Ordinalization and the OECD's Governance of Teachers

TORE BERNT SORENSEN AND SUSAN L. ROBERTSON

Drawing on Marion Fourcade's notion of ordinalization, we develop a conceptual grammar of comparison to explain a shift in the nature and outcomes of the governing capacity of the OECD over time. We argue that comparison as a mode of governance has been bound into the DNA of the OECD as a lever for advancing political liberalism since the inception of the organization. Moreover, we show that around 1990 the organization injected competitiveness into comparison by embracing ordinal modes of comparison revolving around the vertical ordering of things and people according to their relative positions on ranking scales. Yet, by analyzing the case of OECD statistics on teachers and in particular the Teaching and Learning International Survey (TALIS) program, we argue that the outcomes of the mechanism of ordinalization in the context of TALIS have thus far remained muted due to methodological constraints as well as the pluri-scalar politics involved.

Introduction

Governing societies and education systems using statistical reasoning, large numbers, and comparative research have given rise to a substantial body of research literature. Some of this research has focused on major policy actors in the global education policy field, such as the Organisation for Economic Co-operation and Development (OECD; see, e.g., Resnik 2006; Meyer and Benavot 2013; Lingard and Sellar 2016), whereas other works, including the "governing by numbers" literature (Grek 2009; Simola et al. 2011), have been more concerned with the implications of relying on statistics as the primary form of policy knowledge in education. One common argument across these works is that the field of comparative education research over recent decades has come to act as a mode of governance that promotes a culture of global economic competitiveness infused by ideas of markets, standards, and accountability (Nóvoa and Yariv-Mashal 2003).

While we broadly agree, we nevertheless argue that the social ontology of comparison as a mode of governance remains critically undertheorized in the literature and that the newness of statistics and comparison as modes of governing tend to be overstated. After all, the sociology of quantification has highlighted that governing through numbers paralleled the rise of states and contributed to state power beginning in the 1600s (Desrosières 2002). The challenge, thus, is to explain whether there is something new about contemporary forms of governing in a context that has been subject to a significant degree of rescaling of aspects of education governance in a thickening global education policy field. This raises three questions that are at the heart of this article. First, is comparison as a mode of governance now qualitatively different from previous iterations? Second, if this is the case, how are these differences reflected in the actual workings of comparison as a mode of governance? And, third, how is the mode of comparison shaped by the strategic interaction of agencies in the thickening field of global education governance?

In this article, our purpose is to address these questions by interrogating the specific case of OECD governance, and in particular the organization's Teaching and Learning International Survey (TALIS), so as to advance the debate concerning the nature of comparison as a contemporary mode of governance. We draw upon the seminal work of Marion Fourcade (2016) on ordinalization so as to unpack the modalities of comparison in OECD governance and the dynamic links between knowledge production, ideology, and power relations in the global education policy field.

Our analysis draws from a large empirical study concerned with the political construction of the TALIS program (see Sorensen 2017). Conducted in 2008, 2013, and 2018, TALIS is the most highly profiled survey program on the teaching profession, and as such the program is emblematic of the increased research and political attention directed toward the teaching profession globally over the last decades (Paine and Zeichner 2012). Drawing on critical realism and an intensive research design aimed at identifying the particular mechanisms that generate changes in social reality (Sayer 2010), the study analyzed the political discourses (Fairclough and Fairclough 2012) of the major organizations involved in the program over the first two rounds since preparations were initiated around 2005. The study drew on two complementary data sets gathered over the period 2014–16 and subjected to detailed analysis: (i) 15 policy documents issued in the period 2005–14 and the OECD standard teacher questionnaires for TALIS 2008 and TALIS 2013, as well as national adaptations in three case systems for TALIS 2013; and (ii) 31 semistructured qualitative research interviews, based on a realist theory–laden approach (Pawson 1996) and conducted with individuals with firsthand experience of TALIS through current or recent work in one of the organizations engaging with the program. Documents and interview data were gathered

