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PH.D. THESIS

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RONNI LAURSEN

**A Sociological Investigation of  
Governance through  
a Mandatory Learning Management  
System and Practice in Danish Primary  
and Lower Secondary Schools**



AARHUS  
UNIVERSITY  
DANISH SCHOOL OF EDUCATION

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*A Sociological Investigation of Governance through a Mandatory Learning Management System  
and Practice in Danish Primary and Lower Secondary Schools*

[Danish Title: En sociologisk undersøgelse af styring gennem en læringsplatform og praksis i folkeskolen]

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Associate Professor Emeritus Lejf Moos and Professor MSO David Reimer

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# Summary

This Ph.D. dissertation sociologically investigates how governance through a learning management system (LMS) affects school management and teachers' practice. This dissertation consists of data conducted by document analysis, qualitative interview study, and a quantitative survey. The data were analyzed through the lens of Bourdieu's concept of field, habitus, and capital. Furthermore, critical governmentality theory, transformational leadership, and the concept of wellbeing and motivation were relevant theories that informed the thesis. The dissertation shows that the context for implementing an LMS was characterized by conflicts and struggles between policymakers and teachers expressed via the Teachers' Union. Furthermore, all of the 31 interviewed respondents considered the implementation of the platform as a top-down process. The analysis shows teachers' skepticism and opposition to using the platform, but nevertheless an implementation that indicates school leaders and teachers' self-regulated practices towards the platform. Moreover, depending on their position in the school, the interviewed teachers developed a "civil-disobedience strategy" or a "close to management strategy" to cope with the automated teaching practice embedded with the implementation of the digital tool. The LMS is a mandated tool for teachers, and the quantitative-study shows that if management is to ensure teachers use the platform, it requires an 'individualized consideration' leadership practice and that teachers can sense-make the LMS.

The Ph.D. project was originally initiated to investigate how implementing an LMS affects the wellbeing of teachers' – the underlying assumption being that teachers with a high degree of wellbeing produce excellent results and that if an implementation is organized wrongly, employees tend to perceive the implementation as a controlling factor for their practice, which would negatively affect their wellbeing. Thus, a thesis that aimed at investigating how the implementation of the LMS affects teachers' wellbeing. However, during the collection of interviews, it became evident that another factor was at stake at the schools, so the focus of the research changed slightly.

Teachers' wellbeing interrelates with the amount of and the performance of political steering. The implementation of the LMS was prepared during a period characterized by many reforms to change teachers' practice. During this period, two main reasons emerged for changing teachers' practice – a political fear that

Danish students' not learn sufficiently and that Danish public schools are too expensive. Policymakers emphasized that students must do better in the national test system. Policymakers' solution to achieve better test scores was that students must know their learning objectives in every teaching session, and the teaching must focus on a students' data production. Finally, students must have more teaching lessons. As a result, policymakers emphasized that teachers have to spend more time teaching instead of preparing lessons and participating in unnecessary meetings. The LMS is a digital tool that supports the three highlighted solutions. However, the problem for policymakers was that it quickly became apparent – especially exemplified during the 2013 lockout - that the teachers did not think that the changes set forth by policymakers would lead to improving the students' achievements.

With these developments in mind, this thesis focused on how the governance through a learning management system influences/changes school management and teachers' practice. Thus, the aim of the research is to shed light on the practitioners' perspective to expose and understand the complexity of the relationship between political governance and digitization.

The dissertation is based on three types of data presented in four articles. The structure of the dissertation is as follows: Chapter 1 is an introduction to the research interest. Afterward, follows a discussion of the object of research the LMS. Against this background, the Chapter ends with a presentation of the research questions. In continuation of the research questions follow a short discussion of the findings of the thesis. Subsequently, how these findings might have implications for other welfare professions. Chapter 2 presents and discusses the five theoretical approaches applied. The Chapter ends by presenting a model that provides an overview of how the different theories are employed for research methods and analysis. Chapter 3 presents the methodological reflections – I do that in separate sections presenting reflections on the document study, the qualitative interview study, and the quantitative survey study. The final remarks of Chapter 3 are a short discussion of my ethical considerations. Then follows the analytical chapters 4, 5, 6, and 7. Chapter 8 present the overall combined conclusion of the thesis.

## Summary of Results

In the following, I summarize the results of the four articles. The first article is based on a document analysis that investigates emerging conflicts between policy-makers and the Teachers' Union. The article addresses the conflictual context for implementing a learning management system. Articles two and three are primarily based on 31 interviews that shed light on the implementation of the LMS from a practitioner's perspective. The fourth article explores how teachers perceive the implementation of the platform based on survey data from approximately 1,000 teachers.

### Article 1

In the first article, 'Compulsory learning management systems – A Bourdieu-inspired analysis about a struggle between policymakers and the Teachers' Union, I focus on the introduction of a compulsory learning management system in Danish primary and lower-secondary education. Using Bourdieu's concepts of field, habitus, and capital, I analyze 22 documents published between 2005 and 2020. Using these documents, I construct a historical analysis of the Danish educational field's emerging struggle between policymakers and the Teachers' Union. The findings indicate that educational policy is influenced by the logic of other fields such as economics and that the development of educational policy is the result of a long-lasting conflict between policymakers and the Teachers' Union. Policymakers maintain their dominance by producing a human capital logic in the field of education and by adjusting educational policy on an ongoing basis. These adjustments can be seen as a political concession. However, they do not change the precondition for the core elements in the struggle between policymakers and the Teachers' Union about teachers' autonomy and how to perform excellent teaching, which, at least theoretically, implies difficulties for policymakers to alter a teachers' habitus.

### Article 2

The second article, 'Does the Combination of Professional Leadership and Learning Management Systems Signal the End of Democratic Schooling?'

focuses on school principals' agency in continuation of implementing a learning management system (LMS). The article is based on a qualitative study at four schools, comprising 31 semi-structured interviews with principals, teachers, and municipal administrators. Bourdieu's concepts of field, habitus, and capital – are used along with the concept of governmentality to explore a principals' professional agency and self-regulation and to conduct a thorough analysis of practice. The article demonstrates that schooling's democratic purpose tends to be forgotten in the shift towards principals' agency's professionalization and that the LMS is a powerful tool in this process because principals can keep track of what teachers are doing digitally at all times. Furthermore, the article shows how the concept of professional agency is used to symbolize how school principals' actions become distanced from the schools' educational practice.

### Article 3

The third article, 'Implementation of a mandatory learning management – how does it affect teachers' practice and motivation?' explores the relationship between LMS-usage and teachers' motivation. Using Bourdieu's concepts of field, habitus, and capital, I report on 31 interviews and 3 policy documents regarding the implementation of a mandatory LMS in Danish primary and lower secondary schools. In the article, I show that the implementation of an LMS and the resulting automation of certain aspects of teachers' work effects the structures of the teaching practice and promotes specific teaching methods. To stay motivated in a structure that decreases teachers' autonomy, one group of teachers develops a civil disobedience strategy to work around the framework of LMS. In contrast, another group remains motivated by employing a strategy of accumulating capital and acting as an auxiliary arm of local management.

### Article 4

The article 'Does transformational leadership practice during a digital innovation influence employees wellbeing and the implementation of the new technology? –The case of the introduction of a learning management system in Danish schools' was written in collaboration with Associate professor Felix Weis. We used the implementation of the mandatory LMS in the Danish public schools as a case to

study the effect of two dimensions of transformational leadership on teachers' adoption of the LMS and on their wellbeing. Based on a nation-wide survey response of 962 teachers, we analyze how 'inspirational motivation' and 'individualized consideration' relate to the abstinence from using the mandated digital tool. The results show that transformational leadership is positively associated with wellbeing. Moreover, teachers who perceive their management as individualized consideration less often abstained from using the platform. This was to a large degree mediated through the higher levels of sense-making that is found under leadership perceived as individualized consideration.

## Combined Results

Overall, the results of the studies in this dissertation show that political steering through the implementation of the LMS in real-world settings is challenging. *First*, the conflict and struggles reported in article 1 demonstrates a context characterized by mistrust between policymakers and teachers. This conflict and mistrust frame the context for the other three articles. *Second*, practitioners perceive the LMS and embedded governance differently. Although principals' have a teachers' habitus and thus mixed emotions regarding the conflict and mistrust by teachers, they act like an policymakers auxiliary arm and implement the LMS as expected and thus, in reality, support the embedded governance. Teachers are highly motivated to teach and report a high degree of wellbeing, despite the governance embedded in the LMS. To stay motivated in a context they believe opposes doing excellent teaching; they neither work around the LMS nor stay close to management to be part of management decisions. *Third*, if teachers are to use the platform, it requires an involving management that closely follows the implementation of the platform. The probability that teachers' sense-make the platform is also increased by the fact that the management is close to teachers' practice.

## Dansk Resume [Danish Summary]

I denne ph.d.-afhandling var min oprindelige intention at undersøge, hvordan implementeringen af en læringsplatform påvirker lærernes trivsel. Et vigtigt projekt da medarbejdere med høj trivsel bidrager til gode resultater. Er en implementering organiseret forkert, sådan at medarbejderne anser implementeringen som kontrol-

lerende for deres praksis, har det dog en negativ effekt på trivselen. Implementeringen af læringsplatformen blev organiseret i en periode med mange forandringer i folkeskolen. Der var primært to årsager til forandringerne. 1) En politisk forståelse, at danske elever ikke lærer tilstrækkeligt, baseret på resultaterne i internationale komparative undersøgelser, og 2) at den danske folkeskole er for dyr. Forandringer, der er initieret i folkeskolen, er således rettet mod at forbedre disse to aspekter. Til at løse det første problem har politikere og administratorer understreget i de initierede reformer, at eleverne må klare sig bedre i de nationale test. Løsningen er, at undervisningen må baseres på elevernes data. Dette vil give lærerne en indgående viden om, hvor elevens læringspotentialer er, kombineret med at målene for undervisningen altid skal være synlige for eleverne. Derudover skal eleverne have flere undervisningstimer. Til at løse den anden problemstilling har politikerne understreget, at lærerne skal bruge mere af deres tid i klasseværelset på undervisning – i stedet for at bruge arbejdstiden til forberedelse af undervisningen og deltagelse i unødvendige møder. Teoretisk er læringsplatformen et digitalt værktøj, der understøtter disse problemstillinger. Udfordringen for det politiske felt blev dog hurtigt klar – især eksemplificeret i 2013-lockouten af lærerne – lærerne oplever ikke, at de reformer, som politikerne initierede, faktisk ville forbedre deres undervisning og dermed sikre bedre elevresultater. Udgangspunkt med det empiriske arbejde var, at jeg ville undersøge, hvordan implementeringen af læringsplatformen påvirkede lærernes trivsel. I løbet af interviewene blev jeg dog opmærksom på, at det, der var på spil i praksis, især handlede om, hvordan der politisk styres i skolen, og hvordan den styring effektueres gennem læringsplatformen. Derfor ændrede jeg mit forskningsobjekt en smule hen imod, hvordan styring påvirker aktørerne i praksis. Fra et empirisk perspektiv er hensigten, at jeg belyser praksis til at forstå det komplekse forhold mellem styring og digitalisering. Intentionen er, at jeg kan forklare nogle af de kampe, der er mellem praksis og det politiske felt – og udlede plausible forklaringer på, hvad der sker i praksis, når politisk styring gennem digitalisering effektueres. Særligt med henblik på skoleledelsens handlinger og lærernes motivation og trivsel.

Afhandlingen er artikelbaseret og udgøres af fire artikler. De fire artiklers forskellige datagrundlag virkeliggør min empiriske ambition for forskningen. I det følgende præsenterer jeg kort resultaterne i de fire artikler.

## Artikel 1

I den første artikel 'Compulsory learning management systems – A Bourdieu-inspired policy analysis about a struggle between policymakers' and the Teachers Union', fokuserer jeg på introduktionen af læringsplatformen i alle danske folkeskoleklasser. Jeg anvender Bourdieus teori om felt, habitus og kapital til at analysere 22 policy-dokumenter mellem 2005-2020. Ved at analysere hvilken logik der fremtræder i dokumenterne, konstruerer jeg en historisk analyse af kampen mellem det politiske felt og Danmarks Lærerforening. Resultaterne i analysen peger på, at uddannelsespolitikken i høj grad er præget af logikker, der er produceret i andre felter – fx det økonomiske felt – og udvikling i uddannelsesfeltet skal forstås ud fra den langvarige konflikt mellem politikere og Danmarks Lærerforening. Det politiske felt bevarer sin dominerende position ved at anvende en humankapitallogik og tilpasser løbende lovgivningen til den faktiske kontekst. Disse tilpasninger kan ses som politiske indrømmelser, men tilpasningerne ændrer ikke grundlæggende ved de elementer, der udgør kernen i konflikten mellem politikerne og Danmarks Lærerforening omkring lærernes autonomi.

## Artikel 2

I den anden artikel 'Does the Combination of Professional Leadership and Learning Management Systems Signal the End of Democratic Schooling?', fokuserer jeg på skoleledernes handlinger i forbindelse med implementeringen af læringsplatformen. Det er et kvalitativt studie baseret på 31 interviews på fire skoler i tre kommuner. Bourdieus teori om felt, kapital og habitus bliver sammen med teori om governmentality anvendt til at undersøge skoleledernes professionalisering og den selvregulering, der, måske, følger med i praksis af implementeringen. Jeg argumenterer for, at skolens demokratiske fundament har en tendens til at blive glemt i forlængelse af skoleledelsens professionalisering, og at læringsplatformen er et magtfuldt og nødvendigt instrument, fordi skoleledelsen til alle tider kan følge med i, hvad lærerne laver.

## Artikel 3

I den tredje artikel 'Implementation of a mandatory learning management system – how does it affect teachers' practice and motivation?' undersøger jeg, hvordan forholdet er mellem det at skulle anvende en læringsplatform og være motiveret for undervisning. Jeg anvender Bourdieus teori om felt, habitus og kapital til at analysere 31 interviews og 3 policy-dokumenter om implementeringen af læringsplatformen. I artiklen argumenterer jeg for, at implementeringen af læringsplatformen fører til en automatisering af dele af lærernes arbejde ved at understøtte bestemte undervisningsmetoder. For at forblive motiveret i en struktur, der indskrænker lærerens autonomi, har en gruppe lærere udviklet en strategi, hvor de bruger læringsplatformen mindst muligt eller simpelthen helt undlader at bruge den, mens en anden gruppe lærere forbliver motiveret ved at akkumulere kapital og fungere som skoleledelsens forlængede arm.

## Artikel 4

Den fjerde artikel 'Does transformational leadership practice during a digital innovation influence employees wellbeing and the implementation of the new technology? – The case of the introduction of a learning management system in Danish schools' er skrevet i samarbejde med Lektor Felix Weis. Vi anvender implementeringen af den obligatoriske læringsplatform i folkeskolen som case til at undersøge, hvordan effekten af to dimensioner af transformationsledelse påvirker lærerne til at bruge læringsplatformen og deres trivsel. Baseret på et landsdækkende-survey med 962 lærerbesvarelser, analyserer vi, hvordan 'inspirational motivation' og 'individualized consideration' relaterer til lærernes manglende brug af platformen. Resultaterne viser, at transformationsledelse er positivt forbundet med trivsel. Desuden at lærere, der opfatter deres ledelse som 'individualized consideration' anvendte platformen mere. Dette skal i høj grad ses som, at lærere der opfatter deres ledelse som 'individualized consideration' havde 'nemmere' ved at få mening med at bruge platformen.

## Kombinerede resultater

Overordnet set peger resultaterne i retning af, at politiske styring gennem implementering af en læringsplatform er vanskelig. *For det første* indikerer konflikten og kampen analyseret i artikel 1, at konteksten er præget af stor mistillid mellem det politiske felt og lærerne. Den konflikt og mistillid rammesætter de tre andre artikler. *For det andet* at praksis opfatter den indlejrede politiske styring i læringsplatformen forskelligt. Selvom skolelederne har en lærerhabitus og derfor blandede følelser omkring konflikten og mistilliden, så handler de som det politiske felts forlængede arm og implementerer læringsplatformen, som det forventes af dem. Dermed understøtter de i praksis den politiske styring. Lærerne er motiverede for undervisning og reporterer også om høj trivsel. Men det er på trods af den politiske styring gennem læringsplatformen. For at forblive motiveret i en kontekst de opfatter, besværliggør at levere god undervisning, gør de, hvad de kan for at undlade at anvende læringsplatformen eller bruger implementering til at komme tættere på ledelsesbeslutningerne. For det tredje at skal lærerne anvende læringsplatformen i deres daglige arbejde, kræver det en involverende ledelse, der nøje følger implementeringen af platformen. Sandsynligheden for, at lærerne erfarer, at platformen giver mening for dem, øges også af, at ledelsen involverer sig i lærernes praksis.

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# CHAPTER 1

INTRODUCTION



## 1.1 Setting the Context for a Problem

The last Trends in International Mathematics and Science Study (TIMSS) report shows that Danish students are doing worse in mathematics than the previous report (Kjeldsen, Kristensen, & Christensen, 2020). That Danish students do not perform as well as political ambitions is not a new phenomenon. One can say that the continued poor performances observed by Danish students continuously produces an educational crisis (Hansen, 2011), and policymakers have a hard time not acting on this alleged educational crisis. Thus, the implementation of a national test system in 2005 (The Danish Government, 2006) and the recent school reform (The Danish Government, 2013) has the intention of reforming school practice, so students will perform better in the national test systems and comparative international investigations such as the TIMSS report, but certainly also in OECD's PISA report. Policymakers' preferred agency is new educational reforms (Waldow & Steiner-Khamsi, 2019). Concurrently, the Danish welfare state has been under pressure for at least the past 20 years to develop efficient educational solutions. Thus, policymakers emphasize new public management (NPM) approaches to run the public sector (Greve & Åkerstrøm Andersen, 2007). Danish public schools' performance is measured on a school's ability to deliver results in student learning outcomes while also reducing costs (Østergaard Møller, Iversen, & Normann Andersen, 2016). One political solution was to implement a learning management system (LMS) in primary and secondary schools because it is a system designed to support the political understanding of excellent teaching while at the same time also supporting that teaching becomes more efficient.

Using the implementation of the LMS in Danish primary and lower secondary schools as a case, this dissertation aims to understand what happens in practice when policymakers force this agenda. One of the central assumptions in this dissertation is that practitioners can perceive governance as neither supportive nor controlling their practice (Frey & Jegen, 2002). Studies have shown that school management performing transformational leadership can support employees' perception of reforms and increase their motivation (Andersen, Boye, & Laursen, 2014; Jacobsen, Hvidtved, & Andersen, 2011). While work environment studies show that there must be a balance between the demands and control in reforms to maintain or increase employees' wellbeing (Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010). For different reasons, a common aspect of these studies is they emphasize the significance of wellbeing and motivation for organizational performance and results.

With this in mind, a teachers' autonomy is correlated to their job satisfaction and their relationship to a school (Skaalvik & Skaalvik, 2014). One crucial discussion the Danish educational reforms have initiated is how they affect teachers' autonomy and working conditions. Danish teachers have always had a high degree of freedom to organize their teaching in terms of content and assignments (Dorf, 2018) – a needed aspect for teachers to develop professional judgment (Biesta, 2015). With this understanding, the unrestrained aspect of teachers' autonomy is essential if educational reforms are to support the teachers' practice and thus deliver the results expected by policymakers. The reform already mentioned framed and limited the teachers' autonomy by emphasizing specific teaching methods intended to produce improved student learning outcomes. Furthermore, the 2013 teacher lockout caused further distrust of the political system from teachers (Ravn, 2017). Since the lockout and recent school reform, many teachers have left public schools (Epinion, 2017), and a study including teachers that have resigned indicates that some resignations are based on the increase in political steering of the educational system particular concerning teachers' autonomy and time to prepare teaching (Vaaben, 2016). These results undoubtedly indicate that not all Danish teachers thrive with the current governance.

As such, the ultimate consequence of initiated reforms is how practitioners react to the intentions and emphasized requirements of reforms, and the Danish context outlined above indicates that the distance between policymakers and teachers on what excellent teaching and work conditions are, is enormous. In theory, this gap in understanding will lead to implementation failures. Even in more 'friendly' environments, research indicates that reforms in practice rarely perform as well as the political intentions emphasize (Cuban, 2013). In Denmark, the municipalities run public schools and are responsible for school results. Municipalities have many consultants employed to help schools to implement reforms and hold schools accountable for delivering the expected results. From the logic of the state, a bureaucratic layer is necessary because Denmark's policy of local school management has a great responsibility to implement and perform the reforms. With the increasing focus on new public management solutions in the public sector, school managements develop towards managerialism, understood as the professionalization of management (Gunter & Forrester, 2009; Moos, 2014). As a result, school management underlines school performance in measurable results (Fullan, 2014; Kjer, Baviskar, & Winter, 2015; Leithwood, Harris, & Hopkins, 2008; Robinson, 2014).

### 1.1.1 Research Questions

Against this background of, on the one hand, political pressure for measurable results and on the other hand, teachers' motivation requires some autonomy; this dissertation intends to investigate the complex empirical phenomenon of governance through the LMS - that potentially can change the teaching approach and subsequent teachers' practice fundamentally. In that light, I aim to theoretically and empirically explain the interrelation between political governance through an LMS and its practice. To do so, I investigate four research questions:

- 1 *Why is analyzing the emerging conflict between policymakers and the Teachers Union fundamental in explaining how policy develops in the educational field while policymaker' maintaining strong dominance?*
- 2 *Why do school principals' professional agency and the enactment of an LMS, with its embedded notions of self-regulation, tend to neglect the fundamental role of democratic participation as a basis for educational practice?*
- 3 *How does governance produce particular a logic that structures how the LMS, according to policymakers, ought to dominate teachers' practices and how does different groups of teachers react to the dominance.*
- 4 *How do two central dimensions of transformational leadership practice influence if employees use the LMS in their daily work as expected by policymakers? How do the two dimensions of transformational leadership affect employees' sense-make of the innovation and their workplace-related wellbeing. Furthermore, can sense-making explain the effect of leadership practices on the use of the LMS?*

The rationale for the studies outlined in the four research questions must be seen in the light of the recent year's educational changes and the changes that come with digital innovation. The assumption is that such political initiated educational changes somehow effects practice. The local management will be affected by the political-administrative expectations that are for their agency - for the simple reason that local management is held accountable for implementing policy initiatives. Accordingly, local management inevitably will launch initiatives that seek to change teachers' practice. This research will shed light on how governance through the

digital tool changes leadership and teachers - an important perspective, as there is limited knowledge about the relationship between digital governance and practice.

The research is divided into four separate analytical chapters (the four papers), which pursues one research question at a time. The chronology of the chapters is structured so that chapter 4, the document analysis, to some extent, frames the context for the other three analytical chapters. In chapter 5 I use qualitative interviews to analyze how the governance through the LMS influences the local school management. In chapter 6, I use policy documents and qualitative interviews to analyze how teachers handle the structures that follow during the implementation of the platform. In the final analytical chapter, I use quantitative survey data to analyze how broad the LMS is used by teachers and how important local management is for successfully implementing the platform. The analytical chapters utilize multiple research approaches offering insight into the phenomenon of governance through the LMS from various theoretical and methodological views. Some of the most important findings in my research are:

- 1 Policymakers and Teachers' Unions conflict and struggle about working conditions, and the perception of excellent teachers dominates the field of education. Policymakers maintain dominance in the field of education by producing a human capital logic and adjusting the educational policy on an ongoing basis. However, despite the adjustments of the educational policy, policymakers do not change the precondition for the core elements in the struggle between policymakers and the TU about teachers' autonomy and how to perform excellent teaching. Against that background, there is great mistrust between policymakers and TU, which, at least theoretical, makes it difficult to change teachers' practice through reforms and thereby the implementation of the LMS.*
- 2 School principals' professional agency is an increasingly remote bureaucratic practice. In that sense, the visibility of the LMS is a helpful tool as the monitoring aspect provides local school management with the possibility to digitally keep track of teachers' practice. Thus, the implementation of the digital innovation can be understood as an extension of principals' agency's professionalization, and the analysis shows that*

*that priority potentially has serious democratic consequences because democratic schools require presence and participation. Furthermore, the design and the particular implementation of the platform lead, theoretically, to both principals' and teachers' self-regulated behavior in relation to meeting the requirements and expectations for using the platform.*

- 3 The implementation of the LMS was organized as a top-down implementation resulting in automation of certain aspects of teachers' work. This automation of teachers' work guides the teachers to an exact teaching practice and promotes specific teaching methods - thus narrowing teachers' autonomy. To stay motivated in such a structure, one group of teachers developed a civil-disobedience strategy by working around the LMS. Another group of teachers remained motivated by employing a strategy of accumulating capital and acting as an auxiliary arm of local management.*
- 4 The dimension of transformational leadership individualized consideration has a statistically significant relationship with the use of the platform and that a lack of such a practice will decrease non-user by approximately 6 percentage points. It means that a successful implementation of the LMS measured in teachers' use requires a highly engaged local management who follows the implementation process closely. Moreover, the individualized consideration dimension is central for teachers' sense-making of the digital platform since more than 60 percent of the effect of individualized consideration on LMS usage is explained by the fact that this leadership practice increases sense-making. This suggests that this mechanism is a central explanation for the positive contribution of individualized consideration to the successful implementation of an innovation. Furthermore, transformational leadership has a significant positive relationship to teachers' wellbeing – because the data is cross-sectional, a reservation must be made of the validity of that result – even though the conflictual context, theoretically, supports the connection between transformational leadership and wellbeing.*

The wide variety of data supports the results effort to *understand* and subsequently explain what happens in practice when a digital solution with a detailed 'programmed steering architecture is implemented in a public organization as the Danish primary and lower secondary public school. The combination of different data and theories is considered to strengthen the overall argument of the dissertation considerably. This is because the results of the four analytical chapters - despite the different data and theory employed in the chapters - point in the same direction.

The four research questions intend to produce knowledge to investigate the governance through a digital innovation and practice in school management and teachers' practice in public primary and lower secondary schools. The overall conclusion suggests that the governance through the mandatory LMS is detailed and puts tremendous pressure on school management - resulting in less autonomy for leaders and teachers. The implementation of the platform is challenging because it narrows teachers' autonomy. Among others, the recent educational reforms have caused a lack of confidence between policymakers and teachers, which also enhances the difficulties for the local management in the field of schooling practices. Consequently, the implementation structures the possibilities for the teachers' teaching in a way that leads to many teachers not using the platform as required. Although, school managements that followed the process of implementing the digital tool closely resulted in higher teachers' usage.

As discussed, the combined results of the thesis demonstrate that governance through a digital tool significantly influences practice. The quantitative survey study showed that approximately 70 percent of all the teachers used the platform monthly and 50 percent weekly. A crucial result is that due to the detailed governance through the platform, most of the qualitative interviewed teachers did not think that the LMS improved their work - on the contrary, they regarded the LMS as an annoyance that does not make much sense.

The results of the thesis are based on research in the Danish primary and lower secondary public schools. These results might also be of significance for other educational systems and other welfare professions for multiple reasons.

The implementation of the LMS in compulsory school is part of a broader Danish digitization strategy, and compulsory school has, likewise the other professions in the public administration, been influenced by NPM approaches for the last

twenty years. In that sense, it is likely that welfare professions, in general, could gain knowledge of the thesis scientific gaze directed on practitioners. In particular, Danish news media have described that the implementation of the 'Sundsplatformen' (the health platform) has led to frustration among health personnel. From a research perspective, it would be interesting to explore if the governance through the digital devices is as detailed as in primary and lower secondary schools and accordingly if, for example agents in the field of health practices react in the same way as the principals' and teachers' in this study.

Denmark is a digital frontrunner (The European Commission, 2020), and other countries are implementing similar systems right now or will do so shortly, not least in the light of the recent series of COVID-19-related school lockdowns that have created the need to ramp up digital teaching technology. Hence, implementing digital systems like the LMS will become a task for many leadership teams in public administration in the near future. Other governments might not orchestrate a programmed steering architecture in their innovation – however, regardless of the political approach, implementing digital tools most likely will change practice for principals, teachers, students etc.

## 1.2 The Investigated Phenomena – a Learning Management System

This section aims to define what a learning management system (LMS) is in a Danish primary and secondary public school setting. The section is organized as follows: First, I discuss what a learning management system is. Subsequently, I present the political objectives by implementing an LMS. Afterward, I discuss what the literature on implementing an LMS in school-settings highlights as necessary for teachers, which together with the students, are the primary users of the LMS. Against this outlined background, I present the conceptualization of the LMS used in the thesis.

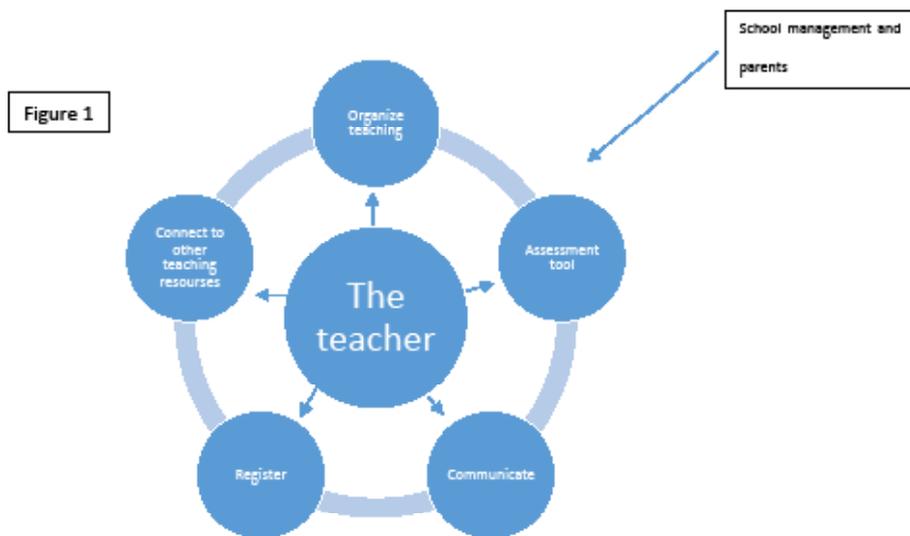
### 1.2.1 Definition of the LMS

Jewitt, Clark, and Garstka (2011) argue that a learning platform uses an encompassing range of different technologies, including, e.g., virtual learning environments and resources sharing technologies. Using an LMS is a global phenomenon – merely think about academia and its use of dashboards to communicate about, e.g., teaching. Despite the global distribution of platforms, the investigated object of this dissertation is the Danish context; thus, the definition in this thesis is adapted to expose which specifications Danish policymakers require embedded in the LMS.

The agreement between the Local Government and Danish parliament emphasizes that the purpose of the LMS was to make it possible to share the same visions for an active learning environment, and in addition, a platform of different tools and services to support a students' learning process (Local Government, 2015).

Figure 1 illustrates how Danish policymakers imagine the LMS will support teachers' work (Local Government, 2015). *Organizing teaching* means that teachers create educational courses and upload them in the LMS, and that the teachers create their yearly syllabus. These courses are always present for students and other forums that have an interest. *The assessment tool* is thought to be a tool to support the Danish version of goal-directed teaching, which is a teaching method that visualizes student learning (Danish Ministry of Education, 2014), while supporting the notion of evidence-based teaching as the assessment-procedure continuously produce data showing student progress. *Communication* is synonymous with teachers giving

students feedback on assignments, but in this model, it also illustrates that the platform is considered to be a tool where teachers can share their teaching with each other and, for example, work on teaching-courses together. *Registration* refers to the LMS as a tool where teachers can register the attendance of students, student progress/evaluation in the student plan, and document student grades. The LMS has to *connect to other online teaching resources*, such as the online portal EMU that is the Ministry of Education online learning portal for teachers. This portal aims to inspire Danish teachers, pedagogical staff, and management to reflect on their teaching practices. The purpose of the LMS to interrelating with other digital-resources is that it will make it easier for teachers to use these teaching courses in their teaching practice. Furthermore, an aspect the LMS also must contain is that the platform makes the teaching completely transparent - for example, so students, parents, and school management have digital access to the issues illustrated in figure 1.



### 1.2.2 The Primary Political Reason for Implementing an LMS

The implementation of the LMS was part of a broad digitization strategy in Denmark for all public sectors (The Danish Government, Local Government, & Danish Regions, 2011). The political aim of the digitization strategy was to support digital solutions and develop digital standards. Furthermore, besides the overall digitization strategy policymakers had two objectives regarding the imple-

mentation of the platform: to make teaching more efficient and to support the goal-directed teaching method (Government, 2018; The Association of Municipalities, 2016).

Thus, policymakers had some clear expectations for the usage of the LMS. When I collected interviews (see section 3.4 for a detailed description of the process); four private operators delivered platform solutions to the municipalities - two of them almost completely dominated the market. Private operators react to market demands, and thus the LMS had a programmed design embedded to support the requirements of policymakers.

Furthermore, the other important political objectives were to streamline a teachers' work. As the analysis in chapter 4 shows, because policymakers needed that teachers spend more time in the classroom teaching, they could extend the school day for the students without an increase in expenses. This aspect became an essential vision for policymakers and local school management for implementing the LMS. Thus, the political vision was that LMS makes teaching more manageable, and simultaneously, more professional because the sharing function in the platform will profile their professional judgment.

### 1.2.3 The LMS-Literature

The implementation of the digital tool began in the school year 2016/17. From a policy-research perspective, the LMS is linked with the recent school reform and act 409, emphasizing that student learning outcomes dominate Danish policy discourses (Dorf, 2018). Simultaneously, Moos (2019) argues that the platform is an example of governance through an efficiency initiative to ensure tools to strengthen students' learning outcomes. According to Moos (2019), the LMS builds on the well-known management technologies: Standards, tests, and digital teaching materials – all aiming at aids data on students' learning and progression.

Besides policy-analysis of the LMS's influence on a teacher's practice, there have been empirical reports on the topic. For example, the project "Use of digital learning platforms and teaching aids" (Misfeldt, 2018). The project's purpose was to develop initiatives that support the implementation of the digital innovation. The researchers in the project primarily focused on how the LMS affects students'

learning, and the result of the project was published in six reports. Two of the reports are significant for my research interests.

The project's first report was a review of the international literature's learning platforms (Aalborg University, 2017b). Three of the review articles were of particular importance for my research interest concerning governing through LMS and its practice. The first of the articles from the review showed that successful implementation of an LMS ensures that the platform makes sense for teachers to apply in practice (De Smet, Bourgonjon, De Wever, Schellens, & Valcke, 2012). The second article showed that teachers are skeptical of using an LMS - suggesting that the implementation of an LMS encourages teachers to employ standardized so-called best practices in their teaching rather than supporting their development of professional autonomy and judgment (Selwyn, 2011). The third article showed that the digital innovation, contrary to the often stated intention of making teachers' work more efficient – that teachers who use the platform experience it as a heavy additional workload (Underwood & Stiller, 2014). Together the three articles provide essential knowledge about the views of an educational practitioner's use of an LMS. But despite literature concerning LMS being extensive when it comes to how the platform support or does not support learning, the literature is far more sparse when it concerns governance and teachers' practice.

The second report of the 'Use of digital learning platforms and teaching aids' project of interest for my research was 'Sub-report 3' (Gynther, 2017). Likewise, the study by De Smet et al. also emphasizes the teacher's understanding the objectives of the LMS as a vital factor for the tool to be successful. Furthermore, the authors emphasize that it is central to involve teachers in the implementation process itself, highlighting that the best way to implement an LMS is a bottom-up approach that provides enough time for teachers to be sufficiently competent to manage the digital innovation, as well as have time to 'play' with the tool, so they can discover the possibilities of using an LMS. Thus, the suggestions from the report are contrary to the political guidelines and demands for its use.

In 2019, an anthology including 11 articles had been published. Likewise, in the project mentioned above, nine of the anthology articles highlight the pedagogical perspective of using the LMS – it could, for instance, be how to create a learning course in 'Meebook' (one of the two dominant LMS-operators). Yet again, two articles were of interest to my research. However, one of the articles was the same review, which leaves only one more article of interest. The article's purpose

actually aimed to improve teaching and student learning outcomes, meaning it is a pedagogical article. However, the authors emphasized that the implementation of the platform involves numerous stakeholders with various intentions of changing practice through the tool. The authors stress that to articulate a change of practice - shared visions independent of the LMS must act as governance-technology to decide how to use the LMS. (Gissel et al., 2019).

#### 1.2.4 Conceptualizing the LMS

As demonstrated in the previous section, the design of the platform is supposed to back the teacher in her/his practice with multiple functions. In that sense, the LMS is expected to be *the* digital tool teachers employ to organize their teaching, share their teaching, and collect data on the students and communicate. These specific elements, for instance sharing teaching courses, are a vital part of the programmed design of the LMS, and thus to some extent, in line with political expectations of how teaching should proceed. Particularly three political expectations influence the design of the LMS. *First*, the design of the LMS is expected to streamline teaching to support a best practice teaching approach in terms of goal-directed teaching and moreover to reduce cost because the thought is that streamlining teaching also means that teachers will be more efficient. Accordingly, streamlining of teaching through the platform can be understood as an underlying premise of the NPM-logic of efficiency, where efficiency emerges by the assumed fact that sharing goal-directed teaching courses make it easier for the teacher to prepare her teaching. *Second*, the LMS supports the accountability of teachers through the 'panopticon design' by guiding teachers to perform the task as expected, thus continuing the NPM-logic of surveillance and detailed control over employees' work solutions. Teachers' performance will always be visible to their colleagues, students, parents, and the management. This form of responsibility is by the policymakers expected to improve teachers' teaching through, for example, the concept of goal-directed teaching, which yet again is expected to improve student outcomes. Through the responsibility affected by monitoring, teachers are guided to a specific kind of professional judgment connected to goal-directed teaching. *Third*, the design of the LMS provides teachers with a tool that can be utilized to collect data on student behavior and performance. The political assumption is that data leads to knowledge of student performance, which provides the teacher with the knowledge to act with the right teaching approach. However, the data

production generated by teachers' use of the platform is also important on the policy level because the specific knowledge the data shows can be exploited to compare efforts across schools and municipality administrations. In that light, the production of data supports policymakers with a strategy to control schools through the knowledge the data produces.

The digital innovation contains many different perspectives, which makes it difficult to conceptualize with one term, and throughout the thesis, I characterize the platform with different terminologies such terminology fits the analyzed context. A conceptualizing of the LMS must cover and embrace that the platform is a multifaceted object. On the one hand, the LMS *is* a working tool teacher must apply in practice daily. However, on the other hand, this working tool is not neutral, as the platform has a programmed steering architecture, which, through the programmed design, steer teachers towards a specific expected practice and, when used by the teachers, simultaneously hold teachers through the programmed design accountable for their practice.

### 1.2.5 Summary of the Concept of LMS

The sparse LMS literature prescribes that a bottom-up implementation process presumably will be beneficial to get to support teachers' positive relationship to the platform. However, a bottom-up implementation where teacher 'play' with all the possibilities the platform offers and uses the options that make sense for the teachers simultaneously contradict the political objectives of the digital innovation. Although Danish school managements have some degree of autonomy to lead at their school, I assume that a bottom-up strategy initiated by the school managements is doubtful since school managements are also part of a bureaucratic system that follows ministerial guidelines and legislation. As outlined, there are very specific political expectations towards the LMS, and the programmed design of the platform supports the political expectations.

Against this backdrop, it is reasonable to understand that digital innovation is more than just a tool for teaching. Instead, the LMS is a multifaceted object that acts as a programmed steering architecture, which guides teachers' practice and holds teachers accountable for their practice.



# CHAPTER 2

THEORY



## 2.1 Using Bourdieu

This section presents a Bourdieusian field analysis model regarding governance through an LMS and the effect on practice. I have constructed the model to elaborate on how Bourdieu's concepts framed the research design and guided the qualitative analysis. Thus, Bourdieu's sociology and analytical concepts of field, habitus, and capital play a significant role in the dissertation's methodology and analysis. In the method- and analytical section, I present and discuss the Bourdieusian influence, for example how habitus is understood and used in the specific analysis. However, to explain the Bourdieusian influence on methods and analysis, the construction of the field analysis act as an exemplary example.

The section is organized as followed. I start with a short introduction to Bourdieu's concept of field, capital, and habitus. Then I present a theoretical argument for doing a field analysis. Subsequently, the particular field-analysis model is presented. The model is divided into four hierarchical sub-themes, the field of power, the national field, the bureaucratic field, and the local field of schooling practices. All four sub-themes are discussed separately. The model also includes a discussion on the limited autonomy the educational field contains. Afterward, I explain the intention of the arrows in the model.

### 2.1.1 Field, Habitus and Capital

In the analytical chapters, I use Bourdieu's concept of field, capital, and habitus to generate new knowledge of the investigated phenomena of governance through the LMS and practice in primary and lower secondary schools and thereby elaborate on Bourdieu's concept - not just to apply the concepts of field, habitus, and capital but to expand the knowledge of for example the field of schooling practices. In the analysis, I explain the concepts and how they can be used to gain knowledge. Therefore, this is only a brief introduction of the concepts that provide enough insight into the theory to follow the argument presented.

I elaborate on Bourdieu's concept of field in the next section, so for here, it is sufficient to establish that a field for Bourdieu is a social space consisting of actors. An actor's practice within a field only makes sense in relation to other actors within the field. That means that actors preferences and position in a social space must be understood as a product of the actors struggles to dominate the social

space and how much accumulated capital the actors can bring into the social space (Bourdieu, 1992, 2010)

According to Bourdieu, capital can appear in many forms, but the most dominant analytical forms are the embodied social, cultural, and economic states (Bourdieu, 2001). Moreover, according to Bourdieu, capital can be symbolic, which means capital can be the subject of alteration and transformation into other forms of capital. Capital transformation is depending on how "habitus" perceives the symbolic actions. For Bourdieu, symbolic capital is the capital that is "unrecognized" as capital but instead recognized as legitimate competencies – a capital process there might not be visible, but in ways that may not be readily recognized as the capital of one particular type (Bourdieu, 2006)

Thus, habitus gives actors agency. In Bourdieu's theory, habitus is the accumulated form of capital an actor can draw on when the actors act in a specific social space. It means that habitus constitutes actors specific dispositions through the exposure to specific practices within a social space – this is, of course, a dialectical process because the "habitus" there are engaging in a social space, with its agency constitutes the dispositions in the social space (Bourdieu, 1992). Accordingly, Bourdieu understands habitus as permanent dispositions predisposed to functions as structuring structures, which means logic that produces and structuring praxis and representations (Bourdieu, 2006).

### 2.1.2 Bourdieu on Field-Analysis

Bourdieu-inspired field analysis is slightly different depending on the research objectives. An anthropological-inspired study typically examines actors' habitus in a specific field and analyzes the actors' relationship to each other (Rowlands, 2018; Rowlands & Rawolle, 2013). The more sociologically inspired studies analyze the relations between fields. Furthermore, what characterizes the investigated fields (see for example, Gunter & Ribbins, 2003; Rawolle & Lingard, 2015). I draw on both approaches because I analyze the dominance in the field and moreover, how the dominant logic of the LMS affects local management and teachers' practice.

