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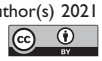

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Quantification and classification in education: What is at stake?

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Abstract

Histories of statistics and quantification have demonstrated that systems of statistical knowledge participate in the construction of the objects that are measured. However, the pace, purpose, and scope of quantification in state bureaucracy have expanded greatly over the past decades, fuelled by (neoliberal) societal trends that have given the social phenomenon of quantification a central place in political discussions and in the public sphere. This is particularly the case in the field of education. In this article, we ask what is at stake in state bureaucracy, professional practice, and individual pupils as quantification increasingly permeates the education field. We call for a theoretical renewal in order to understand quantification as a social phenomenon in education. We propose a sociology-of-knowledge approach to the phenomenon, drawing on different theoretical traditions in the sociology of knowledge in France (Alain Desrosières and Laurent Thévenot), England (Barry Barnes and Donald MacKenzie), and Canada (Ian Hacking), and argue that the ongoing quantification practice at different levels of the education system can be understood as cultural processes of self-fulfilling prophecies.

Keywords

Classification, quantification, education, self-fulfilling prophecies, sociology of knowledge, looping effects

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Introduction

We live in an age of quantification. In our everyday lives as university professors, parents, and citizens, we encounter statistics at almost every crossroad as, for instance, assessment and productivity scores, grades, and ratings. Course assessment scores are used to evaluate the quality of our teaching, tracks of student production and publication points are reported and generate income for our university, and equally importantly, we ourselves contribute to the production of statistics through our assessment of students, systems, and leaders. As parents, we notice the same trend in our children's everyday lives at school. Their skills and performances are regularly assessed and given scores, and they are increasingly required to partake in assessment activities themselves, assessing their own performance and their teachers, school, and peers. Accordingly, we notice how both our students' and children's attention is turned towards assessment criteria. The question of interest to them seems more often to be how they are assessed than what they actually learn. In the age of quantification, a specific mindset seems to be nurtured – that of the *assessing self*.

In this article, we address this quantification turn as a social phenomenon. We ask *what is at stake* when quantification and classification increasingly permeate state bureaucracy, professional practice, and our personal lives. The context of our discussion is the education sector of the Norwegian welfare state, yet the discussion is relevant to most societies, as epitomised in the critique by scholars globally of the Programme for International Student Assessment (PISA) (Zhao, 2020). The article offers a theoretical discussion of the quantification turn and comprises two main sections. After depicting how society has become statistical, we start with an outline of the emerging sociology of quantification, building on the legacy of French pragmatism and the Edinburgh school. We argue that knowledge (statistical classifications, norms, ideas, etc.) is embedded in practice as collective/intersubjective action. Second, we reflect on what is at stake for society and the individual when quantification and statistics become a part of state bureaucracy, professional practice, and young people's everyday lives. We embark on the understanding that, despite good intentions, the quantification turn challenges some of the core values of the Norwegian school and welfare state.

The statistical society

Statistics, measurement, and quantification have been crucial for the development of modern societies. Science, the state, the market, and the economy as we know them today would not have been possible without tools for measurement and quantification. We could say that quantification has helped enable these institutions – and vice versa – and that the state, science, and the market have brought about different quantification processes (Diaz-Bone and Didier, 2016: 7). At the same time, the scope of quantification has evolved dramatically over the past two decades, and a range of statistical overviews and results from assessments, measurements, and tests are being produced at an ever-increasing rate. Technological advances are contributing to continual growth in quantitative 'small' and 'big' data. These quantifications influence how others (institutions and individuals) see us, how we see ourselves, and how we shape our lives. A simultaneous construction of statistics and society is taking place (Sætnan et al., 2011), as well as a simultaneous construction of statistics and individual self-understanding.

The relation between statistics and society has been central in the sociology of science studies (Desrosières, 1998; Hacking, 2010; Mackenzie, 1981). We argue, however, that the tendency to quantify and assess is particularly strong in the field of education, fuelled by a global 'education as social investment' paradigm (e.g. Esping-Andersen, 2002; Heckman, 2006), as epitomised in the annual *Education at a Glance* reports (OECD)[1] and the neoliberal turn. There is a voluminous body of literature discussing the effects of neoliberalism on educational policy and practice (for reviews, see Patrick, 2013; Urciuoli, 2018). The neoliberal reform processes have reinvented the public sector through three major components: market, management, and performance (Ball, 2016: 1049). Indeed, the community of academic scholars has taken a special interest in performativity, assessments, and accountability within the neoliberal regime; in one research review, more than 11,000 publications were located (Lindblad et al., 2015).

