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## Redefining public values: data use and value dilemmas in education

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### ABSTRACT

In this article, we explore how values in education are negotiated and partly redefined by teachers, school leaders and local administrators with data use and accountability. Two dilemmas are prominent for the teachers: 1) Testing and data use are perceived as important to meet the needs of the students and to create transparency and initiating innovation in schools, yet they lead to performance pressure on the students and narrow the societal mandate in education, and 2) Although it is important to identify students at the lowest proficiency levels, the established accountability chains acknowledge the progress of these students and the teachers' efforts only to a limited extent. However, values such as meeting the needs of individual students, transparency and innovation/renewal are partly redefined and narrowed on other institutional levels. The dilemmas represent real normative conflicts in public services that are ultimately unsolvable yet not necessarily at odds with professional values.

### KEYWORDS

Value dilemmas; data use; accountability; teachers; school leaders; administrators

## Introduction

In this article, we examine how values in education are negotiated and partly redefined by teachers, school leaders and municipal administrators as they discuss and reflect on data from national testing. Our analysis is particularly focused on the value dilemmas that occur because of the expectations to make use of test data in school development work. By value dilemmas, we mean conflict-filled situations that require choices because competing and often highly prized values cannot be fully satisfied (Cuban, 1991). They are often related to complex social and educational problems, but they can be simplified and attempted solved by various technical rationalities (Devaney & Spratt, 2009; Green, 1983). One such technical rationality would be testing and accountability, aiming to enhance the overall quality in schools and ensuring that students reach their learning goals. Although critical studies on testing and accountability are numerous (e.g. Jeffrey, 2002; Sellar, 2014), few studies have looked explicitly at value dilemmas and how these take place on different institutional

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levels. Also, a dominating perspective in the data use literature has been the effectiveness of data use practices and how they can be implemented (e.g. Wayman, Jimerson, & Cho, 2012). Analysis of value dilemmas that evolve can yield important insights into both the potential and pitfalls of data use.

Data use practices are usually defined as how actors interact by using test scores, grades and other forms of assessment and data in their work (Coburn & Turner, 2011). Testing and data use offer the potential for studying values and value dilemmas in education as they often include a two-fold purpose: control and development. Through holding key actors accountable for student outcomes, the aim is to increase performance and efficiency in the schools through professional development from the starting point of externally produced data (Mausethagen, Skedsmo, & Prøitz). Data is typically considered efficient, uniform and intuitive measures of student learning outcomes, productive for use in development processes on various institutional levels (Mausethagen, Prøitz, & Skedsmo, 2018, Porter, 1995). However, the very same attributes can lead to exaggerated expectations of what data use can achieve, as well as representing a quite simple view of teaching and learning. At the heart of this discussion lies the question of educational values. Testing and monitoring of student progress and outcomes can provide different actors in the educational system with information that can assist them in better supporting students to meet their learning goals and, thereby, contribute to increasing students' life opportunities; however, testing and data use can lead to marginalisation, a decrease in motivation and an overall narrowing of goals such as inclusion, well-being, care and formation (Hallett, 2010; Jeffrey, 2002; Locke, Vulliamy, Webb, & Hill, 2005; Moore, Edwards, Halpin, & George, 2002). These sets of values concerning quality and equality can ultimately lead to real, normative conflicts within public services and not only for the teaching profession (Green, 1983). Administrators and politicians also must deal with such normative conflicts.

Norway is an interesting country in which to study values and value dilemmas in education, as assessment policies with accountability elements have recently been introduced in education where the teaching profession has enjoyed a relatively high degree of trust and autonomy in their work, and where egalitarian relations between teachers and leaders have a strong tradition (Helgøy & Homme, 2016; Møller, 2015). The education system forms a cornerstone of the welfare state, 97% of the students are in public schooling and inclusion, equal opportunities and formation are important educational goals. As in several other countries, politicians became concerned about underachievement and low quality in schools when the first PISA results came out in 2001, and these results were important in legitimising new reform policies in the 2000 s (Mausethagen, Skedsmo, & Prøitz). Students in grades 5, 8 and 9 take national tests as part of the National Quality Assessment System (NQAS) that was re-introduced in 2007. No high-stakes incentives or rewards, nor sanctions, have been established in Norway, although it has become more common for principals to set specific goals for student performance. Furthermore, attention to students' learning outcomes has been closely linked to the promotion of equality, and mechanisms for control have been introduced in cooperation with local authorities.