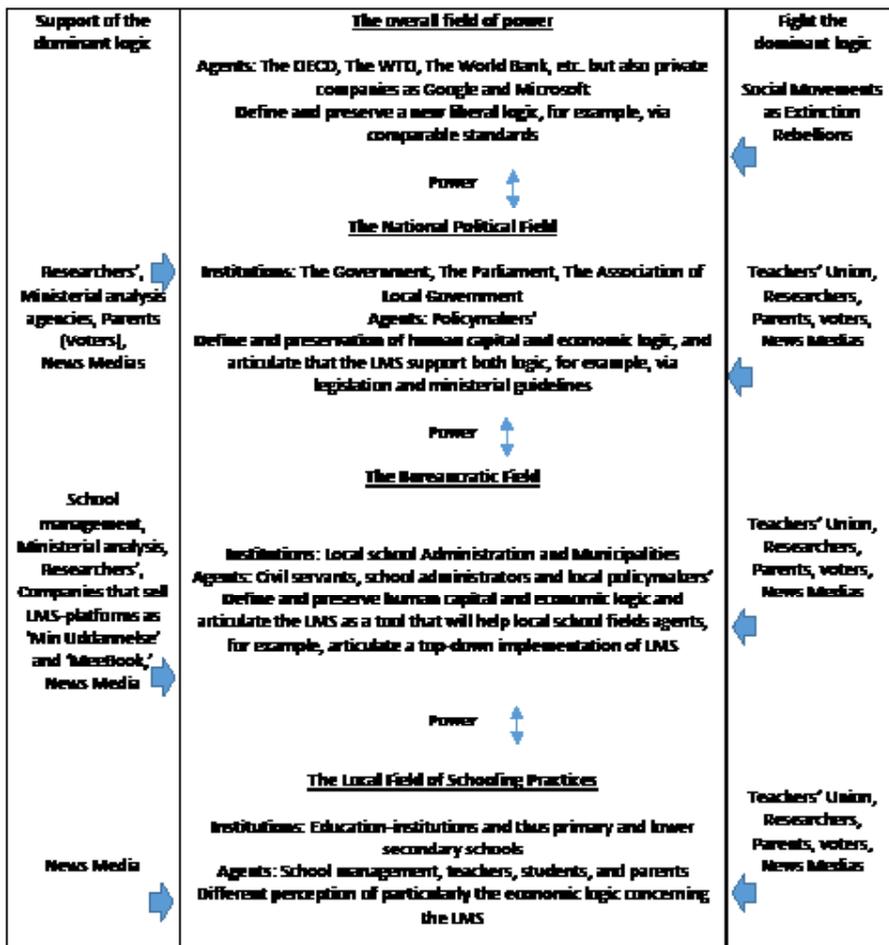
As a key component of his theory, Bourdieu understands a field as a battleground where different actors argue about something specific (Bourdieu, 2005). As explained in chapter 4, it could be how policymakers and the Teachers' Union

disagree both about teachers' work conditions and more symbolic about how to understand excellent teaching. Bourdieu argues that all actors participating in a field have a specific interest in influencing the field in a particular direction. Bourdieu emphasizes that actors participating in a struggle of domination in a specific field simultaneously recognize the values at stake in the field and accept the specific illusion of the field (Bourdieu, 1992). Using all the power at their disposal to neither preserve nor change the logic in a particular field (Bourdieu, 2004b). Again with the same example, either policymakers and Teachers' Union recognize the premise of the human capital logic (Becker, 1993) that a well-educated population is *the* solution for welfare states issues, such as economic growth and job security. Accordingly, they both recognizing human capital logic as the educational doxa. Thus, in this particular analysis, policymakers and Teachers' Union's struggle articulates in different methods to archiving a more educated population. For policymakers, by producing a logic in the field that the LMS will make teaching more efficient, allowing teachers to spent more time in the classroom, which at the same time will encourage teachers to use specific teaching methods that focus on data-production and measurable student-leaning outcomes. The Teachers' Union fights for better work conditions in terms of, for example, more time for teachers to prepare teaching, whereas teachers fear that 'LMS-teaching' leads to teaching to the test practice.

Bourdieu always considers a field analysis as the concrete empirical struggle researchers observe (Bourdieu, 1992). Depending on the researchers' interest, a Bourdieusian approach sometimes differs since the overall field of power, in some cases, merges with the political and bureaucratic field (Mathiesen, 2006). The point is that the field is the researchers' construction to understand and explain the empirical reality via constructing the specific struggles between the different positions the researcher observes (Bourdieu, 1992). The Bourdieusian-inspired Danish researcher Mathiesen (2000; 2006) works with a three-forked field perspective analyzing, for example, Danish educational politics. At first, Mathiesen (2002) argues there is the overall field of power, where agents struggle about the neoliberal market economy and democratize the welfare state. Secondly, a bureaucratic field where agents struggle for neoliberal professional managerialism or democratic representations. Finally, an institutional field where agents struggle about streamlining the service level and developing welfare for and together with the users. Mathiesen, together with Højbjerg (2013), argues that the model can be used by researchers in the following ways, 1) What can be observed. 2) The

differences between agents that produce the dynamics of change. 3) The social significance of the historical specific changes. In this regard, Mathiesen’s model is a way of operationalizing the analytical focus on the various struggles that exist when the researcher focuses on welfare state issues. Hence, Mathiesen understands the overall field of power as both transnational and national. I agree that the national political field has a unique position of power concerning structuring other sub-fields, and thus the national political field dictates the direction for how a state governs. One can merely look at the European effort against Covid-19 to see how strong the national political fields are. Nevertheless, I operate with a transnational supreme power field - inspired by Bourdieu’s thoughts from the book ”Act of Resistance” (2004a), where he argues that the overall field of power is structured by a neoliberal economic doxa that structures the national political fields.

### 2.1.3 A Model for Field Analysis



The model shows how the field analysis inspires this dissertation's research interests and simultaneously, together with the critical perspective on governance structures, the scientific focus on the implementation of the LMS.

#### 2.1.4 The Overall Field of Power

The models' overall field of power includes transnational actors that define neoliberal economic logic and have a decisive influence on actors in other fields. Bourdieu emphasizes that since the fall of communism, there has been global agreement that modern capitalism is the global direction for governments. Thus, the positions in the field struggle over whether capitalism should be regulated or unregulated. The key is that the precondition for production and reproduction in the overall field of power is economic logic (Bourdieu, 2004a). Various studies have demonstrated that actors in the field of power such as OECD, WTO, and The World Bank, supports the neoliberal logic in educational settings (Gunter, 2016; Moos, 2017; Mundy & Verger, 2015; Steiner-Khamsi, 2019; Verger & Curran, 2014; Verger, Fontdevila, & Zancajo, 2016; Williamson, 2016). I primarily reflect on the OECD's influence on policymakers as a transnational actor in chapter 4, which significantly influences the symbolic production of logics for the political field as well as the school field. The OECD produces at least two economic logics - education is a competitive parameter for the national-state and, therefore, developing standards to measure education production outcomes (Sellar & Lingard, 2014).

#### 2.1.5 The National Political Field

The national political field includes the government, the parliament, and the association of local government. The key point is that the parliament and the local government possess the legitimacy to produce legislation and, by extension, the symbolic power to implement proposed measures, so public employees comply with specific legislation. It also means that it is in the political field that the tangible power is realized - in the political agreement between the parliament and local government that primary and lower secondary schools must acquire an LMS and that teachers must use the LMS for specific conditions, such as making a student plan (The Association of Municipalities, 2016). In a Bourdieusian perspective,

the political field is, like all other fields, characterized as a battlefield for political dominance. The notable aspect concerning education, at least in Denmark, is that the political actors' habitus shapes in light of the dominant economic logic, which result in educational reforms that support economic goals, for example, that education must ensure that the population has the right skills to be part of the labor market. Since the social democrats accepted the enactment of a national test system (The Danish Government, 2006), with an argument that tests can be a pedagogical tool (Gustafsson, 2012), there has been no apparent contradictions between the most predominant governing parties, the Social Democrats (Socialdemokraterne), and the Liberal (Venstre). Therefore, I consider the most recent policymakers as being one entity. Of course, this is a bit harsh because up to, for example, parliamentary elections, educational policy differences can be observed between all the political parties. Furthermore, there have been 'heretics' on the political outer left and right wings based on different political ideologies. These outer wings parties have tried to break doxa in the field of education, however, without success. Consequently, the major parties in Denmark for the last 15 years have more or less agreed on the direction of educational policy for the primary and lower secondary schools.

### 2.1.6 The Bureaucratic Field

The agents working within the educational administration of local governments characterize the bureaucratic field. In Denmark, the local government consists of 98 municipalities, which are responsible for running schools. Additionally, the municipalities have some freedom to implement their own values of education and schooling (Greve & Åkerstrøm Andersen, 2007), allowing them to shape the implementation of the LMS to the individual values of the municipality. As a result of this distribution of responsibilities, the municipality is accountable for the implementation of the platform. Thus, the agents within the bureaucratic field significantly influence the concrete implementation of LMS. Moreover, the educational administrators set local standards in accordance with the national standards as national tests to hold local school management accountable. Despite agents in this field having the freedom to adjust legislation and produce their own local standards, these bureaucratic agents can be characterized as loyal Weberian civil servants that act like policymakers extended arm and thus act as required and expected. Although the bureaucratic field-agents have a relatively limited scope

in the analytical chapters in this dissertation, an analytical premise unfolded in chapters 4, 5, and 6 exposing particular structures produced by bureaucratic field agents that significantly influenced the structures in the school field – for example, how to implement the LMS. Furthermore, in light of the theoretical expectations, the struggle in the field is about whether economic rationale or principles that are more democratic dominate the logic of the field. With the expected result, the bureaucratic field will significantly support the LMS requirement from the political field, consciously or unconsciously supporting economic logic.

However, in contrast to theoretical expectations, the interviews I have undertaken with the municipality consultants/school administrators sufficiently demonstrate that municipal administrators perceive their agency as altruistic. For instance, in the interviews, they express, digitization should benefit all students and not only students who have the resources to acquire a computer. However, on the other hand, the school management and teachers interviewed all state that the demands regarding the implementation of the platform are specific, and subsequently that the municipality administrators particularly emphasized the economic logic when they were at schools to demonstrate how to use the LMS. Thus, at least from the schools' management and teachers' perspective, the municipal administrators' tangible agency follows the theoretical expectations of being the extended arm of policymakers', despite their own altruistic perception.

### 2.1.7 The Local Field of Schooling Practices

Field agents in local schools consist of school management and teachers. Moreover, in chapters 6 and 7, teachers are divided into two groups with different strategies to cope with the implementation of the platform. The boundaries between the fields are often fluid, which also applies to the inclusion of agents within the different fields for analysis. As Bourdieu points out, field-analysis always is the researcher's construction. Thus, some researchers might place school management in the bureaucratic field since management becomes managerialism; the administrators act like policymakers auxiliary arm and consciously or subconsciously underline economic logic in decision-making.

A Danish study of school leaders' agency shows that the school management's habitus distinguishes between professional-managerialism and a teacher habitus. The authors suggest that management habitus emerges from external pressures

such as standards and accountability, which characterize the logic of managerialism and subsequently the values on teaching and children's general education, which embodies experience from their teachers' education (in Denmark, almost every school leaders are educated teachers) (Bøje & Frederiksen, 2019). This notion somehow repeats in the interviews undertaken with school management. Thus, interviewed school administrators express that the amount of well-described guidelines for running schools have increased. In consequence, the external pressures result in a more professional agency. Many researchers confirm this external pressure on school management (Courtney & Gunter, 2015; Eacott, 2013; Gunter, 2016; Moos, 2014).

Moreover, all the interviewed school leaders deeply felt that they care about democracy and students' education to be part of a democratic society. Likewise, for the educational administrators, the interviews reveal a discrepancy between school leaders' self-perception and their particular managerial practice. This perspective is not followed up as such – at least not as re-thinking the Bourdieusian concept on the school managers' limited autonomy, which in the Danish context results in the habitual-conflict described above. However, chapters 5 and 6 show how the school leaders' practice indicates their habitus is shaped by the logic of economic. In that sense, the structures that the bureaucratic field underlines influence how the school management reproduces these bureaucratic structures, so it is in the structures the management produces it becomes clear how the teachers are expected to teach.

The final agent analyzed in the field is the teachers. Teachers are the analyzed agent with less capital, and thus, in Bourdieusian terms, undeniably will be the oppressed part of the field. However, they are also in possession of some power to realize the political intention of the reforms by their initial-teaching practice. Are they performing as expected or not?

In a Bourdieusian theoretical framework, teachers are regarded as state welfare workers that underline the need for appropriate welfare for citizens and opportunities to deliver the welfare. In this research, the theoretical expectation is that a teacher's habitus has been internalized via, for example, their teacher education program, the public service motivation- and the Deci/Ryan intrinsic motivation notion (see section 2.5). Thus, teachers are motivated to teach by doing good for others to educate students to become capable citizens. Furthermore, in such a context, teachers emphasize autonomy to professional judgment (Biesta, 2015) to adapt and build teaching courses for 'their' students.

The Bourdieusian framework, however, also underlines that a teachers' habitus is shaped by the logic of teaching produced by the local management and the bureaucratic- and national political field. Although the distance between teachers and agents in the transnational power field is considerable, and the transnational agents mostly influence the national political field by soft power techniques (Moos, 2009; Williamson, 2014), the expectations are that the logic from particular OECD's PISA-results to some extent also forms teacher habitus.

The teacher habitus discussion shows that some conflicting matters theoretically shape a teachers' habitus. Bourdieu's concept of symbolic violence, among others, refers to how agents, over time, accept a phenomenon as natural and accordingly stop fighting the phenomenon (Bourdieu, 1998). Related to this, will the implementation of the platform shape the teachers' habitus, so it becomes the embodied experience, which implies a specific automatized teaching practice? Or will teaching values accumulated at their teachers education program be so much a part of teachers' habitus that they will reject the implementation of the LMS? The research design of this dissertation does not provide a baseline for longitudinal discussion of how the implementation of a new digital innovation changes a teachers' practice. However, to compensate for this conceptual-limitation, I will discuss how policy-makers aim to change teachers' practice through historical document analysis. Still, the analytical arguments in this dissertation will be theoretically informed. This is done, particularly with the 22 interviewed teachers where I ask them to reflect on – how the recent changes had affected their teaching practice and, of course, how the platform affects practice. This provided a solid empirical foundation for analyzing and reflecting on how the teacher undertakes 'LMS-teaching' in primary and secondary schools.

Following Bourdieu's arguments, an agent position within a field must relate to other agents' positions (Bourdieu, 2010). Furthermore, the interviewed teachers' reflection of LMS showed some differences among the teachers' approaches. I subsequently grouped the teachers into two different categories of teachers (chapter 6), which made it possible to analyze different teachers' strategies to cope with the implementation of the digital tool.

As a result of this setup – an aspect I reflected on but also needs further investigation, is the different amount of digital-capital teachers possess. With the understanding that the notion of capital is a useful concept explaining why teachers, also with similar economic and cultural capital, engage differently with the same

technologies. Researchers utilize the concept in various contexts, mainly focusing on access to digital technologies and inequality (Beckman, Apps, Bennett, & Lockyer, 2018; Seale, 2012; Selwyn, 2004). Park (2017) argues that digital capital embeds in Bourdieu's economic, cultural, and social capital. Consequently, digital capital shapes an individual's engagement with digital technologies and includes the preconditions of digital engagement that enable an individual to thrive in a digital society. This includes the implementation of the LMS, and the Danish government's overall digitization strategy that includes a political focus on, e.g., digital devices (The Danish Government, 2011). With the increased use of digital learning platforms that produce digital learning-courses that act like the old textbook, it is reasonable to assume that Danish teachers work in a digital school, and thus the notion of digital capital becomes significant for the wellbeing of the teachers. In Chapter 6 I argue that teachers with more digital capital in their practice reproducing structures at the schools because of their digital competence they reinforce inequality among teachers.

### 2.1.8 Power Relations

The arrows in the model indicate the relationship between power and field. As Bourdieu points out, agents utilize all the power at their disposal to neither preserve nor change the logic in a particular field (Bourdieu, 2004b). While Bourdieu considers the concept of habitus as a system of disposition of long-lasting manners of being, seeing, acting, and thinking – a schema of perception, conception, and action (Bourdieu, 2005), agents' position in the field is determined by the amount of capital they can draw on. This means how much social, economic, and cultural capital an agent accumulates when entering a specific field (Bourdieu, 2004b). Although the precise amount of capital 'policymakers, educational administrators, school management, and teachers' have is not accounted for in the analysis, the theoretical expectation suggests that particular policymakers possess capital and power to dominate other agents (Bourdieu, 1996). The arrows' in the model show that power can be top-down or bottom-up. Yet, the Bourdieusian perspective mostly underlines an asymmetric power in the fields – for example, the top-down implementation of the LMS that actually did occur (chapters 5 and 6). In the aftermath of the implementations, the logic of teaching efficiency, and streamlined teaching that underpins measurable student-learning outcomes, policymakers want to dominate the bureaucratic- and local school field. The power-arrows in the

model reflect the Bourdieusian perspective on power. This can be reminiscent of what I call the critical sociological understanding of governance (see section 2.2.1). Thus, it highlights how the dominant agents continuously use their economic and cultural dominance to remain dominant through the top-down implementation of the LMS.

For the reason that the collected empirical data so largely point to a top-down implementation of the platform, I do not investigate as such the bottom-up perspective. Still, I fully acknowledge that agents from the dominated fields can shape the habitus of policymakers and influence their decisions.

### 2.1.9 Influence from other Agents'

The last perspective of the model is influenced from both the right and left sides towards the investigated fields. On the one hand, Bourdieu stresses that fields are to be understood as relatively autonomous and thus produce their own specific interest and logic (Bourdieu, 2004b). Yet, on the other hand, it can be a complicated matter for the researcher to determine when a specific position dominates the logic of the field (Bourdieu, 1992). Some researchers characterize the weak autonomy as a matter of cross-field-logics (McGuire, 2016). As Rawolle and Lindgard (2008) argue, the autonomy of the educational field is small, pointing out that the educational field consists of numerous cross-field effects from other sectors and organizations such as the OECD. In this particular model, I have included the OECD as part of the overall field of power – which, incidentally, is not in opposition to Rawolle and Lingard; they just do not operate with an overall field of power. The inclusion of OECD in the overall field of power merely gives the impact researchers emphasize they have. However, the left and right arrows of power indicate that the autonomy of the field of education is weak and influenced by much cross-field logic.

In the analytical chapters, the agents on the left and right side of the model play a small role. However, Chapter 4 illustrates how both policymakers and the Teacher' Union use logic from other fields to enhance their position in the field. Nevertheless, the influence of these agents could be unfolded more thoroughly in further research. There is no doubt, agents outside the educational field significantly influence the national, bureaucratic, and local school fields. For example, Bourdieu highlights the media's influence on contemporary societies in 'On television

and Journalism' (2006a), while empirical studies show the media's influence on Denmark's educational policies (Gustafsson, 2012). Furthermore, in the Danish context, more than 50 reports have been made on the recent school reform's impact on management, teaching, and learning (The Danish Ministry of Education, 2020). I have not read all these analyses – still, there is much knowledge allegedly produced for the school field via the reports. A critical view of the analyses is indispensable since e.g., the analyses from Epinon and Rambøll are commissioned work from the Ministry of Education. Presumably, these reports, to some extent, contribute to guiding agents of the field through soft-power techniques. The reports are filled with pictures, highlighted text in bold, many summaries, and, thus, easily read by the recipients - who experience a hectic everyday life (see chapter 5) and therefore probably do not use the time to thoroughly read demanding and hard-to-access research studies. Thus, easily read reports might have a stronger influence on the educational agents. The expectation is that these reports mostly support policy-makers' position by, for example, showing school management that communicates the importance of goal-directed teaching will result in teachers using the methods which has a positive impact on student learning outcomes (Kjer et al., 2015). In chapter 4, I demonstrate that the Teachers' Union also accumulates capital from researchers critical of the reform.

#### 2.1.10 Using Bourdieu's Concepts in Chapters 3, 4, 5 and 6

The Bourdieusian concept of field, habitus, and capital dominates the qualitative analysis in chapters 4, 5, and 6. As presented in chapter 3, I am also inspired by Bourdieu when it comes to research design. Thus, the field, habitus, and capital are used as analytical concepts to understand the data collected. Moreover, Bourdieu's idea of relational sociology is used to frame the research design (see section 3.1.2).

## 2.2 Theory Concerning Governance

In short, I understand political steering or governance as the intention of political agents' to affect the agency of actors in various fields. For example, through specific legislation, guidelines and recommendations. Steering can be articulated as hard power aimed at giving a direct response and direct change of an agents' agency or through soft power techniques that aim at changing the agency over time without conflicting with agents in the field (Gallarotti, 2011). The theories I apply to understand political steering act as tools to help understand and explain the empirical context.

The section is organized in the following structure. First, I introduce the critical sociology approach to governance to explain how I perceive governance in the dissertation. Thereafter, the second part of the section reflects how the dissertation's critical sociological understanding of governance influences the methodology and analysis.

### 2.2.1 Critical Sociological Understanding of Governance

I am inspired by critical sociological studies with, to some extent, reveal a different view on the role of the state in modern society. This indicates that modern western society is based on capitalistic market approaches and relay and adjust its policies to that fact (Bourdieu, 2004a). This includes the universal Danish welfare state model.

Marx was the first researcher to describe the capitalist society and, according to Marx, the embedded conflict and struggle between the dominant (business owners) and the dominated (the workers) regarding the means of production. One of Marx's theses was that because the workers do not own the means of production and thus have to sell their labor, the work objectifies, and the worker becomes alienated from its work. The role of the state is not explicit in Marx's work – however, he emphasized how modern capitalist societies are characterized by struggle and conflict about the means of production. In a Marxist understanding, the working class's exploration leads to the alienation of work (Marx, 1952). Marx's studies of capitalism have had an enormous impact on how researchers understand and analyze the exercise of domination and power. For example, as a result of capitalistic exploration, later reinterpretations of Marx's work highlights that research

from a normative point of view must focus on state produced alienation structures and have an emancipatory effect on citizens (Honneth, 1995; Rosa, 2010) as representatives for the modern Frankfurter school critical theory.

Although not a critical-theory researcher, the Marx-inspired sociologist Richard Sennett (1998) demonstrates in an American setting how alienation in modern work life can lead to a man's corrosion, Sennett demonstrates in the book 'Corrosion of character' that employees are responsible for their own success or failure. In the study, Sennett uses the concept of flexibility to illustrate the three mechanisms that influence and change people's personalities and character formation. First, the tradition-destroying reinvention of institutions and companies orchestrated around a companies' continuous reorganization. A reorganization that does not always occur because the company is in need, but rather because the company must show the market that it is ready for change. Second, a flexible specialization about companies producing as many varied products as possible - and that modern companies are characterized by easily accessible internal and external communication and fast decision-making processes, which helps companies change quickly. Third that the concentration of power without centralization is going on in a three-way process. First, information technology has made it possible for companies to 'monitor' employees' activity, even when they are not at work. Second, companies ensure employee productivity by generating goals that are difficult for employees to achieve, and third, a structure that promotes employee flexibility about employee task performance. Sennett shows that the three concepts have profound consequences for human personality because they radically changed the organization of work in the interaction with each other. Thus, one of Sennett's main points is that the uncertainty in job security and the demand for flexibility unknowingly lead to the employees and company's interests merging.

Foucault (1979) uses the panopticon to explain power. The panopticon is a prison architecture that allows one correctional officer to simultaneously observe all prisoners without the individual prisoner knowing if he/she is being monitored. Concerning this thesis's research interest, a central point from Foucault's theory is that the state uses 'panopticon-like' technologies to steer citizens in the direction of self-regulation. In the field of education - the student taking responsibility for his or her own learning could for example, illustrate this. The central point of Foucault's theory is that the role of the modern state is to discipline the citizens, for example in relation to the LMS, that students optimize their own learning

process. The argument being that citizens become aware that education and learning are essential for their future possibilities, thus they are responsible for being well-educated. Foucault (2010) argues that such a process of state power and control are invisible. Dean (2004) further develops Foucault's concepts of power. He argues that the concept of advanced liberal governance in the modern state, drawing attention to an elegant link between decentralization and voluntariness on the one hand, and centralization and political governance in comparison to centrally set standards, on the other. According to Dean, governance is both about 'real' governance practices, but just as much about how man is self-governing. This means analyzing management is about analyzing what or what practices make people act the way they do. Thus, the analytical focus on, for example management and governance-techniques directs how the concepts are embedded in the human body, so they become self-evident.

### 2.2.3 Using Governance in the Dissertation

From a critical viewpoint, governance, in the implementation phase of the LMS, means a good teacher is a teacher where the teachers' interests merge with the schools or, more precisely, the interests of the state. Accordingly, in a school context, governance tries to merge teachers' perceptions of the values in terms of the benefits of the LMS. This, for example, could be that sharing teaching through the LMS leads to teaching better and more efficiently. Thus, an embedded perspective of governance is that the teacher becomes responsible for how the 'good' implementation is carried out. However, over time changes that occur due to implementation are invisible to teachers. The embedded consequence of this is that the individualization of everyday teaching practice also becomes invisible. Thus, it becomes the individual teachers' responsibility that student-learning outcomes are of the highest standard. The self-regulated governance perspective is primarily revealed in chapter 5 in this dissertation.

## 2.3 Theory of Transformational Leadership

As outlined in the discussion of the field of schooling practice (section 2.1.7), the contemporary school management is placed in the middle of an educational policy battlefield. With the recent school reform, the primary and lower secondary school is divided between neoliberal education economy, accountability, and pedagogical responsibility to ensure more soft values as general student education and, in the end, educated democracy proficient citizens. In such a context, School leaders must balance between consideration of global competition and subsequently political pressure from both state and municipality level for measurable learning outcomes and consideration of the more general and long perspective purpose of the school: the democratic formation of students. In a jumble of political pressure, organizational changes, and some sort of autonomy of the field of schooling practice, it is relevant to discuss local management's influence on the implementation of the platform. In that sense, transformational leadership is a suitable theoretical approach to utilize for analytical purposes - because transformational leadership is a leadership practice that is supportive when an organization needs to change its objectives or its organizational structure (Eisenbach, Watson, & Pillai, 1999; Yukl, 2008).

Transformational leaders seek to develop, share and maintain a vision that encourages employees to put their self-interest aside and meet the organization's goals – the purpose is to make employees understand the meaning of rules and procedures to experience less unnecessary bureaucracy. In this context, a successful transformational leadership approach, in theory, means that the local management can translate the political vision of the LMS and communicate it to teachers. Simultaneously, their communication means teachers understand the need of the platform in practice and thus incorporate the tool into their teaching practice. Therefore transformational leadership becomes a particularly interesting perspective to investigate if and how local management applies the strategy and its possible influence on a teachers' practice.

The section is organized into 2 parts. I start by presenting the concept of transformational leadership, and subsequently, I explain how transformational leadership is applied in the thesis.

### 2.3.1 What is Transformational Leadership?

In short transformational leadership contains four elements; 1) A leader's charisma, e.g. how a leader provides a vision and sense of mission, 2) Inspiration, e.g. how a leader communicates high expectations, 3) Intellectual stimulations, e.g. how a leader promotes intelligent problem-solving. and 4) Individualized considerations, e.g. how a leader gives the employee personal attention (Bass, 1990). The expectation is that a transformational leader empowers employees by establishing a shared sense of vision and goals. Transformational leaders simply create and enhance employees' engagement by involving employees in the creative process with the expected return of improving organizational performance (Bass & Riggio, 2005). For two reasons, the transformational leadership approach is suitable for the analysis in chapter 7. First, it is a leadership strategy that is beneficial when an organization needs to change (Eisenbach, Watson, & Pillai, 1999) – furthermore; the strategy improves other organizational targets, e.g., performance outcomes, by enhancing employee motivation (Wright, Moynihan, & Pandey, 2012). In that sense, a transformational leadership approach is, from an administration perspective, suitable for developing organizational changes (Yukl, 2008). Thus, it becomes an obvious strategy to investigate when primary and lower secondary schools in Denmark aim to change the teaching approach through the LMS. Can policymakers and local school management articulate a vision of the digital tool that empowers the teachers and communicates clear expectations for using the platform?

Second, transformational leadership in the literature positively predicts employees' motivation, job satisfaction, and wellbeing. For example, in a literature review of the correlation between transformational leadership and the context-free psychological concept of wellbeing, the overall argument is that transformational leadership positively affects an employees' wellbeing (Arnold, 2017). Other researchers highlight that transformation leadership positively affects employees' performance and work motivation (Bellé, 2014; Bronkhorst, Steijn, & Vermeeren, 2015). The empirical studies on transformational leadership show a positive interrelation with employees' motivation and wellbeing, hence an interesting perspective on this thesis's research interest. If the teachers perceive the local management as transformational, does that mean they have a high level of wellbeing and are more favorable towards using an LMS?

### 2.3.2 How Transformational Leadership is Applied

Transformational leadership is used as the leading concept in the quantitative chapter 7. It acts as one of the independent variables in the analysis. In the analysis, teachers' perceived transformational leadership is explored. Thus, the purpose of the analysis is to investigate how it influences teachers' use of the platform, how it influences teachers' wellbeing, and how it influences teachers' sense-making of the LMS. Based on the theory, the overall expectation is that transformational leadership's influence will be positive – leading to a higher degree of usage of the platform, a higher degree of wellbeing among teachers, and a higher degree of teachers' sense-making of the LMS.

## 2.4 Wellbeing

The concept of wellbeing is used as an analytical notion implicitly and explicitly in the analytical chapters. Furthermore, as presented below, the workplace-wellbeing indicators derived from Karasek-inspired studies significantly framed the research design, and a high level of wellbeing among employees is in the thesis understood as a prerequisite for them to be motivated.

The section is organized as follows. First, I introduce the WHO wellbeing index. Thereafter, I argue for analyzing Karasek-inspired studies. This specific analysis is divided into four separate themes. The section concludes by exemplifying the three reasons for applying the concept of wellbeing in the thesis.

### 2.4.1 WHO Wellbeing Index

The World Health Organization (WHO) understands wellbeing as the individual state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity. The WHO questionnaire has five categories to measure subjective wellbeing. The questions start with 'in the last 14 days I have; 1) Been happy and in a good mood, 2) Felt calm and relaxed, 3) Felt active and energetic, 4) Woken up fresh and rested, 5) Done things that interest me. Each category scores from 0-5, with 5 constituting the greatest possible wellbeing, while 0 constitutes the least possible wellbeing. Then the score is added and multiplied by 4. The maximum score is 100 and an expression of maximum wellbeing. If the score is below 50, the individual is at risk of developing stress or depression (Topp, Østergaard, Søndergaard, & Bech, 2015). I use Skaalvik and Skaalvik's definitions of wellbeing in chapter 7 that adjusts the WHO-index to a teaching context. Furthermore, the WHO-index is not as such focused on workplace-settings; consequentially, I use studies based on Karasek's demand and control model to exemplify what is essential for employees to thrive at their work.

### 2.4.2 Workplace Settings and Employees' Wellbeing in the Demand/Control Studies

Karasek's theory assumes that the more demands an employee is exposed to, the more likely the employee cannot cope with the demands. In contrast, the more

an employee is in control of the workload, the more he/she can cope with the job (Karasek, 1979; Karasek & Theorell, 1990). Based on 38 Karasek-inspired studies from 2010-2018 - the following sections derive four themes these studies suggest as significant indicators for employees' wellbeing. I conclude with an explanation of how the specific perspective on wellbeing is understood and used in the dissertation.

#### 2.4.2.1 Demand and Control

Karasek-inspired studies show that time pressure and lack of influence in an organization increase employees' risk of stress and burnout (Johnson et al., 2012; Zeng et al., 2014). Furthermore, employees who control their work participate in the organization's decision-making, leaving them with greater job satisfaction. Employees with control promote their ability to develop their competencies and counteract the demands of organization and management (Cendales-Ayala, Useche, Gómez-Ortiz, & Bocarejo, 2017; Garbarino, Cuomo, Chiorri, & Magnavita, 2013; Van Doorn, Van Ruyseveldt, Van Dam, Mistiaen, & Nikolova, 2016). Moreover, studies show that a high level of control of work also suggests that employees are inclined to exploit their resources if exposed to multiple organizational demands (Dawson, O'Brien, & Beehr, 2016; de Jonge, van Vegchel, Shimazu, Schaufeli, & Dormann, 2010).

#### 2.4.2.2 Social Support

Various studies indicate that social support in an organization or company has a positive impact on employee wellbeing (Andersson, Larsen, & Ramstrand, 2017; Johnson et al., 2012; J. Rodwell & Munro, 2013; J. J. Rodwell & Fernando, 2015). In these studies, social support is broadly understood as colleagues or management.

If there a positive approach to each other in teamwork, it reduces stress levels (Levecque, Roose, Vanroelen, & Van Rossem, 2014). For example, if a colleague suffers from stress, a high degree of support from colleagues can help in that situation. In some cases, however, the opposite is true regarding management because in these cases, employees may feel they are monitored extra (Elliott, Rodwell, & Martin, 2017).

### 2.4.2.3 Autonomy

Employees' autonomy increases their work involvement and increases employees' job satisfaction (Johnson et al., 2012; Li, Burch, & Lee, 2017). Employees' education levels reflect on how autonomously they can act in an organization. A Belgian study of young workers showed that the employees with a high level of education are also allocated higher levels of control over their work and ensure higher autonomy in their work – which might prevent them from boredom at the work-place (Verhaest & Verhofstadt, 2016).

### 2.4.2.4 Expectations

Some Karasek-inspired studies show that if almost no demands are required, there is a high risk that the employees get bored at work, and boredom negatively influences job satisfaction (Elliott et al., 2017). Furthermore, a comparative study of Dutch and Italian nurses showed that Dutch nurses thrived at their work better than their Italian colleagues because the Italian nurses had high job requirements for time efficiency improvements, and at the same time had very monotonous work with few variations (Pisanti, 2012). Another study of nursing staff points out that management has the same problem - on the one hand, they must not overload the employee with demands, yet at the same time, the management must ensure that the job constantly challenges the individual employee so that job satisfaction can be maintained (J. Rodwell & Martin, 2013).

## 2.4.3 Using Demand and Control Perspective on Wellbeing to Research Design

The Karasek-inspired studies emphasized four indicators expected to support employees' workplace wellbeing. I used the knowledge and empirical insights generated from these studies to inquire into a teachers' workplace wellbeing in qualitative interviews (see section 3.4.4). I particularly inquired about teachers' perception of their own wellbeing and whether the LMS supports 1) Meaning of the work, 2) Autonomy, 3) Local school management, 4) Rhythm of time. Furthermore, the WHO-wellbeing index is utilized as an independent variable in chapter 7. Moreover, the identified wellbeing indicators link to the theoretical-con-

cepts that underlie the analysis qualitative-chapters, although it is not expressed in the particular analysis as a significant concept.

The identified wellbeing indicators act as the premises for teachers' motivation. As I discuss in the next section, the teacher can be motivated by an intrinsic factor, e.g. like doing something good for society. However, the assumption is that if their wellbeing is low, it will negatively influence their motivation, i.e. high wellbeing is a prerequisite for teachers' motivation.

## 2.5 Motivation

Wellbeing does not necessarily express which external or internal indicators motivate teachers to teach. In the psychological literature, motivation often characterizes neither as extrinsic nor intrinsic (Deci, 1971). This section will introduce how the concepts of motivation are applied in the analyses and influence the research design.

To do so, the section is organized as follows. First, I introduce the concepts of intrinsic and extrinsic motivation. Second, there is a short introduction to the concepts of motivations crowding and public service motivation. Third, follows a discussion of 'LMS-motivation' and the relation of motivation and governance. Fourth, I clarify how the concept of motivation is used in the dissertation.

### 2.5.1 Intrinsic Motivation

This dissertation draws to some extent on Ryan and Deci's 'Self-determination theory' (2020). The theory does not exclude that extrinsic indicators can motivate individuals, but Ryan and Deci emphasize that people have an inherent psychological motivation for learning. This motivation is not automatic and must be supported. According to Ryan and Deci, the three most important indicators to support intrinsic motivation are autonomy, competence, and relatedness. Ryan and Deci argue that autonomy is an individual sense of initiative and ownership regarding agency. The individual experiences of interest and value support autonomy, while in contrast, individual experiences being externally controlled, e.g. punishment, weakens autonomy. Competence is understood as the individual's feeling of mastery, and competencies are best supported in a well-structured environment that affords optimal challenges, positive feedback, and growth opportunities. Relatedness is the individuals' sense of belonging. Relatedness is supported with respect and carrying.

Although self-determination theory mainly analyzes student motivation and thus, which learning environment teachers can build, self-determination theory also expects teachers' intrinsic motivation to be affected by management and steering. Neither implementing a digital platform in Danish public schools could support nor control teachers' motivation. For example, the bottom-up perspectives that the literature regarding the LMS emphasizes will support teachers' LMS-pra-

ctice. Thus, a bottom-up implementation could promote teachers' motivation by highlighting the process and letting teachers adjust the tool to their teaching process and use it when it makes sense. Furthermore, give teachers time to develop their use, i.e. give teachers time to develop the needed competence to master the tools that make sense for the teacher. Accordingly following a focus on self-determination, policymakers and local school management support autonomous motivation by emphasizing the best processes within classrooms.

In contrast, a top-down implementation could be perceived as controlling and thus lowering teachers' motivation. Furthermore, in light of self-determination theory, policymakers increasingly emphasizing high-stakes testing and performance goals are problematic since the assumption of self-determination is that outcome-focused rewards and sanctions reinforce a way of achieving the goal – and also bad practices. This means that self-determination theory assumes that the political aspect of steering teachers' practice towards more intensive methods promoting student-learning outcomes will at the same time demotivate teachers but also eventually lead to poorer student performance.

### 2.5.2 Extrinsic Motivation

Ryan and Deci acknowledge the impact of several extrinsic motivators, such as punishment and rewards, however, they still argue intrinsic motivation leads to an inherent satisfaction and gives the best results (Ryan & Deci, 2000). Nevertheless, it is hard to imagine that teachers would do their work without being paid. Thus, it is likely that performance is also effected by the extrinsic motivation of the employees'.

### 2.5.3 Motivation Crowding Theory

Reforms, leadership behavior, and implementation, to mention some issues, can neither be perceived as supportive nor controlling for an employees' practice. The theory behind this assumption is the motivation crowding theory. The central assumption is that the relationship between extrinsic rewards and intrinsic motivation depends on how employees perceive a given intervention. If an intervention is perceived as controlling, motivation crowding theory expects the imple-

mentation displaces employees' intrinsic motivation. As such, a reward, e.g. can reduce intrinsic motivation (crowd it out). On the other hand, the expectation is that intrinsic motivation is boosted (crowded in) if the employee sees the intervention as supportive (Frey & Jegen, 2002).

#### 2.5.4 Public Service Motivation

Sometimes, employees, intrinsic motivation mean that the employee regards the job interesting for its own sake (Le Grand, 2003). Public service motivation refers to teachers' orientation towards providing service in order to do good for others and society (Andersen, Heinesen, & Pedersen, 2014). Following previous studies of Danish teachers' (Andersen, Boye, et al., 2014), the assumption in the thesis is that Danish teachers have a high level of public service motivation, which means teachers are motivated by more than merely receiving a pay-check.

#### 2.5.5 LMS and Motivation

An underlying premise for a successful implementation of the platform is that the implementation supports teachers' inherent intrinsic and public service motivation by the factors concerning autonomy, competencies, and relatedness. Even though teachers perceived act 409 as both controversial and controlling, the Andersen, Boye & Laursen (2014) study demonstrates how transformational leadership positively supports initiatives from policymakers. In that sense, teachers' public service motivation remained high despite educational reforms were perceived by many teachers as controlling. Thus, a point of interest concerning public service motivation is whether policymakers utilize the knowledge that teachers in the Danish context possess so much public service motivation that they will stay motivated despite reforms. The teacher might be so engaged with their students' wellbeing they, on the one hand, still have a high level of public service motivation while, on the other hand, perceiving the LMS as controlling for their practice.

## 2.5.6 Motivation and Governance

The focal point of this thesis is how governance through the LMS affects practice in primary and lower secondary schools. Motivation is interesting to explore, as governance potentially positively or negatively influences a teachers' motivation. Danish political researcher Lotte Bøgh Andersen (2014) understands motivation as the individual's drive to fulfill targeted goals, while work motivation is how much energy an employee is willing to put behind achieving goals related to his/her job. Such an understanding reinforces the need to analyze the relationship between governance, management, and motivation because governance and management can be perceived as neither supporting nor controlling by employees and thus positively or negatively affecting their motivation (Frey & Jegen, 2002). From the policymakers' point of view, the problem is that unmotivated teachers do not deliver as good of results as possible (Andersen, Heinesen, et al., 2014). Teachers working in jobs that demotivate them could lead to burnout (E. M. Skaalvik & Skaalvik, 2017).

Moreover, the Foucault-inspired critical sociological theory emphasizes analysis of individuals' agency with interest in how motivation becomes self-management and the analysis of what societal mechanisms lead to self-management (Kousholt, Nissen, & Krejsler, 2019). In this context, the theory will assume that teachers in the study will be motivated by monitoring because, e.g., the school management and students' parents in the LMS can always follow the progress of teaching and students. This kind of internal motivation caused by external circumstances amplifies a teachers' focus on performance yet pushes for academic standards. Hence, school management, policymakers, and parents can judge whether teachers perform up to expected results based on the standards.

## 2.5.7 Using Motivation Theory in the Dissertation

In the analytical chapters, particular the aspects of controlling and self-regulation emerges as an underlying premise for analysis. For example, the aspect of control is derived in chapter 4 that analyzes an emerging struggle and conflict between policymakers and the Teachers' Union. The chapter explains why many teachers perceive the LMS as controlling their practice. While the self-regulation perspective emerges as a leading consequence for teachers and principals in chapter

5. In chapter 6, motivation is used as an analytical tool to explain two constructed teachers' strategies for coping with the implementation of the LMS. Furthermore, the concept of motivation was used to frame the research design of the dissertation.

## 2.6 Merging the Theories

Although Bourdieusian inspiration is significant in the framing of research and analysis in this dissertation, it is important to stress that this thesis is not a rigorous Bourdieusian analysis following all the rules to conduct such an analysis. Instead, it is an empirical sociological investigation of an under-exposed phenomenon. Consequently, I apply various theories that are analytically useful for understanding and explaining the empirical phenomenon.