Our analysis takes a slightly different path by looking at quantification as a social phenomenon. Observing that the prevailing zeal for quantification and assessment is influencing policy formation, bureaucratic practices, everyday school life, and even the research programmes that allocate money for analysing this phenomenon, we ask *what is at stake*, both for society at large and the individual.

The demand for quantification and standardisation in education is international in origin. In his studies of the development of European education policy, Romuald Normand explores how scientific expertise and politics have worked together in establishing new indicators and classifications (Normand, 2008, 2010). He argues that the Organisation for Economic Co-operation and Development (OECD) has spearheaded the development of a mindset in which the world is regarded as an 'educational laboratory' (Normand, 2008: 665). Standardisation and the need for comparatively quantifiable parameters require a shift of focus at the national level, rendering the testing of basic skills a top priority. This has created a global mapping and testing regime in schools, as exemplified by international tests such as PISA, TIMSS, PIRLS, and compulsory mapping tests in primary and lower secondary schools. The performative nature of the new standards and classifications will make up new pupils (Gorur, 2018; Popkewitz and Lindblad, 2018). This tendency is also evident in Norway, despite the strong standing of the public 'unity school' (*enhetsskolen*) and its roots within the *Bildung* tradition.[2] The majority of children at the age of compulsory schooling in Norway attend public schools, all following the same core curriculum. However, increasing social inequalities and social segregation in urban areas and an increasing demand for pedagogical and/or religious plurality in addition, one might assume, to the new test regime and publication of school results, has spurred a new interest in private schooling.[3]

According to the Norwegian Directorate for Education and Training, the overall idea behind the new mapping regime is to identify pupils who fall below a 'defined limit of concern' in order to initiate intervention.[4] Hence, the political ambition remains in line with the egalitarian principles of the welfare state, at least in rhetoric. Seen in a different light, it is an interesting example of how an economic rationale, rooted in a global competitive education industry, is transformed into 'good intentions' in compliance with the ideals of an egalitarian welfare state.

In Norway, as in other countries, structures and institutions are created for quantification, accountability, and assessment in the education system, and simultaneously, a culture for this purpose is established in bureaucracy and schools. Radhika Gorur argues that large-scale assessments and comparisons are growing and that more assessments – especially regional and national assessments – are being developed (Gorur, 2017a: 263). She reminds

us that scholars like Porter and Desrosières have demonstrated that quantification is intimately linked to statecraft and is an indispensable technology of regulation (Gorur, 2017b: 350). With reference to Ian Hacking, she points out that numbers not only describe but also *intervene* (Gorur, 2017b: 349). We continue this interest in theoretical renewal within the educational field and propose a sociology-of-knowledge approach to the quantification phenomenon. How do quantification and classification affect the *modus operandi* of educational institutions in Norway? What is at stake?

The emerging sociology of quantification

Histories of statistics and quantification have demonstrated that systems of statistical knowledge participate in the construction of the objects measured (Desrosières, 1998; Hacking, 2010; MacKenzie, 1981). However, the pace, purpose, and scope of quantification in state and private bureaucracy have expanded greatly over past decades, fuelled by (neoliberal) societal trends that have given the social phenomenon of quantification a central place in political discussions and in the public sphere. The extensive body of research on the neoliberal turn and its effect on education illustrates how this also permeates research and scholarly debate.

At the frontier of both European and American sociology, 'the sociology of quantification' is discussed as an emerging field in the social sciences, drawing heavily on the French tradition associated with Robert Salais, Laurent Thévenot, and Alain Desrosières (Diaz-Bone and Didier, 2016; Mennicken and Espeland, 2019; Thévenot, 2019). Desrosières (1998: 1) introduces the topic as follows:

> Unemployment, inflation, growth, poverty, fertility: these objective phenomena and the statistics that measure them support description of economic situations, denunciation of social injustices and justifications for political actions. They are inscribed in routinized practices that, by providing a stable and widely accepted language to give voice to the debate, help to establish the reality of the picture described.

