacity to implement the intentions behind the reform has not been sufficient.

Steering from the Center in Greenland: Governance Gaps, Roles and Responsibilities

The educational system in Greenland is, like many other countries, characterized by a decentralized multi-level governance system (e.g. Wilkoszewski & Sundby, 2014; Blanchenay, Burns & Köster, 2016). This decentralization has contributed to the fact that more decision-makers and more stakeholders have become more involved in primary and lower secondary schools. The many layers of administration make relationships complex, as the responsibility for a good primary and lower secondary school is shared between decision makers across the governance system (see also Table 2). A main challenge in multi-level systems is the question of who retains the responsibility for oversight and steering. This is particularly true for the education sector, as there is a general trend towards more comparability and compatibility of curricula and education outcomes across regions and countries: even in very decentralized systems the central level will need to retain some steering capacity, if national or international standards are to be monitored and met (Burns &

Wilkoszewski, 2013). Hence, the inherent asymmetry between the various governance levels in multi-level contexts persists. This asymmetry leads to governance gaps in seven areas: information, capacity, fiscality, policy, administrative, objectives and accountability (Charbit, 2011; Charbit & Michalun, 2009).

The seven governance gaps are explored in the context of Greenland in the following sections. Schools are per force highly decentralized as the Greenlandic people live in small towns and settlements along the coastline. To be effective, reforms have to reach into even the most distant classrooms, which mean they may have to go through multiple levels of administrative hierarchy, including provincial, municipal, and school-level directors any of whom can delay, dilute, or distort reforms (Bruns & Schneider, 2016).

Table 2. Governance gaps in multi-level education governance systems

Governance gap	Description
Information gap	Asymmetries of information (quantity, quality, type) between different stakeholders, either voluntary or not. The central governance level often has better access to quality information (e.g., comparative data on school performance) than the local level. Also, the central level usually has better capacity to use this information. At the same time, the local level has direct access to information on how policy reforms affect schools – data that the central level first needs to gather. This information asymmetry on both sides can hinder the successful implementation of educational policies.
Capacity gap	Insufficient scientific, technical, infrastructural capacity of local actors, in particular for designing appropriate strategies. This gap occurs when there is a lack of human capital and financial resources between levels of government.
Fiscal/funding gap	Unstable or insufficient revenues undermining effective implementation of responsibilities at sub-national level or for crossing policies. Sub-national governments' own revenues (taxes and fees) often exceed their expenditure responsibilities in education, while the lower levels in the system suffer from too few financial means.
Policy gap	This gap results from the incoherence between sub-national policy needs and national level policy initiatives. It can occur when ministries take a purely vertical approach to policy issues that are inherently cross-sectoral.
Administrative gap	This gap occurs when the administrative scale for policy making, in terms of spending as well as strategic planning, is not in line with functional relevant areas. A very common case concerns municipal fragmentation which can lead jurisdictions to set ineffective public action by not benefitting from economies of scale.
Objective gap	A gap in objective can emerge, when the various levels do not coordinate their aims to make them coherent across policy areas. This is particularly the case when objectives are prioritized asynchronously: a national education ministry might look for strong accountability measures to foster international competitiveness of the system, whereas municipalities might first look for necessary infrastructure and capacity building.
Accountability gap	Difficulty to ensure the transparency of practices across the different constituencies. This gap occurs when the necessary institutional quality measurement mechanisms for each governance level are lacking or misplaced.

Source: Classification of Charbit (2011).

The primary and lower secondary schools in Greenland are a municipal responsibility, and neither the Agency for Education (a subdivision under the Ministry of Education) nor the Ministry of Education have any enforcement authority. *Inatsisartut* (the national parliament) sets the legal and governance framework for the primary and lower secondary school, while the detailed provisions are laid down by *Naalakkersuisut* (the national government). In the municipalities, the municipal council determines the goals and frameworks for schools' activities with by-laws. At each school, there are school boards, which - within the goals and limits set by the municipal council - lay down

principles for activities of the school. The administrative and pedagogical management of the municipal school system is regulated locally by the individual municipality.

