Leading Professionals to Innovation

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Abstract

Despite the last years' efforts to innovate public education in Denmark the Danish public school has remained hesitant to change, and relations with the surrounding world have remained in their early stages. Using Michel Callon's concept of translation our study sheds light on the social processes that form the conditions of managing innovation among professionals. It shows how managing innovation in practice is part of a complex network of social interaction and evolves as a constant 'translation' aiming at enrolling opposing actors, and positioning oneself in relation to the professional identities and positions that innovation put at risk. The analytical contribution of our paper is to add comprehension to innovation management in the public sector as a process of positioning innovation in relation to a variety of human and non-human actors as well as professional identities. Innovation is shown to challenge the professional identities of the teachers and school leaders, as the teachers experience that innovation is not recognized in standardized tests and thereby jeopardizes their professional position. Onwards the paper outlines three management strategies that evolve in the social processes of the translation of innovation and the different management positions that these strategies entail.

Introduction

The zeal for innovation and belief in entrepreneurial skills as the solution to cope with the ever faster changing world and unknown future are widespread today. This is apparent in the private industry, where companies express the need for employees with innovative and entrepreneurial competences. It is also apparent in the public sector where there is a widespread political demand on professionals in the public sector to work more innovatively (e.g. 'The OECD Innovation Strategy: Getting a Head Start on Tomorrow', 'Horizon 2020 – State of the Innovation Union'). As part of this development a wide range of new management practices has gained ground in the public sector; e.g. user-driven innovation, innovation management and potentiality management to name a few.

This development can be described as characteristic for the present post New Public Management era or as part of the New Public Governance paradigm (Osborne 2006, Newman and Clarke 2009). However, we cannot consider the development as a shift from one paradigm to another or see this as the end of the New Public Management era. Steering technologies, such as assessment systems and quality assurance systems, which prevailed in New Public Management and have been accused of hindering innovation (De Bruijn 2002, Gambarotto 2010), are still integrated parts of the administration of the public sector. In the educational sector since the 1990ies a wide range of international standardized tests has been developed, and adapted by many countries. To name a

few: the PISA, TIMMS and PIRLS.[1]Furthermore we have witnessed how a quickly growing number of national standardized tests have been developed.

National assessments in education have in some countries wide implications for the organization of the public educational sector, for example in the United States where it became possible with the 'No child left behind' act to close down schools due to the lack of performance on standardized tests. The international standardized tests as well as national standardized test have as their main objective to measure knowledge skills within the traditional disciplines. Initiatives have been taken to develop international assessment tools in the educational sector to measure also creative competencies[2]. However the efforts have not yet been integrated into international tests (Villalba 2009), and knowledge skills within traditional subjects remain central in standardized assessments systems. The demand for creative and innovative competences is thus aligned with a demand for performance on predefined standardized knowledge goals within the traditional disciplines. This contradiction is essential to understand the conditions as well as possible strategies for public managers in pursuit of an innovative public sector.

The interest in innovation in public governance has been reflected in research internationally (cf. Osborne & Brown 2005). Important research has been conducted in order to understand also relations between public and private partners and a more 'open' public sector as a means to innovation of the public sector, e.g. open innovation and user driven innovation (Borins 2001). But the role of public managers in leading innovation has only gained minor interest in academic research (cf. Bason 2010). Especially the question of how to manage innovation in strong professional environments is lacking and is needed to be able to understand the role of management of innovation in strong professional environments in practice. The situation of complex and contradictory pressures innovation involves for the professionals of the public sector has to be understood as entangled with questions of professional identities and positions, and the management of innovation has to be explored in close interaction with professional identities and professional positions (Harrison and Pollitt 1994, De Bruijn 2002, King 2003, Jeffrey and Craft 2004). Furthermore in this paper we emphasize the role of perceived risk in innovation (cf. Osborne and Brown 2011).

In this paper we investigate conditions and strategies for managing innovation among professionals in the light of the actor-network-theory (ANT) concept of translation. The empirical case is primary and lower secondary public education in Denmark. The main argument of the paper is that managing innovation among professionals in practice should be understood as part of a complex network of social interaction, where it evolves as a constant 'translation' aiming at connecting and disconnecting opposing actors, and positioning oneself in relation to the professional identities and positions that innovation put at risk. The initiatives to create innovative teaching environments in the schools imply an attempt to open up the school, engaging in relations with external actors, and to integrate new ways of working in the school. Our paper explores the processes that arise internally in the school as part of these innovation initiatives and the primary focus of the paper is the social processes that evolve in the daily life in the school among teachers and managers.