Desrosières' (1998) argument is that statistics are not only descriptive but also prescriptive; statistics do not only register phenomena, but also participate in their construction. Statistics, thus, have feedback effects (Desrosières, 2015). With the concept of *retroaction*, he asks whether quantitative indicators are an instrument of emancipation or an instrument of oppression. Comparing Soviet statistics in the Stalin era with New Public Management, he argues that statistics in both cases are subject to manipulation.

> What these two otherwise very different situations have in common is constituted by the perverse effects of the feedback of indicators on the actors whose actions have been quantified. (Desrosières, 2015: 336)

In a similar vein, Laurent Thévenot points to the three meanings of measurement: (a) measuring individuals for quantification; (b) taking political measures accordingly to guide their behaviour; and (c) evaluating the situation through measured judgement that justifies the monitoring based on numbers (Thévenot, 2019: 44). What they both argue is that we need to understand the dynamics between numbers and perceived realities: how

statistics construct classifications that become normative in their consequences when they affect the behaviour and self-perception of the people classified.

A similar line of reasoning can be traced to the Edinburgh school, notably the work of Barry Barnes. Barnes (1995) argues that knowledge is embedded in traditions, classifications, and conventions, and that these traditions exist *through our use of them*. Building on Ludwig Wittgenstein, Barnes acknowledges that all practice is intersubjective. Understanding an expression, a norm, a perception, or a rule is the same as being trained in a practice. Knowledge is embedded in traditions, norms, classifications, concepts, and conventions, all of which live on through our usage of them. Social norms provide a good example. A norm is kept alive only by the social practices of which it is a part, and the individuals with whom we interact can, socially speaking, sanction correct and incorrect usage. Barnes continues:

> To know that a practice exemplifies a norm is to know that most people take the practice to exemplify the norm. For example, to know that [in the United Kingdom] driving on the left is a norm is to know that most people indeed regard it as normative. A collective will make the claim that driving on the left is normative into a true claim by coming to believe it (collectively). Thus, in a perfectly clear and straightforward sense, knowing of norms is knowing what is generally known. And thus knowledge of norms is 'about' itself. A normative order exists as a distribution of self-referring and self-validating knowledge. It exists, therefore, just so long as it is (collectively) known to exist. A normative order is a gigantic self-fulfilling prophecy. (Barnes, 1995: 60)

However, it is not only the norms, values, knowledge, and perceptions *in and of themselves* but also the practice or culture in which these are embedded that must be understood. The practice is not only collective and routine but also open to change:

> Once in possession of the conventions of their traditions, members will apply them and perpetuate them. Knowing what counts as 'the same thing' they will go on and themselves identify further cases of 'the same thing' [. . .] In a nutshell, future use of our conventions of classifications is underdetermined and indeterminate. It will emerge as we decide how to develop the analogy between the finite number of our existing examples of things and the indefinite number of things we shall encounter in the future. This view of classification is sometimes labelled *finitisme*. (Barnes et al., 1996: 54)

This means that any future use of concepts, conventions, classifications, etc., is open. The individual language user, norm follower, or, as in educational practice, the implementor of a classification (the teacher) and the object of it (the pupil) must share an understanding of what concepts, norms, and categories mean in order for them to be sustained. Barnes' argument helps us understand that knowledge (statistical classifications, norms, ideas, etc.) is always embedded in intersubjective practice; that is, culture and knowledge depend on the actors in practice – what they do, think, and feel – or 'practice as collective action' (Barnes, 2001: 17). Similarly, Donald MacKenzie, citing Barnes (1988), argues that a piece of paper

> is not money by virtue of its physical and chemical properties alone; it is money because it is believed to be a medium of exchange and store of value, and that belief is validated by the practice it informs. Our shared belief that the pieces of paper we call 'dollars bills' are money

> leads us to treat those pieces of paper in ways that make them constitute money. (MacKenzie, 2007: 66)