Table 3. Overview of key roles, interests and interventions

Stakeholders	Role/interest	Intervention repertoire
Central level: Ministry of Education and The Agency of Education	-Responsible for the overall quality of teaching in primary and secondary schools -Professional consultancy service -Development of teaching materials -Evaluation of primary and secondary school activities -Provider of teacher professional development courses -Overall supervision/monitoring of primary and secondary schools	-Development of national policy -Development of quality norms -Supervision of quality of teaching -Can establish requirements and criteria in the form of accreditation models for achieving the purpose and foundation of the primary school - Issues curricula, learning objectives and standardized tests -Appoints external examiners
Regional level: (Municipal Council and administration)	-Owner of school buildings and responsible for their maintenance -The municipal council regularly supervises/monitors the activities of the schools	-By-laws -Hiring and -Supervision of quality of teaching -Establishes goals and frameworks for the school's activities
Local level: Parent School Council	-The school board carries out its activities within the goals and limits laid down by the municipal board, and supervises the activities of the school. -The school board sets objectives for the school's teaching and other activities.	-Approves the school's teaching plan for each school year. -Supervision of quality of teaching
School principal	-Manages and is responsible for the day to day operation in the school	-Internal quality monitoring -Prepares proposals for the school board regarding the school's teaching plan for each school year and guidelines for other school activities
Teacher	-Responsible for the quality of teaching in the classroom	-Make changes in the classroom -Contact with parents -Motivating the students
Parents and students	-Client of the education system, some formally part of local school council	-Participate actively in the school -Assist with day-to-day activities

Source: Greenland Primary and Lower Secondary School Act 2017, Government of Greenland. Author's translation

Decentralization has allowed local authorities and schools a greater degree of freedom to respond to diverse and local demands. Individual schools can formulate programs and school visions, missions and values with a high degree of autonomy. There are no requirements from the central or decentralized level to the existence or content of these, other than they must fit within the overall intentions of the Education Act and the municipal by-laws. Given the multilevel governance structure in the education system, the division of roles and responsibilities is a continuous matter of debate. Tension exists between steering and control on outcomes by the national government on the one hand, and the autonomy of the municipalities and schools regarding the delivery of education on the other. The central government acts as regulator for the education system, setting the legal framework and rules within which increasingly autonomous

schools must operate. Alignment in multi-level systems is a major challenge, particularly in those most decentralized systems (Hopfenbeck et al., 2013; Blanchenay, Burns & Köster, 2016). Apart from the increased role for schools and local administrations, there is a host of other stakeholders (including teacher unions, teachers, parents, the media and students themselves, see also Model 1) that play a significant role. When it comes to setting a national education strategy, negotiation and dialogue have therefore become important governance mechanisms.

The central level is required by law to carry out evaluations, collect and disseminate knowledge in order to strengthen the efforts of the municipal council in the field of primary school and lower secondary school to maximize resource utilization. In practice, due to an expressed lack of resources and capacity by the Agency of Education, this is limited to the collection and validation of data in the form of reports, standardized test results and final examination results. As shown in Table 3 and 4, the central, regional and local level of the governance system all have supervisory obligations. These obligations, however, are not specified in content nor frequency, other than what is stated written in the Greenland Primary and Lower Secondary School Act 2017. These obligations are summarized in Table 3.

Table 4. Supervisory obligations between governance levels

Central level (Ministry and Agency of Education)	Regional level (Municipal administration and Board)	Local level (School board, consisting of parent representatives)
§ 37. The Greenland Government supervises the municipality administration of this Act. Sub-section. 2. The Government of Greenland may require municipal information deemed necessary to carry out its duties under this Act.	§ 43. The municipality council has the overall responsibility for the municipal school and ensure that all children of school age in the municipality are enrolled in public school or receive an education commensurate with what is usually required in primary and lower secondary school. The municipal council sets goals and frameworks for the school's activities. The municipality council regularly supervises the activities of the schools, including in relation to the school's compliance with the provisions of the education act.	§ 47. The school board carries out its activities within the goals and framework set out by the municipality council, and shall moreover supervise the activities of the school.