As briefly discussed later on in chapter 3, there are some difficulties in applying various theories with a different ontological and epistemological basis. However, I am not interested in a philosophical or theoretical discussion on how theories with a different ontological and epistemological starting points fit and enrich each other. As previously mentioned, the thesis aims to understand and explain the relationship between governance through the LMS, and agency in practice. In such an understanding, the advantage of applying various theories is that they can complement each other and offer more substantial explanations of the empirical phenomenon, which is the dissertation's core intention. The table below shows how the five theories of Bourdieu, governance, transformational leadership wellbeing, and motivation, are applied and integrated.

<b>Theory</b>	<b>Research Design</b>	<b>Chapter 4 Document analysis</b>	<b>Chapter 5 Qualitative Interview study</b>	<b>Chapter 6 Qualitative Interview and document study</b>	<b>Chapter 7 Quantitative Survey data</b>
<b>Bourdieu</b>	<b>Selection criteria and constructing interview guide</b>	<b>Analytical tool</b>	<b>Analytical tool</b>	<b>Analytical tool</b>	
<b>Governance</b>		<b>Perspective</b>	<b>Analytical tool</b>	<b>Perspective</b>	<b>Perspective</b>
<b>Transformational leadership</b>					<b>Independent variable</b>
<b>Wellbeing</b>	<b>Constructing interview guide</b>				<b>Independent variable</b>
<b>Motivation</b>	<b>Constructing interview guide</b>		<b>Analytical tool</b>	<b>Analytical tool</b>	<b>Perspective</b>

Table 1 shows how the various theories are used in the dissertation. As the table shows, the theories are used for various purposes. The item perspective in the table means that the applied theory is a critical reflection of the particular analysis, neither as a starting point for the specific analysis nor as conclusive remarks. The item analytical tool refers to which theory is used as part of the specific analysis. Consequently, the theory frames the analysis and is explicitly presented in the

analysis of the chapter. The item independent variable means that the theory act as an investigated variable in chapter 7. The items constructing interview guide and selection criteria means that the theory is applied for framing the research design and reflection before the analysis.



# CHAPTER 3

METHODS



## 3.1 Methodology

Chapter 3 presents the three different methods applied to examination, understanding, analyzing, and eventually explaining the research questions of the thesis. I end the chapter by presenting the overall findings of the dissertation, followed by a short discussion of the results, and finally, my ethical reflections.

I use various theories to explore the empirical object and complement each other's strengths and limitations. The consequence of my choices primarily to focus on explaining the empirical object results in theories with different ontological and epistemological explanations. However, I do not regard that as a significant problem because of the systematic and transparency in constructing the research design, which rigorously explains how theory and methods are used for analysis. In addition, I wanted to explore the empirical context and not develop theories from a philosophical or theoretical viewpoint (although as a consequence of the particular analysis, I do contribute with new theoretical insights).

### 3.1.1 Realism

As a fundamental precondition, I believe 'society' is an objective reality. In contrast to the positivist approach, but following, for example, Marx and Bourdieu, I believe researchers need to utilize analysis and concepts to uncover the observable reality's objective structures or context. In this context, the phenomenological perception that participants objectively can explain their circumstances also becomes insufficient.

### 3.1.2 Relational

Bourdieu's relational sociology is a revolt with the ongoing sociological actor/structure debate – where Bourdieu claims his concepts of field and habitus analytically demonstrates the dependence on and the relation between structure and agency (Bourdieu, 2006b). Furthermore, Bourdieu understands that a rigorous sociological science must relate to the differences of the social spaces. Bourdieusian reflexive sociology is a committed objectification of the object of study and, at the same time, an objectification of the sociologist's - analyst's involvement in the

problem (Bourdieu, 2004b). According to Bourdieu, the researcher is never a neutral observer, which somehow influences the way the researcher constructs his object. I am an educated teacher, which means I have experienced the 2013 lockout, the recent reform, and the beginning of the implementation of the LMS. This embodied experience, to some extent, influenced the research interest in teachers' wellbeing and digitization. To 'avoid' this possible blind spot systematic and reflections in methods and theories are important to demonstrate transparency in my scientific options. In section 3.4.1 I reflect on my teacher's habitus concerning collecting interviews and the knowledge I can deduct from the interviews.

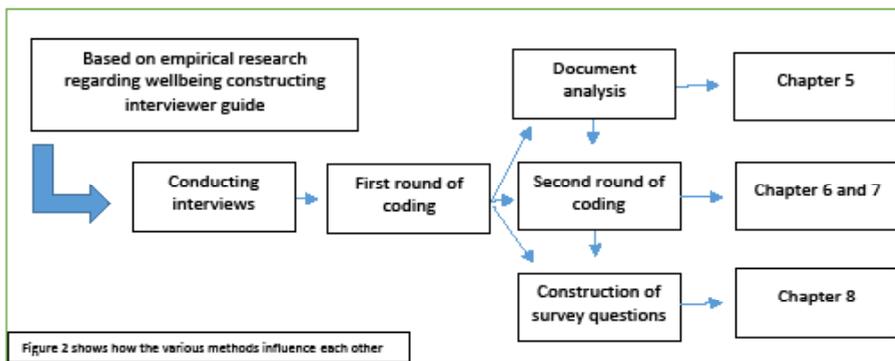
With these introductory remarks, I will start presenting the methodological approaches applied in the thesis. In section 3.2, I shortly present my argument of using multiple methods. Although the analytical chapters are independent, I demonstrate how the different methods are integrated. Section 3.3 presents the reflections and methodological choices in conducting a Bourdieusian inspired document analysis. Section 3.4 is the methodological and theoretical reflection on conduction qualitative semi-structured interviews. Section 3.5 shows the reflections on conduction a quantitative survey and the survey's power of explanation. The chapter is closed with my ethical considerations.

## 3.2 Mixing Methods

As, for example Bourdieu does (Bourdieu, 2010), I use several methods to investigate the empirical object. Bourdieu also argues that a researcher should beware of the methodological ‘watchdogs’ and instead use all the techniques and approaches sociology holds (Bourdieu, 1992). The main argument for using different methods is grounded in the empirical complexity and the fact it is an under illuminated empirical phenomenon. Thus, the various methodological approaches will shed a different light on the governance through the platform effect on practice, and moreover, using various methods results in different lenses, and the combination makes the findings in the dissertation highly probable (Bryman, 2006; Creswell & Plano Clark, 2018). Furthermore, the reliability of the findings is only enhanced because the results from all four analytical chapters point in the same direction. Below, I will discuss how the applied methods are integrated while reflecting on the following sections’ different methods.

### 3.2.1 Strategies of Integration

Figure 2 describes how the different methods influence each other. The arrows in the model leading to chapters 4, 5, 6, and 7 are simplified. The figure explains the interrelation between the different methods, while the methodological processes for the single methods are discussed in the subsequent sections.



In April 2018, the first step in the Ph.D.-process was to analyze the wellbeing studies based on Karaksek’s demand and control model and, in addition analyzing the LMS literature regarding teachers. These 38 studies show five significant factors for the employees’ wellbeing at workplaces. As described in section 2.4.2, the

studies point very convincingly that balance between demand and control, social support, autonomy, and expectation are highly important factors for employees' wellbeing, while the literature concerning the LMS (see section 1.2.3) suggested a bottom-up process among others to prevail, teachers, skepticism. These two analytical perspectives were integrated as essential questions in the interview guide (see section 3.4.4).

Therefore, the next step of conducting interviews was initiated in December 2018. The analytical process starts as soon as the interview begins. The combined first round of analysis of the interviews led to an understanding that much more than teachers' wellbeing was at stake. Thus, the interviews resulted in a need for a document analysis reflecting on an emerging struggle and conflict between policy-makers and teachers articulated through the Teachers' Union. The interviews also resulted in the second round of coding, where I integrated the critical perspectives to analyze which effect the governance through the LMS has on practice. The first and second rounds of coding led to the items used in the questionnaire in the survey.

The subsequent sections reveal the single methods starting with the reflections on the document analysis. After that, a discussion of the phases in using semi-structured interviews. The last method section explains the strengths and limitations of the survey

## 3.3 Document Analysis

Bryman (2016) claims that nearly all research somehow contains text and documents. In principle, Bryman considers all kinds of text as a document; hence, I start with a reservation. Thus, I only in this section explain which documents I have selected to construct the investigated phenomena in chapters 4 and 6, and not all the studies and books I use to frame all the analysis.

### 3.3.1 Understanding a Document

I follow Bourdieu's suggestion that the purpose of a text always depends on the conditions that apply to other agents' perception of the text. Thus, the significance is in which context the meaning is produced in the text, and subsequently which logic the meaning represents. There is an embedded inequality associated with the actual text production and the text's reception in the field because the text is produced by agents with different competencies/capital (Bourdieu, 1993). Consequently, in the selection and analysis, this understanding means I focus on 1) the context where the specific document is produced. 2) How other agents perceive the document. 3) Which logic the document produces and aims to establish as dominant in the field.

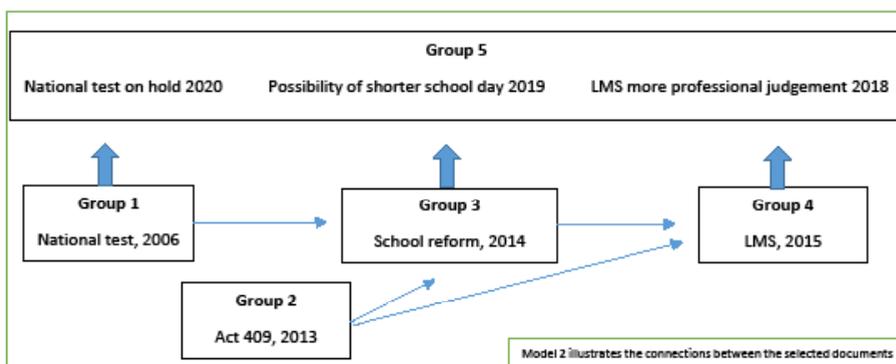
### 3.3.2 Document Selection

I use 22 policy-documents to construct the context for implementing a mandatory LMS in Danish primary and lower secondary schools – 14 of the documents produced by policymakers and 8 produced by the Teachers' Union. The 22 documents were selected to construct a historical Bourdieusian field analysis (Calhoun, 2013; Steinmetz, 2011) regarding the implementation of the platform in chapter 4. Three of the documents are repeated in the selection to frame and support policymakers' logic in chapter 6. I mostly argue for selecting the 22 documents for the field analysis since selecting the 3 documents in chapter 6 is based on the same logic.

The inclusion/exclusion of documents is a common issue in sociological document analysis, with no practical solution to the inclusion/exclusion issue other than the included document must relate, elaborate, and help to answer the research

question (Bryman, 2016; Elklit & Jensen, 2018; Lynggaard, 2017). Bourdieusian inspired field analysis is no exception. Ideally, Bourdieu argues that the influence of all agents should be included, and the historical analysis should begin when the influence of the agents emerged (Bourdieu, 1992). The field analysis in chapter 4 does not quite live up to those ideally (and in most cases unrealistic) criteria. Still, in relation to my overall research interest, I start the field analysis with the political logic for implementing the national test system because of the link between the national test system and the implementation of the LMS. The historical field analysis intends to understand and explain how the struggle is a core focus in the particular social transformation of teaching embedded in the implementation of the platform.

Consequently, the documents can be categorized into five groups. *First*, the four documents regarding implementing a national test system. *Second*, the three documents regarding act 409. *Third*, the five documents regarding implementation of the 2014 reform. *Fourth*, the five documents regarding the implementation of the LMS. *Fifth*, the four documents refer to educational changes after the implementation of the digital tool. Model 2, which is also presented in chapter 4, illustrates how the five-time categories are related.



The model shows the interrelation between the five groups and their historical origins. Since the historical field analysis intends to analyze struggle and transformation, the selected documents need to address neither struggle nor aim of transformation. In the particular analysis, I construct two positions in the field to exemplify the struggle and transformation. The two positions are policymakers representing the logic derived from the political and bureaucratic field and the Teachers' Union representing the teachers' logic. In that construction, policy-

makers will be the dominant agent, which means that the selected documents primarily articulate policymakers' desire to transform the teaching practice in a specific direction and using specific teaching methods. While the Teachers' Union is the oppressed agent in the field. The Teachers' Union selected documents articulate the struggle because they respond to policymakers. The 22 selected documents in no way represent all the documents that have been produced about the various reforms (and certainly not all agents who have participated in producing the logic of the field). Instead, they are strategically selected to illustrate the logic of the two constructed positions, which makes it possible to investigate how the logic produces a dynamic between policymakers' and the Teachers' Union that eventually leads to transformations.

The combination of documents illustrates the historical dynamic in the field and its transformation. Table 3 shows the 22 documents and their analytical coding.

<b>Group 1 National test</b>	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policymakers</b>	Denmark and globalization - Debate booklet on globalization's challenges for Denmark	2005	Ensure competitiveness via educational reforms (economic)
	Prosperity and prosperity of the future – welfare reforms and investments in the future	2006	Ensure excellent educational systems to ensure competitiveness (economic)
	Amendment of the Act on primary and lower-secondary schools	2006	Ensure teachers focus on measurable student learning outcomes
<b>Teachers' Union</b>	Testing is the wrong medicine	2004	The national test will not ensure student learning outcomes
<b>Group 2 Act 409</b>			
	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policymakers</b>	Act 409. Act on the extension and renewal of collective agreement	2013	Ensure teachers efficiency
<b>Teachers' Union</b>	Fewer teachers positions threaten reform	2013	Problems are related to Act 409 - Teaching will be worse if this continues
	2013 may never repeat itself	2017	Act 409 was an assault on teachers – Low trust in policymakers
<b>Group 3 School Reform</b>			
	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policymakers</b>	Agreement on a boost of primary and secondary schools	2013	Students must be as proficient as possible - 80% of the students must perform well in the national test
	Goal-directed teaching in primary and secondary schools – guidance	2014	How to teach in a goal-directed manner - goal-directed teaching ensures good student learning outcomes

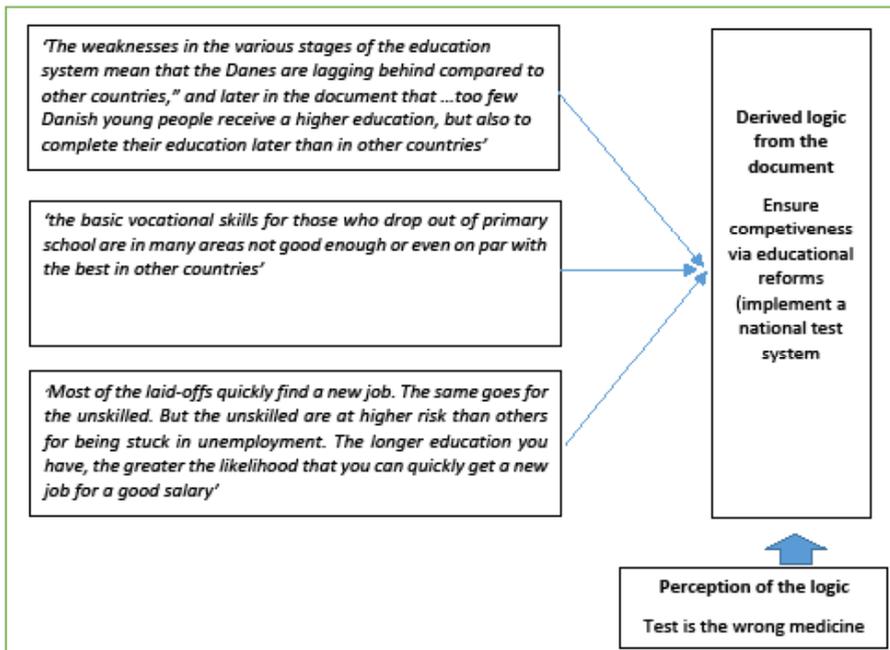
	Executive order on purpose, competency objectives, skills, and knowledge	2017	Students need to know about specific important issues – ensure teachers use the goal-direction methods
	Guidance on the national test – for teachers in all subjects	2017	The national test must be part of teachers' annual planning – ensure teachers prepare the national test
Teachers' Union	Teachers pay for school reform	2013	Teachers pay for the reform – Not enough money to complete the objective of the reform
<b>Group 4</b>			
LMS	Title of document	Year	Produced logic in the field
Policy-makers	Application of digital teaching effect measurement	2014	Rationalize teachers' work – LMS can ensure that the individual teacher can teach more
	The user portal initiatives	2015	Specific demands for use – Ensure teachers' use the LMS
	The primary and secondary school reform and digitization	2015	Rationalize teachers work – LMS is a 'time-saver,' thus saving money
Teachers' Union	LMS	2016	Bureaucratic "monster" – Reduce teachers autonomy and thus professional judgment
	Don't throw the schoolchild out with the bathwater	2016	Teachers are instructed to use LMS in specific ways - Reduce teachers autonomy and thus professional judgment
<b>Group 5</b>			
Educational changes	Title of document	Year	Produced logic in the field
Policy-makers	The LMS must be adapted to the common goals	2018	More autonomy for teachers – but still ensure core elements of the 'LMS-policy'
	Adjustments of primary and secondary schools to make them more open and flexible	2019	Possibility of shortening the school day in primary schools – but still ensure core elements of the reform-policy
	Agreement on the national test	2020	Test needs to be put on hold – but still ensure management and teachers do not forget the national test system
Teachers' Union	We need to find a better tool than the national test	2020	Research shows that national tests do not work – change the test approach

Table 3 shows the 22 documents used in chapter 4 and their analytical coding

### 3.3.3 Analyzing the 22 Documents

Table 3 shows the selected documents and which historical period (group) they are produced. Furthermore, it shows which logic the document aims to produce in the educational field. The logic of the document is the analytical code, which reflection I will present in this section. To demonstrate the method, I use a document from group 1.

The below-selected examples are exemplary for the process to illustrate the methods by deriving the logic. Figure 2 citations are derived from a document produced by the ‘Globalizing Council - a government-initiated council that should provide the government with explanations and solutions to the globalized challenges. The text was called ‘Denmark and globalization - Debate booklet on globalization’s challenges for Denmark’ (2005). The first citation is used in chapter 4, while the other two citations were used in earlier drafts of the analysis; however, to illustrate the analytical process, it is ‘easier’ with three examples (and more would, of course, strengthen the credibility of the analytical-method even more). Still, the purpose of utilizing documents is sociological, meaning that I am interested in context and relation, and not, for example, rhetorical analysis of the sentence structure of the document.



Figur 3

The first step of the methods was to derive the logic. I did that by a critical reading of all the 22 documents establishing the document's overall purpose. As the citations show, the document argues that Danish education does not produce sufficient results to be a dominant factor in a globalized world. Consequently, the articulated flawed education system has significant economic consequences for the state and the individual and needs to be reformed. Subsequently, the methods point to an analytical reading of the document in light of Bourdieu's field, habitus, and capital concept. In this specific analysis, though, I mostly used the concept of field and capital. The field notion in this example demonstrates that agents influenced the Danish government from the overall field of power (see section 2.1.4), and as the citations show articulated into a fear that Danish students do not have the required necessary educational skill. In terms of capital, the example demonstrates how a government can utilize its dominant position to accumulation capital that 'fits' in the government's strategies. The globalization fear and political focus on measurable outcomes began in the early 1990s (Korsgaard, 1999). Thus, it was not, as such, new ideas the globalization council came up with; however, the Danish government needed a strong argument for reforming public schools. So establishing a council that provided the argument and political solutions enhanced the position of the political agents' significantly, since they from that time could refer to the fact that the solutions are essential due to the council reports. Therefore, the government's educational capital has accumulated, emerges as a necessary precondition for committing oneself to a globalized society.

In Bourdieusian document analysis, it does not make sense to merely analyzing the document without relating the documents to the context of perception. The analysis in chapter 4 concerns the emerging struggle and conflict between policymakers and the Teacher' Union; therefore, the Teacher' Union perceives the political document analyzed and responds to the political document by producing its own educational logic. In this case, they agree that education is a precondition for managing the globalized challenge. It is also hard to imagine that an organization representing teachers should be against the significance of education. Thus, the Teachers' Union accepts the core aspect of human capital notion. However, the Teachers' Union does not accept that a national test system and thus the embedded focus on measurable student outcomes will improve primary and lower secondary education.

This analysis method is used in all five groups of documents. The first analytical step is to establish the logic of the documents by a critical reading of the documents. After that, the derived logic is analyzed in light of the Bourdieusian lens. The last step was to analyze the perception of the document. Such a method also emphasizes that policymakers are the dominant agent since they produce the logic the 'Teacher' Union responds to.

## 3.4 Qualitative Semi-Structured Interviews

This section outlines and discusses the principles for analysis in chapters 5 and 6 based on qualitative interview data. The section will show that I apply a theoretical analysis of the data.

About the knowledge, researchers deduct from an interview I am inspired by Bourdieu that demonstrates in *Weight of the World*' (1999) that interviews can be utilized to obtain knowledge of the agents' strategy for practice. But also, that the interviewer understands the objective conditions for the agents' agency. From the researchers' perspective, it means that it is not enough 'merely' to theoretically analyze individuals' world of life since the world of life might be influenced by structures that the individual is not necessarily aware of.

The following section begins with a discussion of transparency and trustworthiness in a qualitative interview study. Afterward follows a description of criteria for recruitment of schools and respondents. Subsequently, I describe how the interviews are operationalized and transcribed. The section ends with a three-forked reflection of how the interviews are analyzed.

### 3.4.1 Transparency and Trustworthiness

Bourdieu argues that particular two factors in a qualitative interview study ensure trustworthiness. The *first* factor is that the researchers use what Bourdieu calls the researchers 'self-objectification' strategy, which refers to the researchers explaining/arguing why a particular phenomenon is of interest (Bourdieu, 2004b). The *second* factor is that the interviewer habitus understands the context for conducting interviews as well as absolutely possible (Bourdieu, 1992).

In my case, these two things are inextricably connected. Thus, I have a teacher's habitus and know all the little understandings of teachers. I had all the selected respondents' confidentiality and trust, and therefore, it was not difficult to get them to report on complicated matters. My habitus reinforces the reliability and validity of the interview setting, to counter a possible critique of my own teacher's habitus role for the analytical strategies I pursued; I emphasized transparency in the reflections and choices regarding the process before, during, and after the interviews.

Following Kvale and Brinkmann's (2015) suggestion, the argument for transparency emphasized that reliability and validity in a qualitative interview study refer to a moral everyday life understanding of reliability and validity. Kvale and Brinkmann's (2015) example of such an everyday moral understanding of the concepts is: 'is this man reliable' or 'your argument is not valid.' They argue that qualitative interview-studies must not live up to the positivist understanding of reliability and validity but instead relate to this everyday moral life to understand the concept. Thus such an understanding of reliability and validity transferred to my study means that the study reliably depends on transparency in the different scientific choices made; its validity depends on whether the interviews reflect the reality I want to investigate. As a result of such a mindset, the research becomes more trustworthy the more well-described the individual part of the interview is. Hence the next section outlines the details of how the qualitative interview study is conducted and analyzed.

### 3.4.2 Recruitment of Schools

In advance, I knew it might be challenging to recruit schools to interview teachers and school management - to exemplify the challenge one of the interviewed school principals said before starting the interview, that he gets more than 300 inquiries every year, so of course, he rejects many researchers that want to investigate his school. I used my teacher network to get in touch with schools. In that case, the most straightforward entrance was if I had contacted an employee at the school in advance, maybe, because it would be more difficult for management to reject on behalf of the teachers. In that way, I established contact with the four schools I wanted to include in the project. At one of the schools, I had an agreement; however, that agreement was canceled because they were suddenly and inadvertently hit by a municipal downsizing and had to let several teachers go. Therefore, the principal at the school did not think I should disturb the teachers during a time of uncertainty. It was problematic with the cancellation because it was the final place to collect interviews. Still, with help from my academic network, I quickly established contact with a substitute school that lived up to my inclusion criteria, which are explained in the next section.

The process to establish the first contact with the school was roughly the same, yet the recruitment of teachers differed at the schools. At the first school, the teacher

representing the Teachers' Union picked teachers at the positions to include in the research. At the second school, I presented the Ph.D. project, and I stated which teachers I would like to interview. Afterward, some teachers volunteered, and I contacted those I missed. At the third school, the school management provided me with contact information on the teachers that matched the selection criteria. Subsequently, I contacted the teachers and made interview appointments. At the final school, the school principal picked the teachers that matched the overall selection criteria.

### 3.4.3 Selection Criteria

The first selection criteria were regarding which kind of schools should be included in the research. To demonstrate some variation at the municipality level – substantial because municipalities in Denmark have the autonomy to shape their own educational logic, and thus the particular implementation of the LMS might be organized differently in the various municipalities. These potential differences could provide insights into the ‘steering’ mechanism and influence on practice. For the same reason, a significant selection criterion was variation at the school level. As a result of this consideration, the interviews were conducted in three municipalities and at four schools located in these municipalities. Table 4 shows the 31 respondents distributed from each municipality and their position.

<i>Municipality</i>	<i>Municipality administration</i>	<i>School management</i>	<i>Teachers</i>	<i>Respondents in total</i>
<i>Big</i>	<b>2</b>	<b>2</b>	<b>13</b>	<b>17</b>
<i>Medium size</i>	<b>1</b>	<b>1</b>	<b>5</b>	<b>7</b>
<i>Small</i>	<b>1</b>	<b>2</b>	<b>4</b>	<b>7</b>
				<b>31</b>

Table 4 shows the interviewed respondents in total

Table 5 below shows the variation of the selected four schools. The schools were selected according to criteria as size measured in student enrollment, staff teachers, and the students' socio-economic background reported by the interview teachers and management, thus not necessarily the objective truth. That provides an opportunity to examine the potential diversity in the relationship between management and the use of the LMS. Furthermore, if teachers' wellbeing and motivation differ because of different management strategies, school size, and

student behavior - following research on the topic, one could easily imagine that student behavior also influences the wellbeing of the teachers (Aldrup, Klusmann, Lütke, Göllner, & Trautwein, 2018).

<i>School</i>	<i>Students enrollment</i>	<i>Staff teachers</i>	<i>Students socio-economic background</i>	<i>Participants in the project</i>
A	710	55	Primary lower middle, working and poor class	8
B	<del>539</del>	<del>55</del>	<b>Primary upper, upper-middle, and lower-middle class</b>	<b>7</b>
C	1126	88	Primary lower-middle and working class	6
D	<del>688</del>	<b>100 (staff in total)</b>	<b>Primary lower-middle and working class</b>	<b>6</b>

Table 5 shows the characteristics of the selected schools

Likewise, the variation on the municipality level the diversity in school characteristics provides me with the possibility to analyze the positions of the schools in relation to each other and investigate the possible different implementation strategies of the platform among the schools.

<i>Gender</i>	<i>Municipality administration</i>	<i>School management</i>	<i>Teachers with advanced digital skills</i>	<i>Teachers representing the Teachers Union</i>	<i>Teachers that 'only' teach</i>
Male	3	4	2	2	5
Female	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>9</b>

Table 6 shows the selected respondents position and gender

The selection criteria regarding the municipality administration employees represent the bureaucratic field logic concerning the implementation of the LMS. Thus, the administrators were the employees responsible for implementing the LMS. In that sense, the administrators were responsible for organizing the implementation of the platform at a municipality level and, as a result, gives valuable insights into the political processes in how municipality administration first perceives the political intentions and requirement and afterward how they 'translate' these intentions and requirements into a bureaucratic logic.

The selection criteria of the school management were that they are responsible for the implementation of the LMS. Besides that, the school leaders were selected according to seniority, age, and gender. Thus four out of the five managers were very experienced. I regarded the leaders' experience very important due to the research

project sensitivity since the relationship between political steering, the LMS, and teachers' motivation/wellbeing in the school field was at the time (and properly still is) considered controversial. An exemplary example of the project sensitivity (but also the leaders' insecurity) was that the youngest leader sought approval from the administration level before it was approved to conduct interviews at the school. My expectation, therefore, was that experienced school leaders' would express their opinion more freely. However, in the interview situations, I experienced all five managers spoke freely and honestly, and in the specific analyses, I did not find that the municipality administration dominated the young leader.

Following Bourdieu's notion of relations between agents' position in a field and their inevitable struggle for domination, thus I strategically selected teachers who possessed different positions within the selected schools. The *first* teacher position within the schools of relevance for the project was teachers with highly advanced digital skills. The criteria for selecting these teachers were that I expected them to have a broad knowledge of digitization, also, how the teaching staff at their school use digital tools. Furthermore, based on the preliminary Danish experience of the implementation of the platform (EVA, 2016), these teachers had some responsibility during the particular implementation. The *second* teacher position selected was teachers representing the Teachers' Union. Based on the Danish National Center for Work Environment's latest intervention-study in primary and lower secondary public schools that suggest that the teacher representing the Teachers' Union has access to knowledge of the school work environment climate (Kristiansen, 2016). Thus, I expected that this group of teachers could provide insight into teachers' motivation and wellbeing. It is important to stress that both teachers with digital skills and teachers representing the Union also possess a regular teaching position within the schools. Thus, they are included in the next table with their teaching position. The *third* position of teachers selected was teachers whose task was 'only' to teach. This position gives the analytical possibilities to compare and relate the opinions experiences with the two above mentioned teachers' position. However, I also expected that the position in itself would provide deep insight in the teachers practice.

Table 7 shows the 22 male and female teachers' distribution, age, and respective teaching positions. Mainly because the recruitment of teachers for the study went as described earlier – I had somewhat less control over gender and age.

Age	'Indskoling' Grade level 1.-3. (student age 7-10)	'Melletrin' Grade level 4.-6. (student age 10-13)	'Udskoling' Grade level 7.-9 (student age 13-16)	'Specialklasse' Children with special needs	Total
-30		Male 2			2
31-40	Male 1 Female 2	Female 1	Male 3 Female 3		10
41-50	Female 1	Male 1	Male 1 Female 1	Male 1 Female 1	6
51-60				Male 2	2
61-		Female 1	Female 1		2

Table 7 shows the distribution of male and female teachers, their age, and their respective teaching position

According to the Danish Teachers' Union own numbers, 28.6 percent of its active members in primary and lower secondary school are males. As table 7 shows, in this project, 10 out of the 22 teachers included were males. Furthermore, the Teachers' Union reports that the teacher's average age in primary and lower secondary public schools is 45.8 years. Again as table 7 demonstrates, there is a preponderance of younger teachers. As a result of these two objective factors concerning teachers in public schools, the teachers in the qualitative interview-study do not represent the whole population. However, representativeness was never the purpose of the interview-study – far more important was the fixed criteria for teachers position at the schools and the maximum variation of the teachers teaching position (Flyvbjerg, 2010). The predominance of younger teachers in the study, though, leads to an expectation that the data would be a little bit biased because younger teachers are properly more positive towards using the LMS as they presumably have a higher degree of digital self-efficacy. Moreover, the youngest participants have learned the teaching methods 'goal-directed teaching at their teachers' education program, which might indicate that they were more familiar with the methods that the LMS is meant to support. In addition, the youngest teachers included in the study have not experienced the lockout thus did not embodied the negative feelings to policy-makers of mistrust and loss of autonomy.

### 3.4.4 Operationalization

The interviews were conducted at the respondents' workplace. The intention was that the environment remained as familiar for the respondent as possible. The Interview guide was sent to the respondent in advance. The advantage of that strategy was that the respondent had the opportunity to prepare for the interview

and focus their attention on an implementation a few years back. The disadvantage was that the respondents could prepare strategic answers. My experience was that one respondent from the municipality level beforehand had prepared some answers, while few respondents used the guide to follow how far in the interview we were. Most of the respondents did not relate to the interview guide at all. The reason for sending the guide in advance was that I would not surprise any of the respondents with questions that they might feel put pressure on them due to the topic's sensitivity.

The interviews were semi-structured (Kvale, 1997; Olsen, 2002) based on a relatively strict interview guide. As a starting point, I used the same guide to interviews at all levels - in the topic of leadership, for example, I asked the teachers about experience and attitudes about leadership, while I asked the leaders about their specific leadership strategies. An interview guide adjusted to three levels makes it possible to analyze the same perspectives on steering, wellbeing, management, implementation, and the LMS. Table 8 shows the themes and structure in the interview guide (for the full guide, see Appendix B).

<b>1. Background information's</b>	<b>5. Specific implementation strategies</b>
<b>2. Experience of changes</b>	<b>6. Teachers collaboration</b>
<b>3. Use of the LMS</b>	<b>7. Management</b>
<b>4. Communication about the LMS</b>	<b>8. Wellbeing/motivation</b>

Table 8 shows themes and the structure in the interview guide.

Although I used a relatively strict interview guide, I also allowed the respondent to speak 'freely' about the themes. For example, a teacher could express her experience of and attitude to the specific implementation in the theme of 'experience of changes.' Consequently, I had to maintain a great overview and concentration on what exactly happened in the interviews because I would not inconvenience the teachers with the same questions twice. Some of the teachers' interviews evolved into a form of Socratic therapeutic conversation because by expressing their experience with some of the themes, they had time to tell about topics they felt were overlooked in their working lives. Thus, several teachers thanked me for letting them put into words how they experienced the last years of governance in public schools. One teacher actually started crying because talking about the learning platform made her realize that she deeply felt that the LMS makes her feel stupid.

### 3.4.5 Period of Interviews

The majority of interviews took place from December 2018 to April 2019. Thus all interviews at the schools were conducted ultimo April. After the interviews at the schools, I conducted three interviews at the municipality level. The last of these interviews were conducted in June 2019.

### 3.4.6 Length and Transcription

The shortest interview lasted 38 minutes, while the longest was 1 hour and 20 minutes. The average length of the interviews was approximately 50 minutes. Overall it was the interviews with the school leaders' who lasted the longest.

Half of the interviews were transcribed manually. The average length of these transcriptions was 16 A4 pages containing 435 words. The other half of the interviews were transcribed with help from the online-transcription tool Konch; a tool specially developed to support Danish researchers in humanities and social science. The Konch-transcripts were of high enough quality to give an overview of the data. I did not print these interviews; I read them online on the Konch platform. The transcripts were not entirely accurate, which meant I subsequently manually transcribed the parts of data that were to be included as citations in the analytical chapters.

To prepare data for the writing process, I created a 'citation' book, with chapters like 'school management,' 'teachers that only teach,' and so on. Accordingly, I prepared many more citation-parts of the data than eventually became part of the specific citations in chapters 5 and 6.

In the preparing phases, I also translated all the excerpts I thought should be included in the analysis into English from the original Danish. That process quite naturally meant that I lost a little bit of meaning.

### 3.4.7 Analysis of Data and Coding Process

This study is influenced by Bourdieu, which also applies in the analytical phase. In this regard, the most important thing is that I followed a theoretical understanding of the data and had a pragmatic approach that helped structure the theoretical

analysis. Furthermore, as a valuable side benefit, such a pragmatic approach makes my study more transparent and thereby helps to clarify the theoretical choices that have guided the analysis.

Following Bryman's (2016) methodological suggestion to deal with a comprehensive data-material, I started the analysis when I did the interviews and read and listened to the interviews two-times merely to get a solid ground to start the analysis. The study has a rigorous theoretical approach starting with an interview guide constructed on wellbeing-studies, implementation and management notions – related to the literature on LMS. Furthermore, an underlying premise for the interviews is that teachers, managers, and administrators have a habitus related to their position in the field. These systematic theoretically derived themes set the direction for analysis. Against this background, the data's first analysis was theoretically systematized around the themes of the interview guide. In that sense, the themes of the interviewer guide mostly led to the respondents' framing their experiences regarding a dichotomy between governance/management and autonomy. Subsequently, the respondents described how that dichotomy influences the motivation for teaching. Although the interview guide was organized in systematic themes, the first round of coding was somewhat loosely organized around the respondents' dichotomist understanding of governance/management and autonomy that structured the conditions of opportunity for practice management and teaching in the field.

#### 3.4.8 Early Analytical Strategy

Based on the first round of coding, I wrote two conference papers. The first one, *'How does school management support teachers' working wellbeing when implementing an LMS'* to the ICSEI-conference in Stavanger January 2019. It was a paper that focused on school management possibilities to be 'active' in the implementation process, but even more, a paper that wondered about how the teachers (I had at the time collected and transcribed 1/3 of the interviews) could be so critical towards the LMS and at the same time express a high level of wellbeing. The second paper, *'Top-down implementation and wellbeing,'* was to the ECER-conference in Hamburg in September 2019. That paper focused on the relationship between a top-down implementation of a mandated learning management system

and teachers' wellbeing. These two papers provide insight into the analytical process leading up to the final analysis in chapters 5 and 6.

The ICSEI-paper was organized into three sections. 1) Perception of the implementation process, 2) perception of the LMS, and 3) perception of wellbeing. The analysis of the paper was related to the themes in the interview guide and primarily narrative stories. Thus, I below will give some statements from the interviews on the three themes and subsequently discuss what I derived from the statements.

The perception of the implementation phase is expressed in three teachers' statements. A 41-year-old female teacher explained the implementation this way:

*The municipality administrators had a clear strategy for implementing the LMS. They organized work-shops ... .. and told us about all the good things you can use the LMS for.*

A 46-year-old male teacher (who eventually was categorized as a teacher with special obligation, since he was a teacher with advanced digital skills) described that

*The school principal supported the municipality's strategy, which meant that we had to prepare 4 teaching sessions .... It seemed like their excitement faded out, so now I am only using it on a minimum basis.*

In terms of the municipal administrators' presentation of the platform at the schools, a 62-year-old female teacher said:

*I did not understand what they (again the municipal administrators) were saying, went my way, and slammed the door on my way out of the room.*

The three teachers' statements indicate a huge gap between the municipal administrators and the teachers. For the municipal administrators, a problem for a successful implementation of the platform was that school management did not follow the implementation closely. This might result in the school management, and subsequently, the teachers did not develop ownership of the LMS.

Two teachers and a principal explain the perception of the LMS. First, the 64-year-old principal said:

*It was not the system I expected. It could not do the things regarding the student plan, we wanted it to ... .. and it is a too heavy system with too many clicks.*

The 46-year-old IT-teacher explained that it:

*can be a tool that makes planning student-courses easier ... .. but it is way too heavy (meaning too many clicks and thus not easy to use).*

While a female 43-year-old teacher reported that when the teachers' should start using the LMS at the school:

*The system broke down the day we had time to get to know the system's possibilities.*

The positive perception of the LMS was that it might give students an overview of the teaching content (also meaning that the teaching material will never get lost as was seen in the 'old days' with copy sheets), and furthermore make it easier to plan teaching-courses and share it with colleagues. However, the statements also show that the LMS was not as good as expected. For example, the fact that the system broke down could easily mean that the teachers loosed faith in the abilities of the platform. The teachers' perception was that the LMS promised more than it could keep in terms of technical solutions

The perception of teachers working wellbeing was demonstrated from three teachers excerpt. In the interview, a 64-year-old female teacher graded her working wellbeing as:

*I am delighted with my job. On a scale of one to ten, I will give my work an eight.*

While a 28-year-old male teacher was more work specific and said:

*It really makes sense for me to be with the students – it is the relation and working with the relation that makes sense.*

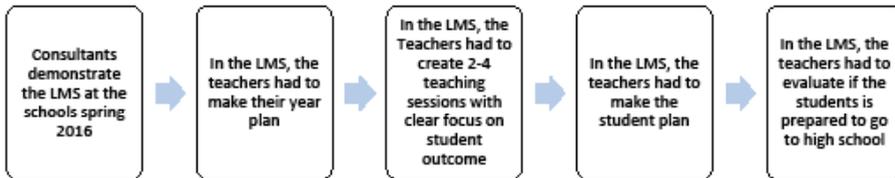
This was elaborated by a 44-year-old male teacher (that also was categorized as a teacher with special obligation in chapter 6, since he represented the Union:

*I need to have a feeling that I have the time to prepare decent teaching... important with a good management you can trust and know they will do the best for me.*

The significance in those three statements at that time was it demonstrated that there was no linear connection between wellbeing and LMS. It means that the teachers express them-selves as very critical towards the LMS and at the same time happy to work as teachers. My analysis was that wellbeing is more constant and does not shake by one change, although the change aims at changing the approach of teaching significantly. Besides, the technical difficulties embed in the LMS at the beginning of the implementation might also lead to less use of the LMS – which might lead to minor irritation among the teachers merely because they are not using it as much as politically required.

The ECER-paper was eight months later, meaning I was in the analytical process of turning towards a more comprehensive analysis. Still, it focused on the relation between the implementation of the LMS and wellbeing. The paper was structured around three analytical models. 1) Top-down implementation, 2) Use- and perception of the LMS, and 3) teachers coping with the platform.

The first model shows how the top-down implementation of the LMS was organized at all schools where I collected interviews.



One municipal administrator explained the similar implementation in the three investigated municipalities was because the LMS companies had designed an implementation-strategy to ensure teachers' use. All the interviewed teachers also expressed a clear 'coming from above' strategy to guide teachers towards the LMS.

They explained that along with the LMS, they followed very specific requirements to the specific use. Thus, the teachers' experience was that they had no saying or got involved in the process. On the contrary, municipal administrators believed they had involved teachers and management, and especially the management thought they engaged the teachers in the process by distributing responsibility to teachers with IT-skills. However, the teachers saw that as technicalities (e.g., helping other

teachers make their first student plan in the LMS) and not on the core elements of how the platform change practice.

The second table characterized the interviewed teachers’ opinions regarding the LMS in four categories.

<b>Positive</b>	<b>Technical problems</b>	<b>Controlling</b>	<b>Negative</b>
Overall overview	‘Broke down’	Goal-directed teaching	Google is easier
Sharing	Many ‘clicks’	Annual performance review	Time killer

Table 9 shows the teachers’ opinion in the ECER-paper

As the table shows, the new perspective in the table was the controlling and negative aspects of the LMS. The controlling perspective appeared in most of the interviews as demands towards a goal-directed teaching approach, while the school management expressed the annual performance review (although few of the teachers also expressed it). That the LMS appeared as a ‘time-waster’ was something most of the teachers agreed. However, they were more divided in how long the LMS would remain to be a time-waster. Thus, some of the interviewed teachers’ expressed that when they had ‘learned’ properly to teach with the LMS, it might be a ‘time-saver’ instead. Teachers with IT-skills working with digital solutions on a regular basis mostly expressed the Google perspective. Although, that group of teachers was highly involved in the implementation process. Still, they believed that there were much better tech solutions out there on the internet.’

The last table I discussed at the conference was based on the 22 teachers’ interviews. A contraction shows the dichotomy between what makes the 22 teachers thrive and the LMS effect on wellbeing.

<b>Teaching encourages wellbeing</b>	<b>Steering through LMS</b>
Want to teach – but teaching must be diverse	LMS guides to goal-directed teaching
Develop students progression, but not assess students all the time	LMS – produce data, which guides to assessment and measurable student-learning outcome
Wants time to prepare to teach	Time-waster
Want social support from colleagues and management	Management does not know how LMS function in daily practice

Table 10 shows perspectives of teaching that the interviewed teachers more or less agreed

They explained the themes differently, but the meaning expressed in the interviews somehow related to the themes. The four themes concerning steering through the LMS were constructed with the same diversity. It is fair to say that few teachers expressed the opposite view regarding the LMS as a time-waster. The same few dedicated teachers saw the LMS as a support for their teaching. Meaning they could

be both for and against goal-directed teaching but, regardless of their opinion, perceived the LMS as an easy tool to carry out the goal-directed teaching.