In this article, we analyse interview data from three Norwegian municipalities to identify educational values that are highlighted as important to pursue, but also values

that are negotiated or resisted and redefined. We ask the following research questions: What value dilemmas around testing and data use are prominent among teachers, school leaders and administrators, and what are the main variations? How are professional values challenged and possibly redefined by changes in expectations for data use? We review research on values in education and the public sector, in general, and look at the introduction of new governing approaches in education, testing and data use, in particular. Next, we describe the analytical perspectives used in the analysis of value dilemmas. We then outline the data and the methodological approach used in the analysis, after which we present and discuss the results.

## Previous research

Although research in education has reported on how core professional values are challenged with new governance tools and accountability pressures in education, studies that examine values and value dilemmas in education on different institutional levels are few. This is certainly so for the Anglo-American literature, which is characterised by reform implementation and school effectiveness perspectives (Prøitz, Mausethagen, & Skedsmo, 2017). However, studies from a range of country contexts report that teachers experience changes in their work that leads to less emphasis on moral reflexivity and democratic values and less caring relations (Hallett, 2010; Jeffrey, 2002; Locke et al., 2005; Stronach et al., 2002). At the same time, studies also highlight how changes in governing tools, to a more limited extent, influence teachers' work with students because profession-ethical considerations and loyalty to students are put first by the teachers, even though accountability pressures increase on other institutional levels (Moore et al., 2002). Some studies emphasise how testing and accountability lead to dilemma-laden situations for teachers, rather than dramatic consequences (Fransson & Grannäs, 2013; Wilkins, 2011). This points to how questions of values and value dilemmas that result from testing and data use are often approached in the existing research but are not so often explicitly studied as value dilemmas nor are seen in a broader institutional context.

Studies in the Scandinavian context have shown that a welfarist legacy, which emphasises education for the public good, mediates the reading, interpretation and shaping of policy ideas and stresses student outcomes and accountability more than previously (Mausethagen, 2013). One of the main tensions is between discourses rooted in socially democratic ideologies linked to notions of equity, participation and comprehensive education, and discourses of accountability and competition that underpin more recent approaches used to govern schools. For example, a recent Norwegian study shows that national test results used for accountability purposes in many ways subsume visibility (Skedsmo, 2018): If student performance on national tests does not meet expectations, it is attributed to the work of teacher teams and schools. As such, the pressure seems to flow downwards in the governing chain, and discussions about results seldom involve national and local authorities in decision-making.

## Analytical perspectives

In this article, we use analytical perspectives on values and value levels in the public sector. A value is often defined simply as an ideal, a quality of something or something

that should be pursued in an activity, influencing individual and organisational behaviour (Beck-Jørgensen, 2003; Busch & Wennes, 2012). An often-used definition of a value in the literature on values in the public sector is that it is “a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means and ends of action” (Kluckhohn, 1951, p. 395 in Beck-Jørgensen, 2003). When someone says that something has a value, we like to determine the importance of this “something” as to how we assess or decide about it. Yet, it is not always easy to distinguish between a value and a practical task faced by, for example, a teacher. Insolvability typically characterises value dilemmas and other dilemmas that one has to deal with, but people often attempt to solve them by means of various technical rationalities (Cuban, 1991). Conflicts of ideals are also related to how ideals belong on different institutional levels, and what is considered good for students, in general, is not necessarily good for the individual student (Green, 1983).

Values can be viewed as being situated in a public value universe with three layers (Beck-Jørgensen, 2003; Busch & Wennes, 2012). The inner layer consists of stable values that he describes as “the public ethos”, such as societal responsibility, security under the law, transparency and independent professional standards. The second layer involves “the professional-specific ethos”. This level includes basic normative and causal conceptions within a certain area, for example, about the role of the profession, degrees of autonomy or how one should respond to certain kinds of issues and problems. These values are also quite stable over time, yet they could also be developed in relation to development in a specific field. The outer layer, the workplace, is where “the leadership ethos” related to governance, leadership and personal relationships in an organisation is situated. This layer represents the more fluctuating and fashion-based values, for example, those concretised as a specific technical rationality (i.e. data use). The values in this outer layer also tend to have a more individual side, for example, how an individual thinks of a specific technical rationality such as testing and data use.