from the OECD, the European Commission of the European Union (EU), the global federation of teacher unions Education International, and the Business and Industry Advisory Committee to the OECD, as well as the three case systems of Australia, England, and Finland. For the case systems, the study focused on their participation in TALIS 2013 and on the engagement of government authorities, teacher unions, and research institutions in the program. The case systems were selected because of their different national trajectories of education systems, institutional arrangements governing the teaching profession, and varying alignment with OECD recommendations (OECD 2005; Connell 2009; Rinne and Ozga 2013). In addressing the three questions guiding this article, we engage with this significant corpus of data and analysis.

The main arguments and structure of this article are as follows. We first introduce Fourcade's (2016) conceptual grammar on ordinalization and reflect on it in the context of the OECD, based on key contributions to the literature. We show that comparison as a lever for advancing political liberalism has been bound into the DNA of the OECD since the inception of the organization but that the nature of comparison as an OECD governing technology has shifted over time. In particular, we demonstrate that the "comparative turn" in OECD education governance from the late 1980s onward involved an emphatic shift from one sort of comparison to another. Not merely predicated on "a scientific approach to political decision making" (Martens 2007, 42), the comparative turn in OECD governance more specifically involved a stronger relative emphasis on ordinalization as a distinct modality of comparison evident in the intensified production and use of outcomes-based indicators and statistics that embrace vertically organized ordinal scales to generate economic competitiveness.

Second, we analyze the OECD's work on teachers, and our empirical case study of TALIS highlights "the limits of the possible" (Mundy 2007, 351) in transnational education governance in terms of comparative research as a policy instrument. By unpacking the engagement of the OECD, the European Commission, and national government authorities in Australia, England, and Finland in TALIS, we show that the drive toward ordinalization in TALIS has remained muted so far, due to particular contextual conditions in the form of methodological constraints as well as the pluri-scalar politics involved.

Finally, we conclude by discussing what the possibilities and limits of ordinalization, as demonstrated in the case of TALIS, means for the deep embedding of political liberalism in the normative standards and definitions of the "good teacher" in the global education policy field. Critically, we argue that the increased relative emphasis on ordinalization in OECD education governance has unfolded over a long period. However, the mechanism of ordinalization has so far been triggered only to a limited extent in TALIS, and, accordingly, the program is severely curtailed in terms of its contribution to a transnational liberal politics of individual liberty and equality of opportunity.

While none of the agencies included in our study were against ordinalization per se, the underpinning principles and topics to be subjected to ordinalization remain contested in the context of TALIS. Our empirical study thus indicates that while some organizations, not least the OECD, have been more influential than others in promoting ordinalization and setting the direction for TALIS—and indeed are expected to do so by governments—no single organization is in a position to control the outcomes of the program on its own. These empirically observable outcomes can be explained with the critical realist notion of emergence (Sayer 2010). Hence, we argue that the mechanism of ordinalization is socially constituted and is enabled and constrained by a myriad of interrelated strategic activities undertaken by a range of organizations, together generating contingent—but not random—outcomes beyond the control of any of them.

Comparison, Ordinalization, and OECD Governance

Fourcade (2016) develops her arguments by drawing on the sociology of quantification (Porter 1995; Espeland and Stevens 1998). Her contribution is distinctive in that it provides an account of how the workings of comparison relate to the general "politico-ethical matrix" and "morality of numbers" (Rose 1991, 689) in political liberalism broadly conceived. Political liberalism involves multiple and evolving philosophical traditions that in their common concern with realizing the promises of liberty put varying emphasis on more individualistic versus collectivistic concepts of liberty. Hence, whereas classical liberals endorse "negative" liberty and "self-reliance," ethical liberals advocate "positive" liberty and "self-realization" and support more state intervention to create the conditions enabling people to actively realize their capacities (Olssen 2000). These strands of thought revolve around the tension at the heart of liberal political ideology—namely, the pursuit of individualistic liberty, on the one hand, with its associated ability to freely perform and experience personal differences, and, on the other, ensuring equal opportunities. This tension alludes to two constitutive paradoxes of liberalism: (i) that of the twin political promises of universal individual liberty and equality of opportunity, where a strong commitment to either promise vitiates the other; and (ii) that of the individualism that legitimates liberalism versus the cultural homogeneity required by the commitment to political universality (Brown 1993).