The conclusion of the paper was similar to the ICSEI-paper. That teachers' wellbeing is much more robust than a single-event destruction. Yet, I began relating wellbeing to altruistic motivation and reflection on when teachers' burnout and leave schools – meaning they thrive as a teacher to the moment they burnout.

The two conference papers illustrate the analytical phase between the two coding processes. The conference paper's analysis was theoretically organized in light of the themes of the interview guide, while the paper's first infant analysis was based on narrative teachers' stories. The narrative stories founded the development until the more comprehensive theoretical informed analysis presented in the next section.

### 3.4.9 Second Round of Coding

The second round of coding began with an elaboration of the conference-papers analysis, which led to the theoretical perspectives applied in chapters 5 and 6. Thus, this reflects how governance and especially the Bourdieusian perspectives utilize in the particular analysis in chapters 5 and 6. Accordingly, the scientific lens was turned more in the direction of steering through the LMS and its influence on practice. Thus, in the second round of coding, I applied a more thorough coding process, where I systematically coded all interviews following the codes derived from the first coding (Kvale, 2007), in light of the outlined theoretical perspectives.

Table 11 is an example of how the coding – derived of a systematical theoretical reading of the data was for each respondent.

<b>Background</b>
<b>Female 33 years, Danish-teacher, Five years at school, moreover work with students with dyslexia</b>
<b>Management – what does not work</b>
<b>The management does not know about LMS –</b>
<b>Miss that they know about the functions</b>
<b>Does not recognize the work of teachers in everyday life</b>
<b>Management – what works</b>
<b>She did not report anything</b>
<b>Time</b>
<b>Hard to make the time fit</b>
<b>Many hours away from home</b>
<b>Doing much administrative work</b>
<b>We have too many projects at school,</b>
<b>Miss time and the peace to 'just' teach</b>

<b>Steering/control</b>
Act 409 - came back from maternity leave to a changed school
Always change - we are used to reforms and change
The management has set some clear goals/requirements for the use of LMS, e.g., the annual year plan/goal-directed teaching course
gradually stepped up the requirements - I think that is a good idea
The expectation from management that we share our course
Management has had deadlines for when we should do the different things - and they have bought access to digital portals (this is a prerequisite for being able to work in an LMS)
LMS-consultant courses with the team - aim to share knowledge and data
The school participate in a developing project about planning and collaboration - we have to do things the same way
<b>LMS/possibilities</b>
Access to student work at all time
Gather all teaching in LMS
<b>LMS/limitations</b>
Lacks being able to use other document types in LMS
The parental communication part is bad
The Student plan does not work as intended
<b>Implementing</b>
'Digital super users' have been responsible for the practical introduction to the school
Job satisfaction/wellbeing/Motivation - the difficult part
Role ambiguity from other actors but also the management
Job satisfaction/wellbeing/Motivation - what works
Teaching and student progression
Professional sparring
Overview as it gives me the courage to dare to jump into wild ideas
<b>Other things</b>
Has taken ownership of LMS
Likes the dynamics of the digital

Table 11 shows the second round of coding scheme

The scheme was constructed as follows. The utterances from the interviews were deconstructed and coded into the constructed categories. The aim of the second coding round was categorization, whereby meaning derived from the longer interview statements in the first round of coding was reduced to fewer categories. After that, I compared all the schemes from the different positions in the field with each other. It means I combined all the derived coding schemes in positions as school administrators, school management, teachers with advanced digitization skills, teachers representing the Union, and only teaching. That strategy allowed me to analyze the differences the respondents represent but also theoretically explain why the investigated agents act as they do. To show the process, I will demonstrate some exemplary examples from the data – first the governance perspective and then the Bourdieusian.

The governance perspective mostly unfolds in the ‘Does the combination of professional leadership and learning management systems signal the end of democratic schooling.’ From table 11 particularly the themes concerning ‘time,’ ‘steering,’

management,’ ‘job satisfaction,’ and ‘LMS,’ informed the theoretical reading, which emphasizes that soft-power governmentality techniques guide individuals to self-regulate behavior (Dean, 2004). An exemplary quote that also is included in the analysis explains the coding process very well. Thus, the quoted principals explain about the LMS:

*employees work within the framework, and we support it, and we move on with what we think is problematic, but we do not accept that you do not work with it (LMS), so it was really that, and we do not turn around and check all the time, we control those things with the annual plan and grades, grades it's not even control we detect it if it's not okay and I get tired of it when it's not okay*

The quote exemplifies how words as ‘do not check all the time’ but at the same time ‘we control annual plan’ are being placed in the coding-scheme in the topic ‘steering’ after reading the transcripts. Another example from the analysis to illustrate the process is in a quote where another interviewed principal explains how working on the LMS for the teachers’ becomes a prerequisite for working in a team (which all teachers, to some extent, must). The principal uttered:

*They (teachers in the team) expected him (a teacher) to deliver the item because they deliver it themselves.*

In the coding-process, these words were also put into the coding scheme’s steering-topic and then analyzed in light of the theory. Both examples demonstrate the applicability of the governance-theory. The examples are analyzed in the analytical section, so here it is sufficient to explain that the first example is analyzed as an example of how principals apply soft-power techniques that lead to teachers’ self-regulated behavior. The second example explains how principals facilitate organizational structures that somehow, yet again, must lead to teachers’ self-regulated behavior. Thus, the scheme was used to derive that the two main concepts analyzed, ‘principal professional agency’ and self-regulation, actually were a core aspect of the interviews.

Merely, the same method-process as the governance perspective was applied to bring Bourdieu’s concepts of field, habitus, and capital in chapters 5 and 6

into action. However, a significant difference between the two analyses is that I am interested in differences in teachers coping strategies in chapter 6. Thus, the comparison between the 22 teachers' schemes becomes important. In the process, I simply divided the schemes into the two constructed groups and compared the topics. I use two examples to demonstrate the coding process. The first example does not appear in the analysis but was included in the early drafts of chapter 6, while the second example appears in chapter 6.

Regarding the use of the LMS, a teacher categorized in the group of teachers with special obligation said:

We have had requirements that we should use visible learning, and we should use goal-directed teaching. I still use it, but now it does not have to be goal-directed. In the way, e.g., five learning goals have been set. Then, there are five evaluation questions within the five learning objectives. There is a requirement that it is visible what the overall goal is and what it is [the student] becomes proficient in.

I categorized 'goal-directed and visible teaching' in both the steering- and LMS category from the quote. Furthermore, I categorized the word 'requirements' in the coding-scheme as both steering and management. In terms of the Bourdieusian lens applied – this specific quote was not included in the analysis, yet it is an excellent example to illustrate how the specific words are being coded - categorized in the scheme, and then theoretically applied in the analysis. Thus, this example, together with many more, demonstrates how teachers' are subject to straightforward power structures in this case articulated by local management but also that the goal-directed teaching-requirements might become embodied experiences, meaning that this becomes one of the teachers preferred teaching methods. This struggle is a significant perspective in the analysis. Although I do not conclude anything (that would have required longitudinal data), I do suggest that it is a hard struggle for local management and policymakers because, on the contrary to this quote, most of the interviewed teachers' have not yet incorporated the LMS or the goal-directed teaching in their practice.

The last example of the coding process and subsequently theoretical reading of the schemes is about the implementation. A teacher with special obligation explained what he saw as essential in the implementation this way:

And then I have spent much energy trying to get into that management space because if it is a must-do task, we might get it done in a way, so people they [all the teachers at the school] feel invited.

I placed words as ‘must-do task’ in implementation as top-down but also as steering. The words ‘into that management space’ were placed in management. In the analysis, the example illustrates how the Bourdieusian theory is suitable through the concept of habitus to explain the practice and yet again provide a theoretical explanation of agency in practice. In the analysis, I demonstrate how teachers with special obligations develop other strategies than teachers only teaching. One of the arguments is that teachers with special obligations habitus have a practical sense to accumulate capital to remain in influential positions at the local schools.

One of the limitations of this approach is that I renounce the opportunity to tell the individual teachers’ subjective experience with the LMS in the narrative analysis (Bryman, 2016). However, analyzing the data in a theoretical perspective such as Bourdieu’s concepts of field, capital, and habitus and in a critical governance perspective as demonstrated allows me to develop an in-depth theoretical understanding of the practice and thus a sociological explanation of the condition of opportunity for the agency in practice, which emerges in chapter 5 and 6. In other words, an analytical approach also aligned with the purpose of the research.

### 3.5 The Quantitative Survey-Study

The quantitative survey study’s overall purpose is to investigate how widespread the teachers’ LMS usage is. Because the use of the LMS was mandatory for all teachers at the time of the survey in January 2020 accordingly, all respondents were able to answer questions in relation to the LMS. Hence, the LMS governance, in theory, is effected. Consequently, the LMS teachers’ practice in light of the Bourdieusian perspective should emerge as embodied experience. However, as chapter 6 demonstrates, many of the qualitative interviewed teachers ‘workaround’ the LMS meaning that they use the platform as little as absolutely possible.

The specific quantitative survey-study that is an integral part of the dissertation investigates four hypotheses that all shed light on the governing through an LMS effect on, in this case, the teachers’ practice. The hypotheses all test the teachers’ particular use of the LMS as the dependent variable. The table items show the questions that construct the dependent variable and how the response is distributed (The following tables have a different number of respondents because, during the survey, respondents drop out).

<b>How often do you use the LMS</b>	<b>Percentage</b>	<b>Respondents</b>
More than 3 times a week	51	546
<b>1-2 times a week</b>	<b>20</b>	<b>208</b>
1-3 times a month	12	91
<b>5-10 times a year</b>	<b>9</b>	<b>91</b>
Rarer	9	93

Table 12 shows the teachers use of the LMS

In the following, I present eight short sections concerning the survey-study. The eight sections are divided into two blocks. The first block describes the construction of the survey-study and my reflections regarding the sampling process and questionnaire design. Subsequently, I report essential features of the study’s research design.

### 3.5.1 Construction of the Survey

The questionnaire was constructed with the tool ‘surveyXact’ as an online web-survey. The full survey consists of 78 questions and is divided into 11 batteries (see Appendix D for the full survey).

<i>Questions</i>	<i>Index</i>
1	Sense-making of the LMS
2	<b>Wellbeing and Job satisfaction</b>
3	Perception of local management
4	<b>Perception of local managements recognition</b>
5	Extrinsic Motivation for becoming a teacher
6	<b>Perception of local management and implementation of the LMS</b>
7	Intrinsic Motivation for becoming a teacher
8	<b>Perception of steering</b>
9	The particular use of LMS
10	<b>Perception of ‘own’ ability to use the LMS</b>
11	Background variables

Table 13 is an overview of the constructed indexes in the survey.

Table 13 is an overview of the constructed indexes in the survey. Researchers aim to use questions validated in other studies because that increases the probability that the questions actually measure the investigated phenomenon. Many of the questions used are also adapted from previous studies. The questions regarding wellbeing are from the WHO wellbeing index (Topp et al., 2015), however I used items adopted to the school context by Skaalvik and Skaalvik (2011), while questions concerning job satisfaction, intrinsic and extrinsic motivation are based on OECD’s Teaching and Learning International Survey (TALIS) from 2018 (OECD, 2019). The TALIS-survey also inspired the background variables (however, because of GDPR, they were moderated to this survey). The questions to cover the index of management and recognition are based on (Andersen, Boye, et al., 2014), while the questions of local management perceptions are based on The National Research Center for Work Environment (Det Nationale Forskningscenter for Arbejdsmiljø) (2004). However, the questions in batteries 1,6,8,9, and 10 were informed by the qualitative interviews conducted for this thesis (see section 3.4 for detailed description). Thus, the questions that informed the batteries were frequently mentioned in the interviews and characterized the qualitative interviews. In order to learn about the effect of the digital innovation

on practice, it was necessary to formulate these 5 new items. In that sense, the survey-study, besides the generalizations purpose, also has an explorative design. The items of sense-making of the LMS and LMS-leadership are explained in chapter 7. Therefore, I use four questions concerning teachers perception of the politically initiated reforms, which I argue in chapter 4 strongly links to the LMS, to illustrate the influence from the qualitative interviews to construction survey-items. The questions were:

<b>Teachers opinion of political reforms How much you agree on the following statements:</b>	<b>Disagreed or highly disagreed with the statement</b>	<b>Respondents</b>
I think the national tests improve my teaching	76 percent	1,082
<b>I think goal-directed teaching improves my teaching</b>	<b>59 percent</b>	<b>1,082</b>
I think the primary school reform provides good condition for my teaching	85 percent	1,082
<b>I think the new working hour rules provide good condition for my teaching</b>	<b>86 percent</b>	<b>1,082</b>

Table 14 shows teachers of recent reforms

All four questions reflect answers from the interviews regarding steering. Yet, in the qualitative interviews, most of the respondents expressed themselves critically concerning the issues covered by the four items. I formulated the questions positively because I did not want to guide the respondents towards a specific direction by ‘reminding the teachers of any bad experiences with the legislation. However, as shown, the large majority of the teachers’ responses were very critical towards the political initiated reforms that set the settings for teachers’ work.

### 3.5.2 Pretest of the Survey

As a general ‘rule’ most research methodology textbooks recommend, a survey is tested before it is put into action. I conducted pretests for two reasons: To ensure that the questions based on the qualitative interviews measure what I expected and that the questionnaire was understandable and easy to answer.

The questionnaire was pre-tested with 25 respondents (teachers) and a qualitative pre-test - sometimes also called a “cognitive pretest” (See Lenzner, Neuert, & Otto, 2016) with four interviews with respondents from the quantitative pre-test. The pre-test focused on the validity and answer-patterns of all items, but I paid particular attention to the “new” items that I constructed in order to, for instance,

measure the politically initiated reforms aimed at changing teachers' work conditions. Overall, the pre-test interviews indicated that the questionnaire was understandable, and only a few adjustments had to be made to account for minor problems in terms of the interpretation/understanding of few selected questions.

I constructed a relatively short questionnaire anticipating a low response rate in web-surveys (Jakobsen & Pedersen, 2016). The pre-test showed that the teachers could complete the survey in 10 minutes (ranging from 8-12 minutes in the pre-test group).

To further ensure the survey's quality during the construction-process, I received expert feedback from my colleagues at the Danish School of Education with experience in survey research and my supervisors.

### 3.5.3 Distribution, Response Rate, and Representative of Survey

In fall 2019, I contacted the Danish Teachers' Union (Danmarks Lærforening, DLF) for help to distribute the survey. The Teachers' Union represents 95 percent of all teachers (Aisinger, 2015). The Teachers' Union sent the questionnaire via e-mail to 5,000 randomly selected teachers (all of them members in DLF) in January 2020. A reminder was sent 14 days after the first distribution. In total, 24 percent of all teachers who were contacted answered the questionnaire, and 19.4 percent completed the full survey. This response rate is comparable to the Teacher's Union's own member surveys (DLF, 2014). Compared to the realized sample's structural characteristics, a substantial similarity to the Union's membership compositions shows a high consistency, which strongly indicates that the sample is reasonably representative of the teacher population organized in the Teachers' Union. For example, the responses came from 95 out of the 98 Danish municipalities. Furthermore, to exemplify, the sample's average age was 47.7, and 698 females responded, which corresponds to 71 percent of the population. This is in line with the Teachers' Union's own statistics on their members that likewise reports that 71 percent of the members are females, and the average age of a teacher in primary and lower secondary school is 45.1 years (DLF, 2020). These comparisons do not seem to indicate that the realized survey sample has a systematic nonresponse bias (see for example Olson, 2006).

### 3.5.4 Anonymity

A precondition for collaborating with the Teachers' Union was ensuring the participating teachers' full anonymity. To do so, the legal department of Aarhus University followed the process of preparing the questionnaire closely. It means that they read and gave feedback on the 'controversial' items. For example, I had constructed background items on teachers' positions at the schools – but combined with items on municipality and school-size, the legal department estimated that the anonymity would disappear if I received information on the positions. Hence, I 'only' got information of which line of topics the teachers teach.

The questionnaire started with a short project-description, and subsequently, I guaranteed the participant that their response would be totally anonymous. However, the questionnaire ended with an open question, where the teachers could elaborate their answers in the questionnaire or make any further comments, but some of them wrote personal information. In total 155 teachers wrote valuable information in the open category, which corresponded to a high degree to the results and impressions from the qualitative interviews.

### 3.5.5 Cross-Sectional Design?

The survey was conducted at one point in time only, which is labeled as a cross-sectional design (as opposed to longitudinal designs that follow respondents across time). Bryman (2016) defines a cross-sectional research design that entails collecting data on more than one case and at a single point in time to collect a body of data with two or more variables. The many variables are used to detect patterns of associations. One disadvantage of most analyses based on cross-sectional designs is that they typically do not allow for the establishment of causal relations. Key concepts are measured at the same time, which makes it difficult to decide a definite causal order (Gundelach, 2017). In relation to the statistical analyses presented in chapter 7 this entails that I cannot be certain, whether X influences Y or the other way around. However, by using statistical methods, I can explain the correlation between the detected variables, and because of the sample size, I argue that the results in chapter 7 are generalizable to all members of the Teachers' Union.

### 3.5.2 Statistical Concepts – Ordinary Least Square (OLS) Regression Model

The main statistical technique applied in the thesis (chapter 7) is the Ordinary Least Squares (OLS) regression model. The OLS regression model is one of the most employed statistical models in social science. The multiple OLS model has the advantage that the relationship of more than multiple independent variables, net of each other, with the dependent variable can be examined. The OLS-models explanatory power means how much of all the dependent variable variation can be explained by the independent variables included in the model. It is called the coefficient of determination –  $R^2$  (Gundelach, 2017). The coefficient of determination is an expression of the proportional reduction in the unexplained part of the model. That is, in the variance of the residuals. In a model without an explanatory variable, differences in the dependent variable are unexplained (Hansen & Hansen, 2012). However, as one gradually adds variables, a larger proportion of the differences will be explained. It is this proportion of explanation that is the coefficient of determination measures. A general assumption is that the more variables included in a model, the greater the explanatory power (Karlson, 2017).

In chapter 7, the dependent variable is teachers' use of the LMS. There are four independent variables. Two of the independent variable are teachers' perceived leadership behavior characterized as inspirational motivation and individualized considerations. These two variables are an integrated part of transformational leadership. Furthermore, teachers' wellbeing and teachers' sense-making of the LMS are independent variables in the OLS-analysis. Via regression analysis, I test for correlations between the dependent and the independent variables. Still, many background variables are included in the analysis as control variables; for example teachers' age and gender.

### 3.5.3 Index of Constructs

The independent variables inspirational motivation, individualized considerations, wellbeing, and sense-making in chapter 7 are constructed concepts. The index-technique is used to reduce the complexity of the many variables that characterize the measured concepts. For example, the wellbeing concept is a construct of the following 7 items.

- |  |
|--|
| <ol style="list-style-type: none"> <li>1. I thrive on being a teacher</li> <li>2. I look forward to going to work almost every day</li> <li>3. I find the work as a teacher motivating</li> <li>4. The advantages of the teaching job clearly outweigh the disadvantages</li> <li>5. If I had to choose again, I would still choose to become a teacher</li> <li>6. I regret that I became a teacher</li> <li>7. All in all, I am well satisfied with my work</li> </ol> |
|--|

Table 15 shows the wellbeing index

Cronbach's alpha (Bryman, 2016) is used to test the reliability of the index. In short, Cronbach alpha tests the measurements' internal consistency. If the consistency is low, it indicates a large degree of random noise. The alpha coefficient will vary between 0 and 1 - the higher the coefficient, the more reliable the index. In this case, the wellbeing index is  $\alpha=0.9$ , which shows that the items very much correlate with each other. Still important to remember, although the items match together, the researcher defines the theoretical concept, which means that I have decided that the 7 items in fact, define the wellbeing concept.

### 3.5.4 Statistical Significance and Correlation Coefficiency

If a sample is randomly drawn, a significance test can be used to examine how likely it is that the sample results also apply to the entire population (Thomsen, 2012). Such a test is based on statistical probabilities. Therefore, it is a precondition that the units of analysis are extracted randomly with known probability. The crucial information in the significance test is the probability that the results based on a random sample also apply to the entire population. That is to gain a more accurate knowledge of the generalization potentials of the analyzes. A significance test is about falsification, which means that the significance test can never finally conclude that the results are correct, but it can determine the probability the result would have been found if it is not correct. The significance is measured in p-values, and in social science, the most normal acceptance for a significant p-value is 0.05 (Bryman, 2016).

A correlation coefficient measures the strength of the relationship between two variables. It is designed so that it will always have a value between -1 and +1. If the

correlation coefficient is -1 or +1, there is a complete correlation between the two variables. If it is 0, there is no correlation. For example, in chapter 7, I measure the strength of the correlation between individualized considerations and the teachers' use of the platform. This is called the marginal context. However, in the particular analysis, I control the marginal context by using a test variable called the partial context, such as background variables such as age and gender. Thus, I controlled for if the background variables influence the result regarding, e.g., the management style of individualized considerations affect teachers' use of the platform.

## 3.6 Ethical Considerations

Throughout the dissertation, I have discussed ethical issues. Therefore, this section will only be a short summary, but also to some extent, an elaboration of my ethical considerations. As part of my Ph.D. I have participated in a mandatory ethics-course and combined with ‘The Danish Code of Conduct for Research Integrity’ (2014), all ethical aspects have guided my research considerations.

The perhaps most important ethical consideration throughout the whole research process was to behave appropriately towards all the people involved in the project. For example, prior to participation in the research, I informed all participants about the research project, so they beforehand knew what they volunteered to.

A dilemma (and I guess that is a general issue for qualitative researchers) that I, among others, had was the participants’ trust and confidence because of my own teacher habitus. As the dissertation shows, I investigate a conflictual topic since the implementation of the LMS was meant to guide teachers’ practice in specific directions. I employ critical theories to analyze and understand the governance through the LMS. The participants are the best to tell their story, but when it is analyzed, it becomes clear for the researcher that the participant does not see the full picture of their story because when you start analyzing the interviews and looking for patterns in the data, you also go behind the individual story. Thus, the combined 31 interviews’ critical analysis emphasizes that school management and teachers’ practice are under considerable external pressure. However, the individual school leader and teacher can still be delighted with the job.

Regarding the qualitative interview- and the quantitative survey-study, I have collaborated closely with Aarhus University’s legal department. Because of the survey-design, the quantitative investigation was not notifiable to the Data Protection Authority. Concerning the interview-study, I sought a consent declaration. In both approaches, I guaranteed participants full anonymity. Hence I do not mention, for example, teachers’ or the schools’ names in the analysis.

You can find my translations of the survey-questionnaire – including the introduction letter to participants, the interview guide, and the consent declaration in appendix A, B, C, and D.





# CHAPTER 4

## Compulsory Learning Management Systems

– A Bourdieu-Inspired Analysis about a Struggle  
between Policymakers' and the Teachers Union

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(Submitted to the Journal NordStep)



# Compulsory Learning Management Systems – A Bourdieu-Inspired Analysis about a Struggle between Policymakers’ and the Teachers Union

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## Abstract

This article analyses the introduction of the compulsory learning management system (LMS) in Danish primary and lower-secondary education. By exploring Bourdieu’s concepts of field, habitus, and capital as analytical tools, the article contributes to critical Bourdieusian-inspired document analysis literature. The analysis builds on 22 policy documents published between 2005 and 2020. Using these documents, I construct a historical analysis of the struggle in the field of education in Denmark between policymakers and the teachers’ union (TU). Analysed through the Bourdieusian lens, the findings indicate that educational policy is influenced by the logic of other fields such as economics and that the development of educational policy is the result of a long-lasting conflict between policymakers and the TU. Policymakers maintain their dominance by producing a human capital logic in the field of education, and by adjusting educational policy on an ongoing basis. These adjustments can be seen as a political concession. However, they do not change the precondition for the core elements in the struggle between policymakers and the TU about teachers’ autonomy and how to perform excellent teaching, which, at least theoretical, implies difficulties for policymakers to change teachers’ habitus.

## Keywords

LMS, Bourdieu, Policy Analysis, Conflict and Struggle

## Introduction

In Denmark, all primary and lower-secondary schools were mandated to implement a learning management system (LMS) from the school year 2016/17 onwards (Local Government, 2015). An LMS is a digital platform on which teachers can build all their teaching and communicate with, e.g., parents and students. The implementation and use of an LMS in many ways constitute a departure from established teaching practices, and the Danish teachers' Union (TU) has been critical of the use of LMS. This is the offshoot of a protracted conflict between policymakers and TU about work conditions and teaching.

The conflict and struggle between policymakers and TU are analysed through policy documents. There is increasing research interest in applying a Bourdieusian-inspired policy approach to reflect how policies are developed, and struggles in fields are unfolded (Hjelholt & Schou, 2017; McGuire, 2016; Thomson, 2005). Such a theoretical approach provides the insight that implementing an LMS must be understood in light of the conflicts that characterise the field of education. Bourdieu, though, never wrote explicitly about enacting educational policy (Van Zanten, 2005). However, educational researchers have used Bourdieu's concepts for policy analysis. For example, Hardy introduces Bourdieu's ideas to policy studies by analysing various school agents' responses to the enactment of a new national curriculum. He argues that educators with more capital respond more actively to prerogatives, while those with less capital simply try to cope with the policy (Hardy, 2015a). In this study, there is a more 'natural' inequality of capital, as policymakers have an unimaginable amount of capital and thus will be the agent that produces the most influential structures in the field of education. Rawolle and Lingard argue (2015) that Bourdieu's concepts of field, habitus, and capital provide researchers with fruitful tools for investigating educational policy and that Bourdieu's theories might develop a new object of policy research reflecting the fact that the state is entitled to exert what is known as symbolic violence, for instance with regard to knowledge production. In a study about school leadership, this symbolic violence, understood as policy in terms of political guidelines and speeches, activates the power relation between agents regarding school practice (H. M. Gunter & Forrester, 2009). Therefore, there is some research interest in applying Bourdieusian concepts to policy analysis; but there is also a research gap in the Bourdieusian literature to policy analysis that can be further explored and developed. In this study, I am particularly interested in the evolving of educational

policies, the way in which a government maintains dominance in a field through legislation and ministerial guidelines, and how the people who are influenced by this dominance react.

In other words, this Bourdieusian-inspired analysis aims to shed light on two constructed positions (policymakers and the TU in the Danish educational field). The Danish case analysis is specific, but nonetheless contributes significantly to understanding how conflict and struggles between agents produce new policies and how political power is exerted. A democratic government has the legitimate right to exercise power. The dominant position of policymakers can lead to teachers' acceptance of the government's use of power, which is a success from a government perspective because this means their legislation and guidelines will be implemented as required. However, power and domination involve a struggle about field logic; and even though teachers are the oppressed party, they might not accept the dominant logic. This may mean that teachers do not implement policies in their practice, as the policymakers require. This is a perspective that educational settings throughout the world can learn from. The article aims to contribute to the development of Bourdieusian analysis by emphasising the fact that the struggle of the agents involved for domination in a field is a significant policy driver. In order to achieve this aim, I will explore the following research question: Why is analysing the emerging conflict between policymakers and the TU fundamental in explaining how policy develops in the educational field while policymaker' maintaining strong dominance?

The article starts by introducing the Danish context for analysis. This is followed by a presentation of how Bourdieu's concepts are applied in the analysis. In continuation of this, the article's research methodology is explained. The article's fourth section contains the analysis, which is followed by the conclusion of the article.

## The Danish context

Denmark is often characterised as a digital frontrunner (Commission, 2020) and the implementation of an LMS is one way to maintain this position. Policymakers have invested a great deal of capital in teachers' digital surroundings, though the Danish context reveals that teachers are sceptical of using LMS. As the analysis also shows, one explanation is that the LMS that has been implemented in Denmark is closely connected to the recent school reform and the introduction of new rules for working hours. Since this article investigates how struggle and conflict produce agency in the educational field regarding concrete policy, an explanation of these rules for working hours is required here.

There is a tradition for regulating the labour market in Denmark using collective negotiation involving organisations representing the employers and employees respectively. This is known as the "Danish model," and it has historically resulted in a peaceful labour market (Bredgaard, Larsen, & Madsen, 2006). However, the negotiations for teachers in 2013 gave rise to the largest and longest labour conflict ever seen in the public sector. This conflict was about teachers' working hours. It lasted for 25 days, and was nationwide, resulting in a lockout by the employers. Local Government Denmark, the Danish municipalities' organization, represented the employers – the Danish municipalities are responsible for running state schools and employing the teachers. The government intervened in the conflict and passed an Act, which reflected the employer's demands. This Act involved a new approach to teaching, and claimed to normalise the work done by teachers. Historically, Danish teachers have enjoyed a good deal of autonomy, but this Act (Act no. 409) changed that. Almost all the teachers felt that Act 409 controlled their practice and constituted a challenge to their professional integrity (Andersen, Boye, & Laursen, 2018). One of the conflict's core issues from a teacher's perspective was the teachers' control over their time – their professional autonomy to allocate time to tasks (Lund, 2017).

The focus of this article is not this conflict, but Act 409 did define the context for the Danish school reform and the implementation of an LMS – and this context helps to understand policymakers and the TU's habitual agency, since its history structures habitus and habitus draws on that particular structure in terms of a new agency. However, before turning to the agency issue in the field, I will introduce

the article's theoretical framework and the consequences of this framework with regard to the article's methodological approach.

## Using Bourdieu

In this article, I investigate the dynamics of a struggle between policymakers and TU in the educational field. For Bourdieu, a field is the researchers' construction of the analytical object in which the researcher accounts for the objective institutions in the field and the agents that influence them (Bourdieu, 1992). I am interested in how the two constructed agents – policymakers and TU act within the objective educational field structures regarding the LMS-implementation. I recognise that the educational field consists of many potential institutions, such as local public schools and non-educational institutions as the OECD. Furthermore, it consists of agents as principals and educational opinion-makers, but in this study, I consider them the underlying premise of the educational field's arena for struggle. Thus, I use the field terminology as an arena for policymakers and TU's agency.

According to Bourdieu, a field is a setting in which agents and their social positions are located. Each particular agent's position in the field results from the interaction between the field's specific rules, the agent's habitus, and the agent's capital. Bourdieu shows that agents' position in a field always relates to other agents, and they have an ongoing struggle to neither preserve or changes the specific logic that dominates the field. Domination of a field requires a certain amount of capital, which the agents involved possess and on which they draw, and domination depends on the unequal distribution of capital between agents (Bourdieu, 2010), resulting in a situation in which power is unevenly distributed (Rowlands, 2018). The specific logic that characterises a field depends on empirical investigations of agents' practice (Bourdieu, 1992). Bourdieu argues that there is a predominant field of power, which includes the state. The state has the legitimate right to exercise symbolic violence. Symbolic violence being understood as to agents accepting specific legislation even though the legislation, on the one hand, against the agents' interest, and furthermore, on the other hand, over time, that those agents internalize the legislation and socialized in practice, so they are not questioning the logic of the legislation and accept it as natural (Bourdieu, 1996). This is a significant notion to remember in light of this article focus, which investigates a conflict between the state as policymakers and the TU in the educational

field, since the policymakers produces educational legislation, as the LMS, with the intention that the LMS becomes a natural embodied practice for the teachers. Effected and further complicated by that teachers are employed by the state and expected to perform the LMS-requirements, limiting teachers' possibilities for an agency. In addition that the distribution of capital is very unevenly distributed. It is difficult to imagine that it will change. Thus, TU's best opportunity to break the dominance is to draw on other influential actors' logic or break the close bond between the policymakers'.

Bourdieu underlines that fields are to be understood as relatively autonomous (Bourdieu, 2004c). Rawolle and Lingard highlight the influence of cross-field effects in relation to the educational field. Examples of such cross-field effects include the international discourse surrounding student assessments, which is closely linked to measures such as the OECD's Program for International Student Assessment, and which places national governments under pressure, leading national governments to adopt the discourse and put pressure on educational practitioners to focus more on assessment (Rawolle & Lingard, 2008). In continuation of the OECD's discourses in the field of economics, the perception of these discourses in the educational field has led to a significant dominant logic in education is the symbolic-governance of quantification (Grek, 2020) and enumeration (Hardy, 2015b). In terms of this research interest, it means that the state's data production and, more importantly, which meaning the data produces becomes a significant political driver for policy development. As such, the LMS is a powerful tool to produce the necessary data to, for instance, support an evaluation culture at the schools. Furthermore, economic data produces an essential logic that implementing an LMS will be an economically effective tool. Thus, the data the LMS produces can be fundamental when developing educational policies.

Habitus is the concept Bourdieu uses to analyse agency in a field. Habitus links agents and practices through systems of dispositions that are bodily embedded through their individual history (Bourdieu, 1993), and habitus constitutes a particular disposition through exposure to specific practices within any given field. This is a two-way relationship: not only is habitus produced by the field within which it is located, but the field is itself constituted by the dispositions of those who involve it, and who influence and are influenced by the forms of capital within the field (Bourdieu, 2006b). In this sense, the agents' habitus is shaped by the logic of the field; but the logic is also shaped by agents' practice continuously producing

and reproducing new logic in the field. Although researchers in educational settings use Bourdieu's habitus concept, they often refer to principals, teachers or students. I draw on Bourdieu's claim that habitus can also be used as a tool to analyse a collective group of individuals (Bourdieu, 1998). I use this opportunity to construct the two analysed positions in the educational field. The scientific gaze reflects on how policymakers and TU's habitus via the meaning of a document establish exact discourses that produce a certain logic in the field. The meaning of the document and the logic structuring the two analysed agents' possibilities for practice in the educational field. Habitus functions as a mediator in the field. In that sense, that habitus is a historical construct, which probably helps policymakers legitimize their view on, e.g., the significance of a human capital approach, since they got the power to reform the educational field and follow the reforms with soft power symbolic guidelines on how to perform excellent teaching.

To summarise, the theoretical lens focuses on how agency, articulated through text-production between policymakers and TU, 'force' them to new actions. Thus, policymakers and TU's habitus become the analytical construct to explore the struggle emerging in the text. As the historically constituted objective structures shape policymakers and TU as can be seen in prior and present legislations and educational guideline. Thus policymakers and TU's habitus somewhat internationalize the legislation and guideline, which means policymakers and TU's in their current and future agency are shaped by the text's logic. With this analysis, I demonstrate how text-documents constitute the logic in the field and at the same time, produce agency among various actors in the field—in this case, exemplified by the two constructions, policymakers and TU. Since policymakers' legality to practice symbolic violence in terms of legislation; they possess the natural dominant position, which means that the TU needs to respond to policymakers' policies and logic; accordingly, the conflict becomes visible in the TU's response.

## Methods

This article's findings are based on analysis of 22 policy documents published between 2005 and 2020. I am following Steinmetz's argument (2011) that Bourdieu's theory is historical. Therefore many of the analysed document are prior the LMS implementation. The purpose is not a complete analysis of the structure of the argument in the selected documents. Instead, I aim to analyse the particular

logic the document produces. Subsequently, how the other agent in the field perceives that logic. Thus, a historical field analysis intends to understand and explain how the struggle is a core focus in the particular social transformation of teaching embedded in the LMS-implementation.

Two problems occurred. First, it is hard to establish where to start a Bourdieusian field analysis. Bourdieu points out that a field analysis must start when an agent does not influence the field's structures any longer (Bourdieu, 1992). Knowing that the discourses and embedded logic in the field that I analyse were emphasised in earlier policies, this analysis starts when a national test system was introduced because the two big Danish governmental capable parties (The Social Democrats and the Liberal Party) from that point on agreed on the big picture of the educational policy (Gustafsson, 2012). Furthermore, the enactment of the national test policy, to some extent, considered a showdown with a democratic school policy and turned towards the measurable student learning outcomes emphasised by the OECD (Moos & Wubbels, 2018a). The end of the analysis is the present regulation of: 1) the LMS requirements, 2) the goal-instructed-teaching guidelines, and 3) the national test system. The second problem relates to the weak autonomy existing in the field of education (Rawolle & Lingard, 2008). This article explores two positions, policymakers and TU. In the analysis I use some of the other influential agents to demonstrate how policymakers and TU accumulate capital – these agents are not the only relevant agents in the field but serve as crucial examples of how autonomy is weak and how policymakers and TU exploit other agents to advance their views.

## Document selection

The 22 selected documents can be categorized into five groups. *First*, the four documents regarding implementing a national test system. *Second*, the three documents regarding act 409. *Third*, the five documents regarding implementing the 2014 reform. *Fourth*, the five documents regarding the LMS-implementation. *Fifth*, the four documents refer to educational changes after the LMS-implementation. Figure 1 illustrates how the five-time categories are related.

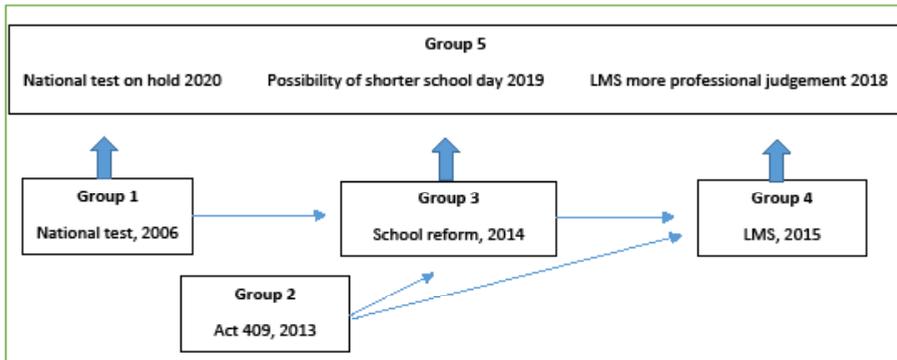


Figure 1 illustrates the connections between the selected documents

The figure shows the interrelation between the five groups and their historical origins. Since the historical field analysis intends to analyse struggle and transformation, the selected documents need to address neither struggle nor aim of transformation. In the particular analysis, I construct two positions in the field to exemplify the struggle and transformation. The two positions are policymakers representing the logic derived from the political and bureaucratic field and the TU representing the teachers' logic. In that construction, policymakers will be the dominant agent, which means that the selected documents primarily articulate policymakers' desire to transform the teaching practice in a specific direction and using specific teaching methods. While the TU is the dominated agent in the field, the selected documents articulate the struggle because they respond to policymakers. The 22 selected documents do not represent all the documents that have been produced about the various reforms. Instead, they are strategically selected to illustrate the two constructed positions' logic, enabling an investigation of how the logic produces a dynamic between policymakers' and the TU that eventually leads to transformations.

The combination of documents illustrates the historical dynamic in the field and its transformation. The table below shows the title of the selected documents, which group the documents belong to, their analytical coding, and is presented in more or less chronological order.

<b>Group 1 National test</b>	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policy-makers</b>	<b>Denmark and globalization - Debate booklet on globalization's challenges for Denmark</b>	<b>2005</b>	<b>Ensure competitiveness via educational reforms (economic)</b>
	<b>Prosperity and prosperity of the future - welfare reforms and investments in the future</b>	<b>2006</b>	<b>Ensure excellent educational systems to ensure competitiveness (economic)</b>
	<b>Amendment of the Act on primary and lower-secondary schools</b>	<b>2006</b>	<b>Ensure teachers focus on measurable student learning outcomes</b>
<b>Teachers' Union</b>	<b>Testing is the wrong medicine</b>	<b>2004</b>	<b>The national test will not ensure student learning outcomes</b>
<b>Group 2 Act 409</b>			
	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policy-makers</b>	<b>Act 409. Act on the extension and renewal of collective agreement</b>	<b>2013</b>	<b>Ensure teachers efficiency</b>
<b>Teachers' Union</b>	<b>Fewer teachers positions threaten reform</b>	<b>2013</b>	<b>Problems are related to Act 409 - Teaching will be worse if this continues</b>
	<b>2013 may never repeat itself</b>	<b>2017</b>	<b>Act 409 was an assault on teachers - Low trust in policy-makers</b>
<b>Group 3 School Reform</b>			
	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policy-makers</b>	<b>Agreement on a boost of primary and secondary schools</b>	<b>2013</b>	<b>Students must be as proficient as possible - 80% of the students must perform well in the national test</b>
	<b>Goal-directed teaching in primary and secondary schools - guidance</b>	<b>2014</b>	<b>How to teach in a goal-directed manner - goal-directed teaching ensures good student learning outcomes</b>
	<b>Executive order on purpose, competency objectives, skills, and knowledge</b>	<b>2017</b>	<b>Students need to know about specific important issues - ensure teachers use the goal-direction methods</b>
	<b>Guidance on the national test - for teachers in all subjects</b>	<b>2017</b>	<b>The national test must be part of teachers' annual planning - ensure teachers prepare the national test</b>
<b>Teachers' Union</b>	<b>Teachers pay for school reform</b>	<b>2013</b>	<b>Teachers pay for the reform - Not enough money to complete the objective of the reform</b>

<b>Group 4 LMS</b>	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policymakers</b>	<b>Application of digital teaching effect measurement</b>	<b>2014</b>	<b>Rationalize teachers' work – LMS can ensure that the individual teacher can teach more</b>
	<b>The user portal initiatives</b>	<b>2015</b>	<b>Specific demands for use – Ensure teachers' use the LMS</b>
	<b>The primary and secondary school reform and digitization</b>	<b>2015</b>	<b>Rationalize teachers work – LMS is a 'time-saver,' thus saving money</b>
<b>Teachers' Union</b>	<b>LMS</b>	<b>2016</b>	<b>Bureaucratic "monster" – Reduce teachers autonomy and thus professional judgment</b>
	<b>Don't throw the schoolchild out with the bathwater</b>	<b>2016</b>	<b>Teachers are instructed to use LMS in specific ways - Reduce teachers autonomy and thus professional judgment</b>
<b>Group 5 Educational changes</b>	<b>Title of document</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>Policymakers</b>	<b>The LMS must be adapted to the common goals</b>	<b>2018</b>	<b>More autonomy for teachers – but still ensure core elements of the 'LMS-policy'</b>
	<b>Adjustments of primary and secondary schools to make them more open and flexible</b>	<b>2019</b>	<b>Possibility of shortening the school day in primary schools – but still ensure core elements of the reform-policy</b>
	<b>Agreement on the national test</b>	<b>2020</b>	<b>Test needs to be put on hold – but still ensure management and teachers do not forget the national test system</b>
<b>Teachers' Union</b>	<b>We need to find a better tool than the national test</b>	<b>2020</b>	<b>Research shows that national tests do not work – change the test approach</b>

Table 1 shows the 22 selected documents and their analytical coding

## Analytical strategy

Table 1 demonstrates the selected documents and in which historical period (group) they are produced. Furthermore, it shows which logic the document aims to produce in the educational field. The logic of the document is the analytical code.