The three layers of values can support each other, or they can create tension and conflict. It is also probable that leaders, who typically will find values in the different layers, experience greater coherence between the levels than professionals would (Beck-Jørgensen, 2003; Busch & Wennes, 2012). For example, leaders would typically be more socialised into the current dominant ideas about governance and leadership, while the profession-specific ethos would be more prominent and stable among professionals. In the case of education, it is possible that leaders will experience tension between expectations to pursue control, quality assessment systems and efficiency, while also finding these difficult to uphold when dealing with complex and broad educational aims, especially if they have a teaching background.

The specific professional values for teachers are inevitably normative and value-laden (Carr, 2010). In addition, leaders also hold normative ideas about how the public sector should best be governed. As such, testing and accountability pressures could mirror public values in all value layers, but also create conflicts. An example is if testing and data use practices are found to weaken relationships with students and students’ motivation and engagement, as well as the broader social and cultural aims of education. These values are strongly interrelated, perhaps particularly within the educational sector, as there is a constant demand for renewal to meet the needs of individual students, and

where the available student test results may strengthen relations between accountability, meeting individual needs and renewal/innovation.

## Data and methods

The data used in this study form part of a larger research project on the use of student test results (data) in Norwegian schools and municipalities. Three secondary schools in three municipalities participated in the qualitative part of the project. The selection criteria were geographical location (rural or urban areas) and the size and type of the established quality-assessment system. The latter criterion was significant as we anticipated that the local quality-assessment systems would affect the data use practices within the schools.

The first secondary school is in a municipality (A) whose quality-assessment system has been developed over the past decade. A series of local tests is carried out, and the local authority has developed local tests and extensive systems for following up the schools' results. Accountability for school leaders and teachers is based on performance management and risk assessment. It is an urban school with 510 students and 55 teachers. The second school is in a municipality (B), which over the past years has established several routines for following up the school's results. These involve, among other things, defined quality indicators, as well as newly established control elements for reinforced accountability on the part of school leaders and teachers. It is a small rural school with 110 students and 15 teachers. The third school is in a municipality (C) that hitherto has had relatively few established routines for accountability. It is a semi-urban school with 480 students and 50 teachers.

In the analysis, we build on data from interviews with 15 teachers (group interviews), 5 school leaders (3 principals and 2 deputies) and 3 municipal administrators. The interviews took place towards the end of a three-year period of observing formal data use meetings at the schools. Each interview lasted 1–1.5 hours, and two researchers were present. The interview guides focused on the use of student test results (national tests and final grading) and dilemmas that the teachers encounter in this aspect of their work; thus, it included specific questions about how they use the results, what assessment represents in their work and in education, and their views on data use as a driver for development work in schools. The interviews were transcribed verbatim. The study was approved by the Norwegian Centre for Research Data (NSD). The participants all gave their consent and anonymity was given by the time of data transcription.

The analysis was performed in three steps. First, instances in the data, where the informants explicitly valued something as “good” or “bad” (and similar) and the context in which this was stated, were studied. What is perceived as “good” is often dependent on position and context, thus being a good indicator of what drives the justifications for what is worth preserving (Afdal, 2018). Second, a closer look into the tension points in the data was performed. For the teachers' focus group interviews, we particularly looked for instances where there was some objection or a developing discussion. Third, similarities and differences across the actors situated on the three institutional levels were investigated, considering the public values that are outlined in the different value layers of Beck-Jørgensen (2003). As the teachers' dilemmas and

promotion of certain values were similar across the three municipalities, they are treated as one actor group, while the school leaders and municipal administrators are described separately.