Along these lines, Fourcade (2016) argues that the employment of comparison in liberal societies is related to a politics of freedom that seeks to recognize difference as a source of mutual enrichment and a politics of government seeking efficiency and control in the disposition of things and people. Accordingly, governance in advanced liberal societies involves freeing social groups from nominal categories of classification while seeking to make them more efficient.

Fourcade (2016) suggests that most social orders throughout history have been organized around the intersection of three different types of comparison: nominal (oriented to essence or nature), cardinal (oriented to quantities), and ordinal (oriented to relative positions according to a stable rank-ordering criterion). Each of these represents an ideal type of classificatory judgment for comparing things and people. While all of them remain widespread and tend to overlap, ordinal comparisons have become more prevalent in contemporary societies due to innovations in digital technologies and the advance of political liberalism globally. Specifically, ordinalization revolves around the vertical ordering of things and people on a scale as fine-grained and fully continuous as possible according to a shared basis of criteria. Thereby, ordinalization serves the moral function of affirming the liberal democratic ideal of bypassing or unmaking established social lumps of nominality that tend to be associated with practices of exclusion, prejudice, and differential treatment. Ordinal comparisons thus provide a fundamental means for the drive toward individualization in political liberalism, as well as the study of inequalities between individuals, social groups, political entities, and so on.

Fourcade (2016) does not situate the drive toward ordinalization in the context of global governance. However, existing research has documented the contemporary emphasis on comparison as a mode of governance in the field, including the effects of rankings of national or subnational political entities, where only one entity can occupy one space at a time—despite marginal differences at times between entities—which in turn reinforces the sense of competitivism (Grek 2009; Robertson 2012; Lingard and Sellar 2016). By reviewing existing research evidence through Fourcade's conceptual lens, the paragraphs below serve to reframe our understandings of the workings of comparison as a mode of OECD governance, with a focus on the ways that comparison and liberal ideology have historically been bound into the DNA of OECD governance.

First, it should be emphasized that since its foundation in 1960, the OECD has employed comparative research as a central means to bring about economic development, framed by a human capital perspective and legitimated by the allegedly scientific nature of the empirical data (Godin 2006). In this sense, the OECD Convention of 1960 still encapsulates the liberal economic and political ideals of the organization, with a strong emphasis on economic growth, individual liberty, and the integration of global markets (Carroll and Kellow 2011). The convention and early history of the OECD cannot be separated from the leading role of the United States in the major economic, social, and cultural developments after World War II. In the bipolar geopolitics of the Cold War, the use of numbers and comparative statistics in the OECD, including in the area of education, thus provided one institutional means through which the United States sought to create the political, juridical,

and economic conditions for extending capitalist market economies and liberal democracy internationally (Resnik 2006; Morgan 2007; Tröhler 2014).

Second, Fourcade's (2016) distinction between principles of classification helps us grasp the qualitative changes in the modes of comparison employed by the OECD in governing how societies are to see themselves and their development. Daniel Tröhler (2014) observes that the dominant development paradigm of the OECD in the 1960s and 1970s was underpinned by modernization theories coined in the United States. These theories revolved around the polarity *tradition/modern* that in turn represented all countries as converging along the path toward a monolithic and homogenizing "modernity" driven by the sophisticated application of science and technology. In this way, "development" constituted the keyword of a specific ideology that held itself to be free of ideology due to its reliance on quantification and comparative statistics. In the perspective of Fourcade (2016), the OECD paradigm of the period thus emphasized the principle of nominalization, since it divided the entire world into four nominal categories of political-economic systems and their development trajectories: (i) the United States as the quintessential modern country followed by the developed countries in Western Europe; (ii) the developing countries of southern and southeastern Europe, Latin America, and parts of Asia; (iii) undeveloped countries, including most of the African countries; and (iv) wrongly developed countries in the Eastern Bloc that had fallen prey to ideology (Gilman 2003).