I am inspired by Bourdieu's suggestion that a text's purpose is to preserve or to change the logic in a particular field. The text as an analytic object produces specific meanings to dominate the field – analysing a text's purpose in a Bourdieusian optic point to how particular meanings are produced. The text agents produce results from the agents' competencies/capital and the agent's text-message market. The purpose of a text depends on the conditions that apply to other agents in the field perception of it (Bourdieu, 1993). The applied analytical devices operationalize by explicitly using the Bourdieusian concepts in the analysis and the analysis structure.

The analysis unfolds the meaning with the documents' particular purpose by explicitly excerpting from the text, from theoretical analysis of how policymakers and TU establish specific logic in the field the other part orientate from, and subsequently produce a new agency articulated in text-production.

The themes that emerged reading the political produced document were around policymakers' dominant position in the field. Thus, the analytical method analysing the document aimed to derive the overall logic that drives policymakers to develop new policies, and in that sense, which logic that particular document aims to establish.

The TU's 8 documents show the TU's perception of the policy and its concrete responses. Because of the significance of the document's perception of agents in the field, the first theme emerging in the TU documents' reading was their response to the particular policy. The documents then showed that logic TU tries to establish as the dominant logic in the field of education. As for both policymakers and TU, the logic they produce structures the other party's habitus and their perception of documents, articulating the agent's agency in the field.

## Operationalisation of the analysis

The 22 documents' selection aims to explore and understand an emerging conflict between policymakers and TU about the LMS-implementation. Thus, the selection criteria for policymakers' documents highlighting policymakers' desire to change teaching and TU's response to the required change of teaching. The systematic reading of the documents aimed at deriving the overall logic emphasis four interrelated issues. 1) The establishing of policymakers' position, 2) the logic policymakers tries to establish, 3) Teachers' perception of- and policy response, 4) The logic TU produces and where TU accumulate capital.

In the documents' operationalisation, all the individual agents that constitute policymakers and the TU are an analytical construction and are merged in collectively orchestrated policymaker and TU habitus. Furthermore, in this analysis, the agency of the agents involved is based on the documents that have been collected. Therefore, this agency's core elements are a theoretical construction grounded in how these documents structure the educational field.

The analysis consists of five interdependent sections, 1) The position of policymakers, 2) The logic that drives policymakers, 3) Teachers' perception of- and policy response, 4) The logic TU produces and where TU accumulates capital, and 5) Domination in the field. The structure in each of the analysis section is primarily chronological: 1) 2006 national test, 2) 2014 school reform, 3) 2013 Act 409, and 4) 2016/17 the implementation of a mandatory LMS. The first two sections' systematic approach analysis the documents' purpose and which logic the document produces. Then I systematically explore TU's response to the policymakers' legislation and how the TU accumulates capital. This approach enables an analysis that explores how a struggle between two powerful educational actors produces a specific dynamic in the field of education. The final analytical section discusses the domination within the educational field, and in that sense, the revision of the three educational policies regarding the LMS, the longer school day, and the national test.

## The position of policymakers

In 2006, the policymakers agreed to implement a national test regime intended to measure student learning outcomes (The Danish Government, 2006b). The most recent school reform was in 2014 and had the political objectives: "that students must become as proficient as possible, the impact of social background on academic results must be reduced, and student wellbeing increased" (The Danish Government, 2013). The policymakers emphasise that student learning outcomes are crucial to schooling, and a closer reading of the political agreement shows that the reform's success is to be measured in terms of: "... at least 80 percent of students must perform well in reading and arithmetic in the national test ..." (The Danish Government, 2013). There is a clear link to the national test agreement and policymakers' specific understanding of student assessment and student learning. Hence, the reform's success is measured by results in the national test, and politicians have encouraged particular teaching methods to ensure specific, measurable student learning outcomes. In this sense, the Bourdieusian gaze points to policymakers' use of accumulated capital to specify which methods are the right ones, and the logic regarding these methods produce the structures in the field that teachers and other agents must relate to and act on. The structures in the field, such as the reform policies, are part of a teacher's habitual disposition. The other part is practice. Therefore, the policies that produce the field structures are followed

up by governmental instructions introducing goal-directed teaching. Such governmental instructions guide teachers' habitus towards a particular practice. Goal-directed teaching must be seen in the context of the reform of common goals for primary and secondary education, which require that students become acquainted with certain key academic concepts at each specific grade level (Danish Ministry of Education, 2017a). The Ministry of Education defines and argues for implementing goal-directed teaching within teachers' practice: "Goals clarify for the students what they need to learn...The new common goals are learning objectives that will support learning goal-directed teaching. And why learning-goal-directed teaching? Because it works" (Danish Ministry of Education, 2014).

The Bourdieusian gaze emphasises that particular policy structures which teaching practices ought to dominate the educational field by encouraging goal-directed teaching, which proceeds in the three-pronged planning, teaching, and assessment process. To guide teachers towards the desired practice, a particular policy demand embedded in the programmed design of the LMS was "The learning platform must support goal-directed-teaching in learning pathways. Thus, it must be possible to work with competence goals" (Local Government, 2015). In Bourdieusian terms, their internalizing of field structures such as those produced via the LMS's political requirements and the agent's particular practice over time shape agents' habitus. One key political goal with the implementation of the LMS was to promote particular teaching methods. The policy outlining the requirements for the LMS stressed: "Students and teaching staff must be able to view, plan, store, and share learning processes based on the common goals and on individual learning goals" (Local Government, 2015). Through the meaning embedded within the policy, policymakers put pressure on school practice to support this part of the overall educational logic. In light of Bourdieusian theory, the programmed design, which means, for example, which didactical opportunities the teacher has to build teaching or the particular way to produce student assessments, embedded in the LMS (Laursen, 2020), ought to shape teachers' habitus to both produce and reproduce the measurable student learning outcomes-logic within the field. As the programmed design, both aim to produce specific teachings methods and, at the same time, change teachers' teaching practice.

Furthermore, policymakers argued that an increase in the number of lessons would improve student-learning outcomes. The goal was: "A longer and more varied school day with more and better teaching and learning" (The Danish Government,

2013). Policymakers wanted to increase production, understood as the number of lessons, but without investing more money in schools. This policy was expected to improve outcomes without an increase in costs. To this end, policymakers viewed the LMS as a tool that could make teaching more efficient by automating teachers' work processes and thereby reducing their workload. "A tremendous academic gain for the schools will be, to the greatest extent possible, the ability to share learning courses – within the school, in the municipality, and across municipalities" (Local Government, 2015). A report commissioned by the Ministry of Education argued that "... digital teaching aids can help save time, especially in preparing lessons, but also in terms of instruction (in the sense that you can achieve more in the same time) and in connection with evaluation" (Rambøll, 2014). In another report commissioned by the Ministry, the study was directly connected to Act 409, arguing that "if you increase digitalization so that 60% of learning courses contain digital learning materials, you can realize a time saving of two hours per week alone from preparation and evaluation and spend the time on teaching instead" (Bøgelund, 2015).

Thus, policymakers used the LMS to argue that increasing the number of lessons would improve student-learning outcomes without increasing teachers' workload – as implementing the LMS frees up time previously used on preparation and evaluation for teaching. Analysed through the Bourdieusian gaze, this means that policymakers, through the core purpose of the policy, produce a dominant economic logic that teachers have to spend more time in the classroom teaching.

On the one hand, the LMS is programmed in accordance with policymakers' demand that it should automate certain aspects of teachers' work so that they can spend more time on instruction. On the other hand, it is also programmed to support policymakers' demand for goal-directed teaching practice. From the policymakers' point of view, the enactment and implementation of an LMS reinforced their position in the field – by the fact the LMS is a tool that if used as policymakers emphasises supports the production of data that, then again, supports a specific teaching method, that from policymakers view, ensure measurable student-learning outcomes.

## The logic that drives policymakers

Many scholars have discussed the OECD's role as an influential policy agent through its soft-power techniques of, for instance, benchmarking national results in PISA (see, for example: Alawattage, 2017; Steiner-Khamsi, 2003). One of the OECD's strategies involves emphasising the human capital theory, which argues that economic growth depends on cumulative labour qualifications (Becker, 1993). The OECD is an agent that connects education and economics – for instance using the argument that the most efficient way to increase GDP is by increasing the average number of years of schooling (Verger, Lluís, 2018). Since the first PISA conducted in 2000, the results have caught the attention of both the media and policymakers in participating countries. The OECD uses PISA to influence local/national policymakers' decisions by comparing results (Sellar & Lingard, 2014).

The connection between the OECD, economics, and education is apparent in a policy document entitled “Prosperity and prosperity of the future.” This document emphasises that Denmark is under pressure from globalisation. So Denmark needs “strong competitiveness so we [can] continue to be among the wealthiest countries in the world” (The Danish Government, 2006a). The significance of enhancing competitiveness is strongly expressed in the policy, which stresses “People's knowledge, creative mind-set, and work effort are key,” and that Denmark, therefore, needs a world-class education system. The argument is elaborated in the work of the government-commissioned Globalisation Council, where the comparison with other countries is emphasised:

The weaknesses in the various stages of the education system mean that Danes are lagging behind compared to other countries”, and, later in the document, “...too few Danish young people receive a higher education, but also [too many] complete their education later than in other countries. (The Danish Government, 2005)

Policymakers assume that higher levels of education lead to higher income for the individual and higher tax revenue for the state, as well as lowering the risk of unemployment for the individual and thereby social security -costs for the state.

The Prime Minister's Office and the Ministry of Finance, which means that educational principles take a backseat to a logic dominated by those fields, prepared the two policy documents quoted above, respectively. Among other things, PISA creates a crisis agenda regarding the quality of national education programs, demanding that politicians take action to curb this crisis (Saraisky, 2019). As the

policies' analysis shows, equality, for policymakers, is a matter of education, jobs, and salaries. Thus, from the Bourdieusian perspective, policymakers' drives by producing a logic of the educational field in the light of human capital theory, so policymakers dominate education with an economic-logic. In that sense, policymakers utilize educational-crises to establish the economic logic – yet, at the same time, policymakers see the solution to the educational crisis orchestrated by the OECD to establish measurable student learning outcomes logic.

## Teachers' perceptions of – and response to policy

The Bourdieusian policy analysis has shown that policymakers produce particular meanings in policy and establish a specific logic in education. In the following, I will analyse how the TU has responded to 1) the national test policy, 2) the 2014 school reform, 3) the enactment of Act 409, and 4) the policy of LMS.

In the process leading up to the national test enactment, the head of the Danish TU, Anders Bondo Christensen, stated in the magazine for the union's members: "more tests do not solve problems with student learning outcomes. It makes no sense" (Ravn & Olsen, 2004). In this short quote, the TU head acknowledged that student-learning outcomes were not necessarily good enough, but questioned the proposed solution's effectiveness. On the one hand, however, the TU's habitus at that time characterized by that education should socialize the students to becoming democratic citizen, which means that teaching involves far more than measurable student learning outcomes. Consequently, the TU was against the core elements of a national test system. On the other hand, the TU's human capital logic problem is that it highlights the significance of education, which is a core element of importance in TU's self-understanding. Hence, the union's struggle against the policymakers resulted in a conflict about teachers' autonomy and working conditions, without focusing on the underlying human capital logic's core elements.

In a consultation response to parliament regarding the 2014 reform, the TU wrote:

it is deeply worrying that the well-intentioned goals of the reform ... have been translated into very narrow test objectives in mathematics and reading. TU looks on with concern as the national tests are now formally adopted as a tool of governance (Christensen, 2013)

The TU thus produces text with negative content towards policymakers. For instance, when the national test system was enacted, the TU was deeply concerned that the national test would encourage teachers to focus solely on passing this test. The TU feared that the introduction of a national test would affect teachers' practice and thereby shape their habitus in light of the national test – meaning that TU worries about teacher's habitus internalize policymaker's positive interpretation of national test and transfer that to teach to the test approach.

However, in the immediate aftermath of the reform's implementation, the TU's most significant concern was financing because of the increase in teaching hours embedded in the reform. In a press release, the TU argued that “the government proposes that the vast majority of state school reform spending should be funded through teachers' working hours” (Teachers Union, 2013a). The TU believed that the reform was connected with Act 409, and emphasised in another press release “that increased teaching hours, and thus greatly reduced opportunities for preparing and following up on lessons, will be the consequence of the new school reform” (Teachers Union, 2013b). The TU sees Act 409 as a democratic failure because of the specific political process leading to the new rules governing teachers' working hours, and subsequent political publications (for example: Mathisen, 2017) have demonstrated that policymakers had prepared the Act before the lockout. At the TU congress in 2017, Christensen stated that:

We knew the process well. But for many members, it has been a tough experience again be confronted with the systematic democratic failure to which we were exposed. The crucial new thing is that, once and for all, it has been documented that the government was deeply involved in the process (Ravn, 2017)

The quote demonstrates that the historical struggle between policymakers and TU internalises in TU's habitus, so their confidence in policymakers is low. The passing of Act 409 exacerbated their lack of trust in politicians during a labour-market conflict about working conditions. The TU is the oppressed agent and believes policymakers enforce and link economic principles to the 2014 reform. This TU habitus fight that logic – meaning that the symbolic violence policymakers' use in terms of legislation refuses by TU. In this sense, the TU did not accept the policymakers' logic regarding what they referred to as the 'normalisation' of teachers' working conditions; and among the teachers that experienced the lockout, distrust of policymakers became an embodied experience.

Regarding the lockout and the TU's subsequent distrust of policymakers, it is important to remember that the form of capital policymakers risk losing during the conflict is symbolic capital in the form of, for instance, legitimacy – because, during the lockout, the state saves money on teachers' salaries. However, the loss of symbolic capital for policymakers problematizes policymakers' political intentions with the reform, Act 409 and LMS, since teachers' habitus internalise the struggle and conflict as embodied experiences, which can lead to, at least analysed with the Bourdieusian perspective that teachers do not perform the teaching policymakers emphasizes.

Consequently, the TU's perception of the enactment of the LMS should be seen in the context of the TU's history of struggle against policymakers. One rather uncompromising statement issued by the TU's chairman expressed the union's position regarding the LMS: "... free us from a system that may make good sense in the administration's planning and control department, but which in schools is perceived as a bureaucratic monster ..." (Christensen, 2016b). This statement shows that the TU's position is that the LMS is a tool invented by policymakers to control teachers' work and reduce teachers' autonomy. Furthermore, the LMS is linked to the goal-directed teaching approach because of its programmed design. In an opinion piece, Christensen wrote: "In many municipalities, teachers are instructed to use a particular IT program to record goals and results" (Christensen, 2016a). Besides the governmental aspect of using goal-directed teaching, the TU fears that critical thinking and democratic schooling is coming under pressure. Analysed through the lens of Bourdieu, this means that the goal-directed teaching approach embedded in the LMS and the political idea of streamlining teaching through the LMS might, in the TU's view, steer and control the habitus of teachers in specific directions. On the one hand, teacher's habitus is shaped by conditions, such as political requirements and teaching guidelines established by policymakers, and on the other hand, by their practical sense for teaching embodied via their historical teaching approach. TU fears that policymaker's logic produces structures in the field of education, which leads to teacher's habitus being shaped by this particular logic.

## The logic TU produces and where TU accumulate capital

This section will give examples of agents that have implicitly supported the TU's fight against politicians with regard to the techniques and methods of schooling. As the analysis has shown, the educational field's autonomy is weak. Cross-field agents have strong opinions on education – some in favour of and some against the dominant logic. TU accumulated capital from two significant positions in the social space. 1) A scientific position and 2) a parent's organization position. Both positions produce their own logic and have an interest in influences the field of education.

The TU used two research positions in particular. The first position is significant for the TU because it questions the fundamentals of national tests. The conclusion in one report on national tests was that such methods contain errors and cannot reveal anything about the individual student's result (Bundsgaard & Kreiner, 2019). The TU has utilised this report to strengthen its position in the field, and in a press release, the TU stated: "We need to find a better tool than the national tests" (Teachers Union, 2020). The TU has used the report's conclusion to generate discourses against national testing in the social space. For the TU, it is central to establish the logic that national testing is not a pedagogical tool but a governmental technique to control teachers' teaching. The second influential position can be characterised as a position that fears that political steering or and policymakers emphasises of specific teaching methods are pushing "Bildung" and educational-democratic schooling. Notably, critique of the concept of goal-directed teaching (Skovmand, 2017) has been used by the TU to argue that governmental initiatives reduce teachers' autonomy. This logic has mainly been an internal discussion with their members on different media and in their communication, structuring teachers' habitus. Through members-communication, TU can structure teachers' memory about goal-directed teaching and thereby orchestrate teacher habitual disposition in opposite to policymakers' requirements. One member survey shows that nine out of ten teachers believe that there is too much goal-directed teaching in primary and secondary schools at Bildung's expense (Bangild, 2016). Analysed through the Bourdieusian lens, this implies that the TU does manage to produce text that establishes an opposite logic to policymaker's dominant logic, which theoretically sharp teachers' habitus in light of TU's policies. A TU logic emphasises the teaching approach rather than the enactment of the national test system and a practice that many teachers believe is the right one and might still have internalized

as their unconscious/conscious teaching practice. The TU represents 95% of the teachers in Denmark (Aisinger, 2015), and therefore the members are a significant asset for TU to produce specific structures and emphasis logic that constitute what excellent teaching contains. In the process of accumulating members' capital, the TU uses its magazine and website to illustrate teachers' stories about everyday life with no preparation time. From their position in the field, the TU has excellent opportunities to affect the individual teachers' habitus.

One significant but very complex and diverse position in the educational field is the position held by parents – however, TU manages to draw on some of the discourses produced by parents to strengthen their logic.

One parent-action fights the national test by producing text arguing that tests make no sense (Bjerril, 2017), and the chair of the School and Parents organisation downplays the importance of test results (Hagensen, 2016). The logic these parents try to establish is the opposite of the dominant logic of the policymakers. Nevertheless, parents are also voters, so the policymakers also depend to some extent on their votes, and the TU can use the arguments of parents to strengthen and support their logic.

It is difficult to find one explanation because primary and secondary schools have changed a great deal. For instance, school mergers have created many new private schools (Sørensen & Knudsen, 2010). Since the school reform, many parents have viewed the increase in the number of lessons as a mistake (Jakobsen, Weber, & Hansen, 2019). These factors could explain the drop in numbers of students in primary and secondary schooling and the increase of students enrolled in private schools (Pihl, 2019). In terms of the Bourdieusian perspective in this article, the specific explanation is not particularly important, because no matter which explanation the TU utilises, the fact is that an increased number of parents do not support state schools. From the TU's point of view, this is a significant argument for changing the 2014 reform and, more importantly for the TU, also an argument for creating better working conditions for teachers. Thus, parent are agents in the field of education – TU' use the depicted parent-logic in the overall social space, where it gains support for fight against the longer school day, by all the time remembering policymakers that parents do not support the longer school day and implicitly telling policymakers that parents are voters.

## Domination in the educational field

The struggles between policymakers and the TU have resulted in three significant changes in the field that challenge policymakers' position but not policymakers' dominance. This section's chronological order analysis unfolds a change of 1) the goal-directed teaching policy, 2) the longer school day policy, and 3) the national test policy.

The first change is that the Danish Ministry of Education reduced the use of goal-directed-method in their recommendation to teachers for excellent teaching. Regarding the LMS, teachers' specific use "must be justified by professional, educational, and didactic considerations" (Danish Ministry of Education, 2018). As the analysis shows, TU socialize teachers habitus to professional judgement (Biesta, 2015), and a democratic teaching understanding (Dewey, 2005), but teacher-training programmes also have a significant impact on the habitus of teachers (Bøje & Frederiksen, 2019). Policymaker's intention to relax the political requirements gives teachers more autonomy, which means policymakers let go of some of the control over teachers' agency – a new logic that adapts to teachers' habitus, now that instruction to teachers pushes to the background. However, in the new policy, the core meaning signifies that LMS is still an important tool for teachers to organize their teaching and support student assessment. A Bourdieusian analysis suggests that – yet, the Ministry of education removed the goal-directed teaching instruction, but that does not necessarily mean that goal-directed teaching is not a teaching-practice anymore. Besides policymaker's guidelines, instruction and demands many municipalities have invested in goal-directed teaching programs leading to municipality instructions steering teachers' practice towards goal-instructed teaching (Knudsen, 2017). Furthermore, the LMS programmed design that both supports that specific teaching-technique and demands still required. The change of policy can be analysed as symbolic, since the teacher's habitus socialized with this particular logic for the last 5-7 years, which means they might as well become an embodied unconscious teaching experiences and therefore, over time, becomes a natural teaching practice.

The second change of policy makes it possible for municipalities to make the school day shorter for the youngest students. The rationale of the policymakers with regard to this change is grounded in the logic produced by many different agents in the field. The new policy states: "The parties to the agreement want ... to listen to the students, the parents, the professionals ..." (The Danish Government, 2019).

As already analysed policymakers, depends on parents' votes, since policymakers habitus aims towards re-election. Policymaker's expectation by increase students' lessons was to ensure sufficient student learning outcomes, thus the new policy setbacks this particular political objective. On the one hand, a new policy adapted to TU's logic that the longer school day should be reduced. On the other hand, however, the policy change does not decrease teaching, which always has been the main object of TU's criticism – leaving that the essential economic logic that also drew policymakers still stands – the significance of downsizing cost in neo-liberal regimes (Bourdieu, 2001).

The last change of policy based on the report issued by Bundsgaard and Kreiner and the subsequent critical reflections regarding national tests by parents, for instance, have led to the test being put on hold. Although 20 percent of the lowest-performing schools still need to do all the tests, the break will be used to figure out a test that can also be used as a pedagogical tool (The Danish Government, 2020). Policymakers invest much political capital in the 2014 school reform. They expect success by student progress in the national test – also in terms of their work in the field of education to sharpen teachers' habitus and thereby practice with formal and informal requirements, such as official ministerial guidance that national test should be part of teachers' annual planning (Danish Ministry of Education, 2017b). So whether they like it or not, teachers must conduct the national test, which will somewhat produce a specific teaching practice towards the national test. In addition, policymakers have made it possible to do a voluntary preparation test before the actual national test. At many schools, principals have made this preparation test part of the teacher's annual syllabus (Ravn, 2019). This means that teachers do many tests, which will somewhat affect teachers' habitus to a "teaching to the test" practice because of the embodied teaching experience but also the policymakers' dominant logic that test is essential to follow and understand student-learning progress. Therefore, it can be a problem for policymakers that the national test now is on hold because it means that the policymakers' logic that the national test should be a pedagogical tool for teachers and measurable student learning outcome is of highest importance – does not have the same authority among agents in the field anymore. Another problem for policymakers due to teacher's habitus stems from the time national test pause since teachers in their practice might "forget" the teaching to the test approach.

The policymakers' educational logic is based on the human capital theory, with the embedded premise that primary and secondary schools must produce high-quality student learning outcomes. The policy documents analysed here show that policymakers consider two particular methods of improving results: goal-directed teaching, and increasing the number of student lessons. The analysis shows that for policymakers, the teachers' main reason to use an LMS was to support these aims. Consequently, the LMS is designed to underpin a goal-directed teacher's habitus and agency, and is expected to streamline teachers' work process. Policymakers showed with Act 409 and implemented governmentality-techniques as national test and LMS to steer and control teachers' work that their trust to teachers' practice is low. A logical result of mistrust of teachers' habitus and practice presupposes further control of habitus and practice in terms of, for instance, more guidelines that emphasis how teachers' perform excellent teaching

The TU's main issues are that although they can accumulate capital and try to structure teachers' habitual dispositions in internal communication; they cannot control the power policymakers have to produce new legislation. Policymakers use symbolic capital to allow certain political concessions to agents within the field on the one hand. On the other hand, these concessions do not shake policymakers' domination. In this sense, it is important to remember that policymakers, despite several elections and thereby embedded political disagreements also about education, the government-capable-parties stand united regarding the human capital logic, meaning that student learning outcomes ensure economic growth for both the individual citizen and the state in a globalized world. Thus, policymakers adapt the new policy to the critique without changing the core elements on the necessity of measurable learning outcomes, techniques, and methods ensuring that – and at the same time keeping the cost for running schools low.

## Conclusion

This article focuses on the logic produced by policymakers and the teachers union (TU) regarding the interplay between the national test system, a school reform, an Act that regulated teachers' working hours, and an LMS. The parties' emerging struggle analysis shows that the distance between the logic they emphasise is great. The purpose of the article is to address “why is analysing the emerging struggle

between policymakers and the TU fundamental in explaining the dynamic in the educational field” by conducting Bourdieusian-inspired historical policy analysis.

The Bourdieusian perspective on policy analysis is fruitful because it sheds light on the conflict between agents and emphasises that policy is historically constituted based on particular struggles. In analysing policy documents and the TU’s responses to policy, I have shown that policymakers and the TU produce specific texts to objectify the field’s structures in light of their preferred logic. Policymakers from the two dominant social-democrat and liberal parties in Denmark stand united on the human capital logic, reinforcing their privileged, dominant position in the field. Thus, it is difficult for the TU to change the field’s logic because they do not have any important political allies.

The policy analysis shows that the educational field is influenced a great deal by other fields’ logic. Both policymakers and the TU use cross-field logic to accumulate capital; they can convert into a policy they what to dominate the field’s structures. Even though the analysis shows that policymakers and the TU possess an unequal amount of capital – policymakers have the symbolic right to produce legislation and, in that process, can accumulate considerably quantities of capital and thus, as a starting point, produce the dominant human capital logic in the field. The policies aim to change the teacher’s habitus by producing teaching-guidelines and other text highlighting the significance of a teaching focus on measurable student learning outcomes. Yet the policies at the same time structuring teachers practice via specific demand to do the teaching. From a policymaker’s perspective, such an approach is extremely important because habitus is the embodied dispositions that agents often unconsciously put into action in a specific practice – a performative teacher (Ball, 2003). In this sense, the LMS becomes a powerful governmental tool since the LMS-programmed design precisely supports structuring the field logic and direct teachers towards a certain practice.

However, opposition to and mistrust of policymakers, creating a field characterised by conflict, categorises the TU’s response to policy and that the struggle produces a specific dynamic in the field. In this process, policymakers maintain dominance and preserve the field’s logic by adjusting the critique of policies in new policies that give concessions but do not change the dominant human capital logic or the technique and methods policymakers believe ensure measurable learning outcomes. Also that the economic logic dominates the effect on teachers teaching continuous dominating, and that teachers habitus that emphasizes are more

democratic-educational school misrecognizes (Honneth, 1995). Even though policymakers concessions by adjusting policies, the struggle and conflict lead to teachers' mistrust of policymakers' political intentions. It means that TU, on an ongoing basis, has produced meaningful text for teachers in opposition to policy-maker's policies – by that TU provides logic for teachers emphasizing a different teaching approach. Thus, TU produces logic for teacher's habitus to orient towards.

In real-world settings, that leaves us with two possibilities that from a policymakers perspective is problematic: Since policymakers have the legitimacy to produce legislation, guidelines, instruction and so forth – teachers might internalize the logic in its habitus and transform it to the required practice. In theory, the practice becomes embodied experiences, and thus transformed to a self-evident truth for the teachers.

However, many teachers might follow TU's opposite logic and thus internalize this logic in their habitus, which might mean that teachers transform that logic to their practice. Accordingly, so the implementation of the required instruction embedded with the reform and LMS becomes a failure. Furthermore, habitus is sluggish, and as the analysis shows, the struggle and conflict have lasted for more than 5 years – meaning that although teachers' habitus over time internalise policy-makers' requirements, so they practice like policymakers demands, the cost from the struggle is misrecognized teacher profession, which leaves little motivation for teaching.

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# CHAPTER 5

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# Does the Combination of Professional Leadership and Learning Management Systems Signal the End of Democratic Schooling?

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## Abstract

Education of democratic citizens is a fundamental aspect of Danish primary and secondary schooling. However, policymakers push school principals' agency towards professional leadership by encouraging specific methods for assessing student learning outcomes. Enactment of a learning management system (LMS) supports the transition towards professional leadership and leads to self-regulation by all actors within schools. While supporting the professional agency of school principals, this transformation is at the expense of core elements of democratic practice. This article argues that schooling's democratic purpose tends to be forgotten in the shift towards the professionalization of principals' agency. In this process, an LMS is a powerful tool because principals can keep track of what teachers are doing digitally at all times. The concept of professional agency is used in this article to denote how the actions of school principals become distanced from the educational practice within the schools. The article is based on a qualitative study at four schools, comprising 31 semi-structured interviews with principals, teachers, and civil servants. Bourdieu's thinking tools – field, habitus, and capital – will be used along with the concept of governmentality to explore principals' professional agency and self-regulation and to conduct a thorough analysis of practice.

## Keywords

LMS, professional habitus and agency, self-regulated behaviour, school principals, forgotten democratic-schooling

## Introduction

A fundamental perspective within Danish primary and lower secondary education concerns teaching Danish children to become active, engaged, and democratic citizens, which entails that the school's work must be characterized by freedom of spirit, equality, and democracy (Danish Ministry of Education, 2019). This has been a core value of Danish schools since the end of the Second World War and was fully enshrined in national educational policy in 1975 (The Danish Government, 1975). Ross understood democracy as a form of government based on the right of the individual, such as the right to freedom of expression (Ross, 1946); however, democracy can also be understood as a way of life (Koch, 2005/1945). A democratic approach to education, therefore, entails more than learning about individual freedoms and rights; it entails 'doing' democracy and thereby experiencing the potential challenges and dilemmas of a democratic way of life – experiences that become embedded in the body (Dewey, 2005). School principals can play an essential role in this regard by generating structures in the school as social spaces that develop democratic practice. A democratic approach to education calls for the school's organizational structure to be democratic (Biesta, 2018). However, in ministerial orders, for example, the democratic agenda has been pushed somewhat into the background. For the last ten years, the Danish Ministry of Education has been more concerned with promoting a school practice focused on measurable student learning outcomes (Danish Ministry of Education, 2014; Danish Ministry of Education, 2015).

Welfare professions and their professionalism can be defined as a particular field of work that promotes human wellbeing and therefore requires specialized knowledge and skills (Eliot, 1994). According to Biesta, the profession's insight into the required knowledge means that professionals need to regulate themselves instead of being ruled from the outside (Biesta, 2015). In this article, I draw on a different understanding of professionalism and agency that are to be understood differently. I argue that the definition of professionalism Eliot and Biesta states is essential for welfare professions is forgotten and that the autonomy of school principals' agency is set by standards for leadership derived from new public management (NPM) (Helen Gunter, 2016). Assessment, accountability, and standardization are part of a global wave of harmonization in the public sector (Moos & Wubbels, 2018). These core principles of NPM tend to lead to a focus on outcomes and outputs in public administration (Moos, 2017) and, within the

field of education, constitute potent tools for governing and controlling teachers (Holloway, 2019). Such logics call for a more professional leader (Hall, Gunter, & Bragg, 2013) – school principals are accountable for the school’s output (in the form of student achievement) and reputation, which also entails many obligations outside the school (Coupland, Currie, & Boyett, 2008). For school principals, “good” professional agency, therefore, refers to a principal who runs the school based on standards or demands from a higher organizational level and takes good care of the school’s reputation.

The introduction of an LMS in Danish schools has to be understood in the light of a recent school reform and new rules governing teachers’ working hours (Law 409) (Dorf, 2018). The introduction of Law 409 resulted in a lockout of Danish teachers by the KL – Local Government Denmark (the association and interest organization of the 98 Danish municipalities). It removed the limit on the proportion of teachers’ working hours spent on classroom teaching. From a teacher’s point of view, the law was seen as the government controlling teachers and teaching (Andersen, Boye, & Laursen, 2018). Three issues emerged from the school reform: 1) primary and lower secondary education must challenge all students to become as proficient as possible, 2) the impact of social background on academic results must be reduced, and 3) students confidence and wellbeing must be strengthened. The political assessment of the reform is based on clear, operational, and measurable goals – e.g., that 80% of students have to perform over the middle level in the National Tests (Danish Ministry of Education, 2013). The LMS is programmed to support goal-directed teaching, which is one of the 1 approaches policymakers believe will ensure the reform’s objectives are met (Danish Ministry of Education, 2014; Danish Ministry of Education, 2016). An LMS is a digital system where teachers can, for instance, upload teaching materials and give students feedback on their work. It also provides a platform for digital communication with students and their parents regarding student progression. In theory, it is a tool that can change teaching radically, yet the literature on how the introduction of an LMS affects practitioners is sparse. Exceptions are two central studies the first showing that teachers are sceptical towards LMSs and the other that teachers fear that the introduction of an LMS will lead to the standardization of teaching practice (Lochner, Conrad, & Graham, 2015; Selwyn, 2011). In Denmark, policymakers had three objectives when implementing an LMS: 1) to make teaching more efficient, 2) to support goal-directed teaching, and 3) to support the digitalization of primary and lower secondary education (Government,

2018; Local Government, 2016)'. The tool is to be used by teachers, and when put into service, it functions like Foucault's panopticon, a design that allow all prisoners of an institution to be observed by a single security guard, without the inmates being able to tell whether they are being watched (Foucault, 1979), the LMS rendering the teacher's practice completely visible. The link between professional leadership and an LMS is that the political motivation for the enactment of an LMS is rooted in a belief that the specific goal-directed teaching methods supported will ensure that teachers adapt their teaching to a focus on assessments and student learning outcomes, thereby ensuring a strong assessment culture in schools, which is the currently dominant political discourse regarding excellent schooling (Danish Ministry of Education, 2014; Danish Ministry of Education, 2016; Government, 2005; The Danish Government, 2006).

This article sets out to present an analysis of practice at four schools, with a particular focus on the principals' agency at these schools. The two issues addressed are professional agency and enactment of an LMS. This article will be done by applying Bourdieu's thinking tools of field, habitus, and capital (Hardy, 2015), alongside the concept of governmentality (Dean, 2004). Using the enactment of an LMS in Denmark as a case, I will examine the interplay between professional agency, an LMS, and democracy. The analysis is intended to fill a gap in the research literature regarding how the introduction of an LMS affects practice and to provide insight into school principals' agency, thereby developing an understanding of how principals produce and reproduce a specific logic through their actions. This leads to the following research question:

Why do school principals' professional agency and the enactment of an LMS, with its embedded notions of self-regulation, tend to neglect the fundamental role of democratic participation as a basis for educational practice?

In the article's first section, I will discuss Bourdieu's thinking tools when analysing the actors within specific fields of education, as well as highlighting the benefits of combining these thinking tools with the concept of governmentality. In the second section, I will present the study's methods and data. The subsequent analysis is divided into three themes, based on which, I present my conclusions, addressing the above research question.

## Theoretical approach

This study intends to generate empirical insight into school principals' scope for agency and how enactment of an LMS influences this agency. Bourdieu defines habitus as permanent dispositions that are predisposed to functions as structuring structures – that means logic that produces and structuring praxis and representations (Bourdieu, 2006). Habitus is what gives actors agency, and actors' agency only makes sense in relation to other actors. Actors' preferences and positions in a social space is a product of their struggles to dominate this space and the amount of accumulated capital they can bring into it (Bourdieu, 1992).

Actors that have the “right” taste in terms of cultural capital can dominate a social space – a process that is not necessarily based on conscious actions. However, Bourdieu argues that this leads to actors accepting that something is the right taste, despite it not representing their own personal taste. As a result, certain dispositions are recognized as the right ones within a given social space, even though some of the actors in this space cannot achieve or accumulate the correct capitals to gain the recognition of others (Bourdieu, 2010). A field can be understood as relatively autonomous, which means that each field produces a specific interest and logic (Bourdieu, 1992). However, the autonomy of the educational field is difficult to limit, and Rawolle and Lingard argue that the educational field consists of numerous cross-field effects from other sectors and organizations such as OECD (Rawolle & Lingard, 2008). One potential challenge in fields comprised of cross-field effects is the loss of context. For example, the state, which sets the framework rules and regulations governing educational practice with universal symbolic capital that is endorsed in all contexts; however, school principals and teachers are contextually bound to a specific social space (Hardy & Lingard, 2008). Capital appears in many forms, but the most dominant analytical forms are embodied social, cultural, and economic capital (Bourdieu, 2001). Moreover, according to Bourdieu, capital can be symbolic, which means capital can be altered and transformed into other forms of capital. The transformation, however, is dependent on how “habitus” perceives the symbolic actions within a specific field. For Bourdieu, symbolic capital is capital that is not recognized as capital, but as legitimate competences, for example, honour (Bourdieu, 2006).

Habitus is Bourdieu's term for the accumulated forms of capital an actor can draw on when making a move in the social space. As such, habitus is comprised of an actor's specific dispositions through exposure to particular practices within

a social space. However, this process is dialectical – through its agency, the habitus engaging in a given social space constitutes and reproduces the dispositions in this space (Bourdieu, 1992). School principals' habitus is shaped by neo-liberal discourses and practices and by standardizations processes for example as results-based management (Gunter, 2016), and thereby habitus in the educational field is associated with the likelihood of rewards and success and of having an effective practice in many different fields – the principals' success is in an interplay between the educational, managerial, and transformational demands (Lingard & Christie, 2003).

Within criminology studies, Bourdieu's work has been combined with concepts drawn from Foucault (Schlosser, 2013; Wacquant, 2016). Bourdieu's thinking tools are intended to be used to analyse power relations between actors within a field, and his notion of symbolic violence (Bourdieu, 2006b) is an analytic tool to shed light on invisible domination. Foucault's concept of governmentality - particularly in terms of how individuals are held responsible for their success (Dean, 2004) – emphasizes the individual self-regulated elements embedded in the LMS. Governmentality studies stress that modern forms of government are often based on soft power relations, where actors, perhaps unconsciously, act towards, for instance, specific standards (Perryman, Ball, Braun, & Maguire, 2017). Numbers come in handy because by measuring something, you can set a standard and then measure everything else against it – the data schools can provide becomes essential (Ozga, 2009). Soft power means to cultivate power through a variety of policies; it is about getting others to voluntarily do what you want them to without any conflict (Gallarotti, 2011).

Governmentality can be defined as the organized practice through which individuals are governed. Dean emphasizes that governmentality is not only a concept for understanding how individuals are governed but also how individuals think about the way they are governed, although they do not always fully understand the governance (Dean, 2004). For Dean, the essential issue for the researcher is to analyse how policies, for example, or tools such as an LMS, make individuals act in a certain way and, by extension, consciously or unconsciously regulate their behaviour in accordance with said tool or policy (Dean, 2004). Cuban has demonstrated that there is a considerable distance from the enactment of a specific policy to the concrete practice in a given social space (Cuban, 2013), and Rose is arguing that government by distance is policy working through delicate associations,

translations, and relations (Rose, 1999). Governmentality studies focus on what happens with the policy from enactment to practice (Colebatch, 2002; Olena, 2008). Ball argues that performativity is a technology that regulates employees' judgment based on rewards and sanctions – the employee's performance is measured in terms of, e.g., the outputs they produce (Ball, 2003).

In the data I have collected, I have identified that the principals' leadership through their habitus is being sharpened by policymakers' increased demands for assessments and measurable student learning outcomes. Also, LMS is a technology that enacts NPM-logic in its programmed design, which means that LMS is governmentality-tool to steer teachers' teaching in particular directions. The LMS governmentality-logic then again sharpens the principals' habitus towards the assessments and student-learning outcome. It means that governing at a distance bridge to principals' agency in the analysis. This lens of theoretical-discovery will be followed up in the method and analysis-sections.

## Methods/data collection

The findings in this article are generated using data consisting of in-depth semi-structured interviews (Kvale, 2007) conducted at four schools and in three municipalities with five leaders, four civil servants, and twenty-two teachers. The primary data presented is based on interviews with five school leaders. At one school, the principal was new in the job, so the vice-principal was also interviewed to provide insight into the process surrounding the implementation of the LMS. One principal was female. All were experienced leaders, with four of them approaching retirement age. The reason for selecting experienced principals was that the topic is highly charged in Denmark, and the expectation was that experienced employees would be more likely to express themselves freely. Teachers were also interviewed to counter school principals' tendency to overvalue their own effort (Andersen, Boye, et al., 2014), allowing teachers' perceptions to qualify the principals' utterances. In addition, a number of civil servants were interviewed, as being responsible for the implementation of policy, they can provide insight into how much autonomy and room for manoeuvre the school principals have. The interviews were conducted January-June 2019. In theory, the implementation of the LMS should have been completed during the collection of data, but it turned out that the four schools

were each at different stages of the implementation process. The interviews were, on average, an hour.

Data were thematically analysed in two rounds of coding. In the second round, it was identified that all five leaders talked about demands from policymakers and professionalism as central working conditions for themselves and the teachers and that an LMS is a tool that can control teaching. The emerging findings were related to relevant literature, such as policy documents, Bourdieu's thinking tools, and the concept of governmentality. This study's findings are based on qualitative data – it is a theoretical construction and interpreted in light of the selected theory. The data is generated from a specific dynamic context, which means that the results of the study cannot be generalized. However, generalization is not my aim; instead, I investigate the social phenomena professional agency, self-regulation, and democracy. As such, the analysis focuses on an exploration of how these phenomena relate to each other in the specific context of the introduction of an LMS in Danish schools and how they affect the various actors. It is not the individual actor's story that is of interest, and data will, therefore, be presented as the construction of school principals or teachers' utterances - excerpts from the data will be used to make the analysis more present.

## Analysis

Three sections are the fundament for the conclusion of the article. In the first analytical section, I will show how principals' meeting activities and the particular implementation of the LMS drive principals toward a professional agency. The argument is that principals' habitus and thereby agency is sharpened to be managerial professionalism. The second analytical section will show how four drivers related to the enactment of the LMS lead to self-regulated behaviour for practitioners within the social space. The argument is that self-regulated behaviour amplifies the managerial professionalism and sharpens actors' habitus and agency in that light. In the last analytical section, I argue that professional agency and the programmed design in the LMS that encourage teachers to goal-instructed teaching, which means that the teaching is being harmonized, and therefore there is little time to focus education on democratic values and participation.

## The orchestration of professional agency

This section will present an analysis of two issues that contribute to professional agency: First, the implementation of an LMS and second, the principals' meeting activities.

All four schools in the study followed the same implementation process regarding the LMS. First of all, the municipalities drew up a number of objectives and requirements for the process, e.g., that teachers are to create their annual teaching plan in the system. The LMS was developed by private operators, who have created a manual to ensure that their product will be used properly; it is a step-by-step manual, and a governmentality technology because it is created in the sense of the intentions of the policymakers for the LMS. When implementing the LMS at the schools, the principals presented the overall objectives and requirements drawn up by the municipalities to school staff. They then strategically delegated responsibility for the process to trusted employees with excellent IT skills, familiar with the technical aspects of the LMS.

The principals' agency in the implementation process was clear: Develop objectives and requirements for the system's operation and let others do the legwork. The principals agreed that such tasks are not part of their area of expertise – they need to be delegated to others to allow the principals to concentrate on other assignments. As one principal put it:

“The municipality asked us to appoint three “superusers,” so they could participate in some courses at the municipality, so we did that... ..I have said I did not have the competence to do it because I do not use it in my everyday life – it is entirely natural that it is those three that have organized it (*Principal A*).”