## Findings

The two most prominent value dilemmas for the teachers are: 1) Testing and data use are perceived as important to meet the needs of the students, for creating transparency and initiating innovation in schools, yet they result in performance pressure on the students and narrow the societal mandate in education, and 2) Although important to identify students at the lowest proficiency levels, the established accountability chains acknowledge the progress of these students and the teachers' efforts to a limited extent. These dilemmas also present an implication, namely that the information which teachers now have available about students' performance can result in them feeling unable to help their students. For the school and municipal administrators, similar values for education are expressed, but are given different meanings. In particular, public values of meeting the needs of the individual "client" and renewal/innovation are clearly articulated by all the actors, but these have different meanings to different actors, which, in turn, can create value dilemmas for teachers and their leaders. However, this is not solely dependent on the institutional level but also on the kind of municipal quality assessment system that is in place.

## Teachers

Most teachers who participated in the study were relatively favourable to the national tests, and there were limited variations across the three schools. Their view of national test data reflects values such as transparency, meeting the needs of the students and innovation. First, the teachers describe how there is a need for a certain form of control of teachers and transparency about the school's work; second, they stress the need for routines where teachers can cooperate in discussing the results and making use of them to support student learning and school development. This can be interpreted as teachers feeling secure in knowing that they are doing what is expected of them, as well as discussing results and student competence with other teachers. Their opinions also reflect public values that have been on the rise in the last few decades. It also indicates that it is not primarily the tests themselves that create value dilemmas, but the number of tests and how the test results are used. There is a long tradition of assessing the students' knowledge and competence, as described by a teacher in the following way:

We need, if they are called national tests or something else, you need to map the students in one way or another .... But it's also because we use them as a useful tool. If it just had been okay, now we have national tests, okay the school got it, right and we did not something more, yes, I think it had become much more negative focus on it.

However, the teachers were generally concerned with the performance-orientation in education in general concerning both the weakest and the strongest students in situations of national testing and final grading. The following dialogue of three teachers reflects this:

T1: It becomes such a wrong focus that it is only results-orientation and not where the learning is in it and how we will use the results further.

T2: We have noticed a fairly significant shift just now, where both parents and students are very, very concerned with achievements (...)

T3: It's almost like that either they bother or they do not bother, so it's very special now in grade ten where they are very concerned with their grades and it's about doing their best. And that's very positive that they want to do well, but maybe on the wrong grounds, they have ambitions after graduation.

Another dilemma concerns the way in which the available information and data are used to identify students who have challenges and what these challenges are, but without the teachers having the knowledge and resources to help them. If teachers find that they have all this access to results without having the resources available to assist and support the students, this becomes a dilemma, moreover reflecting a more classic dilemma in public services. For example, one teacher says, "I do not think we are so very good at doing something about these students and students who get two even though we speak very well about it". This kind of statement can be interpreted to be more about how the teachers describe a value dilemma in practical terms, than about available resources and their own skills, reflecting the perceived importance of taking care of students' motivation and self-esteem. The following excerpt also shows how what can be interpreted as value dilemmas also take the form of practical questions, extracted from a discussion over the lack of resources that they often experience to be faced with:

T1: And the teachers who are supposed to be support teachers, they cannot be the first ones to be taken away when there is a teacher absent. That is the first thing that happens; there is never any continuity.

T2: No, true, but for next year we will not have any support teachers at all.

T3: No, they take it away.

T2: It's a little like I'm feeling that this is something like you must fix this. That's the feeling I am left with, and then it's a bit like, so how do I do that?

T3: The results are lying there and you feel like doing something about it, and so the skills and knowledge are not enough to do that.

The teachers emphasise the responsibility that they have for their students' academic and social development, as well as for their future education. At the same time, this is not primarily related to tensions between the focus on relationships and test results, or a more fundamental rejection of the tests themselves. It has more to do with resources and competence. This underscores that the professional and public values do not necessarily differ greatly, rather that teachers discuss the development in terms of



their mandate to enact the curriculum and their perceived knowledge and competence to do this properly. The dilemmas then also often take the form of practical dilemmas for teachers, demanding them to focus on how they can solve these issues.