Source: Greenland Primary and Lower Secondary School Act 2017, author's translation

The regulation and supervision structure of the Greenland education system reflects the traditional forms of education regulation elsewhere, known as the bureaucratic-professional model,[4] which is based on arrangements such as control of conformity to rules, the socialization and autonomy of the teaching professionals and the joint regulation regarding questions of employment or curriculum.

The supervisory obligations by the central level is hampered by the fact that the Agency of Education is on one hand obligated to supervise the quality of teaching and on the other have the responsibility for capacity development and professional learning of the teachers and schools. This construction in practice, results in the entire management and supervision of the school system resting on reports by the local school board and statistics without a professional, external authority to question the quality and validity of this information. Nor are there formulated any follow-up or

support mechanisms following the results of a supervision in a school with 'underperformance', or formulated any threshold for when a school underperforms. Apart from the formal supervision, centrally appointed examiners perform indirect supervision.

According to the Greenland Primary and Lower Secondary School Act (2017), local school boards, consisting of parent representatives, carry a significant role and responsibility, when it comes to the management and supervision of primary and lower secondary schools.

> There are probably some things about the board work as in which the board is given quite much power in relation to the regulation and such. But where the boards do not really manage to take that power. So, if a board wanted something, really wanted, then there are really many options for the board (Interview, Chairman of School Board, School X).

The local school council, a construction introduced in 1997, are to present an annual report to the municipality council. The purpose of the annual report is to strengthen the ability of the municipality council to carry out their supervisory obligation. The annual report documents the municipality school system and shall give the municipality council the foundation for assessing the academic level at the municipality primary and lower secondary schools and the opportunity to intervene if necessary (Qeqqata Municipality, by-laws, author's translation).

> The only kind of supervision we perform, is actually based on information from the school management. And we have not taken the initiative to come and observe anything, so it has been driven exclusively through the information we receive from the management on how it goes. (Interview, Chairman of School Board, School X)

> They (the school board) are in lack of both insight and skills to assess almost all the details of a school leader's tasks. And that is on a regular day. On difficult issues or assignments, e.g. follow up on municipal guidelines, there is no help for them. Finally, they're in no position to question any disposition from either school leadership or municipal direction. That's bad! (Interview, School leader, School Y)

The above interview excerpts illustrates an international trend; in countries where school decentralization reforms have granted significant power to school level councils including parent representation, researchers have found that parents often do not feel empowered to challenge the views of school directors and teachers, given income and class disparities (Bruns & Schneider, 2016).

The school principal is responsible for the day to day operation in the school and internal quality monitoring, and according to above interview excerpts, provides all material and information for which the supervision structure rests upon. One school leader has experienced a significant lack of assistance from the authorities:

> Supervision as a concept is completely absent in our line of work. If, as a school leader, you ask for advice, counsel or guidance you will likely get a non-answer or a reminder on municipal goals. The idea of dialogue on a specific difficult matter seems not to exist. You're on your own! I have not experienced anyone perform supervision on a leadership basis. Nobody seems to want to know or learn what is actually going on at the schools, much less in the classrooms. Once the guidelines have been formulated the general perception seems to be that they're already in effect. Well, it doesn't work like that! (Interview, School leader, School Y)

Summary of Governance Structure

Practice and governance structure are defined partly by the interrelationships (see also Model 1) in the governance system and society as a whole. The decisions and practice are influenced by the networks and context the stakeholders find themselves in. Every vital part of the system – school, community, municipality, and government – contributes individually to the system as a whole to drive improvement and success.