However, one problem with the distributed leadership approach is that the teachers know that trusted employees do not have any formal authority regarding the LMS. When teachers experience something that, in their opinion, does not make sense, they want to talk to their principals about the problem. The teachers' rationale is that it is the principal who can make changes. The teachers' experience was that the principal gave strategic, professional answers reflecting the official policy, e.g., that LMS makes it easier to reuse teaching in another context. Nevertheless, from the teachers' point of view, the problem is that material still needs to be prepared if it is to be reused. This demonstrates how principals try to tone down a potential

conflict between different positions in the social space by drawing on accumulated capital to convince teachers that LMS is still working.

All five leaders stated they took part in many meetings both in- and outside the school.

“Most of my days are packed with meetings ... .. I would say that probably 70% of my meetings take place at the school, which means with employees, board members, but also external partners (*Principal A*).”

To reinforce the principals' perception of many meetings, a new survey conducted by the Danish Association of School Principals found that school principals use, on average, 46% of their working hours on administrative tasks (School Principal Association, 2020). The principals in this study stated that they attend many meetings with different educational stakeholders. While this might include, for example, meetings with parents to address a conflict about student grades, much of their time is spent preparing and holding meetings on how to translate municipal policy into school practice. In addition, they often participate in seminars organized by the municipality centred on the implementation of policy. The data also showed that principals accumulate capital by seeking to influence strategic participation in municipality council or the union for principal, which reinforce their meeting activities. Principals' meeting activities helps them accumulate capital, which they can draw on in other context but also call for a tool to steer teachers from a distance.

When encountering a problem, teachers stated that they often found the principal was not available to discuss the issue because he or she was in a meeting or not at the school at all. As one teacher stated: *“our principal is often not here ... we (the teachers) do not know what he is doing (Teacher A).”* Most of the 22 teachers in the dataset regard it as a problem that the principal does not have time to discuss their issues, even though the teachers do state that the principal finds time in his or her schedule when there is a serious conflict, for instance with a student. The teachers do not want to be monitored by the principal, but they expect principals to be highly aware of what goes in the classroom as part of everyday teaching practice so they can offer support when problems occur. By the accumulated capital meetings sharpen the principals' habitus and professional agency – they are aware, for example, of their role in the social space as the auxiliary arm of policymakers, which means they know they are accountable for policy demands, and doing the work of

government at a distance. In this strategic game, the principals play strategically and are loyal to policy when in social spaces away from city hall. When disagreeing with policy, their strategy is to keep the disagreement between themselves and the policymakers. One principal explained:

“even though you do not agree with the inherent purpose of control, you implement with respect for the legislation – you have to do that, otherwise you fail as a leader. When a law is enacted, I act like a civil servant and implement it (*Principal B*).”

In this sense, meetings generate the logic within the social space, and the principal through he/she agency reproduces this logic, for example, when drawing up policy-decided objectives and requirements for an LMS.

The school principals want to be close to teaching. However, they are frequently away from the school, for example attending meetings about school policy at city hall. When they have to implement a tool such as the LMS that will potentially radically change teaching, they delegate responsibility to others. Consequently, they do not understand the premise of the tool and, therefore, cannot support the teachers’ practice. These two examples show how the shift towards managerial professionalism distances principals from teaching practice at the school. Instead, the data indicate that principals’ agency is professional. Thereby, the principals’ accumulate capital from the political field and their habitus produce and reproduce the dominant professional logics within the school – for instance, that data and assessment in terms of the goal-directed teaching method embedded in the LMS are crucial to student progress. The link between professional agency and the LMS, as well as how the LMS, when used, produces self-regulated behaviour, will be further explored in the next section.

## Four drivers of self-regulated behaviour

This section will examine how four aspects of implementing an LMS will, in theory, lead to self-regulated behaviour, and how the LMS is an essential tool for principals’ professional agency. For the principals, one of the goals in using an LMS is:

“for us (management at the school), the goal with the platform is to ensure a strong assessment culture. We need a tool that can help

us document that we improve student learning outcomes (*Principal C*).”

Besides implementing a tool with lots of embedded political issues, the principals were aware of some technical difficulties with the LMS. Many of the teachers interviewed were sceptical towards the LMS and saw it as part of the unpopular school reform and law 409, but also that many teachers initially preferred using Google-classroom because it is more intuitive. The principals, therefore, found the implementation process difficult at the beginning. However, as one principal stated: “*the LMS is, in fact, an easier way to plan (teaching) while also documenting that learning is taking place (Principal D)*.” This means that the principals might be aware of potential conflicts embedded in the LMS, but their professional-habitus telling them it a tool that lightens teachers’ workload and places the focus on assessment. In the data, meanwhile, it is clear that before self-regulated behaviour could be established at the school level, policymakers had to use direct force and enforce a top-down process with clear goals and demands. The teachers in the study did not use the LMS voluntarily, and the LMS can only act as a self-regulated instrument if practitioners use it. As already mentioned, policymakers embedded a particular structure for the enactment of the LMS. This structure is, of course, something principals have to ensure teachers implement. They, therefore, inform the teachers that this is a requirement that he/she must meet – with structures within the schools, making it very difficult for any failing to do so.

“Teamwork is the place for development and help ... As leaders, we have to draw up expectations and a structure for this teamwork. We want our teams to be units that ask themselves if we are solving the task properly (*Principal E*).”

Instead of continually reiterating requirements, the school principals organize the work within collaborative communities where teachers work together, for example, when developing the annual teaching plan. Being part of a team requires that teachers work within the LMS. As one principal put:

“Then there were four courses that should be prepared in the LMS, and they were reused in connection with professional learning communities, so we had the link between professional learning communities and the LMS (*Principal D*).”

Secondly, at one of the schools, the data in the LMS is an essential part of the process when teachers hand over a class to a colleague (with the other three schools working to implement a similar system). Storing data within the LMS makes it accessible to the new teacher, who can thereby see what the class has been working on and the work the previous teacher has done. If a teacher does not put his or her work on the platform, colleagues cannot build on this work. The aspect of governmentality that leads the teachers to a self-regulated behaviour is that the teachers' autonomy is shrunken, so if they do not want to be controlled by the principals all the time works on the LMS and programmed-design for teaching. If the teacher does not want to be a bad colleague, then again needs to work on the LMS. A principal explained, "*they (teacher in the team) expected him (a teacher) to deliver the item because they deliver it themselves (Principal B).*" The goal is to sharpen teachers habitus in light of the wished self-regulated behaviour, so they in their agency produces and reproduces a self-regulated behaviour in accordance with the dominant logic of assessment and use of data in teaching.

Thirdly – and this is, as the enactment of the LMS, a combination of direct and soft power. The school principals use annual staff development reviews to address teachers' work on the LMS. At first, the review is direct power because staff does not have a choice whether to participate or not. Even though there is a power relation between principal and teacher, the review becoming soft power relations if it is a success in terms of the principal convinces the teacher the benefits of the review. Is it a success, it is a common-development conversation where principal and teachers agree on shared focal points for the teacher and hiding the power structures embedded in the review. As part of this dialogue, there is an expectation from the principals that teachers present their work; for example, in the form of one of the exemplary pedagogical teachings, which is a demand that teachers have to make. Exemplary teaching is a teaching course based on data and student assessment. One principal explicitly states that the implicit agenda with the review is to make sure the teachers use the platform: "*you do not need to do extra work, just bring what you have to do on the platform to the review (Principal D).*" There are three aspects of the annual staff development review that lead to self-regulated behaviour regarding the use of LMS among teachers. First, teachers know that the LMS will be discussed – the teacher, therefore, has the option to either ignore it and take the heat or play along and do the exemplary teaching. Most teachers choose the latter. Second, exemplary teaching is expected to involve goal-directed teaching or other forms of teaching that use data and student assessment. Again, the teachers know

what is expected of them and can regulate their actions accordingly. Third, the review often ends with an agreement concerning what the teacher has to work on for the next year – both more generally and in terms of the LMS. From principals point of view, a successful review, on the one hand, turns teachers habitus towards assessments through the exemplary teaching, and at the same time encourage to further self-regulated behaviour by voluntarily setting up measurable goals for the teachers’ practice, which can be evaluated in the next review.

The fourth and final aspect of school practice linked to self-regulation is the visibility embedded in the LMS. All relevant parties can monitor a student’s progression, test scores, well-being, assessments by teachers, and so forth. Although organizational demands such as the student plan are being used to ensure the teachers using the LMS – a principal stated:

“employees work within the framework, and we support it, and we talk about it when we think there is a problem, but we do not accept that you do not work with it (the LMS). However, we do not look over our shoulders, checking all the time; we control things like the annual plan and grades. Grades – it’s not even control; we detect it if things are not done right, and I get fed up when they are not done right (*Principal D*).”

It is a requirement that student grades are inputted in the LMS, so the school administration is alerted if a teacher forgets to report a student’s grades. What is more, the school has the right to share the information embedded in the LMS, such as individual student plans, with other parties who might find it relevant for their job, e.g., the school psychologist. The panopticon-technology means that teachers can never know when another party may want to see what is going on in the LMS. The possibility of being watched is what encourages self-regulation. Principals are very much aware of this possibility and address it explicitly in the interviews. Although, they clearly stated that this is not something they did – and none of the teachers had experienced this form of control. Nevertheless, the school principals argued that the possibility is there and will be utilized if necessary – in other words, if they “hear on the grapevine” that a teacher is performing poorly.

Each of the four aspects of self-regulation outlined above relates to specific teaching practices. The top-down implementation with particular requirements, the principals’ agency, and the programmed design of the LMS all lead to the

logical consequence of teachers' self-regulation. Teaching practice becomes harmonized and instrumental, which means that students experience the same method for teaching in all subjects and at all grades. Once the LMS is used, it activates programmed steering-techniques as architecture for reshaping task and relations in education. The logic behind harmonized and instrumental teaching shape teachers' and principals' habitus, meaning that they produce and reproduce these logics in their practice. Although teachers might be critical of the LMS and the growth of a culture of assessment, teachers' performance is measured through their ability to successfully practice specific teaching methods, for example, during annual staff development reviews. The fact is that principals' professional agency distances them from everyday school practice. In this light, the LMS becomes a perfect, powerful tool for school principals to ensure a specific teaching practice by allowing them to monitor what is going on in the classroom digitally – steering by distance.

## The tendency to forget the schools' role as a key democratic institution

The data shows that principals' professional agency and the self-regulation of teachers caused by the LMS are linked and lead to the proliferation of specific teaching methods, resulting in instrumental and harmonized teaching. In the following, these aspects will be analysed in terms of how they affect democratic schooling. In the dataset, professional agency and the LMS have intended or unintended consequences for democratic schooling.

Firstly, the LMS is designed to support an instrumental, goal-directed approach to teaching. The principals are accountable to the municipalities for ensuring such an approach is embedded in school practice. Hence, they are accountable for what happens within the local school space. However, it is a complicated matter. The teachers do feel pressured by principals to practice this specific approach to teaching. However, the implementation of the recent school reform and law 409, resulting in a greater number of lessons and less time to prepare for these lessons, also plays a key role in this regard. All 22 teachers I interviewed state that they use goal-directed teaching because it offers a ready-made and fully baked solution that is only one click away. Related to the lack of time to prepare lessons, one teacher explained: *“Often, you just use a portal, and then you do what is on the portal (Teacher B).”*

However, this gives the school principals another chance to support the use of the LMS and goal-directed teaching; it simply – or at least that is the school principals' argument - saves the teachers time. One might say that this view of practice is in complete alignment with the Danish Ministry of Education's notion of how Danish primary and lower secondary education should be governed. However, many of the teachers in the study added their teaching had become worse since the reform and implementation of LMS because they now just tell students to click on a webpage and complete the assignments there. Most of the teachers regard digital platforms for teaching as highly instrumental due to their instructional design. Instrumental teaching means that students know precisely what is expected of them after every lesson and what comprises the lesson's specific content. The problem from the perspective of democratic schooling is that pressure from school principals and a lack of time to prepare lessons mean that such methods constitute the majority of teaching among the interviewed teachers – methods that do not enhance or encourage students' critical and innovative thinking (Biesta, 2018). The programmed technical architecture leads to a reduction of teaching to those activities that can be captured in measurable quantitative form.

All principals explicitly mentioned that the demands from “above” are increasing and becoming more detailed. One principal stated:

“We do have the autonomy to create our vision/policy for the school. However, I feel we are being measured on some very specific matters - which do not always make sense. We are accountable for some simple issues and are being measured on that. Final student grades, national test scores, and student wellbeing scores (*Principal E*).”

The increase in detailed demands from policymakers is part of the professionalization of school structures and principals' habitus and agency (Courtney & Gunter, 2015). The specific demands for measuring student learning progress in, e.g., national test scores narrow down principals' autonomy to sharpen the school from their own beliefs. They are civil servant that has to deliver a specific result. They accumulate capital from meeting with policymakers and encourage teachers to use, e.g., goal-directive teaching to ensure student results. In that process LMS is a tool underlying self-regulated behaviour in terms of the above mention teaching method. If the self-regulated behaviour is a success – and none of the teachers in the data feel that they are being controlled by their principal, which could indicate self-regulations. It then means teachers in their habitus and agency also produce

and reproduce the notion of, e.g., goal-directive teaching, which harmonizing teaching, so the students experience the same sort of teaching in most lessons. It means that the principals in his/her habitus are disposed of for professional agency rather than to generate core democratic structures. If the principal were to prioritize such structures, he/she would in conflict with policymakers' approach to schooling. Furthermore, it is challenging to implement "learning by doing" and participatory democracy in schools because of the detailed demands from policymakers. A democratic schooling approach is based on student participation and is a prerequisite for socializing students to becoming democratic citizens (Dewey, 2005). Being socialized into a progressive, democratic society involves learning about different cultures and values (Gurin, Nagda, & Lopez, 2004; Zemon, 1998).

## Conclusion

Teaching students to become democratic citizens is a core task of primary and lower secondary education in Denmark. However, the data in this study shows that this task tends to be neglected in school principals' agency. The article presents a three-pronged analysis of: 1) the pressures on school principals to act professionally, 2) how the enactment of an LMS leads to self-regulation by teachers, and 3) what these two factors mean for a democratic approach to schooling.

The data in this study demonstrates that principals experience pressure from policymakers at different levels. Policymakers make specific demands concerning student outcomes and encourage school principals to apply to particular methods, such as goal-directed teaching, to ensure these demands are met. Requirements are focused on student learning outcomes. This means that policymakers limit the school principals' autonomy in the school as social space while, at the same time, determining which logic should dominate this space and, by extension, the practice of teaching. Analysing the data shows that the school principals in the study adopted this logic, thereby reproducing it in the social spaces where they are the dominant actor, embedding demands for goal-directed teaching, for example, in the structures of the social spaces of the school. Teachers' autonomy is thereby limited by the demands emanating from a culture based on assessment and clear goals for student learning, structuring the organization of the school in alignment with official policies. Once that LMS is in use it is a tool that is programmed to support the official policies

However, it is important to stress that most of the participants in this study underlined the vital role of democratic schooling where the teaching is organized so that students learning by doing and develop their critical thinking skills. All five leaders in the study support this view. As such, it is the agency of the various actors, rather than their beliefs that has implications for democratic schooling. It is the way policymakers structure the school as social space, which leaves little room for principals' autonomy in structuring educational practice, in turn leaving little room for teachers' autonomy. However, it is important to underline that the data shows that this is a very complicated process with many explanations for the structuring of the school as a social space. Not only principals' professional agency, but also the recent school reform and law 409-push teachers towards safe options in the form of ready-made goal-directed teaching materials available from online teaching portals.

The data shows the implementation of the schools was based on a top-down approach, both pressuring teachers to use the LMS and shaping their habitus according to the logic of goal-directed teaching. The first action is based on accumulated power in the social space: Policymakers set up demands for how to use the LMS, the municipalities translate and create more and new demands to the principals, which then again translate and set up demands for teachers. When a policy is enacted, the translation-process can lose original thoughts of the law, in the case of the LMS, there is a straight line from what policymakers demand and the principals' demands toward the teacher. The principals support the political notion that a strong assessment-culture within the school is a necessity. None of those interviewed in the study express support for instrumental teaching – but the logic and habitus sharpening in a specific social space in terms of, for instance, lack of preparation time means that instrumental teaching is seen as a necessity. The enactment of the LMS plays the same role in structuring the social space as the principals' professional agency – it is a powerful tool to exercise a specific logic in the space. It is a powerful tool because the embedded programmed design reproduces this logic, reinforcing the centrality of goal-directed teaching and assessment through the options the LMS provides. It means, on the one hand, that the programmed design limited teachers' autonomy because it subscribes to ready-made goal-directed teaching and collection of data on student progress. At the same time, teachers' habitus is sharpened in that light, which means teachers in their agency are reproducing policymakers' thoughts of education.

The data indicates that there are two mutually dependent logics embedded in the LMS that sharpen principals' and teachers' habitus to self-regulation and sharpen principals' and teachers' habitus.

The initial analysis shows that the enactment of an LMS is not an example of soft power, for instance, by providing incentives encouraging the use of specific teaching methods, but of top-down hard power, enforcing its use. Nevertheless, once the LMS has been integrated within school practice, and its logic starts to shape the habitus of the various actors, the concept of governmentality can help understand such processes. Firstly, the evidence shows how the visibility of the LMS and its embedded approach to teaching shape the actor's habitus and agency in accordance with the dominant political logic. Secondly, it shows how that leads school principals to focus on the use of the LMS to optimize teachers' professional development – primarily evident in annual staff development reviews, where teachers are held accountable for their work on the LMS and their individual development plans.

Two reservations must be stressed. The theory is used to interpret self-regulation within a particular context, and therefore does not indicate how the LMS will affect self-regulation in the future. It is a theoretical construct offering a plausible explanation of the phenomenon. Second, two teachers in the study present a direct challenge to the concept as they had not been using the LMS and had no intention of doing so until the principal finds out.

To summarize, the analysis presented in this article shows that a combination of professional agency and the intended and unintended consequences of the enactment of an LMS has resulted in a tendency to neglect democratic schooling in school principals' agency. A prerequisite for success for successful democratic schooling is that schools base their values on the recognition of diversity and their practice on critical thinking and democratic activity so that students experience everyday democratic life as embedded in their habitus. While school principals accept the importance of such an approach, this is not reflected in their agency – mainly because the political field dictates two dominant logics governing primary and lower secondary education: goal-directed teaching and ensuring a strong assessment culture. These logics are instrumental as they are reproduced in the principals' agency and thereby embedded in the organizational structures of the school, leaving little room for the practice of democratic agency among other school actors.

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# CHAPTER 6

Implementation of a Mandatory Learning Management System: How does it Affect Teachers' Practice and Motivation?



# Implementation of a Mandatory Learning Management System: How does it Affect Teachers' Practice and Motivation?

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## Abstract

This article suggests employing a sociological approach to explore the relationship between using a learning management system (LMS) and teachers' practice and motivation as a potentially constructive contribution to educational technology research. Using Bourdieu's concepts of field, habitus, and capital, this article reports on 31 interviews and 3 policy documents regarding implementing a mandatory LMS in Danish primary and lower secondary schools. The data presented offers detailed insight into teachers' perceptions of the political intentions in introducing the LMS and how using the LMS affects their motivation to teach. The findings show how the implementation of the LMS and the resulting automation of certain aspects of teachers' work structures the teaching practice and promotes specific teaching methods. To stay motivated in a structure that narrows teachers' autonomy, one group of teachers developed a civil disobedience strategy to work around the LMS. By contrast, another group remained motivated by employing a strategy of accumulating capital and acting as an auxiliary arm of local management.

## Keywords:

Bourdieu, Teachers' Practice and Motivation, LMS, Automation

## Introduction

Since the 2016/17 school year, all Danish primary and lower secondary schools have been required to use a learning management system (LMS) (Local Government, 2015). An LMS is a digital platform where teachers can communicate with students and parents as well as digitally develop and organize their teaching. This calls for investigations into how the field of schooling practices react to the changes the programmed steering architecture of the digital innovation requires for teaching.

The importance of such research agenda amplifies by the fact that an empirical study highlights that to successfully implement an LMS, it must make sense for teachers to apply in practice (De Smet, Bourgonjon, De Wever, Schellens, & Valcke, 2012). Other studies show that teachers are skeptical of using an LMS - suggesting that the implementation of an LMS encourages teachers to employ standardized so-called best practices in their teaching rather than supporting their development of professional autonomy and judgment (Selwyn, 2011). Furthermore, contrary to the oft-stated intention of making teachers' work more efficient - teachers experience using an LMS as a heavy additional workload (Underwood & Stiller, 2014). These studies provide essential knowledge about the views of educational practitioners on the use of an LMS. In the field of technology, however, there tends to be a lack of sociological explanations of investigated phenomena (Beckman, Bennett, & Lockyer, 2014), which leaves a gap in terms of research focused on developing in-depth sociological-theoretical understandings of the interplay between how technology is utilized in organizational settings and employees' practice.

Bourdieu's theory of field, habitus, and capital provides a construct to analyze power relations between policymakers, local school management, and teacher, and furthermore, which strategies for practice the teacher adopts. These concepts comprise a proven approach to explaining the numerous interactions between the many different actors within education (Gunter, 2012; Hardy, 2015; Lingard & Christie, 2003; Rowlands & Rawolle, 2013). By investigating the implementation of an LMS at Danish primary and lower secondary schools, treated as a specific case that nonetheless shares key similarities with educational settings across the globe, this article exanimate two interdependent research questions. Using the combination of policy documents about the platform and qualitative interviews, I investigate how the implementation of the LMS produces a particular logic that structures the possibilities for teaching. In continuation, I investigate whether

teachers with different habitus react differently to the structures in the field of school practices that are produced by using the platform.

This article is divided into the following four sections. The first section provides a short introduction to Bourdieu's theory and how it is applied in the analysis. The second section outlines the research methodology, data collection methods, and the analytical stages employed in the study. The third section presents the analysis, which is divided into eight sub-themes regarding the structures produced by the implementation of the LMS and how teachers' habitus internalizes these structures and becomes motivated or demotivated for teaching. Finally, the fourth section draws conclusions based on this analysis.

## Using Bourdieu

Bourdieu's field, habitus, and capital concept frames the analysis by directing the analytical gaze towards power and practice.

Bourdieu defines a field as a structured social space that contains people who dominate and people who are dominated. Individuals struggle to transform or preserve the field, and they bring all the power at their disposal to this struggle. Power defines their position in the field as a result of their strategies (Bourdieu, 2006a). The predominant field of power acts as a meta-field that regulates the struggle for power throughout all fields (Vandenberghe, 1999); Bourdieu exemplifies the transnational aspect of the power field by highlighting influential economic organizations' influence (Bourdieu, 2004a). From this article's perspective, the focus is primarily on how the power field includes the state, with the legitimate right to exercise symbolic violence through legislation and policies (Bourdieu, 1996), meaning that governance or political steering of teachers' practice is expressed through the legislation and policies regarding the LMS.

Bourdieu never wrote about digitalization; however, the development of a notion of technological capital can extend Bourdieu's concept of capital by focusing on different forms of capital that can be measured in terms of a person's access to and ability to use technology, thus underlining that social class can play a role in technology use and proficiency (Selwyn, 2004). In the educational field, this has led to curiosity regarding inequalities in students' IT skills and access to technology (Apps, Beckman, & Bennett, 2019; Seale, 2012; Hayhoe, Roger, Eldritch-Böersen,

& Kelland, 2015). Furthermore, a literature review of 16 studies on technology, student practice, and Bourdieu's theories shows that the students' practice is heavily influenced by multiple social and cultural factors, which complicates attempts to explain the logic within the field of educational technology (Beckman, Apps, Bennett, & Lockyer, 2018). However, in this article, the research interest is the relationships between governance, implementing an LMS, and teachers' practice and motivation. Bourdieusian studies on governmental techniques point to datafication as a political-economic regime (Sadowski, 2019). Quantification has facilitated symbolic governance within the educational field (Grek, 2020) and asymmetric power relations between actors, yet the concept of habitus can be utilized to explore these asymmetric power relations (Rowlands, 2018). Bourdieu's habitus concept addresses how social agents operate in ways that are compatible with their social situations (Lingard & Christie, 2003). In terms of governance through an LMS, the dominant actor, which in this case is the Danish state, will continuously struggle to maintain its dominance in the field of schooling practices. The various agents' positions in the field are determined by the amount of capital they can draw on—that is, how much social, economic, and cultural capital an agent accumulates or can draw on when entering a specific field (Bourdieu 2004b).

Agents practice articulates through their habitus. Still, to unfold teachers' practice, I draw implicitly on extrinsic and intrinsic motivation (see, for example, Deci, 1971). In a Bourdieusian approach, motivation focuses on habitus - the accumulation of values and dispositions influenced by experiences that shape future behavior (Bourdieu, 1992). In this sense, motivation becomes an individual's strategy in terms of a particular practice - shaped by their history and social relations. The individual teacher's position in the field of schooling practices is always relative to other teachers. Motivation and teachers' strategies depend on their position in the local school field, meaning that teachers' habitus provides insight into a structured, complex, and yet fluid dimension of the teachers' agency.

## Theoretical consequences for research design

To summarize, the focal point when applying a Bourdieusians lens is to investigate how governance is articulated and produce particular logic that structures how the LMS, according to policymakers, ought to dominate teachers' practices and how

different groups of teachers react to the dominance. Furthermore, the Bourdieusian perspective significantly influenced data collection, as outlined below.

## Methods

This article’s findings are based on the analysis of documents introducing a mandatory LMS in Danish primary and lower secondary schools, as well as 31 semi-structured interviews.

## Document analysis

Table 1 shows the three documents and analytical coding derived from using Bourdieu’s field and capital concept as analytical tools (Bourdieu, 1993).

<b>Documents</b>	<b>Year</b>	<b>Produced logic in the field</b>
<b>'Application of digital teaching effect measurement'</b>	<b>2014</b>	<b>Rationalize teachers' work – LMS can ensure that the individual teacher can teach more. Automation of teachers work</b>
<b>'Goal-directed teaching in primary and secondary schools – guidance'</b>	<b>2014</b>	<b>How to teach in a goal-directed manner. Goal-directed teaching ensures good student learning outcomes. Thus the method maximizes student learning outcomes</b>
<b>'The user portal initiatives'</b>	<b>2015</b>	<b>Specific demands for use – Ensure teachers' use the LMS</b>

**Table 1. The policy documents and analytical codes.**

The document outlining 'The user portal initiative,' written by Local Government Denmark (the association and interest organization of the 98 Danish municipalities), is selected because it sets the political agenda in terms of which specifications to embed in the LMS. The goal-directed teaching document authored by the Danish Ministry of Education is selected because it shows how the LMS is linked to a specific understanding of teaching and learning. The final document is a report commissioned by the Ministry of Education, which argues that implementing an LMS in Danish primary and lower secondary schools will make teachers more efficient. This report is selected because it emphasizes how policymakers see the LMS as a tool supporting the automation of teachers' work. As such, the three analyzed policy documents relate to the state's production of legislation and policy guidelines to maintain dominance (Bourdieu 2001).

The 3 selected documents do not represent all the documents produced about LMS in Danish compulsory school. They are strategically selected to demonstrate policymakers' intention regarding teachers' LMS-practice.

## Interview study

Table 2 shows the distribution of the interview study's 31 participants.

Municipality	Consultants	School	Managers	Teachers	Teachers with S.O.	Total
A	2	One	1	4	3	10
		Two	1	4	2	7
B	1	Three	2	2	2	7
C	1	Four	1	2	3	7
	4		5	11	10	31

**Table 2. The distribution of participants at the four schools.**

Following Bourdieu, a criterion for selection of participants was that they hold different positions at the schools (Bourdieu, 2010). Subsequently, I categorized teachers into two groups - teachers that teach and teachers with special obligations (S.O.) (although it is important to underline that those teachers with special obligations also teach). Special obligations refer to teachers that: 1) act as shop stewards for the teachers' union, or 2) have responsibilities regarding the local implementation of the LMS. The data analysis reinforced the construction of two teachers' positions since the data derived made it clear that teachers have different strategies depending on their position at the school. This construction of teachers' acts as an analytical grip – the limitation of such an approach is that this classification might lose some nuances. Furthermore, interviews were conducted with the five school principals and four municipal consultants. (At one school, a new principal had just been employed, so the vice-principal was also interviewed; and in one municipality, I interviewed both the responsible consultant and one of the employees involved in enacting the policies.)

The shortest interview lasted 38 minutes, while the longest was 1 hour and 20 minutes. The average length of the interviews was approximately 50 minutes. In general, it was the interviews with the four school management representatives that lasted the longest. The interviews were transcribed. The excerpts presented in this article are translated into English from the original Danish. During the interviews, participants were asked to respond to questions related to the implementation of the LMS, its use, and their practice and motivation. The participants mostly framed their experiences in terms of a dichotomy between governance and autonomy – and described how that dichotomy influences the motivation for

teaching. The data were analyzed in light of the literature regarding technology and education and, especially, Bourdieu's concepts of field, capital, and habitus to develop a theoretically informed argument concerning teachers' practice.

## Organizing the analysis

The two types of data support an empirical description and a sociological-theoretical explanation of the LMS implementation process, teachers' practice, and motivation. The lens steers the analysis directly to Bourdieu's theory and an underlying Bourdieusian-informed conceptual framework. The first part of the analysis – concerning how the various agents, via the LMS, produce a specific logic that structures teachers' possibilities for orientation—is structured in four interdependent analyses: 1) Top-down implementation, 2) teachers' efficiency, 3) registration, and 4) goal-directed teaching. This is followed by analyses of how these four issues produce an automation logic that narrows teachers' scope for autonomy and professional judgment. As revealed in the analysis, the automation process tends to alienate teachers from their work. The final part analyzes 1) how teachers that teach and 2) teachers with special obligations develop strategies to stay motivated within the automation logic that structures the field.

## Top-down implementation – teachers forced use of the LMS

The interviews with school principals and municipal consultants showed that they sought to structure the LMS implementation as a bottom-up process (Lipsky, 1980), with principals allowing teachers to 'play' with the LMS before it was formally adopted. However, as one principal stated: 'The learning platform is a must-do task' (Principal at school three). This implies that, no matter the result of teachers' 'play' with the LMS, it is a tool they are forced to use. Therefore, regardless of the intentions outlined above, most of the interviewed teachers regarded the LMS implementation as a top-down process.

The interviewed teachers, school principals, and municipal consultants all report that the LMS implementation was followed up by specific demands regarding its use. Consequently, the teachers had to compile individual student plans and annual teaching plans within the LMS. While this did not represent a significant

shift in teaching, since most teachers already did this planning digitally, it is an example of political steering towards the use of a specific tool, as well as limitation of didactical choices.

The political steering exemplifies the fact that all four schools implemented the LMS through strikingly similar top-down processes. Of course, the school principals took somewhat different approaches, adapting the LMS to their local context, but the overall implementation process was the same at all four schools. One explanation is that the companies that sell the LMS' produce operation manuals containing standard procedures principals can easily translate to their local context and provide consultants who visit schools instructing as to how these procedures can be implemented. As such, the companies developing the technological solutions produce a logic regarding how to best use the LMS that influences the principals and thereby narrow the scope of the principals' understandings regarding how the LMS could be implemented and used. This logic is amplified by the abundance of assignments principals have, meaning easily adaptable, ready-made solutions are highly attractive (Laursen, 2020). At the same time, the logic characterizing the three analyzed documents emphasizes specific ways the LMS should be used and, if done so properly, improve school practice. Thus, by making particular demands and emphasizing a particular practice, policymakers reduce principals' opportunities for a non-top-down implementation of the LMS.

Accordingly, the top-down implementation forces teachers to use the LMS - hard power is necessary to realize the political objective that all Danish teachers use the LMS daily. Bourdieu considers the concept of habitus as a system of dispositions or enduring ways of being, seeing, acting, and thinking – a schema of perception, conception, and action (Bourdieu, 2005). As such, symbolic violence articulated by policymakers through demands seeks to change teachers' habitus, which, at least in theory, is a long and challenging process. Thus, from a political perspective, demands aimed at changing teachers' habitus are transformed into a specific teaching practice. Over time, this specific practice becomes embodied experiences, and therefore, in a Bourdieusian understanding, the excellence of this practice becomes a self-evident truth. From the policymakers' point of view, this is the very purpose of the legislation and symbolic governance. Therefore, the interviewed principals and municipal consultants have done what is expected of them as the auxiliary arm of policymakers - meaning that they (re)produce the logic that structures the local field of schooling practices in line with policymakers'

intentions and expectations regarding the use of the LMS – leading to an implementation of the LMS which seeks to change teachers' practice through specific requirements.

## Teacher efficiency - changing teachers' practice

One aspect of changing teachers' habitus emphasizes policymakers' economic goal of making teaching more efficient via the LMS. Thus, the policymakers' introduction of an LMS was seen as a tool that could support teachers' work efficiency. In a report compiled by the consultancy group Rambøll and commissioned by the Ministry of Education, the argument is that 'digital teaching aids can help save time, especially in preparing lessons, but also in terms of instruction' (Rambøll, 2014). The logic of efficiency is particularly articulated with regard to teachers' possibilities for sharing teaching via the LMS. A principal explained the logic as follows:

I really, really hope that the teachers get even better at planning together, sharing knowledge, and preparing together. And to achieve this, I believe the LMS is a vital tool  
*(Principal at school two).*

This quote exemplifies how the principals' highlight increased efficiency as a positive consequence of implementing the LMS, seeking to establish the logic of economic efficiency as dominant. The majority of the interviewed teachers internalize this logic by indicating that, when they become more familiar with the LMS, sharing lesson plans within the LMS will make their work easier. Analyzed using Bourdieu's concept of symbolic violence (Bourdieu, 1992), the goal that sharing lesson plans will become a completely natural and unconscious practice is a governmental technique for streamlining teachers' work so that they use more of their working hours in the classroom. The dominance of the logic of economic efficiency hereby means that economic principles trump educational concerns. At the same time, the sharing of lesson plans limits teachers' possibilities for orientation because the exemplary goal-directed lesson plans uploaded to the LMS become the gold standard for teaching, as detailed later in the analysis. Thus, sharing teaching plans via the LMS supports and enhances a standardized teaching practice.

## Registration

– making LMS the natural, unconscious choice for teaching

The registration process produces data about the students – for example, the LMS produces data about student absence and academic progression in a so-called evaluation form where teachers and students can assess students' progress by awarding marks. The process likewise supports standardized practices. In this sense, the registration underpins a direct process of automation of teachers' work. This process can be linked to arguments regarding datafication within the educational field (Lawn, 2014). From this perspective, the LMS's automation becomes an essential part of the production of educational data that actors within the field of schooling practices can act upon. One teacher explained the registration process embedded in the LMS as follows: 'I mostly feel like it is going to be registration [using the LMS]. So we register what we have to register' (Teacher at school one). As such, this teacher is critical; the example demonstrates how the teacher internalizes the demands made by the LMS in habitus and performs as required in practice (Ball, 2003). One teacher described the process as follows:

The idea was also that we should evaluate together with the students after each course. There is no time for that. However, I now tell the students that they have to award stars themselves, and then I will give them stars afterwards. Then I can see if they have the same opinion about their learning progress as I have (*teacher with S.O. at school one*).

Thus, the LMS becomes a tool for teachers to register student assessments and then produce data underpinning their teaching that is focused on measurable student learning outcomes. The interviewed municipal consultants highlighted that implementing an LMS makes the teachers' work more manageable - precisely because it is easier to register and thereby produce significant data. One example is when teachers start a lesson by opening the LMS and registering student attendance –if a certain level of absence is registered in the LMS for a particular student, the principal must take some form of action to improve attendance. If the LMS continues to register a high absence rate for that student, data are transferred to the municipal department of social services.

In this way, registration becomes a significant form of symbolic violence. As such, the registration can be seen as policymakers' attempt to ensure the LMS becomes

part of everyday teaching practice. Registration becomes a way of automating teachers' work towards a practice where the teacher finds it entirely natural to begin lessons by inputting the necessary registrations within the LMS. Logically, the next step for the teacher is to start teaching within the LMS by distributing assignments to students digitally.

## Goal-directed teaching – promoting teachers' habitus towards data-driven teaching

Registration via the LMS produces data. Data production and evidence-based teaching are underlined in the analyzed document on goal-directed teaching. Like many other countries, Denmark faces pressure from the publication of the OECD's PISA rankings; since the comparison between countries makes their educational systems appear to be in deep crisis (Steiner-Khamsi, 2003). The symbolic discourses surrounding PISA's datafication of learning outcomes have a significant impact on the political- and field of schooling practices—whether through governance-by-numbers or evidence-based educational programs (Sellar & Lingard, 2014). Governance-by-numbers within the educational field has led to a growing political assumption that more data will better enable the measurement of student learning outcomes, solving the educational crises caused by the PISA rankings (Steiner-Khamsi, 2019). In such an understanding, the political logic for implementing an LMS is thus to provide a tool that makes it easy for teachers to develop teaching focused on student learning outcomes and thereby produce valuable data. Therefore, the document outlining 'The user portal initiative' highlights that the LMS must be designed to support extensive data collection, which will strengthen the evaluation culture within schools. The LMS implementation is linked to the use of goal-directed teaching methods because goal-directed teaching is regarded as 'what works' (Danish Ministry of Education, 2014).

Both policies strongly emphasize the need for goal-directed teaching that ensures the production of data on student learning outcomes, seeing it as the best teaching method for increasing student proficiency.

Moreover, the 'goal-directed teaching' policy document describes how teachers should establish specific goals for students' learning and continuously evaluate their progress. In this sense, the focal point for teaching is specific goals for student learning. It is again clear that the LMS, with its evaluative structure, is designed to

support goal-directed teaching methods. Like the registration process, the goal-directed teaching policy emphasizes the significance of a tool to produce data about student progression. Data production will continue to increase if using the LMS is a focal point for teaching since data production is a core element of the LMS. Thus, over time, the methods become naturalized for teachers, as the practice becomes an embodied teaching practice (Bourdieu, 2006b).

The LMS has a programmed design that stipulates, for instance, how to evaluate students; however, in terms of the (form and) content of lessons, the LMS is 'empty,' and teachers, therefore, have to add their lesson plans to the system. At the four schools in this study, the principals set out a number of requirements for lesson plans; for example, teachers' utilization of exemplary lesson plans that demonstrate how to practice goal-directed teaching and use data on student progress for evaluation purposes, in line with the programmed design embedded in the LMS. A teacher explained the goal-directed teaching process as:

It is more because they [the administration] are so into this goal-directed teaching. As such, it is just not necessarily, where we [the teachers] are at in our everyday lives. When you make a teaching course, the goals are focused (*Teacher with S.O. at school three*).

The programmed design is linked to the goal-directed and data-driven teaching approach. With the Bourdieusian lens directed towards agents' practice (Bourdieu, 2001), the LMS's programmed design can be analyzed as a political step towards producing specific structures in the field of schooling practices, such as the goal-directed teaching guidelines, since such guidelines reduce the range of teaching methods and strategies open to teachers. One attempt to produce structures that reduce teachers' autonomy is the principals' request that teachers produce exemplary lesson plans that can be shared with colleagues and are designed according to a goal-directed approach. On the one hand, the intention is that such goal-directed lesson plans, when made available via the LMS, can be downloaded and shared; on the other hand, the aim is to steer teacher's practice in such a way that, over time, goal-directed teaching becomes *the* embodied teaching experience.

## Automation

The policy analysis of the three documents reveals two main political arguments for implementing an LMS. 1) An economic logic that an LMS makes teaching more efficient, and 2) that the LMS, via specific methods, produces data enabling, e.g., the measurement of student learning outcomes. So far the analysis indicates the automation of teachers' work is underlined as fundamental to achieving the political goals regarding the LMS. Modern companies tend to use technologies for monitoring and intensifying work processes, which might lead workplaces into a new form of 'digital Taylorism,' and, in turn, to boredom among their employees (Spencer, 2018). In an educational setting, Williamson argues that digital governance techniques seek to predict learners' capacities through social algorithms (Williamson, 2014). The LMS does not produce automated algorithms, such as machine-learning tools; however, it can be seen as a tool that both automates teachers' work processes and automatically produces data for actors within the field of schooling practices. Such data can be used to develop new tools that use algorithms to predict student learning. The automation of teachers' work through the LMS is a simple approach to politically steer teachers' work in a specific direction, thereby reducing teachers' autonomy. As discussed later in this analysis, the reduction of complexity that follows with such LMS-based automation alienates many teachers (Rosa, 2010) from their work, because the automation questions their professional judgment (Biesta, 2015). The majority of the interviewed teachers were motivated by the opportunity to adapt their teaching to different contexts and different groups of students, regarding the 'construction' of teaching as a meaningful and creative process. As such, by reducing their opportunities to adapt their teaching based on professional judgment, the alienation caused by the LMS-based automation can lead to the boredom associated with 'digital-Taylorism.

Despite efforts at all levels of the bureaucratic field - in the sense that the state as an actor has infinite capital it can accumulate and draw on when producing the structures of sub-fields (Bourdieu, 1996) in the form of, e.g., ministerial guidelines for practice - not all of the interviewed teachers' habitus has yet internalized the LMS as part of their teaching practice (Bourdieu, 2006b). This analysis has shown that the teachers perform in accordance with policy requirements; however, as explored below, this performance occurs in a struggle with their own values for excellent

teaching, as articulated in habitus, whereby teachers try to avoid the requirements without it being discovered that they do not live up to the performance ideals.

Meanwhile, habitus is sluggish, so changes in practice take a long time, and both unconscious and conscious dispositions for specific strategies determine agency. In this sense, habitus draws on previous teaching strategies to produce new ones, which means the adoption of new strategies is a slow process (Bourdieu, 2005). So how does the habitus of two different groups of teachers cope with the LMS structures outlined in the implementation process and enable them to remain motivated for teaching?

## Teachers' motivation for teaching

Danish teachers share many common values and beliefs of teaching and children's education due to the fact they are educated in the same four years of pre-service teacher training (Boye & Frederiksen, 2019). However, to demonstrate differences, the analyzed teachers were divided into two distinct categories. For example, I asked what motivates them to teach and whether the LMS can support the teaching form that motivates them. Most of the interviewed teachers explain that developing content to suit a particular group of students is a key part of what motivates them to teach. There are variations regarding how the teachers set about developing content, but many regard it as a creative process. The interviewed teachers can see advantages to the LMS; for example, it can provide students with an overview and ensure they have easy access to the syllabus. However, most of the teachers do not see the LMS as supportive of the creative process of developing content, arguing that the programmed design embedded in the LMS supports a specific way of developing lesson plans and assessments. As such, the LMS was not meaningful for the teachers. A dominant view among the teachers is that the programmed design embedded in the LMS represents an instrumental approach to the assessment of student learning (Selwyn, 2011). As I will show, the interviewed teachers practice different habitual strategies to cope with the logic that establishes the LMS-based structures in the field of schooling practices.