Value dilemmas primarily have more to do with teachers feeling that they do not do enough for students who have not yet reached the learning goals in the curriculum, more than value dilemmas resulting from having national tests in itself. Simply, for teachers, it does not seem appropriate to have the tests if they are not used to help the students further. This also has to do with professional knowledge in how the teachers' focus is primarily oriented towards the practical tasks that are to be performed. They find that it can become more difficult to get in a good position with students to motivate and help them, or that the students do not get the recognition they deserve even if both students and teachers have made an effort and improved their "results". If the available information is not used to help students, it becomes ineffective in many ways for the teachers; however, this also takes the form of value dilemmas for teachers when it becomes evident that the school is unable to help the students and that neither the students nor the teachers are adequately recognised for the work they do, despite student improvement. One teacher noted:

It may not be that they have gone from grade two to grade six because that is very unrealistic, but maybe we have got them up at grade four then and, yes, now they are likely to complete upper secondary education and that is what we are very good at. We are not necessarily good at those top grades, but we lift the students from where they are, and I think I've never seen anything about it the newspapers to put it that way.

We find that the teachers describe this as a type of unfair lack of attention, both towards the students and themselves. This particular, this relates to students' final grading as they decide upon their future education. This type of dilemma can be linked to broader discussions about differentiation in schools and challenges related to whether it is correct that all students, regardless of their starting point, are expected to achieve the same learning goals in the curriculum. With national testing, the teachers are concerned that there are many students who are not recognised according to the goals in the curriculum. In final grading, however, the teachers can to a greater extent recognise students' broad competence.

There are some interesting variations between national testing and final grading. Final grading is to a greater extent seen as high stakes for teachers and students than national testing. This can also be interpreted as a Norwegian contribution to the discussion of testing and accountability because performance-based accountability is handled less stringently in Norway than in many other countries, in particular, Anglo-Saxon countries. This also indicates the importance of studying accountability in specific national contexts and the potential differences between accountability issues linked to various types of data produced by different types of assessments. On the other hand, the expressed dilemmas can also be interpreted as teachers, to some extent, accepting the premise of performance management and accountability. Thus, identifying the educational goals has become a central discussion. Often, teachers' goals reflect the goals set out in national and local government documents, while professional values appear to be less explicitly articulated and rather take the form of practical problems. There are reasons to believe that these value conflicts are more implicit in the teachers'

descriptions of what they perceive are negative consequences of national testing and the practical problems that they experience, and also that these value conflicts may be more explicitly expressed depending on the kind of assessment, for example in variations between grading and national testing. Through their descriptions about the use of student results, we can determine the professional value layer in education. This can also be interpreted as a continuity in what teachers experience as common goals and public values over time and across institutional levels, and that politicians and the profession are working towards the same aims and loyalty to these aims will continue if this effort of working towards the same aims continues. However, if this effort weakens, the value dilemmas may also change character.

### **School leaders**

School leaders partly emphasise different values, but these are also quite close to teachers' professional ethos. However, different leaders adopt different values in their schools and vary in how explicit they are about their values. There are differences in the extent to which school leaders talk about conflicts of interest and value dilemmas. One of the three school leaders (municipality B) describes this type of dilemma several times, both in conversations related to the observations and in interviews. She states:

I do not want exam and national tests to be a quality stamp, nor the opposite, but I have to admit that it's a little important. I think it measures something even though I do not try to make it too big in everyday work. (...) I do not want to participate in that measurement and weighing. I want to help promote good practice without focusing so much on the results.

The school leader uses the terms learning and measurement as opposites several times in the interviews. Hence, she is more explicit in the value dilemmas than the teachers, and perhaps this is because she is more involved in the daily situation of how to balance them. This is also linked to questions about choice of actions: "I think I need to be a bit careful about controlling too much because here are really skilled people, but then I, if I do not control the teachers at all, there is no development". This tension between evaluation and innovation can also be seen as a kind of value dilemma for the leaders in terms of how to balance between the professional value layer and the outer value level of expectations by leadership. Arguably, she also identifies more fundamental values, such as independent social responsibility, in the ways that she partly rejects results- and performance-orientation in education.

Another concrete example of a value dilemma is evident during an interview with one of the school leaders from municipality A. During the interview, a school leader from another school calls and asks if his school can accept a student from their school. When continuing the interview, the school leader comments that accepting this student would probably reduce the average test scores at the school, but that "running a school is about more than results". Another school leader in the same school describes how the results are used at the school and how they constantly evaluate the measures used to assess whether they should continue using a specific teaching method. For example, he describes a dilemma for him as leader in connection with a reading project:

It was the results. It was simply that the results were not good enough, and then we got into a dilemma. The teachers perceived the project as successful, yet we saw that the results

were not there. So what do we do? We are governed by what is effective and now it is the results from 8th to 9th grade on national tests that measure whether the project has an effect or not.