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[1] PISA (the Programme for International Student Assessment) was launched in 1997 by the OECD. PISA tests the skills and knowledge of 15-year-old students. In 2000 the focus of the assessment was reading, in 2003 mathematics and problem solving, in 2006 science and in 2009 reading again. The 2012 data collection focused on mathematics. TIMSS (Trends in International Mathematics and Science Study) focusing on mathematics and PIRLS (Progress in International Reading Literacy Study) were developed by the International Association for the Evaluation of Educational Achievement (IEA).

2 Identifying indicators to measure creativity was the purpose of the EU commission group established in 2009 "The technical expert group on possible indicators relating to learning to learn and creativity competences".

The analysis is divided in two parts. First the paper shows how teachers' experiences with innovation in practice involve negotiations among the teachers and for the individual teacher on how to relate innovation to preparation for standardized tests in the day-to-day teaching. Second the paper shows how school managers engage in these negotiations to lead the professionals towards innovative teaching. The school managers employ three different strategies trying to enrol standardized test, professional identities and positions into the innovation agenda: 1) Linking opposing actors 2) Placing the manager as a separation device and 3) Defining new identities. We argue that the ANT analytical framework brings added value to the understanding of the importance of professional identities and positions in relation to managing innovation, and sheds light on the complex processes of negotiation and enrolment that characterize managing innovation among professionals.

ANT perspectives on managing innovation

Actor-network-theory (ANT) has gained considerable popularity since it took off in the 1980ies and has been taken on also by scholars of organization and management (e.g. Czarniawska and Hernes 2005, Perillo 2008). The actor-network-theory offers a conceptual tool to connect people, artifacts and institutions and to understand the complex social processes of distribution of power, positions and identities. In this paper the concept of translation, as developed by Michel Callon (Callon 1986) is used to analyse the social processes that occur in practice, where the contradictory agendas of innovation and predefined standardized goals are negotiated among managers and professionals.

According to Michel Callon translation is a process that takes place in a complex network of inter-relations. It is a process of structuring power relations, positions and identities that occur through displacements and transformations (Callon 1986). Through the process of translation ideas and positions are negotiated, and strengthened or weakened. In the translation process roles are defined and attributed to actors who accept them. To describe translation is thus to describe the group of multilateral negotiations, trials of strength and tricks that evolve and enable them to succeed. The definition and distribution of roles are a result of multilateral negotiations during which the identity of the actors is determined and tested (Callon 1986). In this perspective the public manager is thus engaged in this network of various actors and agendas where the identity as manager as well as the professional identities and positions are negotiated, changed or stabilized. When we regard management through these lenses of ANT, management is regarded as a social process of translation unfolded in the everyday practice where socio-material networks are created (Perillo 2008). Management becomes hence a management process where an actor aims at enrolling other actors, agendas and ideas and at stabilizing his own agenda, in our case innovation.

The ANT approach has been adopted also in analysis of school management by Helene Ratner to trace the idea of organizational learning and to follow its processes of translation and enrolment as managers attempt to engage teachers in reflective learning processes (Ratner 2013). Our analysis moves along similar lines, but emphasizes the processes of negotiation between various actors and aims at a comprehension of the role of professional identity and positions in these processes. We include in our analysis an exploration of the role of the perceived risk that the teachers experience in regard to their professional position by engaging in innovation. Using the concepts of actor-network-theory we emphasize the negotiated character of risk in relation to innovation analysis (cf. Renn 2008, Osborne and Brown 2011).

Further we use the ANT approach to explore the relation between managers and professionals beyond the dichotomy between management and professionalism. The dichotomy between management and professionalism is discussed and criticized by Mirko Noordegraaf. Noordegraaf offers the concept of 'connection' to avoid that kind of analysis (Nordegraaf 2011). Pursuing the intention to move beyond the dichotomy between management and profession we explore the possibilities of ANT to permit an analysis where the roles and identities of managers and professionals are developed in the process where managers strive to create an innovative work environment among the professionals. The school managers are largely a part of the professional culture of the field they manage (Sløk 2012). From this point of view we understand the school managers as part of both the particular professional questions as well as the larger context of the organization, for example economy, external stakeholders and assessment-structures.[3] The school manager is both the organizational leader who needs to take on organizational goals and who is entangled in the teachers' professional culture as well. Thus the concept of translation is also used to arrive at an understanding of the school managers' strategies to gain support among professionals for innovative teaching and how at the same time different management positions and roles develop as part of these practices.