## How teachers that 'only' teach stay motivated

Political steering can be perceived as supportive or controlling in terms of employees' practice (Frey & Jegen, 2002), which can positively or negatively impact their motivation (Jacobsen, Hvidtved, & Andersen, 2014). By contrast, governmentality studies focus on how the individual by social-techniques soft-power instruction motivates by its task to self-regulation (Dean, 2004) that in terms of the LMS, could be exemplified by teachers who meet all the requirements, adapt their practice in line with the teaching guidelines, and stay motivated without questioning the purpose of the LMS. Applying the Bourdieusian lens to examine how the top-down implementation of the LMS structured the school field suggests that habitus among the group of teachers that 'only' teach must develop strategies to relate to and cope with the dispositions inherent to the LMS, such as goal-directed LMS-based teaching, if they are to stay motivated for teaching.

As detailed below, this group of teachers' habitual strategy is to fulfill the absolute minimum requirements. As one teacher responded to a regarding everyday use of the LMS: 'Yes, I can do that. But I more or less don't because I would not achieve as much as I do now if I had to' (Teacher at school one). Another teacher was more radical, saying:

I have not spent much time on it [the LMS], but that is because I have deliberately not responded until I have received a minimum of one, and preferably two, reminders [from the management] for any work that absolutely must be done  
(*Teacher at school two*).

The first of these quotes indicates that the teacher uses the LMS as little as possible, while the teacher in the second quote implies that she only uses the LMS when explicitly instructed to do so by the school management. The teachers' habitual strategy to bypass the LMS is so strong that it results in subtle civil disobedience. Their habitual dispositions for teaching are different from those supported by the LMS; the dispositions inherent to the LMS stand in stark contrast to these teachers' values and their emphasis on autonomy – values that have been internalized during the teacher-training program and their previous teaching practice. The notion of habitus reflects the dominant dispositions of these teachers, and how the platform has constituted a professional habitus dominated by the LMS

managerial logics, but also resistance to such logics. This represents a conflict between teachers and policymakers about what constitutes excellent teaching. In that sense, the interviewed teachers believe that the LMS-based automation of teaching is poor-suited to the complex realities of teaching practice'. As a result, they believe that using the LMS has a detrimental effect on their teaching, which logically only amplifies their sense of alienation from their work because of the LMS implementation. In stark contrast to this sense of alienation, the teachers are strongly motivated by concern for their students. It is crucial that they feel that their teaching and interactions with students have a positive effect - not only in terms of better test scores, but also out of a concern for their students' wellbeing and development as future citizens in a democratic society (Dewey, 2005).

For this group of teachers, staying motivated is a complex matter. On the one hand, they must cope with the structures produced by the LMS, which slowly but surely seek to change teachers' habitus, best exemplified by the fact they all perform in accordance with requirements, at least to some degree. On the other hand, they must manage their existing habitus as teachers, which stresses the importance of professional judgment and autonomy when developing lesson plans, for instance. The LMS-based structures that dominate the field challenge their teaching habitus, which leads them to employ a strategy seeking to use the LMS as little as possible. Therefore, in a Bourdieusian sense, a struggle takes place concerning whether or not the LMS becomes an integral part of practice and, thereby, embodied experiences comprising the cognitive schemas teachers draw on when developing new teaching. As long as the LMS alienates teachers and they regard it as a time-waster that conflicts with their values in terms of what constitutes excellent teaching, teachers will not consider the LMS as something that adds meaning to their practice and will therefore develop strategies to avoid everyday use of the LMS. The sense of alienation in relation to their identity as a teacher and the emphasis on a performance culture inherent to the LMS might lead to teachers' corrosion of character (Ball, 2003). It is difficult to imagine that such a scenario actually improves teachers' efficiency as automation tends to lead to boredom, or that it will improve student-learning outcomes, which are one of the main reasons for implementing an LMS.

### How teachers with special obligations stay motivated

Many of the teachers with special obligations have the same skeptical approach to the LMS and apply some of the same civil disobedience strategies. However, the

few teachers who support the use of the LMS as part of their everyday teaching practice all belong to the group of teachers with special obligations. This little group comprises teachers with a high level of digital capital (Seale, 2012). This leads to a reproduction and reinforcement of distinctions between teachers: Teachers with a high level of digital capital get involved in the development and implementation of digitalization policies at their schools. In turn, this involvement further improves their digital skills, helping them accumulate more digital capital and widening the gap to the other teachers at the school. By possessing valued digital competences, these teachers become key members of staff, positioned close to management because management selects them to perform digitalization tasks. Nevertheless, all teachers with special obligations have developed a strategy, whether conscious or unconscious, to accumulate capital and position themselves in relation to their colleagues. Regarding implementation of the LMS, one teacher explained:

I have spent a lot of energy trying to get into that management space, because if it is a must-do task, then we might as well get it done (*Teacher with S.O. at school one*).

In terms of strategy, applying the Bourdieusian habitus perspective, this quote demonstrates that for this group of teachers, their motivation is not specifically related to the LMS, but reflects an attempt to influence management decisions. As such, while they might disagree with a particular policy, they are motivated by an interest in the processes surrounding the implementation of said policy. This group of teachers' interest in staying close to the local management and hence strengthen their position in the field of school practices as indispensable for local management reinforces by principals' strategies when implementing new policies, as one principal explained, 'We always do that by having some frontrunners. So, you find some core people, some key people, and you give them as much knowledge as possible' (principal at school four). The strategy is to select employees who are trustworthy and loyal, and who will therefore help communicate the policies to the rest of the teaching staff. From an organizational perspective, this is a sort of distributed leadership (Spillane, 2005), where selected employees are given a degree of responsibility for ensuring the work gets done. Employees can even be selected for this task prior to the actual implementation process; in this case, trusted teachers were selected to be part of the municipal-level decision-making process determining which LMS system the municipality should buy.

The habitual perspective (Bourdieu, 2006b) is that the group of 'key persons' at a school is limited – among other things, because participation is voluntary based on an interest (conscious or unconscious) in preserving the local school field. It means teachers with special obligations exclude other teachers from being close to management by volunteering, when tasks need to be solved. Yet again, their unconscious-conscious interest is to seek influence and accumulate capital, which at the same time means being part of school decisions and distinguish from the other teachers. This positioning of certain teachers as close to management, with others excluded from such positions, is self-perpetuating because principals continue to select the same few teachers for key roles because they trust them to meet their expectations. Teachers with special obligations develop a level of knowledge that positions them closer to management, reinforced by principals repaying their loyalty by selecting the same teachers to participate in exciting courses and in-service training programs. This leads to this group of teachers sharing responsibility for structuring the local social space concerning the LMS – not necessarily in terms of the political steering, but more how to operate/teach using the LMS. Of course, as the analysis has shown, this operation and teaching is intricately intertwined with policy governance.

## Conclusion

In this article, I have proposed that examining teachers' experiences through a Bourdieusian lens can help shape a new approach to understanding the governance of teachers through digitalization technologies. This article outlines how government policies have viewed the introduction of digital technologies in schools as a panacea, improving student-learning outcomes and making teaching more efficient. However, the analysis also indicates that the automation of the teaching practice via the LMS can have a negative impact on teachers' motivation.

In this study, teachers react with skepticism towards the top-down implementation of a mandatory LMS in Danish primary and lower secondary schools since it produces a logic that structures the field of schooling practices in favor of certain specific teaching methods. One concern that I only touch on briefly in the analysis is that many of the interviewed teachers see the LMS as a time-waster within a very hectic work life. As such, they might have viewed the top-down implementation of the LMS more positively if policymakers had provided the necessary resources.

Nevertheless, teachers see the LMS as limiting their autonomy and scope for professional judgment by applying a 'one-size-fits-all teaching model.' There are a number of conflicts embedded in policymakers' and teachers' respective understandings of the LMS. For example, policymakers believe that the LMS is a time-saver, while many teachers regard it as a time-waster. Furthermore, policymakers expect the implementation of the LMS within teaching to produce valuable data about student learning outcomes, while many teachers see it as a meaningless distraction. The belief among policymakers that the LMS can increase efficiency while simultaneously improving student learning leads them to support greater automation of teachers' work; however, the consequence of this automation is that teachers increasingly feel a sense of alienation from their work.

The analysis suggests that the produced logic regarding implementing an LMS is aimed at changing teachers' practice in line with policymakers' requirements. Guidelines and requirements become the structures shaping teachers' habitus and agency. However, habitus is sluggish and filled with embodied teaching experiences supporting a different perception of what comprises excellent teaching. The data indicates that many of the teachers develop civil disobedience strategies, using the LMS as little as possible, if at all. From the policymakers' point of view, the problem is that the LMS is not transformed into embodied experiences, weakening political governance through the LMS despite their efforts in the form of guidelines and requirements.

Although most teachers approach use of the LMS in their teaching with skepticism, there is greater enthusiasm among the group of teachers with special obligations, who have developed a strategy to stay motivated by being close to local management. This means their habitus has embedded a practical sense to exclude other teachers in the local social space from being part of local decision-making processes. From the point of view of school management, they gain trusted employees, an auxiliary arm of local management, to implement both popular and, more importantly, unpopular decisions among the teaching staff, meaning they have teachers to structuring the local social space, by producing the guidelines and requirement requested by the principals. The involvement of teachers in the implementation of such guidelines and requirements could potentially help in developing a sense of ownership among their colleagues, although my analysis suggests otherwise with regard to the implementation of the LMS.

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# CHAPTER 7

## Does Transformational Leadership Practice During a Digital Innovation Influence Employees Wellbeing and the Implementation of New Technology?

The case of the introduction of a learning management system in danish schools.



# Does Transformational Leadership Practice During a Digital Innovation Influence Employees Wellbeing and the Implementation of New Technology?

The case of the introduction of a learning management system in danish schools.

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## Abstract:

This article studies the effect of two dimensions of transformational leadership with regard to the adoption of technological innovation by employees and their wellbeing during the introduction of a learning management system in Danish schools. Based on a nationwide survey response of 962 teachers, we analyze how inspirational motivation and individualized consideration relate to abstinence from using a mandatory digital tool. The technological innovation in question was introduced during a large labor conflict which was characterized by a tense atmosphere between teachers and politicians. The results show that transformational leadership is positively associated with wellbeing. Moreover, teachers who perceive their management as individualized consideration abstained less often from using the platform. This was to a large degree mediated through the higher levels of sense-making that is found under leadership perceived as individualize consideration.

## Keywords:

Transformational leadership; implementation of technological innovation; schools; wellbeing; sense-making.

## Introduction

The public sector is currently experiencing an ongoing digital transformation that goes along with changes both in the organization and in the content of the work done by employees (OECD, 2019a). Managing these changes poses a challenge to leadership. Despite the possibility that digitalization can empower employees to collaborate and develop more consumer-friendly solutions (Dunleavy, 2005; Margetts & Dunleavy, 2013), a considerable skepticism among employees towards digital solutions has emerged (Selwyn, 2011; Spencer, 2018). This calls for investigations into which leadership practices enable the successful implementation of digitalization in this area. By investigating the implementation of a learning management system (abbreviated LMS below) in Danish primary and lower-secondary schools, we study the relationship between transformational leadership practices and teachers' wellbeing, as well as the adoption of innovation by teachers and the specific role that digital sense-making plays in this process. Within the transformational leadership framework, we focus on the two dimensions of inspirational motivation and individualized consideration (Bass & Riggio, 2005).

The LMS involved in this case has the potential to change teachers' daily work substantively. It is a platform of different tools and services meant to support learning, where teachers can build, organize, and distribute their teaching digitally. But it is also a tool that enables the school management and parents to monitor whether teachers are complying with all requirements. Digitalization in this form regularly meets criticism as it can result in 'digital Taylorism', which is associated with boredom that alienates employees from their work (Spencer, 2018). In order to avoid a drop in the motivation and job satisfaction of employees, the local management plays a particularly important role (e.g. Frey & Jegen, 2002). Their practice can be perceived as supportive or controlling by employees. Thus, in order to understand the consequences of digitalization for public employees, it is crucial to study the key role of local management.

Education is by no means an exception when it comes to digitalization. Central policymakers like the OECD highlight the positive effect of digital solutions on student learning outcomes (OECD, 2012). However, one qualitative study of the implementation of an LMS in the UK showed that digital innovation can also meet resistance among teachers, and that in this case, rather than supporting bottom-up plurality, it led to an officially mandated, standardized teaching practice (Selwyn, 2011). Against this background, the Danish case is an interesting example

for public administrators and researchers for at least two reasons. *First*, Denmark is a frontrunner in the digitalization of education (Mullis, Martin, Foy, Kelly, & Fishbein, 2020; The European Commission, 2020). In the latest Trends in International Mathematics and Science (TIMSS) study, all the Danish school leaders taking part report that their primary or secondary school uses an LMS (Kjeldsen, Kristensen, & Christensen, 2020). *Second*, a conflict emerged with regard to implementation that reveals the typical gap between the intentions of policymakers and the reluctance of employees to have their work controlled rigidly. Danish governments have embraced digital solutions in order to streamline work tasks and make work more efficient and easier in the long term (Bøgelund, 2015), regardless of the parliamentary majority in place at any one time. But the implementation phase of this LMS coincided with a heated conflict between policymakers and teachers relating to working conditions. The implementation of the LMS resulted in additional potential for conflict that the school management had to address. To exemplify, the LMS was seen by teachers as a tool to streamline their pedagogical work in the direction of specific teaching methods which they did not necessarily perceive as making sense (Laursen, 2021a).

Using a quantitative survey data analysis among teachers in Denmark, we explored whether two central dimensions of transformational leadership practice have an impact on whether employees use the LMS in their daily work as expected by policymakers. We also studied the relationship of these practices with employees' sense-making of the innovation and their wellbeing in the workplace. Applying a decomposition analysis, we investigated whether sense-making can explain the effect of leadership practices on the use of the LMS. We find that the dimension known as 'individualized consideration' reduces the probability that teachers never adopt the innovation significantly. Furthermore, our theoretical expectation that transformational leadership and wellbeing are related to each other was confirmed – although the relationship between the two is fairly small. Finally, we find that individualized consideration has a strong relationship to teachers' ability to make sense of digital innovation, while inspirational motivation does not. This relationship between individualized consideration and sense-making also mediates the effect of the individualized consideration on the use of the platform.

The next section describes the context and the political purpose of implementing an LMS in Denmark. We then discuss our theoretical expectations regarding 1) the effect of a transformational leadership strategy on the implementation of the LMS,

2) employees' wellbeing regarding the transition, and 3) teachers' sense-making of changes and its influence on their use of the LMS. After a description of our research design and methodology, we present and discuss our results. The final section concludes and highlights the most critical implications for practitioners and future research.

## Context: The Mandatory Implementation of a Learning Management System in all Danish Primary and Lower Secondary Public Schools

The LMS implementation that we have studied originates in a political agreement between the Danish government and the central organization of the municipalities (called *KL* in Denmark) stating that all teachers should use the platform from the school year 2016/17 onwards. There were three goals: *First*, this LMS is part of a broader strategy for the digitalization of public administration (The Danish Government, 2011). *Second*, it is a tool to streamline the work of the teachers (Rambøll, 2014); and *third*, it is a pedagogical tool intended to help teachers to focus their teaching on student assessment and therefore student learning outcomes (The Association of Municipalities, 2016; The Danish Ministry of Education, 2014).

Just before the implementation of this LMS in the school year 2016/17, there was a pervasive labor market conflict in Denmark, including a lockout for 25 days, with the focus on teachers' working conditions and involving *KL*, which represents the employers, and the Danish Union of Teachers, which represents 95 percent of public-school teachers. The central government intervened on the side of the employers and regulated teachers' working hours by law, thereby indirectly limiting their autonomy. Nearly all the teachers regard this law as controlling (Andersen, Boye, & Laursen, 2018). Given the intensity of the conflict, the climate was undoubtedly still characterized by mistrust during the implementation of the LMS. Hence, the task of the local management was demanding as it had to overcome the existing tensions and implement a new digital infrastructure that might also have been seen as another step towards more control.

## Transformational Leadership and the Implementation of Digital Innovations

Transformational leadership has been studied using tried and tested models in many different settings (Høstrup & Andersen, 2020; Pasha, Poister, Wright, & Thomas, 2017). Researchers often conclude that transformational leadership has a positive effect on organizational performance (Jacobsen & Bøgh Andersen, 2015).

Transformational leadership empowers employees by establishing a shared vision and goals, thereby creating and enhancing employees' engagement and involvement in the creative process. By emphasizing collective goals, transformational leadership tries to change employees' behavior, values and motivation (Wright, Moynihan, & Pandey, 2012). The literature characterizes transformational leadership as containing four elements. *First*, the leader's charisma, i.e. how the leader provides a vision and sense of mission. *Second*, its inspiration, i.e. how the leader communicates high expectations. *Third*, its intellectual stimulations, i.e., how the leader promotes problem-solving, and *fourth*, individualized consideration, i.e., how the leader gives the employee personal attention (Bass, 1990). In the change process, transformational leadership management intends to inspire employees to transcend their own self-interest and work for the organizational goals (Moynihan, Pandey, & Wright, 2014).

The maneuvering space available to local managers in practicing transitional leadership is influenced by the political control of measurable outcomes, see for example (Moos, 2017). In our study, the organizational change initiated by the political level implied far-reaching consequences for teachers' task discretion as the platform suggests, or almost pre-imposes, specific teaching methods. This circumstance might complicate the implementation process on the institutional level. Empirically, Cuban (2013) shows that in educational settings there is a massive gap between political objectives and intentions on the one hand, and how practitioners implement them on the other hand. Transformational leadership can be particularly beneficial in this kind of situation, because it is known to enhance the outcomes that were set as targets in other organizational strategies (Moynihan, Pandey, & Wright, 2011). Moreover, it has proved to be a useful approach to leadership when an organization needs to change its objectives or its structure (Eisenbach, Watson, & Pillai, 1999; Yukl, 2008).

In our study, we focus on two out of the four dimensions underlying Bass's model pertaining more to leadership practices than to the personal characteristics of a single leader: on 'inspirational motivation', which we measure as the school management's clear communication about the expectations of teachers' LMS use; and on 'individualized consideration', which we operationalize as the school management's involvement in implementing the LMS. Our study responds to the critique that the traditional multi-dimensional approach to transformational leadership is undertheorized, and that does not specify how the dimensions jointly form transformational leadership or how dimensions are selected for inclusion or exclusion (van Knippenberg & Sitkin, 2013). Knippenberg and Sitkin (2013) argue that instead of the full range of multi-dimensional conceptualization, researchers should focus their studies on more clearly defined and empirically distinct aspects of leadership. Moreover, Jensen et al. (Jensen, Moynihan, & Salomonsen, 2018) argue that leadership studies should concentrate on the behavioral dimensions of leadership, because there is little knowledge of what managements' 'detailed communicative behaviour is'. These theoretical limitations and empirical considerations seem reasonable in our case, too. Based on these arguments made by Jensen et al. and in particular by Knippenberg and Sitkin, we split transformational leadership into two dimensions when investigating specific leadership practices.

We do not expect local school management to create a local 'digitalization vision', but that in the implementation phase the management should communicate the political objectives, acts inspiring and as a role model, and communicates clearly what is expected from the teachers. Furthermore, we adjust the measurement of the two dimensions of transformational leadership to the specific context we study. This background leads us to Hypothesis 1: *Inspirational motivation and individualized consideration have a positive effect on teachers' adoption of the LMS.*

## Transformational Leadership and Employees Wellbeing

Studies show that the adoption of a transformational leadership strategy by leaders improves the performance and work motivation of employees (Bellé, 2014; Bronkhorst, Steijn, & Vermeeren, 2015; Jacobsen, Andersen, Bøllingtoft, & Eriksen, 2021). Less is known about the relationship between this leadership practice and the wellbeing of employees, in particular in a conflictual context. In a review of the literature, Arnold (2017) shows that the correlations between trans-

formational leadership and negative and positive aspects of wellbeing are strong. For instance, transformational leadership predicts the level of subjective happiness as well as a lower occurrence of adverse outcomes such as stress. However, he points out that only the cross-sectional studies demonstrate a positive relationship between transformational leadership and psychological wellbeing – not the longitudinal studies. Although we cannot analyze this nexus using longitudinal data either, we study the relationship in a situation in which transformational leadership meets a great challenge: fast and extreme changes in a climate of conflict and mistrust. In particular, since the main targets of this mistrust and conflict are the same policymakers, who set out the requirement for changing teaching methods and teachers' LMS-use. On the one hand, the local school management is responsible for ensuring teachers' wellbeing at the school. On the other hand, the school management is also responsible for making sure that teachers use the platform for all the purposes for which it was intended. This places the local management in a demanding situation and requires advanced management practices. Theoretically, this conflictual situation is expected to be solved if the different elements of transformational leadership are applied by the managers correctly<sup>1</sup>. If this is the case, we expect this is the case, which leads us to our Hypothesis 2: *Transformational leadership, measured as inspirational motivation and individualized consideration, applied by school managers improves teachers' wellbeing.*

## Employees Sense-Make of the Digital Innovation

Studies also show that the way employees perceive digital devices is an important factor in the successful implementation of digital change (Cetindamar Kozaoglu & Abedin, 2020; Underwood & Stiller, 2014). Based on the work of Weick (1995), Griffith (1999) develops what he calls 'the features based theory of sense-making triggers'. He argues that sense-making helps, for example, innovators of new technology to understand how users make sense of technology, in order to prevent conflict between e.g. management and employees.

In line with the diffusion theory presented by Rogers (2002), we expect that both sense-making and the adoption of digital innovations occur at different speeds for different employees. In our case, this means that individual teachers might differ

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<sup>1</sup> See e.g. the results by (Bass & Riggio, 2005) on the positive effect of transformational leadership on context-dependent job satisfaction.

in the degree they have adopted the LMS at the time of our survey. However, the political intention of implementing an LMS was that teachers would streamline their work process and that they would all start using the platform immediately. After all, the use of the LMS was mandatory for all public schools. However, in order to achieve the aim of fast and comprehensive implementation, it is vital that teachers can see the purpose of utilizing the new technology. In a study of the implementation of an LMS in Flemish primary and secondary schools, De Smet, Bourgonjon, De Wever, Schellens, and Valcke (2012) show how crucial this can be in a similar context. Teachers who regard an LMS as a tool that improves their daily work are also expected to use it more. Despite the mandatory LMS implementation in the case analyzed here, there is a significant risk that the teachers will be reluctant to start using it because they cannot see the purpose of the innovation. However, transformational leadership is a leadership practice that potentially leads to employees' motivation and performance, and thus we expect that transformational leadership will positively influence teachers' use of the platform. That leads us to Hypothesis 3: *Inspirational motivation and individualized consideration will have a positive effect on teachers' sense-making of the LMS – and to Hypothesis 4: Teachers that can make sense of the LMS have a higher degree of using the platform.*

## Research Design and Methods

### Sample

A nationwide cross-sectional web survey was conducted in collaboration with the Danish Teachers Union (DLF). This union represents approximately 95 percent of all teachers (Aisinger, 2015). The questionnaire was sent by DLF via e-mail to 5,000 randomly selected teachers in January 2020, i.e. in a period when the successful implementation of the innovation that was introduced in 2016 should be completed. A reminder was sent 14 days after the first e-mail. In total, 24 percent of all the teachers who were contacted answered the questionnaire, and 19 percent completed the full survey. This response rate is comparable to the teacher's union's own member surveys (DLF, 2014). A comparison with structural characteristics of the realized sample and the unions' membership composition shows a high consistency, which gives us confidence that the sample is fairly representative for the vast majority of teachers who is organized in the DLF<sup>2</sup>. Out of 1,124 teachers

<sup>2</sup> The average age of the sample was 47.7 and the proportion of women was 71 percent; in the population of

that are in active service, we could use 962 cases without missing value on any relevant variable.

## Measurement

The questionnaire was developed based on our theoretical expectations. It was pre-tested with 25 respondents (teachers) and in a qualitative pre-test with four interviews with respondents from the quantitative pre-test. The pre-test focused on the validity and reliability of the self-constructed items. In anticipation of a low response rate in web surveys (Tourangeau, Groves, Kennedy, & Yan, 2009), we constructed a relatively short questionnaire. The pre-test showed that the teachers could complete the survey in 10 minutes (ranging from 8 to 12 minutes in the pre-test group).

The survey was divided into three batteries. An overview of all the items can be found in table 1. The first battery measures *wellbeing* based on questions that were validated in previous studies: three items of the wellbeing index were adopted from the WHO wellbeing questionnaire (Topp, Østergaard, Søndergaard, & Bech, 2015), adjusted to the context of education using the same approach as Skaalvik and Skaalvik (Skaalvik & Skaalvik, 2011). Four items are based on OECD's Teaching and Learning International Survey (TALIS) from 2018 (OECD, 2019b). The last two batteries consisted of questions that were constructed based on qualitative studies (Laursen, 2021b), exploring the relations between governance, daily use of the LMS, and management. The results from explorative work provided insights into which factors teachers consider important for *sense-making* of the LMS, and how leadership regarding the LMS was practiced and perceived. We measured teachers' sense-making of the LMS with questions about how teachers specifically use the LMS in their everyday practice, and questions about whether they feel that the LMS improves their teaching. Accordingly, the sense-making questions focused on whether the teachers adjusted their practice with a view to ensuring that the LMS made sense to them. The last battery measured was *inspirational motivation* and *individualized consideration*, based on survey items that were adjusted so that they asked about the perceived leadership practices with regard to the implementation of the LMS. Inspirational motivation was measured by asking DLF members, the average age is 45.1 years and 71 percent are women (DLF, 2020). While there is a principal risk that teachers' motivation to participate was influenced by loyalty to the DLF or by a critical or positive attitude towards the LMS, these numbers point at least towards a good representation of the different demographic groups within the membership.

three questions that measure how the local school management communicates the political visions concerning the LMS, as well as communicating its clear expectations concerning the teachers' use of the LMS. Individualized consideration was measured through two questions about how the leadership involves themselves in teachers' everyday LMS teaching practice.

We opted to measure transformational leadership from the vantage point of the individual teacher and not in a separate survey among school leaders. Besides feasibility, our motivation here was to avoid using a possibly biased self-judgement of school leaders (Andersen et al., 2018). Moreover, from a policy perspective the ratings of employees are particularly interesting, since they are regularly collected by employee surveys in public service in Denmark and are thus the same information that the municipality management will get about the school.

The questions came from different sources, so different response scales were used for different batteries in the questionnaire. The TALIS items use a 4-point Likert scale ranging from strongly disagree to strongly agree – forcing the teachers to choose between a more positive and a more negative standpoint – while the other four batteries use a 5-point Likert scale including the neutral midpoint 'neither agree nor disagree'.

**Table 1** Survey items and theoretical constructs

<b>Inspirational motivation</b>	
<ul style="list-style-type: none"> <li>▪ The management at my school has clearly communicated what benefits the learning platform offers</li> <li>▪ The management at my school has clearly communicated what the learning platform is to be used for</li> <li>▪ At my school, in the implementation process, there have been clear expectations from the management about the use of the learning platform</li> </ul>	$\alpha = 0.77$
<b>Individualized consideration</b>	
<ul style="list-style-type: none"> <li>▪ The school management has been good at involving the teachers</li> <li>▪ At my school, the school management has followed the implementation process closely</li> </ul>	$\alpha = 0.74$
<b>Wellbeing</b>	
<ul style="list-style-type: none"> <li>▪ I thrive on being a teacher</li> <li>▪ I look forward to going to work almost every day</li> <li>▪ I find the work of a teacher motivating</li> <li>▪ The advantages of the teaching job clearly outweigh the disadvantages</li> <li>▪ If I had to choose again, I would still choose to become a teacher</li> <li>▪ I regret that I became a teacher</li> <li>▪ All in all, I am well satisfied with my work</li> </ul>	$\alpha = 0.90$
<b>Teachers' sense-making</b>	
<ul style="list-style-type: none"> <li>▪ Using the learning platform supports the efforts I make with the students</li> <li>▪ With the learning platform as a tool, it is easier to assess the students' versatile personal development</li> <li>▪ Using the learning platform gives students a better overview of the material they are to be taught</li> <li>▪ I use the learning platform to discuss common standards for evaluation with colleagues</li> <li>▪ Using the learning platform contributes to more exciting teaching</li> <li>▪ Using the learning platform strengthens my motivation to teach</li> <li>▪ Using the learning platform strengthens my commitment to the school</li> <li>▪ The school management's implementation of the learning platform gives teachers the opportunity to provide good teaching</li> </ul>	$\alpha = 0.81$

## Analysis

As a first step, we analyzed if the item scales followed the expected structures using principal component analysis. For the analyses reported here, we combined the variables into additive indices with the same range as the original variables (from 1 to 5). There was generally high consistency in the expected scales, especially with regard to 'sense-making' and 'wellbeing'. We combined two indices with somewhat lower alpha-values, on transformational leadership, based on theoretical arguments.

The first hypothesis that transformational leadership relates to the implementation of the LMS was tested using a logistic regression model. The dependent variable here is whether teachers use the LMS at least 1 to 3 times a month (0), or if they use it less (1). Thus, the variable indicates 'under-usage'. In order to provide a more

intuitive interpretation, we report average marginal effects. The second hypothesis stating that transformational leadership also affects employees' wellbeing, and the third hypothesis, stating that it directly relates to sense-making, were both tested using additive index variables and modeled with linear OLS models. Since we had to expect that the error terms of the two equations are correlated, we estimated them simultaneously using seemingly unrelated regression (Wooldridge, 2018) with identical sets of covariates. We opted for this strategy to allow for correlations between the error terms of the two equations, but still revealing a rather simple and intuitive result. We also re-estimated the entire setting using a structural equation model, including measurement models for all latent variables instead of the indices. This led to results that were not substantively different in any way, but pointed in some cases towards slightly stronger effects into the directions that we find. The results are available upon request from the authors. Finally, our hypothesis 4 was that the effect of transformational leadership on the abstinence from using the LMS is mediated via sense-making that leaders can trigger among employees. We applied the Karlson/Holm/Breen decomposition method (Karlson, Holm, & Breen, 2012; Kohler, Karlson, & Holm, 2011). The reduced model was the same logistic regression analysis we used for testing hypothesis 1, adding the index for sense-making gives the full model. For nonlinear probability models, reduced and full models cannot be compared directly (Karlson et al., 2012; Mood, 2010)<sup>3</sup>.

In order to account for the conditions that different teachers face, we control for a number of situational factors: the subject that they teach (Danish, math, or any other subject), whether they teach in primary or secondary school, the size of the school in the three groups, and the estimate of the teachers regarding the social composition of the parents in the school in three categories. In addition, we ran robustness checks including a municipality fixed effect for the municipality in which the school is located, which did not affect the results. Finally, we accounted for the sociodemographic characteristics of the teachers: their level of teacher training, as well as their age, work experience as a teacher and gender. The set of control variables was identical for all models.

Whenever possible, standard errors were clustered on the municipality level<sup>4</sup>. This was done as a conservative approach and out of caution since there is the theoretical

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<sup>3</sup> Due to the sensitivity of the decomposition to the chosen link function, we re-ran the analysis as a probit model.

<sup>4</sup> For hypothesis 2 and 3, our analysis based on a seemingly unrelated regression could not be estimated with robust standard errors in the software we used (Stata 14.2). We re-ran the analysis with clustered standard errors

possibility that several teachers have the same leader. Since we do not know the exact school, we adjust for the municipalities that usually contain several schools. This means that we pretend having even fewer clusters than we actually have and it thus a quite conservative approach. Without this adjustment, the standard errors would be somewhat smaller, but there was no case in which the clustering changed our conclusion.

The main results are reported in the next chapters as coefficient plots. Full models can be found in tables in the Appendix.

**Table 2: Descriptive statistics**

<b>Variable</b>	<b>Mean/%</b>	<b>SD</b>
<b>Individualized consideration: index</b>	<b>-3.2</b>	<b>0.87</b>
<b>Inspirational motivation: index</b>	<b>-2.83</b>	<b>0.86</b>
<b>Wellbeing: index</b>	<b>-2.20</b>	<b>0.42</b>
<b>Sense-making: index</b>	<b>-3.70</b>	<b>0.81</b>
<b>Age</b>	<b>47.68</b>	<b>9.66</b>
<b>Tenure</b>	<b>18.27</b>	<b>9.59</b>
<b>School section:</b>		
<b>Primary</b>	<b>25.0%</b>	
<b>Lower secondary</b>	<b>28.8%</b>	
<b>Secondary</b>	<b>39.7%</b>	
<b>Special needs</b>	<b>6.6%</b>	
<b>Subject</b>		
<b>Science and Math</b>	<b>33.1%</b>	
<b>Humanities and Languages/Danish</b>	<b>57.0%</b>	
<b>Other</b>	<b>10.0%</b>	
<b>Gender: female</b>	<b>70.9%</b>	
<b>School size</b>		
<b>0-300</b>	<b>17.2%</b>	
<b>301-600</b>	<b>45.6%</b>	
<b>601+</b>	<b>37.2%</b>	
<b>Education</b>		
<b>Teacher education</b>	<b>83.8%</b>	
<b>Teacher education + MA</b>	<b>3.9%</b>	
<b>No teacher education</b>	<b>7.0%</b>	
<b>Other</b>	<b>4.1%</b>	
<b>MA</b>	<b>1.4%</b>	
<b>Socioeconomic status of school, teachers' estimate</b>		

as single equation OLS models, but report the results from the multiple equations model only.

## Results

In order to test our first hypothesis about the impact of transformational leadership on the actual implementation of the LMS, i.e. the compliance of teachers with the intentions of the policy, we ran a logistic regression model predicting a using behavior that is clearly below the expected frequency. We define this as using the platform only 5-10 times a year, which is reported by 163 teachers (17 percent) within our sample. The coefficients are plotted in figure 1 (for full regression results, see table A.1 in the Appendix). For hypothesis 1, only models 1 and 2 are relevant. In model 1, we show coefficients for a model without covariate adjustment, while in model 2 we adjust for covariates as described in the methods section. Note that negative coefficients imply a lower probability of NOT using the platform, and that the coefficients are average marginal effects that can be interpreted as changes in probabilities. Looking at these four coefficients, two main findings stand out: first, the index for ‘individualized consideration’ has a clear, strong, and statistically significant relationship (99 percent significance level) with the use of the platform, while the index for ‘inspirational motivation’ does not. Second, the differences between the models with and without covariate adjustment are not very large. While this may not give us certainty that there are other confounders which we miss to control for, it is a strong hint that relationship is not very sensitive to the typical third variables one might expect.

The size of the coefficient for individualized consideration is remarkable: the point estimates show that we can expect that, all else being equal, an increase of one on the 5-point scale of the index on individualized consideration goes along with a decrease of non-users by ca. 6 percentage points. A lack of inspirational motivation on the other hand goes along with a much smaller decrease (approx. 2 percentage points) in the probability for low usage and is also not statistically significant at conventional levels.

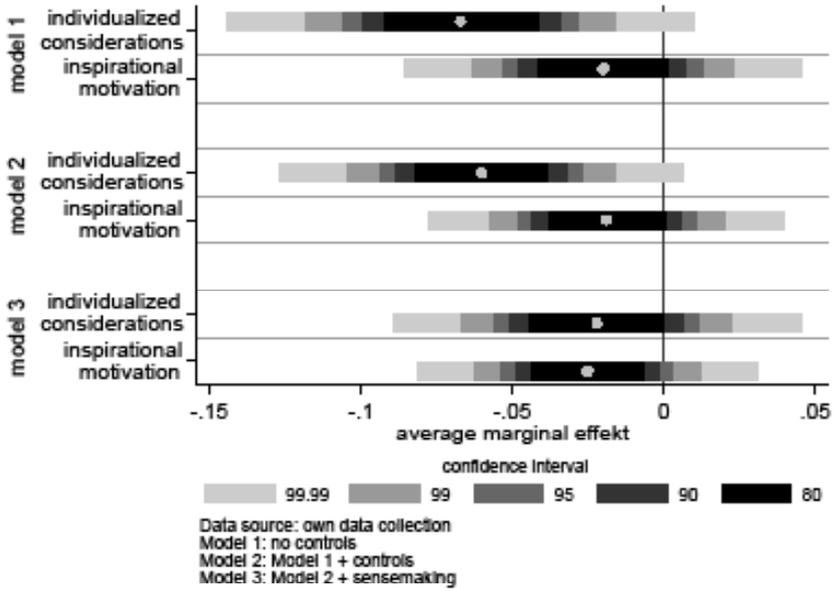


Figure 1. Coefficient plot: the relationship between transformational leadership and teacher's non-use of the LMS. Average marginal effects from a logistic regression.

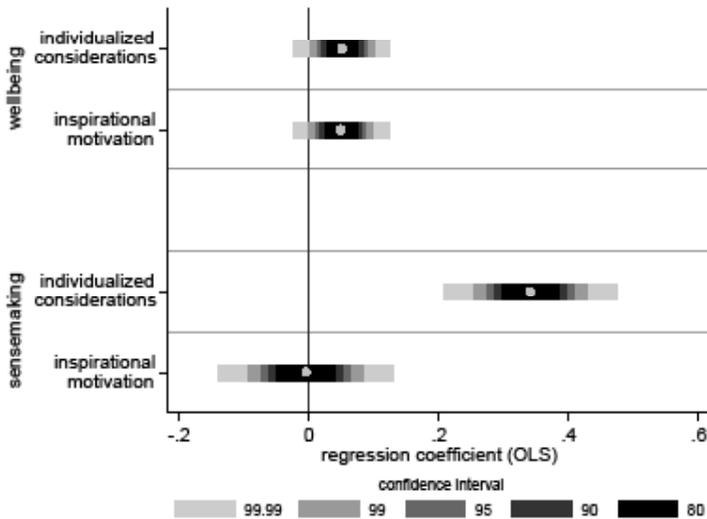


Figure 2. Coefficient plot: the relationship between transformational leadership and teacher's wellbeing as well as their sense-making of the LMS. Seemingly unrelated related regression.

The second hypothesis refers to the relationship between transformational leadership and teachers' wellbeing, and the third hypothesis to the relationship between transformational leadership and teachers' sense-making of the LMS. Both dependent variables are measured as an additive index constructed from the items documented in the methods section. We estimate both equations jointly as seemingly unrelated OLS regression with the same covariates as in model 2 of figure 1, and report the main findings in figure 2 (full results in table A.2 in the Appendix). The results show that both dimensions of transformational leadership, inspirational motivation and individualized consideration, have a positive and statistically significant relationship with teachers' wellbeing. With an estimate of 0.05 index points increase in wellbeing per one index point increase in individualized consideration and inspirational motivation respectively, the regression coefficients are, however, fairly small. Thus, we can conclude regarding hypothesis two that we do find the expected positive relationship between a leadership that is perceived to be transformational and teacher wellbeing, although this relationship is not very strong.

Equation 2 relates to hypothesis 3 and estimates the relation between transformational leadership and teachers' evaluation of whether the digital innovation makes sense. Here, the coefficient for individualized consideration is of substantial size (0.34 'sense-making index points' per 1 index point increase in individualized consideration) and statistically significant. Individualized motivation, on the other hand, is not related to sense-making, which confirms hypothesis 3. This is, however, only a partial confirmation of our hypothesis since we do not find any effect of inspirational motivation on LMS sense-making.

Finally, our hypothesis 4 was that the effect of transformational leadership on the use of the LMS is mediated by sense-making. Upon our results for hypothesis 1 we test this hypothesis only for individualized consideration, since this variable was much more clearly related to both sense-making and the tendency to refuse to use the LMS. Model 3 in figure 1 includes the sense-making index to model 2 in the same figure and gives us already a hint that the mediation hypothesis holds: the coefficient is clearly smaller and no longer statistically significant. In order to test the mediation more systematically, we employ the decomposition technique suggested by Karlson, Holm and Breen (2012). This analysis shows us that more than 60 percent of the original relationship is accounted for by sense-making (64.1 percent for a logit model and 62.7 percent for a respective probit model).

This clearly supports hypothesis 4 that individualized consideration reduce the probability of a refusal to use the LMS by improving sense-making.

## Discussion

The findings suggest that the two dimensions of transformational leadership practice that we investigated have a different effect on employee behavior. In our analysis, we adjusted for covariance and used a comprehensive list of control variables. Regarding wellbeing, our findings align with our theoretical expectations of a positive effect of transformational leadership. However, we find that this relationship is not very strong. Regarding employees' ability to make sense of and thus adopt a newly implemented digital platform in practice, only individualized consideration had a positive effect. The organizational performance goals, in our case, measured in teachers' LMS-usage has a strong relationship to individualized consideration, mediated through sense-making. Our study shows that it is beneficial to investigate the dimensions of transformational leadership individually to explain specific leadership practices and understand why different leadership approaches work under different circumstances depending on what the organization's objective is.

The results underline the importance of managers' individualized consideration practice and that sense-making place an important role for the success of the implementation. When leaders involve themselves in teachers' practice and guide teachers to see the purpose of the LMS, the probability that teachers do not implement the innovation is reduced. Hence, our study is in line with Jensen, Moynihan, & Salomonsen (2018), who highlight that in order to achieve organizational goals, the management must employ a face-to-face dialog with the employees. Additionally, our results indicate that the involvement of managers in LMS implementation increases the ability of teachers to make sense of digital innovations. However, when leadership involves themselves in the teachers' practice they balance on a knives-edge because their involvement is always at risk of being perceived as controlling (Jacobsen, Hvidtved, & Andersen, 2011). An ideal approach with regard to a successful implementation would thus be that the management does involve in teachers' practice, but also emphasizes that the teachers themselves are involved in the implementation process since that supports teachers' ability to sense-make of the new technology or method.

Regarding the relationship between transformational leadership and teachers' wellbeing, we find a statistically significant but at most moderately strong effect. This result suggests that leadership that communicates detailed and clear expectations regarding organizational changes to reorganize employee practice can maintain or perhaps increase employees' wellbeing during the changes. The moderate relationship between transformational leadership and wellbeing could possibly be due to the fact that we measure leadership explicitly with reference to the implementation of the LMS, and at the time of our data collection this event dated back 3.5 years. Thus, a strong effect that lasts this long would come at a very strong surprise, and even a moderate could be seen as a surprising finding. A general effect on wellbeing during the time of the implementation is likely, though. The LMS implementation implies best practice-guided teaching and thus more streamlined. Such a teaching approach can, of course, in some settings support organizational goals. However, it can reduce task discretion of the individual teacher and therefore also influence their wellbeing. The importance of autonomy for teachers has been argued for in psychological and philosophical studies (Biesta, 2015; Skaalvik & Skaalvik, 2014).

As our results show, the dimension 'individualized consideration' is the most effective strategy to ensure that teachers use the platform as required in everyday practice and not only on extremely rare occasions. This indicates strongly that implementing political visions, being as leadership team involved into the process and expressing firm expectations improves organizational performance. In contrast, we found now correlation between inspirational motivation and the use of the platform. One explanation could be that teachers who manage to make sense of the platform simply do not need a leadership that communicates the platform's benefits because they already know how the LMS supports their practice.