The output- and outcome-focused indicators that the OECD came to embrace and develop from the late 1980s differ markedly from a development paradigm revolving around nominalization. This shift substituted the prevailing paradigm of a descriptive "development comparatism"—revolving around nominal and cardinal categories of classification—toward a more normative "globalization comparativism" (Cussó and D'Amico 2005). The late 1980s thus marks a watershed in global educational governance, as the OECD came to embrace a competitive turn to comparison by operationalizing human capital theory in the evaluation of educational outputs. This competitive turn happened in the period when the communist bloc fell apart, thereby forcing the OECD to redefine its role in a more unipolar world, with the United States as global leader (Morgan 2007). The creation of output- and outcome-focused indicators have since proven pivotal for the rise of the OECD in global governance, enabling the organization to govern at a distance while promoting learning concerning how to be a globally competitive economy, putting education sectors front and center (Henry et al. 2001). The International Indicators and Evaluation of Educational Systems (INES) Project was launched in 1988, followed in 1992 by the first edition of *Education at a Glance*. From the mid-1990s, the Programme for International Student Assessment (PISA) was initiated as part of the INES Project. Moreover, the OECD Growth Project (OECD 2001) took place in the period 1999–2001 and identified distinctive "growth effects" of

education and human capital in explaining economic growth rates, thereby raising the profile of educational issues within the OECD and paving the way for the establishment in 2002 of a separate Directorate of Education (Lingard and Sellar 2016).

Third, Fourcade argues that while "nominality and ordinality must be disentangled in order to realize the political *ideal* of liberalism, both are simultaneously essential to its performance too. The result is a somewhat paradoxical amplification of each imperative. The patterned, historically constructed specificity of people and things must be recognized; but it must also be suppressed" (2016, 180). Hence, while people are classified into social lumps of nominality, these categories are also meant to be unmade if possible. OECD education governance reflects this dual amplification. Revolving around policy reviews of national education systems and standardized evaluations and surveys (Fraser and Smith 2017), the former help to amplify nominality by recognizing the specificities of historical trajectories and system features, whereas programs such as PISA and TALIS are constructed to suppress the specificities of systems taking part and to render participating systems comparable in terms of ordinality. The amplification of ordinality "is thus predicated on the ability to commensurate. The end point of the process, the ultimate realization of ordinality's ideal of order, is an infinite vertical splitting—a scale upon which everything and everyone may be accounted for and ranked" (Fourcade 2016, 182). Yet again, the outcomes of OECD programs might feed into an amplification of nominality due to the exposure and recognition given to high-performing systems (Grek 2009), whereas in other systems less accustomed to competitive comparison, media attention might lead to policy responses preoccupied with ordinality (Hopfenbeck and Görgen 2017). Regardless of the particular outcomes, the point to be noted here is that nominality and ordinality are simultaneously disentangled, amplified, and suppressed in OECD governance.

Finally, the workings of ordinalization are fueled by decategorization, leveling, and what appears to be a morally agnostic ideology (Fourcade 2016). This is a defining feature of OECD governance, and the legitimacy of the organization depends on its capacity to deflect contentious political issues into the scientific realm with numbers and standards, framed by persuasive umbrella concepts such as knowledge-based economy (Godin 2006; Tröhler 2014). Briefly, decategorization involves dissolving the nominally classified lumps of society—social groups and objects—and reclassifying them by means of a scale that is as continuous as possible. Leveling employs quantification to restructure those nominal differences, transcending boundaries of kind and collapsing absolute differences into relative ones (Espeland and Stevens 1998), thereby completing a semantic leap toward more open-ended representations of underlying differences. Ordinalization hence serves to liquefy and sublimate nominal categories and in-kind solidarities associated with