Here, innovation is mainly related to effects and professional knowledge, and autonomy is downplayed as a value. The importance of working systematically with students is related to broader educational goals. The leader notes that “We have been very results-driven. I also think that you do not have much chance of having a good life without getting up to a certain level of basic skills”. At the same time, he describes conflicts in the school: “I feel that there is room for, absolute room for us to see the whole human being, that we must work with both”. This point of view, however, can be understood as an expression of a value that is important for his work as a leader:

I think that a performance-driven school is better than schools that are governed by emotions, I think it's a bit aggravating, but it is clear that it must not go too far, and it is always the focus on students' learning and not teaching for the test and the danger there. But it will always be there, but I think the exam and the national tests, which are certainly the greatest for us.

This school leader is also concerned about the pressure on teachers and feels the use of rewards is important: “I hope and believe that teachers are experiencing some pressure and that I am lifting the good teachers and we celebrate when we do well. We buy champagne”. This reward of desired behaviour also gives signals of what is “good and correct” for the teachers to do. For this school leader, transparency and openness about the results seem to be more widely accepted than at the other schools. Openness is also a value that he is concerned with, like the teachers, but at the same time, it can also be a challenge: “I believe that with time we get more and more openness”; yet here, openness is about the results and innovation efforts more than about dilemmas in education in general.

At the last school (municipality C), the school leaders are very concerned that the tests primarily say something about the students and not the teachers: “We see differences in classes, but we cannot connect it to the teachers. we have no reason to do that”. At the same time, they are concerned about the benefits of a system that “keeps the quality up so we look into the tests”, but they note that this is primarily important information that teachers can use: “We can really just bring out lots of good information”, and they state that they can use this in development work. Thus, they stress both the value of transparency and the professional integrity and autonomy of the teachers—along with helping the individual students. This combination of values represents a somewhat different value universe than that of the former school.

Teachers were concerned that they did not have enough resources to help students, and that this also had to do with their own competence. At all three schools, both leaders and teachers are committed to transparency, helping the individual students and seeing innovation as important values, and it being crucial for the test results to be used appropriately. However, it is also important to see differences in what this development work should be. While school leaders in municipalities B and C emphasise the teachers' autonomy and independent professional standards, school leaders in municipality A are more focused on controlling teachers' work in specific ways, and this trumps certain professional values.

## **Municipal administrators**

The values emphasised by the municipal administrators place a similar emphasis on students' learning outcomes and being able to help students reach the learning goals. They also highlight the value of development work and innovation/renewal to improve teaching practices and, in turn, student outcomes. However, they hold a narrower view on “meeting the needs of the individual students” than the teachers do. There are, however, important differences across the municipal administrators, reflecting the quality assessment systems in the three municipalities. The following examples reflect the values that the municipal administrators hold whilst also showing the variations between them. For example, while the school leaders more clearly expressed value dilemmas, there are significant differences among the three municipal administrators. In particular, being “student-centred” and “helping the individual student” have quite different meanings, as do ideas of how to achieve these. While the municipality administrators in B and C are more likely to talk about the broader educational goals, the municipal administrator in A is more focused on the pupils' learning outcomes and how steering teachers' practice towards the goals are more important than values in the other layers, such as independent professional standards and the value of autonomy:

If the teachers can be close to the students both professionally and socially, combine care and warmth and be ambitious (...). We use results, we must have results to know where the student is and how to adapt and differentiate in the classroom. It is about teaching practice and it is about the teacher.