Managing innovation is not a matter of implementing an innovation model. Understanding innovation management is a matter of understanding how the strive for innovation in practice takes form in relation to other agendas and actors. The concept of translation is thus used to understand the elements of the social processes in public institutions in which innovation can be expanded and recognized among professionals.

In this perspective the success of engaging the professionals in innovation depends on how the school managers engage in these relations and succeed in enrolling other actors and agendas in the innovation agenda as well as succeed in connecting innovative teaching with professional identities and positions.

The case

Our analysis is based on a case study of public primary and lower secondary education in Denmark. The public school system has a significant societal position in Denmark. 86 % of all children attend public schools, while only 14 % attend private schools.[4] From the 1990ies regulatory acts were implemented in Denmark in order to decentralize public education on primary and lower secondary level. This led to increased administrative and pedagogical responsibilities at the level of the individual school and placed more responsibilities and power with the school manager. Far the largest part - 98 % - of school managers in Denmark has an educational background as teachers.[5]

In the Danish public education sector there has been a political as well as administrative concern about how to achieve a public education that provides the students with the innovative and

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[3] This position is analyzed by Camilla Sløk with the concept of 'hybrids' emphazising the hybrid position of head teachers between the professional and organizational (Sløk 2012).

[4] NYT fra Danmarks Statistik nr. 623, 22. december 2011 "Elever i grundskolen 2011/2012"

[5] The fact that 98 % of headmasters has an educational background as teacher is the result of contracts with the Danish teachers' union

entrepreneurial competences.[6] Despite this concern and various national and local initiatives the Danish public school has been rated as too closed around itself and mainly reproductive in its culture. As part of the OECD review on the Danish educational system in 2007 it was stated in the national background report: "According to this OECD response, the primary challenge involves developing a strategic leadership culture with a local, national and global perspective to allow schools to function in interaction with a society that is altering at a rapid pace." (Improving School Leadership National background report, Denmark 2007:91). Again in 2013 in a national review of the Danish public school it was stated: "[…] thinking logistically, structurally and functionally is such a deeply rooted cultural feature of the school and its self-comprehension that in case anyone puts a question mark against this, for instance by pointing at the need for other ways of teaching, it appears as if one is questioning the very foundations of the whole school. […] Teachers who want to do something else and who are open to experiments and wish to explore new ways – and hereby confront the logics of functionality – tend to leave the school and seek other employment. Thus the school and its employees are reproducing themselves and hold on to a particular way of practicing school." (Danmarks Evalueringsinstitut 2013:73, our translation)

Our study was initiated to provide explanations of and suggestions to the role of management in creating innovative learning environments in public primary and lower secondary school. The study was conducted from 2011 to 2012. The project was financed by the Danish Industrial Federation and conducted by Center for School Leadership at Copenhagen Business School.

Research method and data collection

The case is based on a qualitative study of 10 Danish public primary and lower secondary schools. 20 qualitative interviews were conducted for the study, two on each school: 10 interviews with one or more managers (depending on the size of the school) and 10 group interviews with teachers. The interviews where conducted at the schools. The visits gave the researchers opportunity of tours of the schools and in some schools minor observations. In addition to the Danish case study a parallel study was conducted in four American schools. The American part of the study has served as an analytical tool to broaden the analytical perspectives on the empirical material from the Danish schools.

The conducted interviews have been semi-structured interviews (Kvale 1996) and conducted on the basis of two interview guides based on the same themes: one for interviews with teachers and one for interviews with managers. The interviews were conducted by researchers from Center for School Leadership, Copenhagen Business School. One researcher has been present through all the interviews, but investigator triangulation has been used in the data collection and also the interviews. Hoping to escape some of the biases that are implied in qualitative interviews performed by a single researcher a large part of the interviews has been conducted by two researchers. More researchers have also been involved in the analysis of the data. The analysis has taken its starting point in defining codes, coding of interviews, and eventually the identification of patterns in the data (Bernard 1994).

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[6] Cf. The strategy for "The worlds best public school" launched by the government in 2006 as part of the Danish globalization strategy: *Regerings globaliseringsstrategi 2006*. Initiatives have been taken to integrate innovation in teachers training, cf. the report on entrepreneurship and innovation in higher education *Entreprenørskab i de videregående uddannelser. Innovation og iværksætteri på KVU og MVU* followed up by the decree *Bekendtgørelse om uddannelse til professionsbachelor i folkeskolen* (BEK nr. 779 af 28/06/2007).