This line of theoretical reasoning enables us to analyse how ongoing practice at the different levels of the education system can be understood as *cultural processes of self-fulfilling prophecies*. In sociology, the theory of self-fulfilling prophecy dates back to the work of W.I. Thomas and Robert Merton, who claim, in short, that what people perceive as real becomes real in its consequences. Barnes argues that the inductive inference individuals make about an entity can become distinctive inputs for the inferences that other individuals subsequently make about the same entity, thereby creating 'feedback loops' between how different actors (collectively) understand the entity (Barnes, 1983: 534). He terms this feedback loop 'bootstrapped induction'. Based on Barnes' theory, Donald MacKenzie proposes the notion of 'Barnesian performativity' (2007) for this kind of self-fulfilling practice. It emerges when the effects of using a theory bring social reality in line with the assumptions or predictions of the theory. Put differently, a theory produces feedback loops that make the theory self-fulfilling (see also Marti and Gond, 2019: 4). MacKenzie (2007: 56) uses this method of reasoning in his studies of financial markets, arguing that in Barnesian performativity, an effect of the use in practice of an aspect of economics is to make economic processes more like their depiction by economics.

Building on the same line of reasoning, the Canadian philosopher Ian Hacking describes how (statistical) knowledge enables classification systems that 'make up' people. His approach to performativity is to analyse how classifications of people interact with the people classified. He asks: how do classifications of people affect the people classified, how do people change by virtue of being classified, and how do the ways in which people change have a sort of feedback effect on our systems of classifications themselves (Hacking, 2004a: 99)? In several of his works, Hacking studies how statistics have created categories that become normative and subsequently lead people to modify their behaviour. The advancement of statistics and the calculus of probability in the 1800s triggered an avalanche of printed numbers (Hacking, 2004a: 100, 2010: 2). Statistics acquired new applications, and statisticians were concerned with finding order and patterns in the social world. Society could be predictable, even if it was not governed by universal laws.

> During the nineteenth century, it became possible to see that the world might be regular and yet not subject to universal laws of nature. A space was cleared for chance. The erosion of determinism made little immediate difference to anyone. Few were aware of it. Something else was pervasive and everybody came to know about it: the enumeration of people and their habits. Society became statistical. A new type of law came into being, analogous to the laws of nature, but pertaining to people. These laws were expressed in terms of probability. They carried with them the connotations of normalcy and of deviations from the norm. The cardinal concept of the psychology of the Enlightenment had been, simply, human nature. By the end of the nineteenth century, it was being replaced by something different: normal people. (Hacking, 2010: 1)

Statistics[5] created a new type of knowledge about the social world and could thus be used as a governing device. Of special concern was deviance (Hacking, 2004a): the prostitutes, criminals, suicides, insane, etc. The graphical notion of normality was depicted by the bell curve, where people positioned near the average were considered the norm, whereas people positioned at either end of the curve represented deviance (Turmel, 2008). Like

Hacking, Niklas Rose (1999: 133) emphasises that our understanding of normality has sprung from our concerns about 'pathological children': the boisterous, defiant, disobedient ones. It was these children that created problems for the experts and that had to be 'dealt with'. As such, (statistical) normality is not only something we observe but also something we value.

Statistics create new ways of being. Accordingly, statistics contribute to what Hacking terms 'making up people' (Hacking 2004a). Vast amounts of statistical data were used in the calculations of the average, and the average came to be regarded as the norm. The idea of the average influenced perceptions of the normal, and when more aspects of human behaviour were studied and made the object of statistical studies and calculations of averages, this feedback had effects: social actors modified their behaviour to align with statistical perceptions of what was normal and, by implication, what was 'good'. Consequently, according to Hacking, the construction of new categories changes not only ideas of society but also how people describe each other and how they see themselves. Thus, the classification of people into categories constructs the reality it is intended to describe. In this way, classification processes contribute to making up people.

We argue that the strong theory of performativity and self-fulfilling prophecy (Barnes, Desrosières, Hacking, MacKenzie, Thévenot) should be taken as a point of departure in studies of the culture of classification in the education system in order to address what is at stake. In the following, we identify three critical areas in which the notion of the benefits of the quantification turn is challenged. Pertaining to the context of the education system in the Norwegian welfare state, we question what is at stake in state bureaucracy, in professional practice, and for individual pupils.

Following the classifications: What is at stake?

What is at stake in state bureaucracy?