It is notable how it is always the individual student's development which is the main focus: “I'm concerned with the student, just the student”. This is often linked to their results, more than their overall social and academic development. Thus, a close link between the student and the results is established. The administrator in municipality A is less concerned with values related to good and safe dialogues with school leaders and teachers, and talks more about controlling, asking and checking out: “And then I will have a checkout in the end of the impact of measures, results and practices and the effect of leading the teachers”. The “leading the teachers” expression comes up several times and contrasts with the other municipal administrators who emphasise dialogue, involvement and teachers' and school leaders' autonomy. The same “check-out” as regards school development orientation also applies to the school leaders, as noted by the administrator:

I have to hear from the school leaders, first and foremost, what the school leader thinks in terms of improving. And I have to follow even more closely in relation to if they have a little ambitious and a little development-oriented leader. Then I have to consider whether it is the right man in the right place.

The other two municipal administrators are also keen to follow up the schools and the leadership teams in the schools, but place great emphasis on other values, such as dialogue, collegiality, common ownership and trust, as well as autonomy and independent professional standards. In municipality C, the administrator says:

The biggest motivation is that I hope they feel they (the school leaders) have a support. That they are followed up, that we care, that they are not alone. No bonus system makes

money or anything, but it goes on that dialogue. And I hope that the follow-up in itself is motivating.

Teachers' autonomy and knowledge are also emphasised: "Finding students who need more help. Identify the three students with lowest results and what do we do with them .... But the teachers say they know it, and I believe that. But it creates a system for us". The municipal administrator in C also says that he does not think school leaders and teachers see the use of test data as a check: "Of course, there is control. But, in the dialogue, there is a focus on the future. I do not think they think it's for control purposes". The administrator in municipality B is concerned with having a "learning focus" with the principals "instead of just telling them what to do", thus emphasising the value of innovation/renewal but in combination with dialogue and relationship skills—associating this to make "people safer and more honourable". Securing a safe school for the students and creating good learning environments are also noted as important goals for the work in the municipality, and that the test data alone do not mean that much:

We are very clear about communicating that we are very concerned with the results, but it is not to see if we are high or low on ranking or who is the best ... . I would rather have development. Results are only interesting when they are put in a context of development over time.

In summary, we do not see so many dilemmas at the municipal level, but we see obvious differences between them in what values the administrators emphasise. At the same time, we see that different value sets are "offered" in the municipalities. These value universes can affect the understanding of concepts such as "the best of the students", from incorporating a narrower understanding of learning outcomes in terms of academic outcomes to a broader understanding about creating safe learning environments. For example, administrators in municipality A describe this primarily as a means of achieving better professional results, while the administrator in municipality B also describes this as an end in itself. Another example is the perspective of the teacher and the importance of professional standards and autonomy. While situating the teacher mainly as a means of achieving better academic results in municipality A, the administrators in B and C describe dialogue with teachers as more of an end in itself. Thus, new assessment systems redefine values in education. In this process, "the needs of the students" are framed differently between different actors and between different levels. The framing can be seen as legitimising test data and performance monitoring as a strong basis for making decisions about improvement efforts. As such, it also partly redefines what innovation and renewal in the education sector should be, who should decide about this and what kind of knowledge should be prioritised.

## Discussion and conclusion

In this study, we asked the following research questions: What value dilemmas around testing and data use are prominent among teachers, school leaders and municipal administrators, and what are the main variations? How are professional values challenged and possibly redefined by changes in expectations for making use of test data? The following two value dilemmas are most prominent among the teachers: 1) Testing and data use are experienced as important to meet the needs of the students, for

creating transparency and initiating innovation in schools, yet lead to a major performance pressure on the students and narrow the societal mandate in education, and 2) Although important to identify students at the lowest proficiency levels, the accountability chains that are established to a limited extent acknowledge the progress of the students and teachers' efforts, both with regards to national testing and final grading. An implication of these dilemmas is that the information that the teachers now have available about students' performance and the expectations to make use of it lead to an ongoing experience of not being able to help their students. Although being a classic dilemma in public services, increased external accountability can strengthen it and have serious consequences on teachers' motivation. It should receive serious attention from policy makers, municipal administrators and school leaders. The responsibility of leaders was found to be especially important as they mediate how the accountability chain was established and enacted on different levels.