According to Fazekas and Burns (2012) policy making needs to be aligned to its governance structure and take into account the respective responsibilities of different agents. When reorganizing decision making and strengthening local capacity, education systems should have capacity at the ministry level, and support at regional and local levels to drive large-scale improvements (OECD, 2015). One can discuss if that is the case in Greenland. The governance structure seems to have been designed for a bigger society, and so will require a greater level of capacity at all governance levels. The respective responsibilities throughout the system is distributed between governance levels and offers a high degree of autonomy. However, this high degree of autonomy needs to be accompanied with the required capacity, support mechanisms and knowledge to fulfill the intentions of policy. Due to the composition and capacity of the local parent school boards to carry out the responsibility, the foundation of which the supervision of quality assurance rests upon should therefore be questioned.

> The legislation has not looked at practical possibilities and does not fit into the Greenlandic conditions. It is not adapted to everyday life (Governance meeting observation November 2016, comment by Kujalleq Municipality).

Capacity, both in the form of staff and funding, varies greatly among the five municipalities, as the municipalities with the lowest populations also have the highest numbers of settlement schools.[5]

Drivers For Change – How Does Greenland Work for System Improvement?

In the previous section the focus was the governance structure, the roles and responsibilities of agents at the various levels of the education system. In this section, the analysis focuses on how the various stakeholders address quality and what types of strategies for planning and implementation have been used to set a direction, to ensure capacity and ownership at local level, and lastly how these efforts are monitored and evaluated.

Fullan (2011) defines drivers as policy and strategy levers that have the least and best chance of driving successful reform. A right driver is identified as *a policy or initiative* that ends up achieving better measurable results for students, while a wrong driver is identified as a deliberate policy that has little chance of *changing status quo and* achieving the desired result. The right drivers are effective because they work directly on changing the culture and practice. Fullan (2011) further states intrinsic motivation, instructional improvement, teamwork, 'allness' as the crucial elements for whole system reform and aligning the goals of reform.

According to McQuillan (2008: 1781), all education reforms assume that some *system*, be it a classroom, school, district or nation, is ineffective. The root cause of the ineffectiveness, depending on where in the hierarchy one sits, seem to be a matter of how one should frame the discussion – in terms of people or numbers. As expressed by a school teacher:

> I do not believe that the political ambitions are compatible with the reality of the school. I think those politicians should try to get out and experience what a public school is! And it does not matter if we speak the highest political level or the municipal level. They set some goals, but they never come out and see the reality. It quickly becomes a matter of numbers and percentages, and the numbers they should preferably be black on the bottom line (Interview, School teacher, School C).

The following sections look at what lead drivers and underlying theory of action has been employed over the last 15 years of education policy in Greenland.

Objectives, Accountability Structures and Evaluative Thinking

According to the OECD (2015) the key to guide education policy improvement is to establish a small number of clear, prioritized and measurable goals that can drive the system for all those involved. Fullan and Quinn (2016) likewise identify accountability as a driver for system improvement, however for that to work, there needs to be a culture of evaluation in the system. It must make sense to evaluate. To evaluate, objectives must be formulated. So, what types of objectives are being set, what is being monitored and for what purpose? Evaluation culture and an intent to pursue overall strategies is expressed as a requirement by the central level in the below excerpt, but there is no further information on how this should be done.

> Resources allocated to education must be exploited optimally to consistently pursue overall strategies. This requires a strong evaluation culture that can continuously inform the administrative and political level of the impact of the efforts (Ministry Education Strategy, 2015, author's translation).

An interim evaluation report (2010) for the 2002 *Atuarfitsialak* reform revealed that there is much data that describes public schools from many perspectives, however, that data was either difficult to access, often not on a digitalized form, or presented in such a way that makes it difficult for policy makers to analyze the numbers and make decisions (Inerisaavik, 2011).