The participating schools are all schools where the school managers have engaged in creating an innovative learning environment in their schools. The schools vary on geography, socio-economic profile, size, and management structure. Furthermore the schools were selected with regard to their approach to innovation to be able to spot any patterns in the management of innovation that could be linked to the schools' different approaches to innovation. The way the schools approach innovation vary, from innovation through design processes to innovation in the natural sciences. Innovation in the educational sector, and also in the schools of our study, regards innovation as a subject of teaching and a way of teaching - both 'teaching of innovation' as well as 'innovative teaching' (cf. Jeffrey & Craft 2004). A common aspiration for the school managers in our case study is to arrive at an innovative teaching among their teachers. Their idea of an innovative school can be described by Osborne and Browns definition of an innovative environment as an environment characterized by common values, and assumptions that are conducive of new ideas and organizational changes (Osborne and Brown 2005).

The qualitative method was chosen for the study in order to grasp the meaning and value that is attached by the various actors in the field to the practices of innovation. The qualitative interviews have given us the possibility to explore how the managers and professionals connect their professional identities to practices and other actors in the field as well as the obstacles and possibilities they experience in their daily work in order to deliver their professional services. The case study is of course not representative of the general conditions of managing innovation in the public sector, neither is it representative of how managers and professionals create and react to different opportunities and obstacles for innovation. However, the study provides an indication of the social dynamics and central issues at stake for professionals and managers, when they engage in innovation.

Teachers' experience of the risks of innovation

The first part of the analysis concerns the teachers' experiences in relation to innovation. The teachers in our case study state that innovation is inspiring, stimulating and important. The same teachers experience innovation as hard work, tiring and as creating a lot of uncertainty. Innovation is experienced as a way of working that stands in strong contrast to the standards set by national and local performance tests, and they experience a schism between achieving results in tests and exams while working innovatively. This confirms also findings from other studies on creativity and innovation in education (e.g. Tanggaard 2011).

In our case study one teacher describes how he acts on this dilemma in his daily practices. He explains how he, at a certain point of year, shifts from one way of teaching into another. He describes how he begins his school year with a way of teaching that is open, student centered and explorative, and then at a certain point in the fall shifts into a teaching focused on providing knowledge to the students. The interviewed teacher is a central figure in developing the school's innovation work, and he has through out the interview stressed the importance of an innovative learning environment. Yet he says:

> "So all of a sudden playtime is over. Last year already in the autumn I 'switched on to default', and I started just bam, bam, bam, 'now you [the students] are going to have this, now you're going to have that', so I have my back free. Because I think, a part of the

innovative teaching might support their exam-capabilities, but there is also some of it that does not. […] You just have to 'pour in' the standardized goals, you just have to do that, I think." (Teacher)

This teacher finds that engaging the students in innovative experimental projects and student centered projects does not sufficiently prepare them for their exams. Instead he finds that a teaching method based on a view of learning as a transferring of predefined knowledge from the teacher to the students prepare them better for their exams. This teacher handles the dilemma that he experiences between different agendas by spending the first part of the year engaging the students in innovative experimenting ways of learning and the rest of the year using other methods.

Intrinsic in this handling of the dilemma is the teacher's refusal to connect to the innovation agenda. The story of this teacher is an example of how teachers through their daily practices can detach themself from the innovation agenda, defining their orientations in another manner, and instead of stabilizing the innovation agenda, can destabilize it (Callon 1986:8). An integrated part of the social process where the teachers attach or detach themselves from the innovation agenda is the professional position and identities of the teachers. 'Keeping his back free' is the motivation for the teacher's detachment from the innovation agenda. The teaching of innovation is not only a matter of finding a practical or logistic solution in order to be able to deliver on two different sets of expectations at the same time, but are interwoven with questions of professional status. Another teacher states that:

"I think it is a problem that there doesn't exist a concrete way to evaluate innovation today, we don't get any grades [for innovation]. We just need to acknowledge that what gives us status are the grades." (Teacher)