How are statistical tools constructed, used, and justified for the purpose of quantification and measurement? What might be the implications? Many studies attempt to measure effects, often based on the Campbell Collaboration's models for meta-studies, which use statistical methods to combine results from several independent studies of the same problem. In Norway, this is used by, among others, the Knowledge Centre for Education (see Lillejord et al., 2015). The same rationale lies behind the wish of the National Commission on Gender Equality in Education to measure and assess children's potential and performance based on register data (NOU, 2019: 3). The report can serve as an example of a set of underlying assumptions that are commonly used to justify measurement and quantification. First, the relatively poorer academic performance of boys compared with girls is portrayed as a social problem *per se*, not as a problem that is socially constructed. Second, academic performance is held up uncontested as a valid indicator of people's potential to succeed later in life, assuming an unconditional causal relationship. Third, it states that there is a need for more research and statistical data (preferably longitudinal) that is evidence-based, implying that such data is essentially reliable and valid (an assumption that has been an object of criticism since the early anti-positivists). Fourth, the current classification system (grades) is presented as an abstract and uncontested reality, rendering its very existence unquestioned. Finally, statistical data is portrayed as objective and descriptive, thus ignoring the prescriptive effects of classification that contribute to

reinforcing the classification system itself. Moreover, the report exemplifies the increasing reliance on evidence, commonly associated with the 'gold standard' of randomised controlled trials (RCT).

The report provides an example of how modern classification systems are constructed with the dual ambition of, in this case, helping boys who perform poorly academically while simultaneously improving economic efficiency. The process has a parallel in the construction of statistical knowledge in nineteenth-century Britain. Donald Mackenzie (1979, 1981) showed how statistical knowledge was produced to satisfy particular class interests in Victorian England. Mackenzie's starting point is the structural position of the mathematical statistician Kart Pearson as a professional middle-class person. Pearson developed his thinking by mobilising what nineteenth-century British middle-class culture had to offer (morals, philosophy, Darwinism, eugenics, mathematics), and he creatively put this together and developed his statistics. He became a eugenicist during the 1880s, asking whether the sick and the violent should have the right to reproduce and create new sick and brutal humans. His socialist solution (in a social Darwinistic sense and interpreted on a collective level – survival of the fittest group) was government intervention in childbearing. His thinking was 'condensed into his eugenics'. He regarded eugenics – i.e. the idea that natural selection must be replaced with artificial selection – as an integrated part of politics (social change was to be controlled from above and with the knowledgeable classes seated at the controls); at the same time, it was an application of his moral philosophy (only the scientifically educated can be moral) to human reproduction and a science to be developed along the lines of his epistemology; finally, the necessity of a programme of national eugenics was, he felt, a direct consequence of the application of evolutionary theory to the contemporary world of international competition. Thus, behind the construction of statistical tools, such as multiple regression analysis and Pearson's R, is a rather elitist and hygienic demand for 'normality'.

The analogy is, of course, provoking, exactly like Desrosières' (2015) comparison of Soviet statistics and New Public Management, mentioned above. However, the resemblance between the use of statistical data in early eugenics research to justify policy and actions, which today are regarded as dehumanising, and the contemporary 'trust in numbers', should not be ignored. The current demand for and reliance on evidence is indeed politicised, albeit with the intention of doing good: identifying people who cause concern in order to help them or compensate for shortages. Despite its good intentions, this practice involves sorting people into categories that are constructed based on aggregate data. This, in turn, makes it necessary to turn to the practice of the people responsible for putting the policy developed in the state bureaucracy into practice.

What is at stake in teachers' professional practice?

How do the numbers, classifications, and test results 'travel' from state bureaucracy to the teachers' professional practice, and vice versa, and how are statistical classifications and conventions translated into social classifications and conventions in schools and classrooms? In order to understand whether and how statistical classifications are translated into social conventions in the everyday work of teachers, we need to explore the culture of the profession. Previous research points to the fact that professional teachers are carriers of the cognitive ideals of both knowledge and moral virtues. Parsons' pattern variables – five dichotomous and variable options, mutually exclusive, where one set of variables is