Specification of policy objectives and means is one of the factors influencing successful implementation (Mazmanian & Sabatier, 1983; Blackmore, 2001). The Ministry of Education has since 2005 developed education strategies and plans on system and national level. A direction is set from the central level with a framework legislation and an overall education strategy. However, this direction is not defined or clarified further. A review of 30 years of education policy in Greenland suggests that educational reform work has lacked objectives and strategies to guide the changes and implementation forward in the system (Lennert, 2014). As a result, there has been no national monitoring of the education system prior to the 2005 Education Plan. The only current system-level monitored objectives for the primary and lower secondary school consists of quantitative output targets, e.g. proportion of cohorts continuing directly in the education system and the proportion of trained teachers. A wish for more elaboration on the centrally set direction and goals was expressed by a municipal board member, as there is no clarification of what is meant by quality, and therefore makes the concept subjective.

> What is behind the statistics and numbers? What is it that we need to work on? We all have the same overall goal, that is better outcomes for our kids. But how we reach our goals, is the question. We all have goals, but we need to have a closer look at the implications of these goals and how to reach them (Interview, Municipal Board Member).

Naalakkersuisut (the national government) states in their Education Strategy (2015) that it is their intention to strive for more people completing an education and therefore better able to support themselves and their families. In addition, education in Greenland is seen as a means of a self-

sustaining economy and independence; the overall objective of the education system is "for cohorts who complete primary and lower secondary school by 2015, 70% shall obtain training/education leading to a vocational or professional qualification before the age of 35" (Ministry Education Strategy, 2015: 8).

The stated theory of action can be said to position the rationale of education for the sake of society, not the individual. This contradicts on some level the 21st century knowledge and information society Greenland is situated in and the value of knowledge (especially Indigenous knowledge[6]) in itself.

The Education Strategy (2015) forms the basis for Greenland's cooperation with the EU through the Partnership Agreement (European Commission, 2014).[7] The Partnership Agreement provides a responsibility to ensure that the level of education is raised, that this is done effectively and that the efforts are continuously evaluated. The agreement has meant that the Self-Government of Greenland has focused even more on results and progress in education, as the Partnership Agreement has a reporting obligation on a set of indicators. Interviews with municipal staff and board members indicated a lack of inclusion in the construction of the indicators and a wish for better consultation processes.

> Better consultation processes are needed. We would like to be consulted on how we'd like to govern our schools, because we are the ones in charge of the operation, the implementation and supervision. Maybe, if they listened more to our needs we would all end up with a solution that we were satisfied with. If they listened more carefully and asked for what information we have and used that in their planning. Better cooperation on top-down and bottom-up approaches. From the politicians to the ones who carry out the change in the field and vice versa. That connection needs to be better (Interview, Municipal Board Member).

In Europe the traditional form of education regulation through rule-governed processes, centralized legal frameworks and shared assumptions has been shifting to and been replaced by goal-governed steering of outputs and outcomes, accompanied by the monitoring of targets (Maroy, 2008). The 2002 Atuarfitsialak reform introduced standardized national tests in the subjects Greenlandic, Danish, English and Math, and School Quality Reports to monitor the quality of schooling. At the same time, key objectives on outcomes related to the standardized tests were not specified, and the central or municipal level have not established follow-up mechanisms, like high-stakes incentives or mechanisms to support struggling schools, that are characteristic of accountability policies. As a consequence, one could argue that Greenland has only moved "half-way" toward accountability.

The intentions with standardized tests, differentiated teaching and ongoing evaluation, while looking good on paper, have not been fully implemented, as illustrated by a school teacher:

> I simply don't think that we are good enough in conducting ongoing evaluation. We set up some pointers, some benchmarks with the standardized tests, the final examinations, and midterms, so we have some data there. The ongoing evaluation, however, we are not good enough at that. We are not good enough to state and write down the goals of an activity, and determine how we measure that when we are done (Interview, school teacher, School C).

A focus on external accountability is further exemplified by an expressed wish from the central government to introduce international comparable tests as a means to raise the quality of education and teaching.