discriminatory practices in order to realize the liberal ideals of equality of opportunity and the colorblind society. Fourcade (2016, 184, with reference to Porter 1995) notes that leveling is closely associated with the formulation of standards, which have an air of objectivity and which afford unequivocal communication. In this way, leveling and standards provide a basis for the "pursuit of objectivity" and "seizing of the world" from the messiness of politics while helping to construct a robust infrastructure for it. Hence, the representation of a morally agnostic ideology is predicated on deflection of political contestation through numbers and standards. However, Fourcade (2016) suggests that the twin liberal tenets of freedom and government underpin the alleged moral agnosticism, along with the associated moral language of democracy and a radically individualist and anti-elitist philosophy aligned with the promises of accountability. With the liquefying of nominal categories and in-kind solidarities, ordinalization suggests a promise of movement and social mobility, revolving around a human capital view of the world according to which freely operating individuals and organizations are and ought to be absorbed in perpetual optimization and reputation management.

Yet, Fourcade also notes that in practice there are limits to how much ordinalization can deliver in terms of the liberal ideals, because fully continuous and fine-grained scales tend to be unattainable. Hence, "the society that is liquid in theory continues to be lumpy in practice" (2016, 188). This powerful statement leads us to the OECD's work on teachers and the TALIS program that exhibit the drive toward ordinalization as a mode of governance as well as the limitations and paradoxes that tend to accompany it.

OECD Governance and Teachers: A Case of Fragmented Ordinalization

Our analysis shows that whereas the OECD has been a major actor in putting teachers in the top of policy agendas globally, the organization has thus far proven less successful in creating ordinal scales for comparing teacher workforces. In this respect, the conceptual grammar of Fourcade (2016) enables us to recognize the dual amplifications of nominality and ordinality also in the OECD's work on teachers. Fourcade notes that the amplification of nominality tends to involve ordinality as well, since the prioritization of one area for political intervention implies a ranking claim relative to other themes. A brief overview of the OECD's work on teachers clarifies the argument.

The OECD has had an interest in the nominal category of the teacher workforce since the 1960s (Papadopoulos 1994), but the category became intensely amplified around the time the competitive turn in comparison took hold. OECD (1990) explored the importance of teachers for quality education, and the development of indicators related to teachers and teaching gained momentum in line with the calls of the INES general assemblies in 1991 and 2000, followed up by the major OECD review *Attracting, Developing*

and Retaining Effective Teachers (OECD 1995, 2005). Furthermore, the policy recommendations of the OECD Growth Project singled out making the teaching profession more attractive as one of the key measures to ensure competitiveness in the new global economic environment (OECD 2001). These activities provide the backdrop for the OECD TALIS program that eventually grew out of the INES Project in the mid-2000s, as PISA had done in the 1990s (OECD 2009, 19–20). Teachers have since then been singled out as "front-line workers" (OECD 2014, 32) in enhancing student learning outcomes and economic competitiveness, underpinned by the oft-cited finding (OECD 2009, 2014) that within schools, teacher- and teaching-related factors constitute the most important contributors to student learning outcomes. The amplification of the nominal category of teachers has thus been pivotal for creating a global debate on education and teachers, based on heavily generalized representations of "one-worldness" and a "global reality of teacher professionalism" (Sobe 2013, 52).

Drawing on our empirical study of TALIS (Sorensen 2017) introduced at the beginning of this article, the following sections analyze the drive toward ordinalization over the first two rounds of the program. Our analysis highlights a series of insights enabled by Fourcade's (2016) conceptual grammar with regard to the creation of comparability, the contentious processes and dynamic relations involved in OECD governance, and the fact that ordinalization in the area of teacher workforces so far remains fragmented.