The consequences of audit for professional positions have been analysed in relation to academic selves and positions in higher education among others by David Jary (Jary 2002) inspired by Marilyn Stratherns ANT-based analysis of audit in the British university system (Strathern 1999). Jary argues that audit in universities has had a major influence on the possible academic professional positions and strategies (Jary 2002:54). Our case study confirms how assessment systems in organizations connect to professional positions and identities. Our study further shows how introducing innovative and experimental teaching activities in practice jeopardize professional identities by putting the delivery of assessed service goals at risk. The teachers' experiences of risk cannot be explained by a mere mechanical view on risk. Instead risk should be understood as a perceived risk, and the perceptions of acceptable levels of risk should be understood as socially constructed (Renn 2008). Our study stresses the importance of the social dimension of risk. This dimension of risk and the perceived risk on professional identities and positions are intrinsic to the understanding of innovation among professionals. The daily negotiations and interactions of connecting and disconnecting to the innovation agenda are intertwined with the situation that teachers' gain professional status by achieving high student results in the standardized.

Management strategies

The second part of our analysis concerns the school managers and their strategies regarding innovation. The school managers in our case study are well aware of the dilemma that the teachers experience. The managers are themselves part of this complex coexistence of different agendas in

their own ambitions for the school as well as in their relation with parents and local authorities in regard to their expectations to the school. The management practices they engage in trying to create an innovative learning environment are thus characterized by the necessity to relate to this other actor in the daily social interactions of the professionals - standardized tests and their strong connection to professional identity - and to relate to the risk innovation poses on professional identity, through the negotiating, enrolling, connecting and disconnecting of other important actors in the field.

From our case study three different management strategies can be extracted, which all aim at enrolling other central actors: 1) Linking opposing actors 2) Placing the manager as a separation device and 3) Defining new identities.

Linking opposing actors: Identifying standardized goals with innovation
First the school managers in our study engage in changing the identification of the two agendas, innovation and the assessment of standardized learning objectives, from being incompatible with each other into being in accordance with each other. The school managers employ a practice where they try to enrol the standardized testing as an element that supports the innovation agenda to create a sense of accordance between these two sets of requirements.

The argument becomes a professional argument that claims that innovative skills are closely related to knowledge skills within the traditional disciplines, that they support each other, and that innovative skills support skills evaluated in the standardized assessments. This strategy is present in the managers' communication with the teachers as a general emphasis of the connection between the innovative skills and disciplinary knowledge:

> "Several times I have said [to the teachers] that when we do innovative courses it is building a foundation. So for me there is no contradiction between high results within the single disciplines and innovation, that is very important. [...] There were a lot that could not see how these two things could have anything to do with each other, and they simply must have something to do with each other, in my opinion" (School manager)

But managers also engage in concrete didactic work trying to specify the points of this connection. This is done by going through the national standardized goals and searching for the goals, which can be described as related to creative and innovative competences:

> "Now we are making this diploma [for our students for participation in innovation courses], that says 'I have done....'. Where it is exactly described what the student has worked on, which actually is a list of goals that the teachers can find in the national standardized goals. I will say that there is a lot of national standardized goals, that the teacher can wing off after an innovation-week and say 'This I have been through thoroughly'." (School manager)

This practice aims to enrol the standardized goals into the innovation agenda by identifying the two agendas as interrelated and by establishing an alliance (Callon 1986:8) between the standardized tests and innovation. As part of this strategy the school manager becomes a central device for establishing the alliance, as the manager needs to define the professional specifics of the alliance. This again implies a certain management position and role. The practice implies an activation of the school managers' position as a professional manager who has to undertake a complex task of didactical integration of on the one side creativity and innovation and on the other side pre-defined

standardized goals. This could be interpreted in the light of a conceptual dichotomy between manager and professionals, as a return to the profession manager. Stephen Ball (2003: 37) is among the critics of this type of leadership, labelling the NPM-manager a "colonized professional" while Leithwood argues on behalf of the managers that the professional manager is at risk of making the manager illegitimate among the teachers, since they do not believe the manager is on their side (e.g. Leithwood 1998). A contemporary stance to the question on which side the manager is, could be to see the manager rather as a hybrid between the teacher-profession and the leadership-profession, rather than either/or (see also Sløk 2012). Furthermore to understand the practice of managing innovation among professionals, it is necessary understand it in relation to the negotiation and risk handling that is at the core of this management process.

Management as a hybrid position should in practice not be understood as an oscillation between to kinds of leadership roles, shifting between profession and management. In practice it is part of a complex network of social interaction and evolves as a constant 'translation' aiming at enrolling opposing agendas, and positioning oneself in relation to the professional identities and positions that innovation puts at risk.