> Naalakkersuisut wishes to introduce the use of international comparable tests to ensure a high quality in primary and lower secondary schools. This will be an important tool for developing the primary and lower secondary school in the future (Ministry Education Strategy, 2015).

However, the focus and needs of teachers are more on internal accountability and student-centered evaluation.

> If you go over to the municipality and ask, they will say that we must have the highest marks in the country. But I look at it differently, because I'd rather have a look at the starting points of the students and how much they have improved. I think that is more interesting, I think it's impossible to compare cohorts because there are too many different factors that play into that. It's not two pieces of wood, it is people we work with (Interview, School teacher, School C).

The interview excerpts and analysis illustrate the differences in *shared depth of understanding* across the governance levels, namely between classroom, municipal and central levels of government on how the primary and lower secondary school system should be monitored and with what indicators.

Conclusion

The findings illustrate what seems to be a historical lack of coordination in connection with the implementation processes in regards to educational reform, where there has been no tradition of extensive cooperation and planning across municipalities and central government, or a solid tradition for monitoring and conducting utilization focused evaluations. Complexity theory and developmental evaluation, to a large extent, focus on the constructive and evolving interrelationships between the key stakeholders at various levels of the education system. Relationships between the central administration, municipalities and school leaders have historically not been particularly good, but according to the data collected, there is a turnaround in progress. These relationships will be key in shaping a constructive policy environment and setting a clear and coherent framework for the school system in Greenland.

Schools and education systems, are also structure-determined as they adapt to changes within social, economic, and political contexts while internalizing, learning from, and evolving from systemic memory inherent in the system. As mentioned in the introduction, the formal education system is young in Greenland, which is also illustrated by the education level in population.

The challenges in the Greenland education governance system touches upon all seven multi-level governance gaps (see Table 2). The Greenlandic education system is an example of a complex dynamic system, whose elements are isolated from one another, and the policy making is not aligned to its governance structure and the respective responsibilities of different actors are not taken into account. The multilevel governance structure seems to complicate the constructive planning and steering of the primary and lower secondary school system due to a lack of clarity (and possibly a lack of agreement) about roles and tasks, as strategies are not consistent nor guiding (administrative and objective gap). Whether the planning of education reform relies on an evidence-based understanding of the characteristics of the Greenlandic school system and is constructed in such a way that reform contributes significantly to improved student achievement and well-being, can be questioned (policy gap). The governance structure is also fragile due to limited staff on all levels with great responsibilities not limited to education (administrative and capacity gap), with close links to the small and scattered populations in the municipalities that puts pressure on the funding of the school system (fiscal gap).

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The purpose of national education strategies and plans is unclear due to the simple and positivistic nature of monitored indicators. Existing strategies are not constructed to guide change, and there is no alignment between governance levels. At the system level, no theory of action or plan has been formulated on how to raise the quality of the primary and lower secondary school. Stakeholders with responsibilities in the quality of primary and lower secondary school area formulate their own strategies and objectives, which are not held up on a major theory of action or strategy. This causes mismatches and lack of coherence in the objectives, and resulting priorities, formulated from the central level with the rest of the system (e.g. the Teacher Training College, the municipalities, and the schools). The lack of alignment across a multilevel governance system therefore makes negotiation, cooperation, and coordination a necessary and important tool.

Apart from the centrally set curriculum learning outcomes, no standard or objective is set on the level of quality of the standardized tests or final examinations. There is a lack of clarity in what is meant by the quality of the primary and lower secondary school, how to raise or increase quality and by what means. The nationally monitored objectives say nothing about quality. Whether students continue directly from lower secondary schooling in the education system is often influenced by the limited capacity of education programs, number of available apprenticeships, and ultimately not the results of the final examinations. To use the proportion of trained teachers as a quality indicator is unfortunate, as practice is more complex, and the quality of schooling is influenced by a variety of factors that cannot be reduced to one indicator – trained teachers.