Given our results change hardly when we include additional variables, even if we apply municipality fixed effects, we are confident that at least a part of the coefficient we find can be attributed to a real effect of leadership practice. However, we are fully aware of the fact that our study also has a number of limitations. One of the most severe disadvantages of our data is the cross-sectional design. Our results show that transformational leadership supports the achievement of organizational goals. As Arnold (2017) shows in a review, the long-term effects of transformational leadership on wellbeing are challenging to establish and longitudinal data would suit this purpose best. While we generally agree with this conclusion,

we regard our study as a comparatively robust test case. That is first because we study an implementation that was extremely large-scale and that was implemented in a conflict-loaded climate imposed from a higher policy level. In this kind of situation, it is generally more difficult for the local leadership to have an impact on their organization. Second, because we asked questions that referred explicitly and directly to leadership practice with regard to implementation, not just to the general leadership style. Following Knippenberg and Sitkins (2013) critique of broad leadership questionnaires that most likely do not measure particular practice, we know in our study that inspirational motivation and individualized consideration are teachers' experiences of the leadership practice with regard to the LMS. Thus, our study's results contribute to the growing literature that highlights the importance of studying leadership practice to address real-world leadership challenges.

Furthermore, due to the strong statistical relationship, we also argue that our findings of the impact of individualized consideration as a leadership practice in conflictual implementation settings and a support the sense-making of employees adoption of new digital innovations can be generalized to other settings. For instance to education in similar countries and most likely also to public-sector organizations in general. Denmark is a digital frontrunner, and other countries are implementing similar systems right now or will do so in the near future, not least in the light of the recent series of COVID19-related school lockdowns that have created the need to ramp up digital teaching technology. Hence, implementing such systems will become a task for many leadership teams in public administration in the near future.

Concerning the generalizability of the results to the population of teachers in public schools in Denmark, our survey design is strong because the teachers are randomly selected with known probability and the characteristics of the participating teachers align closely with the population (see the footnote in the methods section). Teachers from 95 out of the 98 Danish municipalities responded to the survey.

## Conclusion

This article aimed to investigate the relationships between transformational leadership and teachers' wellbeing as well as the adoption of innovation by teachers

and the specific role that digital sense-making plays in this process. This purpose was justified by the fact that the relationship between the implementation of new digitalization tools and the employees use and perception of the tools is underestimated and that the specific implementation took place in a conflictual context, which theoretically means that management has more significant considerations of employees' perception of the tool.

We find that individualized consideration has a clear, strong, and statistically significant relationship (99 percent level) with the use of the platform, and that a lack of such a practice will decrease non-user by approximately 6 percentage points. Inspirational motivation does not have such a strong connection. Concerning wellbeing, we find that both inspirational motivation and individualized consideration leadership practices have a positive and statistically significant relationship with teachers' wellbeing. The regression coefficients are relatively small, with a 0.05 index point increase in wellbeing per one index point increase in either of the two dimensions of transformational leadership. The investigation of sense-making shows that the coefficient for the dimension individualized consideration is of substantial size (0.34 'sense-making index points' per 1 index point increase in individualized consideration) and statistically significant. By contrast, the other dimension, inspirational motivation, does not relate to sense-making. Finally, we find that more than 60 percent of the effect of individualized consideration on LMS usage is explained by that fact that this leadership practice increases sense-making. This suggests that this mechanism is a central explanation for the positive contribution of individualized consideration to the successful implementation of an innovation.

Even though we have mentioned some limitations, this study makes numerous possible contributions to the public management literature. The results indicate that a transformational leadership practice can help to achieve organizational goals and support employees' wellbeing and sense-making of digital innovations. They also show that this works in a challenging, real-world setting, and that the results hold when we ask very concrete questions about a specific leadership task – instead of merely measuring general leadership styles. Future research should focus on confirming these effects, ideally based on longitudinal data that prospectively enables to follow both leaders and employees through the course of such major changes of their work environment.

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## Appendix 1: Full models

**Table A2. Full models for figure 2: Coefficient plot: the relationship between transformational leadership and teacher's wellbeing as well as their sense-making of the LMS. OLS regression coefficients; seemingly unrelated regression.**

Seemingly unrelated regression	Equation 1 Index: wellbeing		Equation 2 Index: Sense-making	
Individualized consideration	0.05 <sup>*</sup>	(0.02)	0.34 <sup>*</sup>	(0.03)
Inspirational motivation	0.05 <sup>*</sup>	(0.02)	-0.00	(0.03)
Age	0.00	(0.00)	-0.00	(0.00)
Tenure	0.00	(0.00)	-0.00	(0.00)
<b>School section (ref.: primary)</b>				
lower secondary	-0.07 <sup>*</sup>	(0.04)	0.12 <sup>*</sup>	(0.07)
secondary	-0.06 <sup>*</sup>	(0.04)	0.34 <sup>*</sup>	(0.06)
special needs	-0.05	(0.06)	0.19 <sup>*</sup>	(0.11)
<b>Subject (ref.: science and math)</b>				
Humanities and language/Danish	0.01	(0.03)	0.00	(0.05)
Other	-0.03	(0.05)	-0.05	(0.09)
Gender: female	-0.01	(0.03)	0.17 <sup>*</sup>	(0.06)
<b>School size (ref.: 0-300)</b>				
301-600	0.01	(0.04)	-0.07	(0.07)
601+	0.02	(0.04)	-0.11	(0.07)
<b>Education (ref.: teacher ed.)</b>				
teacher education + MA	0.03	(0.07)	-0.01	(0.12)
no teacher education	0.07	(0.06)	-0.06	(0.10)
Other	0.10	(0.08)	0.30 <sup>*</sup>	(0.14)
MA	0.06	(0.12)	-0.16	(0.21)
<b>Share of high socioecon. Status in school, teachers estimate (ref.: very high degree)</b>				
high degree	-0.02	(0.06)	0.12	(0.10)
partly	0.01	(0.05)	0.24 <sup>*</sup>	(0.09)
low degree	-0.04	(0.06)	0.19 <sup>*</sup>	(0.10)
very low degree	-0.09	(0.06)	0.23 <sup>*</sup>	(0.12)
Constant	-1.97 <sup>*</sup>	(0.11)	-2.91 <sup>*</sup>	(0.21)
<b>R</b>	<b>0.62</b>			

Standard errors in parentheses

Data source: own data collection

\* p < .10, † p < .05

Table A1. Full models for Figure 1: The relationship between transformational leadership and teacher's non-use of the LMS. Average marginal effects from a logistic regression.

Average marginal effects. Model:	(1)	(2)	(3)
Individualized consideration	-1.07 <sup>†</sup> [0.02]	-1.06 <sup>†</sup> [0.02]	-0.02 [0.02]
Inspirational motivation	-0.02 [0.02]	-0.02 [0.01]	-1.03 <sup>†</sup> [0.01]
Age		0.101 <sup>†</sup> [0.00]	0.101 <sup>†</sup> [0.00]
Tenure		1.00 [0.00]	1.00 [0.00]
School section (ref: primary)			
lower secondary		-0.03 [0.03]	-0.01 [0.03]
secondary		-1.07 <sup>†</sup> [0.03]	-0.04 [0.02]
special needs		0.14 <sup>†</sup> [0.06]	0.16 <sup>†</sup> [0.06]
Subject (ref.: science and math)			
Humanities and language/Danish		1.04 [0.03]	1.04 [0.03]
Other		0.10 <sup>†</sup> [0.05]	0.10 <sup>†</sup> [0.05]
Gender: female		-0.05 [0.03]	-0.03 [0.03]
School size (ref.: 0-300)			
301-600		-0.04 [0.03]	-0.04 [0.03]
601+		-0.02 [0.03]	-0.02 [0.03]
Education (ref.: teacher ed.)			
teacher education + MA		-0.05 [0.07]	-0.05 [0.07]
no teacher education		1.02 [0.05]	1.01 [0.05]
Other		1.03 [0.05]	1.05 [0.06]
MA		-0.06 [0.11]	-0.06 [0.11]
Share of high socioeconomic. Status in school, teachers estimate (ref.: very high degree)			
high degree		1.03 [0.05]	1.04 [0.05]
partly		-0.04 [0.05]	-0.01 [0.05]
low degree		1.01 [0.06]	1.02 [0.06]
very low degree		1.07 [0.07]	1.10 [0.06]
Index: sense-making			-1.11 <sup>†</sup> [0.02]
N	962	962	962

Standard errors in parentheses

Standard errors in parentheses

Data source: own data collection

<sup>†</sup> p < .10, \* p < .05





# CHAPTER 8

CONCLUSION



## 8.1 Conclusion

The previous four chapters answered the research questions of the thesis. As a preview of the chapters, this short section will present some of the general results. I end the section by suggesting potential problems embedded with detailed control over future digital solutions.

### A sociological Investigation of Governance through a Mandatory Learning Management System and Practice in Danish Primary and Lower Secondary Schools

In the introduction section, I claimed that the intention of this thesis is to provide a thorough investigation of governance through a digital innovation and practice. The conclusion points to that the governance through the mandatory LMS is detailed and puts tremendous pressure on school management. In that sense, the platform is more than just a neutral working tool teachers can use when they think using the tool will improve their teaching – instead, the platform, through its programmed steering architecture, guides teachers' to a specific teaching approach. Resulting in less autonomy for leaders and teachers. The document analysis used in chapter 4 showed how a historical struggle and conflict between policymakers and the Teachers' Union about working conditions and different perceptions of what excellent education entails. Given the intensity of the conflict, the climate during the implementation of the LMS was characterized by mistrust between policymakers and the Teachers' Union. Hence, the task of the local management was demanding, as it had to overcome the existing tensions and implement a new digital infrastructure that potentially could also be seen as another step towards more control of teachers' practice. Thus, the quantitative-study in chapter 7 showed that many teachers do not perform the required LMS-obligations as expected. Therefore, the success of the implementation depends on the eye of the beholder. However, teachers, who sense-make the digital innovation to their practice, have a higher degree of use of the platform. The two dimensions of transformational leadership – inspirational motivation and individual considerations used by local management can inspire teachers' to a higher degree of wellbeing and sense-make the innovation. The leadership practice is the auxiliary arm of policy-makers because this management practice in chapter 7 showed that the leaderships' communicating of clear expectations and active involvement leads to teachers'

usage of the platform and thereby complies with the political expectations for the implementation.

At the qualitatively investigated schools, the digital-innovation was initiated as a top-down implementation. Although the schools are located in different municipalities, they followed the same plan for introducing the platform to the teachers. The analysis in chapters 5 and 6 demonstrated that the companies that sell the platforms have manufactured a 'game plan' to roll out the implementation, ensuring that teachers start using the platform. Furthermore, the qualitative-study in chapter 5 showed that school management at the schools has a hectic work-life with many meetings with stakeholders. Resulting in the lack of time to build their own 'LMS-vision'; instead, they copy the game plan. Additionally, with the implementation of the digital tool came a number of political demands for the use of the platform, which of course, limits local management possibilities for producing their own 'LMS-vision.' Both chapters 5 and 6 showed that school management organized a top-down implementation and communicated the requirements for teachers' use of the platform. Besides that, local management remained relatively passive during the implementation. However, the quantitative-study in chapter 7 showed that teachers who perceive that the management follows the implementation closely also have a higher degree of platform usage.

The qualitative chapters 4, 5, and 6 showed that one of the political objectives of the digital innovation is to streamline teachers' work and, in addition, change teachers' practices towards a digital-tool whose pedagogical design emphasizes assessment, data-production on student achievements, and goal-directed teaching. Accordingly, the top-down implementation at the schools automates teachers' work, so the teaching practice becomes more efficient. The efficiency must be realized by, for example that teachers share goal-directed teaching-courses on the platform. According to policymakers, such a teaching approach saves teachers preparation-time so that they can spend more time in the classrooms. At the same time, such a teaching approach steers the teaching towards standardized best teaching practices. Thus, the school management required that the teachers produce a minimum of two exemplary goal-directed teaching courses that can be shared with the rest of the teaching staff. Therefore, the shared teaching courses available on the platform were very specific. I characterize this as part of the automation process. Teachers' can perceive such a steering process as neither supporting nor controlling their teaching practice. As chapter 4 showed, the period of implemen-

tation was characterized by teachers' mistrust of policymakers. The majority of the interviewed teachers in chapters 5 and 6 perceived the platform as a political-invention. Chapters 5 and 6 showed that the school management is aware that the implementation of the LMS may be conflicting. The qualitative analysis showed that the majority of teachers' do not associate the platform with an improvement of their teaching. Therefore, the teachers expressed much resistance towards the LMS. This resistance is supported by the results from the quantitative study in chapter 7. Regardless of teachers' resistance and the school leaders' awareness, the implementation of the platform emphasized automation of teachers' work. Chapters 5 and 6 demonstrated how teacher autonomy and professional judgment narrow because of the implementation of the platform. Moreover, the chapters showed that school management used the platform's monitoring capabilities, which theoretically leads to teachers' self-regulated practices, which will support an increased use of goal-directed teaching.

Chapters 5 and 6 showed that a precondition for automates practices is that school management and teachers adapt the LMS changes into their practice. The analysis in the two chapters showed that management implements the innovation expected to change teachers' practice. Thus, that the management control and guides teachers' practice by, for example, using the annual staff conversation as a control if teachers are using the LMS as requested. The analysis demonstrated how school management produces structures within the school, so the teachers are forced to use the platform. These structures are exemplified by, for example, the way the platform is used to discuss handovers between teachers because, in the concrete handover of teachers' teaching courses, it becomes evident if a teacher has produced the expected goal-directed teaching. In addition, the analysis showed that the school leaders have a split habitus between a bureaucratic- and teachers' habitus, but that the agency of the leaders characterizes as policymakers' auxiliary arm. In particular, the document-analysis in chapter 4 suggested that teachers' habitus shapes by the teachers' mistrust of policymakers, and moreover, most of the interviewed teachers' do not believe that the LMS improves their teaching because they consider the forms of assessment too narrow. So how do teachers' cope with the structures that automate their practice and of which the qualitative analysis show characterize the local school field?

The qualitative-study in chapter 6 showed that the group 'the teachers that only teach' develops a 'civil-disobedience strategy' where they ignore the requirements

and try to teach as 'normal' as possible. Therefore, the logic of the platform does not characterize their daily teaching practice – although it is impossible to skip the LMS entirely because some of the registration processes are a precondition for teaching. For example, teachers' have to input students' grades in the platform, and if they do not do that, the school administration receives a warning that they are missing. Still, the analysis demonstrated that their strategy to cope with the LMS is to use it as little as possible. Moreover, the analysis showed that the group characterized as 'special obligations' cope with the innovation differently. Many of those teachers also expressed skepticism and criticism concerning the platform (although the few of the 22 interview teachers that were positive towards the platform were part of this group). This group of teachers' developed a strategy, conscious or unconscious, to keep themselves close to management. In that sense, they accumulate capital, which enhances their position in relation to the rest of the teaching staff. The fact exemplifies this; they are the ones the principals selects for external education and the ones that get the exciting tasks at the schools. In return for the principals' selection, they act as the principals' auxiliary arm at the schools.

Table 16 provides an overview of some of the dissertations most important findings.

Chapter:	Findings
<p><i>Chapter 4</i>            'Compulsory learning management systems – A Bourdieu-inspired analysis about a struggle between policymakers' and the Teachers Union'</p>	<ul style="list-style-type: none"> <li>- Policymakers and Teachers' unions conflict and struggle about working conditions, and the perception of excellent teachers dominates the field of education</li> <li>- Policymakers maintain dominance in the education field by producing a human capital logic and adjusting the educational policy on an ongoing basis</li> <li>- Despite the adjustments, they do not change the precondition for the core elements in the struggle between policymakers and the TU about teachers' autonomy and how to perform excellent teaching</li> <li>- Theoretically, that background makes it difficult for policymakers to change teachers' practice</li> </ul>
<p><i>Chapter 5</i>            'Does the Combination of Professional Leadership and Learning Management Systems Signal the End of Democratic Schooling?'</p>	<ul style="list-style-type: none"> <li>- <b>Principals' professional agency is a remote bureaucratic practice – the LMS-visibility provides school management with the possibility to digitally keep track of what teachers' practice, which means the platform support principals' professional agency.</b></li> <li>- <b>The platform leads to principals and teachers self-regulated behavior</b></li> <li>- <b>Schooling's democratic purpose tends to be forgotten in the shift towards the professionalization of principals' agency.</b></li> </ul>
<p><i>Chapter 6</i>            'Implementation of a mandatory learning management system: how does it affect teachers' practice and motivation?'</p>	<ul style="list-style-type: none"> <li>- The top-down implementation of the LMS and the resulting automation of certain aspects of teachers' work structures the teaching practice and promotes specific teaching methods.</li> <li>- This way of implementing the LMS intends to narrow teachers' autonomy</li> <li>- One group of teachers develop a civil-disobedience strategy by working around the LMS to stay motivated. Another group of teachers remains motivated by employing a strategy of accumulating capital and acting as an auxiliary arm of local management</li> </ul>
<p><i>Chapter 7</i>            'DOES TRANSFORMATIONAL LEADERSHIP PRACTICE DURING A DIGITAL INNOVATION INFLUENCE EMPLOYEES' WELLBEING AND THE IMPLEMENTATION OF THE NEW TECHNOLOGY?             THE CASE OF THE INTRODUCTION OF A LEARNING MANAGEMENT SYSTEM IN DANISH SCHOOLS. '</p>	<ul style="list-style-type: none"> <li>- <b>The dimension of transformational leadership individualized consideration has a statistically significant relationship with the use of the platform and that a lack of such a practice will decrease non-user by approximately 6 percentage points. Inspirational motivation does not have such a strong connection.</b></li> <li>- <b>Inspirational motivation and individualized consideration leadership practices have a positive and statistically significant relationship with teachers' wellbeing.</b></li> <li>- <b>More than 60 percent of the effect of individualized consideration on LMS-usage is explained by the fact that this leadership practice increases sense-making.</b></li> <li>- <b>That it is beneficial to split the dimensions of transformational leadership to explain leadership practice and understand why some leadership approaches have a more significant impact on employees' usage of the mandated digital innovation</b></li> </ul>

Table 16 shows an overview of the results

## 8.2 Perspectives Based on the Findings

The analysis in all the analytical chapters demonstrates that governance through the LMS is extensive and detailed, resulting in an LMS-implementation approach that automates teachers' work. You can easily imagine that the automation of teachers' work will influence the way they teach. Selwyn (2011) shows in his study of implementing a learning platform in England how practitioners believe such an innovation leads to 'best teaching practices.' Some researchers (see for example, Qvortrup, 2019) and practitioners, for example, in my sample, some of the math-teachers indicate they prefer to use 'best practice solutions,' argues that 'evidence-based best practice' will enhance teachers' professional judgment and improve teaching. In Denmark, particularly the concepts of goal-directed teaching (Danish Ministry of Education, 2014; Moos, 2016; Skovmand, 2017), learning communities (Dufour & Marzano, 2011; Qvortrup, 2016), and visible learning (Bjerre, 2017; Hattie, 2009) have influenced the teaching practice. One of the similarities between the concepts is that they conceptualize teaching.

Nevertheless, digital innovations, at least in the Danish primary and lower secondary school, have little impact on students' learning outcomes (Balslev, 2020), while many researchers have criticized the standardized best approach for different reasons (Biesta, 2007; Bjerre, 2017; Stender Petersen & Dalum Christoffersen, 2019). Additionally, Danish students' math competencies have decreased (Kjeldsen et al., 2020), indicating that the last 8 years of Danish conceptual-practice do not have the impact expected. Thus, the result of implementing the LMS, the 2014 school reform, goal-directed teaching, and visible learning, to a certain extent, measured in student learning outcomes, must be characterized as failures. Besides that, I can theoretically identify some problematic issues that follow the teachers' practice from a student's perspective – which is supported by the fact that some of the interviewed teachers expressed that digital teaching simply must be boring for students. This statement must be understood in the light of students' everyday life at schools. A hypothetical illustration of students' everyday practice may look like this:

*When the students meet at 08:00, the first thing that happens is that their presence is registered in the LMS. After that, the teacher asks them to logon to the platform 'Min Uddannelse.' On the platform, they will find Danish assignments for the*

*next two hours. The first thing they need to do is log on to a new learning-portal and solve the goal-directed teaching assignments connected to the lesson. When these tasks are solved, they must log on to another digital portal and solve a few grammar assignments. After their 10 o'clock break, the next subject is math. The math teacher starts the lesson by asking the students to log on to the LMS from where they find the link to the learning portal 'Mathfessor.' On 'Mathfessor,' they must solve the goal-directed assignments about statistical probability. After their noon break, they are going to have science. Again the teacher starts the lesson by asking the students to....*

The illustration shows that the LMS and goal-directed teaching produces a monotonous school day – in many ways, a form of schooling that does away with reform pedagogy and project-orientated schooling and instead is inspired by a more traditional form of schooling.

Another problem is those learning portals as 'Mathfessor' rewards the students with stars for how many assignments they solve. Theoretically, one can argue that the consequences of monotony and rewards are that students' intrinsic motivation for learning and schooling will decrease because this persistent focus on specific teaching methods likely leads to less student autonomy and thereby demotivation (Ryan & Deci, 2020). The illustration can also exemplify how a teacher's hectic work life leads to monotonous teaching. The majority of the interview-teachers expressed they have too little time to prepare the teaching. This tendency was repeated in the survey-data, where 82 percent of 1.077 respondents replied that they disagreed or highly disagreed with the statement that *'I have enough time to prepare for my teaching.'* It means teachers feel they cannot prepare the teaching they believe is excellent. Therefore, the teachers in the qualitative studies report they use all the learning portals at their disposal because it is easy and requires little preparation. In that sense, as chapters 5 and 6 points to, the political governance initiated through the recent reforms pushes teachers towards ready-made digital solutions.

As an isolated change of teachers working conditions, the detailed governance of public schools through digital innovation does not as such cause lower wellbeing. Thus, both the three qualitative studies and the quantitative study indicate that

wellbeing and job satisfaction are robust to changes. However, teaching autonomy enhances their professional judgment (Biesta, 2015), and a Skaalvik and Skaalvik (2014) study shows that autonomy is a significant indicator for teachers' job satisfaction. The dissertation results show that the detailed political steering pressuring the agents in the local school field undeniably narrow teachers' autonomy. Less than one-third of the teachers who responded to the 2013 TALIS believed that their profession is valued in society (OECD, 2014) – the survey-data I have collected shows that the teachers' perception of misrecognition has increased.

<b>Teachers opinion of recognition How much do you agree with the following statements:</b>	<b>Disagreed or highly disagreed with the statement</b>	<b>Respondents</b>
In Denmark, political decision-makers value teachers' views	93 percent	1,100
<b>In Denmark, teachers can influence education policy</b>	<b>84 percent</b>	<b>1,100</b>
In Denmark, teachers appear to be valued in the media	88 percent	1,100

**Table 17 shows teacher' perception of policymakers and Media's recognition of the profession**

Against this background, it is reasonable to assume that the teachers feel misrecognized by news media and their employees. In that sense, the teacher indicates that they are dissatisfied with the current job conditions. The poor reputation of the profession (at least what the teacher thinks) might cause two serious problems for politicians. Vaaben (2016) indicates that specific governance affects teachers' decisions to leave public schools. Moreover, it has been difficult in recent years to attract enough students to the teacher education program (DLF, 2018). This probably explains why there are not sufficiently educated teachers to teach in public schools today.

One last reflection on digital technology impact on the practice and democracy can be based on Dunleavy's (2005) famous article 'New Public Management is Dead – Long live Digital Era Governance and subsequently the paper together with Margetts (2013) 'The second wave of digital-era governance: a quasi-paradigm for government on the Web.' These two papers point towards the fact that digitization has the potential to involve and engage citizens in public affairs. Margetts and Dunleavy's ideas' put forward that digitization in it selves has some embedded democratic perspectives for public administration. In terms of the investigated LMS, this perspective could be that digitization makes it easier for parents to engage

in their children's education but also that the digital tool streamlines teaching so teachers' will have more time to engage in students' general education. In contrast to Margetts and Dunleavy's optimistic view on digitization, the analysis of this thesis demonstrates that governance through the LMS is detailed and more focused on control than releasing teachers' to engage in the student's general education.

Furthermore, chapter 5 shows how some of the embedded aspects of new public management very much influence primary and lower secondary public schools. Based on that analysis, I argue that such a structure makes it challenging to organize a structure based on participatory democracy and 'learning by doing' teaching (Dewey, 2005). Instead, principals re-organize the controlling structures of the digital innovation in the field of schooling practices. Moreover, a combination of LMS governance guiding teachers towards specific teaching methods, and at the same time, teachers' perception of lack of time to prepare what they themselves consider as excellent teaching raises another democratic perspective. I do not as such pursue this perspective in the analysis, but it is suddenly worth further researching. How the digital innovation influence teachers' relation to students? Most of the qualitative interviewed teachers consider their relation to students as a significant factor for their motivation for teaching but also for the student's general education. In that sense, a shift of teaching towards a mainly digital school is worth considering how the teacher-student relationship will develop. In the critical theory perspective - where participation, experience, and communication have emancipatory potentials - there is a risk that the way digitalization is organized through the LMS in primary and lower secondary schools alienate teachers and students in relation to the important democratic task that the field of schooling practice has - namely to educate the students to be able to part of a democratic society as critical and educated citizens - in that light an educational task that is a prerequisite for a society to be democratic.



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# APPENDIX



# Appendix A Consent Declaration



**Consent**

Date: 24/01-20

## Declaration of consent

### 1. The title of the research project

A sociological investigation of governance through a mandatory learning management system and practice.

Regarding the research project 'A sociological investigation of governance through a mandatory learning management system and practice' AU ID / 1296, I need your consent to process your personal data following the Data Protection Ordinance.

### 2. Project description

Concerning my dissertation about governance through a mandatory learning management system and practice, I will be conducting a case study at selected schools in the Central Jutland Region in the autumn/winter of 2018/19.

My project aims to generate knowledge about how school management can support teachers' practice when schools with the learning platform are to be organized. Therefore, I will uncover the different strategies that school managements use to implement the learning platform and examine how the different implementation strategies' effect supports that the work with the learning platform makes sense for the teachers.

### 3. Data accountable, project group, and project manager

Aarhus University, CVR no. 31119103, is Data Responsible for the processing of your personal information. Rasmus Laurson is responsible for the project and can be contacted at rl@edu.au.dk and telephone 29 27 25 12.

### 4. Categories of personal data processed about you

Concerning the project, I process general personal information about you in the name, age, and employment place.

### 5. Purpose and Treatment Activities

Your personal information will be treated and used confidentially following good data processing practice. In the publication of the project's results, as well as in connection with presentations, articles, and possibly book form, information about persons participating in the case study will take place in a non-immediately identifiable form. Likewise, the name of participating schools will not appear.

### 6. Recipients or categories of recipients of the Personal Data

I do not share your personal information with anyone.

### 7. Storage time



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AARHUS UNIVERSITY

**At this time, I can not say how long I will keep your personal information. I only use your personal information for research purposes and store your personal information for as long as it is necessary concerning the purpose of the project and in accordance with applicable legislation.**

**E. Possibility to withdraw consent**

**Participation is voluntary, and you can withdraw your consent to the processing of personal data at any time. This can be done by contacting Reanni Laurssen. If you withdraw your consent, it will only take effect from this time and will not affect the legality of my processing up to this time.**

**Signature:**

**You confirm that you have received, read, and understood the above as a basis for my consent to the processing of my personal data for the following purposes: Name (block letters):**

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**(Signature and date)**

## Appendix B Interview Guide



### Presentation of project

I am a Ph.D. student who investigates how school management can support the teachers' wellbeing when working with the learning platform is to be organized.

Therefore, I will uncover the different strategies that school managements use to implement the learning platform and examine how the different implementation strategies' effect supports that the work with the learning platform makes sense for the teachers.

The purpose of interviewing you is to gain insight into your knowledge and experience of how you have experienced management's strategies in connection with implementing a learning platform.

The interview will take approx. 45 minutes.

I have a consent declaration that I would like you to sign - by signing it, you consent that the information I receive in the interview can be used in a research context.

The interview will be recorded on a Dictaphone and telephone. The recordings will be transcribed and used for my research. The recordings will be stored responsibly and I am the only one who has access to the data.

The interview will be treated confidentially. The material will be destroyed when I finish processing it. In my dissertation, your statements will be anonymized.

Finally, you must ask if there is anything you are in doubt about or do not understand during the interview - for example, if my questions are unclear. You are also very welcome to make me aware of important elements/topics that I am not asked about.

After our interview, you can make me aware if there are statements or anything else you do not want me to use in the dissertation.



#### Presentation of the informant:

- First, I would like to know your background.
- Age, how long you have been a teacher, and your educational background.
- Can you try to describe what a typical day is like for you as a teacher?
- How have you experienced the changes that have taken place in the last 4-5 years in primary school?
- Can you briefly describe how your work as a TR progresses?
- Can you briefly describe how your work as an IT resource person goes?

#### The learning platform:

- Can you tell us about how you work with the learning platform in your daily work?
- What is the goal of the learning platform for you?
- What function do you imagine the platform should have in your daily work?
- What opportunities and limitations do you see in the platform?
- Can you try to explain how much time you spend on the learning platform?

#### The implementation of the learning platform:

- Can you try to describe how you experienced the start-up with the learning platform?
- What has been your role in the implementation? (e.g., TR work) (IT resource person work)
- Can you describe how the school management, for example, has helped you?
- Can you describe how the school management has involved the teachers in the implementation process?
- How do you feel that the administration has supported the implementation process at the school?
- During the implementation process, which things/conditions have been important to you?
- Can you try to tell about what things/initiatives to promote the management's LMS-implementation that has worked well?
- Is there anything that has not worked so well?



### Communication about the learning platform?

- Can you describe how you have experienced what the school management has told about the opportunities the learning platform offers?
- How have you experienced that the administration has communicated about the learning platform?

### Team collaboration

- How do you work in teams at your school
- Can you try to describe how teamwork affects your workday?
- Can you try to describe how you in teams work with the learning platform?

### Everyday / Management approach

- Can you try to describe which work situations make sense to you?
- How do you adapt that sense of meaning when working with the platform?
- What is important to you so that you can thrive with your work?
- Can you try to describe what you consider good management?
- How do you feel that the management at your school is present?
- Can you try to describe a situation where the management has praised you or a colleague?
- What expectations do you have for yourself as a teacher?
- Can you try to describe what opportunities you have for teaching as you would like to
- What conditions are required for you to feel good at your job?
- Can you try to describe how satisfied you are with being a teacher?

### Rounding off the interview

- Is it rightly understood that what you are experiencing is.... And ...
- I'm about to run out of my questions. Is there anything you would like to mention in the conclusion?
- Thank you very much for your participation in my project

## Appendix C Letter to Teachers Prior Survey

Dear teacher

The Danish Teachers' Union sends this email to you to help me with my Ph.D. project on how the learning platform's implementation affects teachers' wellbeing.

Now I need your help in answering a questionnaire. The questionnaire has two focus points. How your wellbeing and job satisfaction are and how implementing the learning platform you use in your municipality has proceeded.

It takes approx. 10 minutes to answer the questionnaire, and please complete between 14<sup>th</sup> January and 7<sup>th</sup> February. Thus, on 14<sup>th</sup> January, you will receive an email with a link to the questionnaire. Just click on the link, and it will be possible to answer the questionnaire. 30th January, I send a reminder if you have not yet answered the questionnaire.

Your answer to the questionnaire is crucial in my Ph.D. investigation of the relationship between wellbeing and the LMS-implementation. It is therefore important that the questionnaires are answered.

All answers will be treated confidentially and anonymized.

If you have questions about the substantive part of the questionnaires or questions about the project's matters, you can contact Ph.D. student Ronni Laursen by email at [rl@edu.au.dk](mailto:rl@edu.au.dk) or telephone 29723512.

As a primary school teacher for more than 10 years, I know that teachers have to deal with many things, but I hope you will find the 10 minutes to participate in the survey.

Many thanks in advance for your help!

Yours sincerely

Ronni Laursen

Ph.D. Student at Danish School of Education

Jens Chr. Skous Vej 4, bygning 1483, 419 8000 Aarhus C, Danmark

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## Appendix D Questionnaire for Survey

Copy of the introduction letter to the teachers and the questionnaire.

**Dear teacher**

**As a teacher in primary school for more than 10 years, I know very well that teachers have to take a stand on many things. That is why I am glad you will spend the next 10 minutes answering my questionnaire.**

**The questionnaire has two focus points. How your well-being and job satisfaction are, and how the implementation of the learning platform that you use in your municipality has gone.**

**The data collected will be used for my PhD project entitled "a sociological study of how the implementation of a learning platform affects teachers' well-being".**

**Thanks for your help.**

**Are you currently working as a teacher?**

- (1)  Yes  
(2)  No

**Have you worked at a school since 2016?**

- (1)  Yes  
(2)  No

The first series of questions is about 4 things:

- 1) How you thrive on your work
- 2) How satisfied you are with being a teacher
- 3) How your position is on some of the latest initiatives
- 4) How your attitude to teaching and learning is

**How much do you agree with the following statements?**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
I thrive on being a teacher	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I look forward to going to work almost every day	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I find the work as a teacher motivating	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>

**How much do you agree with the following statements?**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
The advantages of the teaching job clearly outweigh the disadvantages	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
If I had to choose again, I would still choose to become a teacher	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
I would switch to another school if possible	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I regret that I became a teacher	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I would recommend this school as a great place to work	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I think the teaching job is respected in society	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I am happy with my own efforts at this school	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
All in all, I am well satisfied with my work	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>

**How much do you agree with the following statements?**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
I am happy with my salary	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I am happy with the terms of my employment as a teacher that have nothing to do with pay	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
In Denmark, political decision-makers value teachers' views	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
In Denmark, teachers can influence education policy	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
In Denmark, teachers appear to be valued in the media	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>

State what significance the following factors had for you to become a teacher.

	Great significance	Some significance	Minor significance	No significance at all
The teaching job provided a secure career path	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
The teaching job provided a stable income	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
The teaching job provided job security	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
The working conditions for the teaching job fit well with my private life	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
The teaching job gave me the opportunity to influence the development of children and young people	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
The teaching job gave me the opportunity to contribute to the community	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
The teaching job gave me the opportunity to help socially disadvantaged children and young people	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>

Indicate how much you agree with the following statements about changes to the primary and secondary public school

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
I think the national tests improve my teaching	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I think goal-instructed teaching improves my teaching	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>
I think the recent school reform (2014) provides good conditions for my teaching	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
I think the new working hour rules (act 409) provide good conditions for my teaching	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

**How much do you agree with the following statements?**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
Focus on evaluation strengthens students' learning	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Testing students makes it easier to track their progression	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
I have enough time to prepare for my teaching	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
I have the right conditions to do good teaching at my school	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

### **The Learning Management System**

The next questions are about the learning platform used in your municipality. The learning platform in your municipality can be, for example, 'Min Uddannelse,' 'Meebook,' 'MolMo,' 'ItsLearning' or 'EasyIQ.' I.e. the learning platform where you as a teacher can plan your teaching and interact with students, parents and colleagues.

There will be questions about your competencies, your use, your attitude and your perception of the implementation.

**How much do you agree with the following statements?**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
<b>I felt confident in using the learning platform when it was introduced</b>	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
<b>It is easy for me to use the learning platform</b>	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

**How often do you use the learning platform?**

- (1)  More than three times a week  
(2)  1-2 times a week  
(3)  1-3 times a month  
(4)  5-10 times a year  
(5)  Rare

**How much do you agree with the following statements?**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
<b>The management at my school has clearly communicated what benefits the learning platform offers</b>	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
<b>The management at my school has clearly communicated what the learning platform is to be used for</b>	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

Indicate how much you agree with the following statements about implementing the learning platform.

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
The municipality uses the learning platform to control the teachers' work	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
School management uses the learning platform to control the work of teachers	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

In the following, indicate how much you agree with the following statements about the implementation of the learning platform.

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
The school management's implementation of the learning platform gives teachers the opportunity for good teaching	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
In the implementation process, there have been good opportunities to get help to get started with the learning platform	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
In the implementation process, the school management has been good at involving the teachers	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
At my school, the school management has followed the implementation closely	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
At my school, in the implementation process, there have been clear expectations from the	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
management about the use of the learning platform					
In the implementation process, the 'superusers' at the school have had a great responsibility for the implementation	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

Indicate how often you use the learning platform for the following.

	<b>More than 3 times a week</b>	<b>1-2 times a week</b>	<b>1-3 times a month</b>	<b>5-10 times a year</b>	<b>Rare</b>
I use the learning platform to plan concrete teaching with colleagues	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
I use the learning platform to exchange teaching materials	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
I use the learning platform to discuss the development of specific students' learning with colleagues	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

Indicate how much you agree with the following statements.

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
Using the learning platform supports the efforts I make towards the students	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Using the learning platform strengthens my motivation to teach	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Using the learning platform limits my professionalism	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
Using the learning platform strengthens my commitment to the school	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
I use the learning platform because my leader says I must	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

**How much do you agree with the following statements about teaching and learning?**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neither agree or disagree</b>	<b>Disagree</b>	<b>Strongly disagree</b>
With the learning platform as a tool, it is easier to assess the students' versatile personal development	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Using the learning platform gives students a greater overview of the material they are to be taught	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
I use the learning platform to discuss common standards for evaluation with colleagues	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Using the learning platform contributes to a more exciting teaching	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

**Management and Workplace** The following questions are about your workplace and your management.

You will be asked how you experience your management and your workplace.

**Indicate the extent to which you agree with the following.**

	To a very high degree	To a high degree	Partly	To a small degree	To a very small degree
Does management trust teachers to do a good job?	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Can one trust the announcements coming from the management?	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Are conflicts resolved in a fair way?	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Do teachers keep information hidden from management?	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
At my school, I have good opportunities to organize the teaching that I think is best	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
At my school, I have an influence on my own work situation	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

**State the degree to which you experience your school principal doing the following.**

	To a very high degree	To a high degree	Partly	To a small degree	To a very small degree
Gives teachers positive feedback if they perform well	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Actively shows his appreciation of teachers who do their job better than expected	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Most often do not recognize individual teachers, even if they perform as required	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Personally praises teachers when they do their job particularly well	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

	To a very high degree	To a high degree	Parity	To a small degree	To a very small degree
Rewards teachers based on how well they perform in their work	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>
Keeps important information hidden from teachers	(1) <input type="checkbox"/>	(2) <input type="checkbox"/>	(3) <input type="checkbox"/>	(4) <input type="checkbox"/>	(5) <input type="checkbox"/>

### Background and qualifications

The questions in the last section are about you, where and what you work as.

#### What is your gender?

- (1)  Male  
 (2)  Female  
 (3)  Other \_\_\_\_\_

#### What is your age?

\_\_\_\_\_

#### In which municipality do you work?

- (1)  Albertslund  
 (2)  Allerød  
 (3)  Assens  
 (4)  Ballerup  
 (5)  Billund  
 (6)  Bornholm  
 (7)  Brøndby  
 (8)  Brønderslev  
 (9)  Dragør  
 (10)  Egedal  
 (11)  Esbjerg

- (12)  Faxe
- (13)  Favrskov
- (14)  Faøse
- (15)  Fredensborg
- (16)  Fredericia
- (17)  Frederiksberg
- (18)  Frederikshavn
- (19)  Frederikssund
- (20)  Furesø
- (21)  Fåborg-Middelfyn
- (22)  Gentofte
- (23)  Gladsaxe
- (24)  Glostrup
- (25)  Greve
- (26)  Gribskov
- (27)  Guldborgsund
- (28)  Haderslev
- (29)  Halsnæs
- (30)  Hedenslædt
- (31)  Helsingør
- (32)  Herlev
- (33)  Herning
- (34)  Hillerød
- (35)  Hjørring
- (36)  Holbæk
- (37)  Holslebø
- (38)  Horsens
- (39)  Hvidovre
- (40)  Høje-Taastrup
- (41)  Hørsholm
- (42)  Ikast-Brande
- (43)  Ishøj
- (44)  Jammerbugt
- (45)  Kalundborg
- (46)  Kerleminde
- (47)  Kolding
- (48)  København
- (49)  Køge
- (50)  Langeland
- (51)  Lejre
- (52)  Lemvig
- (53)  Lolland
- (54)  Lyngby-Taarbæk
- (55)  Løssø
- (56)  Mariagerfjord
- (57)  Middelfart
- (58)  Narsø
- (59)  Norddjurs
- (60)  Nordfyn
- (61)  Nyborg
- (62)  Næstved
- (63)  Odder
- (64)  Odense
- (65)  Odsherred
- (66)  Randers
- (67)  Rebild
- (68)  Ringkjøbing-Skjern
- (69)  Ringsbædt
- (70)  Roskilde
- (71)  Rudersdal
- (72)  Rødovre
- (73)  Samsø
- (74)  Silkeborg
- (75)  Slangerbø
- (76)  Slive
- (77)  Slagelse
- (78)  Solnædt
- (79)  Sønder
- (80)  Stevns
- (81)  Struer
- (82)  Svendbø
- (83)  Syddjurs
- (84)  Sønderbø
- (85)  Thisted
- (86)  Tander
- (87)  Vallensbø
- (88)  Vardø
- (89)  Vejen

- 00)  Vejle
- 01)  Vesthimmerland
- 02)  Viborg
- 03)  Vordingborg
- 04)  Århus
- 05)  Aabenrå
- 06)  Aalborg
- 07)  Århus

**How many students are there at your school? If you are currently working, state in relation to your last school**

- (1)  0-300
- (2)  301-600
- (3)  601+

**What is your level of education?**

- (1)  Teacher education
- (2)  Teacher education and subsequently a master
- (3)  A master
- (3)  Merit teacher
- (4)  Other

**How many years have you worked as a teacher?**

\_\_\_\_\_

**Which level do you primarily teach?**

- (1)  Primary (Indskoling)
- (2)  Primary (Melletrin)
- (3)  Lower secondary (Udskoling)
- (4)  Special needs

**Which subject do you primarily teach?**

- (1)  Science and math
- (2)  Humanistic, Danish and foreign language
- (3)  Practical and Music
- (4)  Other

**State how you would characterize your school's student base.**

- (1)  To a very large extent students with high socio-economic status
- (2)  To a large extent students with high socio / economic status
- (3)  Partly students with high socio / economic status
- (4)  To a small extent students with high socio / economic status
- (5)  To a very small extent students with high socio / economic status

**If you have further comments, you can write them here.**

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**Thank you so much for your answers!**

They are a great help so that in my PhD project I can examine the well-being of teachers in a hectic working life

/ Ronni Laursen PhD student at the Danish University of Education [rl@erku.su.dk](mailto:rl@erku.su.dk)

Unfortunately, you are not part of the target audience.

Thank you for your time.

/ Ronni Laursen