instrumental and the other expressive – are instructive for understanding the ambivalent character of teachers (Parsons, 1939). The ambivalence between knowledge and morality in teachers' habitus is well known from Norwegian studies (Skarpenes, 2011; Thue, 2019; Østrem, 2010). From studies of professions, we know that this ambivalence is not unique to teachers but characteristic of many professional groups in the wake of the neoliberal turn (Bourdieu, 1999; Evetts, 2009; Zacka, 2017). The 'impossible mission' of teachers is to reconcile policy from above with the needs, skills, and concerns of individual pupils. In professional practice, the act of classifying people usually involves some sort of assessment of individual pupils, relying on a set of standardised indicators or assessment criteria. The accountability against which teachers are held up relies, to a large extent, on their usage of assessment tools. Such tools and indicators appear as objective entities, and this apparent objectivity is usually perceived as an important prerequisite for fair and equal treatment. However, standardised assessment tools also necessitate professional discretion. In the presentation of assessment results, such as grades, however, discretionary judgements are concealed, rendering the results into objective realities. These apparent objective realities are then, in turn, used for policy development, as outlined above, reinforcing the system for assessment and classification. The paradox is striking.

In a culture of accountability, it is how teachers' actions are documented and justified that is at stake. Discussing the connections between accountability and responsibility with reference to Bauman's concepts of morality and ethics,[6] Biesta (2004) argues that the accountability culture seems to be governed by ethics and to elicit behaviour that suits the accountability *system*, rather than to encourage professional and responsible action. In the narrow, technological sense of the term, *accountability* refers to the presentation of auditable accounts, according to Biesta. It is this understanding, he argues, that permeates the educational sector, transposing ideas from financial institutions into a managerial context. Accordingly, Ball (2003: 216) argues that performativity – i.e. the 'technology, culture and mode of regulation that employs judgements, comparisons, and displays as means of incentive, control, attrition, and change' – requires professionals to organise themselves in response to targets, indicators, and evaluations, and 'leave no space of an autonomous or collective ethical self'.

The question at stake, then, is how the implementation of quantification influences teachers' practice. Do they become 'docile instrumentalists' or 'disobedient moralists'? And how, in turn, does that influence the ideology of the Norwegian unity school, notably the principles of egalitarianism and inclusion and the *Bildung* tradition? Finally, how does it influence the objects of quantification – i.e. the pupils?

What is at stake for the pupils?

How are numbers, classifications, and categories involved in the production of new subjectivities and forms of personhood? How does classification affect the behaviour and self-perception of the pupils themselves? Undoubtedly, the new culture of classification and evaluation in education has played a part in the construction of new youth categories and, undoubtedly, these categories will affect the pupils classified (Skarpenes and Nilsen, 2014). In the past decade or so, categories depicting deviant groups such as 'ADHD pupils', 'school dropouts', 'workplan heroes', 'too-good-for-their-own-good girls', as well as normative categories such as 'generation obedient', the 'generation without rebellion', and 'generation performance' have reached the public sphere in Norway. While some of these

categories depict ideological understandings, others rely on statistics. For instance, 'school dropouts' is a category used for the approximately 20–30% of young people who quit upper secondary school before the exams. The alleged increase in dropout rates has caused moral panic and influenced political priorities (Vogt, 2017). In a similar vein, and as mentioned above, boys have been singled out as a category of concern due to their relatively poorer grades compared with girls (NOU, 2019: 3, Vogt, 2018). What these examples have in common is that categories of deviance are created based on the premise of relatively poor statistical reasoning, while simultaneously constructing broad categories of pupils of concern. Once classified as a category of concern, the people whom the category is ascribed become people of concern. A relevant question thus becomes 'How do classifications affect the people who are classified?' In line with the theory of self-fulfilling prophecies, there is reason to suspect that people live up to the categories with which they are identified. Moreover, the categories become an integrated part of institutional practice. Hacking (2004a, 2004b) points out that socially constructed categories not only have labelling effects on an individual level but happen at an institutional level and are maintained through the very institutions of which they are part. For instance, a child with severe autism is unlikely to be aware of his ascribed category, yet the category is integrated in institutional practices that come to shape the child's everyday life and self-perception. The interaction between the individual and the category thus takes place at an institutional level.