However, values such as meeting the needs of individual students, transparency and innovation/renewal are partly redefined and narrowed on other institutional levels. In particular, meeting the needs of the students and innovation is partly given a narrower meaning among municipal administrators than within the professional value universe. Interestingly, while value dilemmas are found to be more implicitly embedded in teachers' experiences of testing and data use, or they take the form of practical dilemmas, the school leaders state such dilemmas more explicitly. This is reasonable as the school leaders more strongly mediate between national and local policy expectations than the teachers. The dilemmas thus reflect variations in values across system levels and the changing meaning of professional values as they are partly redefined by municipal administrators and local variations. This is particularly so for public values such as meeting the needs of the individual students (and parents) and development work (innovation/renewal). Generally, all actors apparently agree on these values, while, in particular, the municipal leader in the municipality with the most "sophisticated" quality assessment system partly redefined these values with a narrower meaning in terms of student outcomes and ways to control the work of teachers and school leaders.

Organisational scripts emphasising control, efficiency, outcomes and accountability are found in municipality A, partly redefining central public values such as taking care of the need of the individual and innovation/renewal. However, the teachers' dilemmas do not necessarily differ that much among the municipalities and can thus be interpreted as continuity in the professional value layer that does not necessarily easily change with changes in governance and accountability (Beck-Jørgensen, 2003; Busch & Wennes, 2012). It is also viable that the conflicts among the different values are not seen as being too dramatic, and the experience of working towards the same educational goals is prominent. However, the subtler shifts in meaning making also signal shifts in values that can change how we talk about innovation/renewal and meeting the needs of the individual student. For example, we see how the meaning of innovation partly moves towards mainly implying exercising externally defined development projects and meeting the needs of the individual student partly moves towards being mainly understood as improving learning outcomes. As such, the meaning of key public values has in subtle ways drifted away from key professional values, and they may influence the values of independent professional standards and autonomy. However, by using the language of professional ethos, i.e. helping the individual student and being development oriented, the differences in meaning become unclear.

The teachers' value dilemmas identified here differ slightly from previous research, which particularly focused on unintended consequences, such as increased standardisation of teaching, changes in relationships and alignment of teaching with what is being tested (e.g. Hallett, 2010; Locke et al., 2005). A broader framework for looking at public values has helped to nuance discussions around testing and data use and how possible changes take the form of less high-stakes contexts, as in the Scandinavian countries. We found few signs of alienation and resignation among the teachers because of new governance forms and student testing in particular; neither are there reports about dramatic changes in relationships or more reductive teaching methods in the schools, while there are clear signs of dilemmas that are created as a result of new values being brought to the forefront that are perceived as partly jeopardising professional values (Carr, 2010; Cuban, 1991; Fransson & Grannäs, 2013). These findings do not, however, make them less important to discuss, as they reveal the more subtle and intricate processes of change. In particular, the redefining of central public values, such as meeting the needs of the individual and innovation/renewal, are important to critically discuss as they indicate the more subtle and intricate changes in education.

Values from the different layers are often sidelined in terms of highlighting them as positive, such as the importance of transparency and developing teaching practices to better help the students. This is noteworthy, as the values do not need to compete with each other—rather, this kind of sidelining could be interpreted as a functional work division (Beck-Jørgensen, 2003). Yet, teachers' dilemmas often take the form of being practical problems. The orientation towards solving practical problems is a characteristic of much professional work, including teaching (Mausethagen, Proitz, & Skedsmo, 2018; Grimen, 2008). This way of approaching dilemmas may be a challenge as these kinds of dilemmas are not solvable, as such, but rather require a discussion of their different dimensions and an awareness of how to best handle them. Thus, one could discuss these dilemmas as reflecting the need for placing more emphasis on how to deal with such partly unsolvable value dilemmas in teaching and in teacher education programme, i.e. as a part of modules on professional ethics (Maxwell & Schwimmer, 2016).

Moreover, it is crucial for all actors in the education sector and public policy makers to be aware that value dilemmas also represent real normative conflicts in public services. This also means that one is not necessarily disagreeing in public policy, as the findings in this analysis show. This is important knowledge as existing research on accountability and data use is characterised as either critical studies or effectiveness studies, and there is a need to move this discussion forward by also looking more closely at how leaders on different levels in education deal with these value dilemmas that ultimately are normative conflicts. Such conflicts could be made more relevant with data use, but are not necessarily at odds with professional values.

## Disclosure Statement

No potential conflict of interest was reported by the authors.

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