Whether the current supervision structure serves its purpose should be questioned (accountability gap). Following the international shift toward a post-bureaucratic 'governance by results' model (Maroy, 2008), Greenland has in the past 10-15 years been increasingly focused on results in the monitoring of the system. This article suggests that developments in Greenlandic policies demonstrate the difficulties of navigating the tensions between promoting two key aspects of accountability—internal and external and the challenges of building capacity for both. There is a great focus on external accountability and results. Without a foundation on internal accountability, external accountability drivers have limited effects (Abelmann et al., 1999). There is a strong need for a focus on internal and collective accountability and an incorporation of qualitative evaluation initiatives in individual institutions to get indicators of what works. A dual focus on both performance and impacts will allow for a critical assessment of the extent to which and whether goals are met.

The current situation in Greenlandic education policy is characterized by the lack of basic analyses, studies of developments in the field, the effects of different actions; on the other hand, a considerable amount of positivistic information is gathered in the form of statistics (information gap). This total reliance on statistics is most likely linked to lack of evaluation capacity and evaluation culture. The formulated objectives, and the monitored indicators, are output goals that assume that the foundation is well functioning. However, Greenland has an education and school system in strong need of development and quality improvement. A blind focus on desired output goals is therefore not sufficient in driving the change forward. Without evaluations that look at contexts and other variables such as day-to-day teaching, it is difficult to see which initiatives lead to what results. Supervision and monitoring only looks at intended consequences. What are some unintended consequences of policy?

In 21ˢᵗ century complex systems there is a need for continuous innovation, assessed through co-learning (within and across classrooms, schools and municipalities; and school to municipality to ministry). Structures and networks to do so in Greenland are limited. There is therefore a strong need for a type of data management that can track emergent and changing realities, and feeding back meaningful findings in real time to the practitioners. A way of thinking characteristic of complexity and developmental evaluation (Patton, 2011).

Systems thinking, complexity and developmental evaluation together offer an interpretive framework for engaging in sense making (Patton, 2011). Sense making across governance levels and classrooms is identified by Fullan and Quinn (2016) as an imperative factor for successful implementation of education reform. One thing is the coordination and cooperation between governance levels, institutions and key stakeholders to secure a coherent framework and infrastructure. Another is implementing the wanted change in the classroom and working towards the desired outcomes. To create conditions for system wide development there is a need for a discussion between the governance levels and all relevant stakeholders on the root causes of the current conditions of the system and how to address them. A discussion centered on how to raise the bar for all and what success and quality look like in practice. On national, municipal, school and classroom level. General principles, guidelines and frameworks to clarify roles, tasks and expectations should then be formulated in cooperation and consensus.

Notes

1. Looking at the population over 16 years, a development of approx. 6 percentage points over the past ten years.

2. A more detailed discussion of a similar complexity model of a school can be found in Johnson (2008).

3. Greenland Education Act 2002, it has since been amended (2012, 2017) with minor changes. The pedagogical intentions, structure and governance remain as it was.

4. The model brings "state, bureaucratic, administrative" regulation and a "professional, corporative, pedagogical" regulation together (Barroso, 2000).

5. Avannaata Kommunea, for instance, has a population of 10.600 and 26 schools (2018). At the same time, it is the municipality that is the most challenged by an extensive geography (stretching from Siorapaluk to Ilulissat) and complex infrastructure. Two settlement schools were closed in 2017.

6. While acknowledging that there are ongoing debates in both academic, applied contexts and among Indigenous Peoples about the appropriate concept to use when discussing knowledge and indigeneity, the definition by Bohensky and Maru (2011) is provided: *Indigenous Knowledge is holistic and often encompasses interrelationships between diverse phenomena, including social and environmental phenomena.*

7. A full description of the Partnership Agreement and monitored indicators can be read in the annual planning and implementation reports conducted by the Ministry of Education:

http://naalakkersuisut.gl/~/media/Nanoq/Files/Attached%20Files/Uddannelse/Engel
sk/Annual%20Work%20Plan%202017.pdf

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