Davide Sparti (2001)[7] developed Hacking's point about 'making up people' in a way that brings several important points to the education debate. Sparti argues that identity is created in contexts of collective forms of classification and that, with reference to Axel Honneth, it is dependent on the acknowledgement of others. More specifically, identity will be viewed as a set of social categories used to classify individuals into different types. Consequently, being a specific type of person is partly determined by the categories used to describe that type (Sparti, 2001). When social groups start grouping activities into categories and the use of these categories becomes widespread, a classification process takes place whereby verbs are replaced by nouns: those who drink become *alcoholics*, those who have sexual intercourse with someone of the same sex become *homosexuals*, those who perform poorly at school become *pupils of concern*, etc. When a category describing a specific type of behaviour is created, so too are new realities and new ways of being, and new types of people are 'made up'. Like Rose (1999), Sparti argues that modern society tends to account for individuals who do not fall under the usual ('normal') categories. Consequently, various groups of experts (psychologists, teachers, doctors) attempt to assign these individuals manageable social identities, thereby contributing to institutionalising other forms of acknowledgement. This does not mean that experts invent or construct these new types but, as Sparti writes, 'rather that a kind of person came into being at the same time as the kind itself was classified [. . .]. Once again: our classifications and our classes conspire' (Sparti, 2001: 334). Category formation is therefore a communicative constitutional practice. Once a category is accepted, it works as follows: based on a specific type of knowledge, people are grouped into a category. Frequent use of the category has a self-reinforcing effect (tautological rather than explanatory). What happens when a category is converted into a personal identity? The person must regard herself as an example of that social category and acknowledge it. The person becomes her own audience with respect to that category, meaning she assumes other people's perceptions of her. This will often change the behaviour of those who are classified. Sparti's interpretation of Hacking shows that new ways of sorting lead to changes in the self-awareness (cognitive loops) of those who are classified, and this can have

feedback effects (social loops) on the category that require the category itself to be modified. This can lead to a 'loop upon loop' process (Sparti, 2001: 341).

In Norway, pupils who score poorly on certain tests are categorised as 'pupils of concern' (*bekymringselever*). These pupils are grouped into a category in which new forms of acknowledgement must be institutionalised. The pupils must be acknowledged as individuals in need of intervention, and the teachers must have specific guidelines for following up on them. It thus seems reasonable to say that these tests create the category. The teaching staff will discuss and compare cases of 'pupils of concern', and the teachers will apply this category in their daily practice while the parents are kept informed. The pupils' understanding of themselves may, of course, be influenced by the category (and by the changed behaviour of their teachers and parents), and they may also modify their behaviour as a result of the categorisation. The cognitive and social loops will therefore contribute to creating new types of pupils. Classification and categorisation create new forms of teaching and new pupils who change as a result of being categorised, and such change will create a new need for statistical data and new measurements of performance. In this way, the demand for quantification and classification is reinforced.

Final reflections

The prevailing zeal for quantification and assessment is influencing policy formation, bureaucratic practices, everyday school life, and the construction of pupil identities. Structures and institutions are created for quantification and assessment in the education system, and a culture for this is simultaneously established in bureaucracy and schools. We have argued that the use of statistical knowledge and classifications in the educational system participates in the construction of the objects that are measured. Moreover, we have shown how classifications of pupils might affect the pupils classified and have a feedback effect on the statistical systems of classifications themselves. Concepts such as 'looping effects', 'feedback', 'bootstrapped induction', and 'Barnesian performativity' are drawn from different traditions in the sociology of knowledge, and we have argued that the concepts add theoretical vigilance to the understanding of educational changes as cultural processes of self-fulfilling prophecies.

The Norwegian public school, the so-called unity school, is formed on a tradition of egalitarianism and inclusion. These ideals do not seem to sit well with the current global education industry. From a social welfare perspective, the quantification turn thus challenges some of the core ideals of the welfare model, despite intentions of 'doing good', by, for instance, identifying children below a 'defined limit of concern'. Moreover, it might also challenge the *Bildung* tradition of the Norwegian school system by celebrating measurable results at the cost of a more holistic and democratic learning perspective. When we, as university professors and parents, observe an increasing attention to assessment criteria instead of learning outcomes, we understand that not only as a symptom of a societal quantification turn but also as a change of mindset, which indeed also includes ourselves. Like teachers, we are held accountable against policy demands that increasingly rely on statistics, and as parents, we are acutely aware of how assessment scores might have imperative implications for our children's everyday lives and future possibilities. Despite our concerns for the effects of the quantification turn, which we share with a number of scholars worldwide (Zhao, 2020), we contribute to reinforcing the systems of classification when we act in compliance with the system, such as when we rehearse the learning goals of the week

with our school-aged children, initiate course evaluations, or develop assessment criteria. In that respect, we behave like 'docile instrumentalists', knowing that in the current state of affairs, we do this in the best interest of our own and our children's opportunities to succeed in life. We share a mindset of *assessing ourselves*.