Placing the manager as a separation device: Assuming the blame of the disconnection between innovation and the standardized disciplinary goals
When innovation and the demands on predefined standardized goals are disconnected, when innovative processes fail and result in unrealized service goals, angry parents or unsatisfied local administration, what happens? And who is responsible for handling the damages on the single professional and his or her professional identities and self-understanding? These kinds of questions arise when the identification strategy doesn't succeed, and when the disconnection of innovation with a secure delivery of professional services becomes apparent. The second practice we observed among the school managers was a practice of taking responsibility for the situation where innovative teaching, for instance experiments with new teaching methods, fails. Here the organizational position of the school managers becomes central. A school manager describes this situation and his management strategy like this:

> "When things go wrong or fail for an employee who has done something innovative in a class, he has in fact taken this task upon himself, but it fails and he gets knocked out by it. In that case it is an essential task of mine to tell him 'It is my responsibility'. I have to take the blame with regard to parents and everybody else and say: "That was what we did, that was how we worked", and support the employee. The teachers must not feel that they are on their own, if the fail." (School Manager)

This school manager thereby places himself between the teachers' work with innovation and the problem of not fulfilling expected service goals. As Michel Callon puts it "To interest other actors is to build devices which can be placed between them and all other entities who wants to define their identities otherwise" (Callon 1986:9). In this case the school manager himself becomes this 'device' that locks out the other demands on service goals that are opposed to and threaten innovative work. This strategy entails a manager position and role as the responsible head of the organization. It accentuates the hybrid position of the manager as being both on the side of the teachers and at the same time the organizational manager. As the manager assumes this position as a device that is placed between innovative teaching and standardized service goals blame, guilt and responsibility become central elements. The manager becomes a carrier of blame, assuming the

blame for the damages that innovative experiments may cause in relation to fulfilling other service goals.

Defining new identities: Connecting innovation with professional identity
Thirdly we have observed managers' attempts to find ways to reward teachers that engage in innovative teaching. As there is no exam in innovation and no other direct assessment of students' innovative skills, the results of the teacher are not rewarded in the national assessment system. Two teachers who have been engage with innovation in their school for several years tells us:

> " We got appointed as responsible for these four citizen-meetings [at the municipality]. Of course they did that because we have done other things, because we are recognized for what we are doing. […] You can say, we wouldn't have been asked [by the local administration] to do this, if our school manager didn't think we are doing a good job, then they would have taken some teachers from another school" (Teachers)

The manager here has applied a strategy of adding value to innovation. The school managers do that by connecting innovation with high professional position; creating semi-management positions as innovation coordinators, promoting the innovative work done by teachers, or connecting innovation with benefits as training, participation in conferences, etc. Managers as well as teachers also try to find ways to expose their results of innovative teaching. This means that in the major of the schools in our case study the results of innovative processes are presented through a displaying of student created objects, in classrooms, libraries, corridors and halls.

Explaining this with the concept of translation we understand this as a process of aiming to establish an alliance between innovation and a strong professional position, and thereby trying to identify innovative teaching with strong professional positions. This further means that the manager in this attempt to consolidate the position of innovation in the school becomes a connecting 'device' between innovation and professional status. This management position again includes new roles for and new demands on the school manager, as the function of the manager as personnel manager becomes significant.

Conclusion

We have used Michel Callon's concept of translation to shed light on the social processes that form the conditions of managing innovation among professionals. Applying the concept of translation we have argued that managing innovation among professionals should not be seen as an oscillation between profession and management but instead is part of a complex network of social interaction and evolves as a constant 'translation' aiming at connecting and disconnecting other actors, and positioning oneself in relation to the professional identities and positions that innovation put at risk.

Our case study of managing innovation in public primary and secondary education shows how school managers engage in a process of positioning innovation in relation to a variety of human and non-human actors as well as professional identities. Innovation challenges teachers' professional positions as teachers experience innovation as a teaching subject that is not recognized in standardized tests. This experienced dilemma is central school managers' strategies to create an innovative learning environment. Three different management strategies has been extracted from our study, that shows how school managers aims at establishing connection between innovation and

standardized tests, assumes the blame when this is not the case, and engages in adding value to the identity and position of the innovative teacher. The strategies imply different management positions and roles that are assumed simultaneously, thus drawing a picture of managing innovation in the public sector as a task that cannot be conducted through a single model for innovation management but instead demands a manager that engages in the daily social negotiations of innovation assuming a variety of management roles and position.

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