For society at large, however, what is at stake are some of the core values of the welfare state of which the unity school is a cornerstone. The public discourse in the wake of the Covid-19 pandemic is a thought-provoking example. As home-schooling became the norm and exams were cancelled, a sense of moral panic emerged in Norway, invoking terms such as 'lost generation' to signify how much the young generation had lost in terms of learning due to the pandemic. What is revealed by this discourse is a narrow understanding of learning, in which whatever organised and planned activity that takes place in a classroom and can be assessed is defined as learning, in contrast to naturally occurring and unpredictable events, such as a global pandemic. If the world is an educational laboratory, as suggested by Normand (2008), then the pandemic should offer a unique learning opportunity, encapsulating both practical knowledge, such as cooperation, cleanliness, and health care, as well as theoretical knowledge of, for instance, virus mutation, risk assessment, infection control, policymaking, social economy, and statistical prediction. At the very least, the pandemic has taught us that the world can still be unpredictable, despite our sophisticated statistics. When we are faced with such a crisis, it is arguably the ability to cooperate and think in new ways, combined with a well-functioning democratic leadership, that matters – abilities that are integral to *Bildung*. So, how can a generation that has encountered and dealt with this in their real lives be 'lost'? What this example illustrates may be yet another example of bootstrapped induction (Barnes, 1983), whereby a theory about a phenomenon effectively becomes self-fulfilling. Our argument in this article thus holds a warning about the use of statistics and classification in the field of education by emphasising some of the critical elements of the quantification turn.

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Notes

1. The *Education at a Glance* reports rely on data collected across all OECD countries based on a set of indicators. It presents itself as 'the authoritative source for information on the state of education around the world. It provides data on the structure, finances and performance of education systems across OECD countries and a number of partner economies. More than 100 charts and tables in this publication – as well as links to much more available on the educational database – provide key information on the output of educational institutions; the impact of learning across countries;

access, participation and progression in education; the financial resources invested in education; and teachers, the learning environment and the organisation of schools.' www.oecd.org/education/education-at-a-glance/

2. *Bildung* is translated in Norwegian to *dannelse* or *danning*. With roots in German nineteenth-century Enlightenment philosophy, *Bildung* has become a central term in Norway, both in an education and curriculum context and in broader discourses about people's enlightenment, personal growth, and democratic behaviour. *Bildung* is associated with individual development and growth, as well as with democratisation and social responsibility (e.g. Løvlie, 2009), and is often linked to an anti-instrumentalist position.
3. Since 2010, the share of children in private schools has increased by more than 60%. www.ssb.no/utdanning/statistikker/utgrs/aar
4. On the website of the Directorate, the mapping tests are justified as follows: 'The mapping tests in reading, arithmetic, and English are designed to identify students who need extra support. It is important that these students are identified early in their educational process so that they can be offered the support they are entitled to. The mapping tests are thus also a tool to prevent students from dropping out later in their education. The results of the tests only provide information about students who are around or below a defined limit of concern. The mapping tests consist of many easy tasks. Therefore, the tests provide little information about the students who manage all or almost all the assignments. Students who do everything or almost everything correctly are not necessarily particularly clever students. However, students who fall below the threshold of concern need extra support' (our translation). www.udir.no/eksamen-og-prover/prover/kartlegging-gs/#formal-kven
5. This paragraph is based on Skarpenes and Nilsen (2014).
6. According to Bauman (1991), morality is a genuinely human ability to distinguish between right and wrong, whereas ethics are the rules, norms, and codes that regulate and codify what counts as moral action. Modernity is governed by ethics, Bauman claims, which indicates a narrow, technological sense of accountability. Doing right, in this sense, is abiding by the rules and regulations within a given institutional framework.
7. This paragraph is based on Skarpenes and Nilsen (2014).

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