Institutions of Ordinality and the Operating Rules in TALIS

The influence of the OECD and the European Commission in education governance has been associated with their capacity as main "centers of calculation" engaged with the production, control, and distribution of knowledge (Grek 2016; Lingard and Sellar 2016). Bruno Latour (1987) and Nikolas Rose (1991) suggested that such centers of calculation inscribe events and processes transported from around the globe into standardized forms and accumulate them in hubs where they can be compiled, compared, and mobilized to exercise power over events and actors at a distance.

With regard to TALIS, our study confirms this position of the OECD and the European Commission. In fact, we take the analysis further by conceiving of them as the main "institutions of ordinality" (Fourcade 2016, 188) in the program due to their pooling of resources and capacities of power with the objective to institute ordinal scales as a basis for the international comparison of teachers and teaching. This is most visible in the number of reports and documents issued by the two organizations that draw on TALIS. Moreover, the OECD and the European Commission have, also in the context of TALIS, been able to engage a wide range of organizations in ordinalization at various scales—with each organization having its own preferences in terms of the amplification of ordinality.

The main OECD body engaging with TALIS is the TALIS Board of Particating Countries (from TALIS 2018 the TALIS Governing Board), made up of representatives from national government authorities, the European Commission, Education International, and business and industry. Moreover, at the national level of implementing TALIS, various constellations of National Project Centers, steering groups, and advisory groups were set up. In parallel, the European Commission established working groups starting in the mid-2000s in which representatives from EU member states discussed the need for indicators centered on teachers and teaching and identified TALIS as a useful instrument for this purpose (Sorensen 2017).

We noted above that while ordinalization revolves around the moral language of democracy and accountability, it is simultaneously predicated on the deflection of political contestation. This is an important insight for unpacking the possibilities and limits of transnational political authority and a paradox characterizing the associated "operating rules" (Mundy 2007), which revolve around soft legalization and epistemological governance (Lingard and Sellar 2016). Hence, while the PISA program has poignantly been labeled an "accountability engine," since "it tells you that there is a problem but it doesn't tell you how to fix it" (interview respondent quoted in Morgan [2007, 205]), Fourcade (2016) suggests that institutions of ordinality are harder to render politically accountable because they were designed to undo nominal categories in the first place.

In TALIS, we also found that the OECD and the European Commission as the main institutions of ordinality remain elusive in terms of accountability. The TALIS Board of Participating Countries functioned by all accounts over the first two rounds as a consensus-based forum for educational multilateralism (Mundy 1998), yet with the OECD TALIS Secretariat exercising epistemological leadership in terms of indicators development, survey design, analysis, and policy implications. A former OECD senior analyst pointed out that it was imperative for the work of the TALIS board that the OECD TALIS Secretariat be able to earn the trust of governments, due to uncertainty about what the program was going to examine more specifically and whether it was going to be controversial for teacher unions. Hence, although the expert reputation of the OECD was pivotal in attracting government authorities in Australia, England, and Finland to sign up for TALIS 2013, there are also limits to the trust and legitimacy granted to the OECD. We should note that the TALIS program over the first two rounds was a vulnerable construction, with governments signing up and paying for one round at a time.[1] Given the OECD's trajectory, it should be added that our findings do not indicate that

---

[1] With TALIS 2018, funding and obligation arrangements changed as the program was "upgraded" to a Part II program in OECD governance arrangements, thereby achieving the same status as, for example, PISA and INES. Yet, governments remain free to leave the program though they now have to give one year's notice.

the United States has exercised particular influence on TALIS, only joining the program for TALIS 2013 where it fell short of the required response rate.

The six guiding principles for the TALIS survey strategy reflect the OECD's capacity in epistemological and infrastructural governance (cf. Lingard and Sellar 2016), framed in bureaucratic-technical terms, and they are helpful in considering how the OECD is held to account: (i) policy relevance; (ii) value added in terms of that international comparisons should be a significant source of the study's benefits; (iii) results should yield information that are useful for developing indicators; (iv) validity, reliability, comparability, and rigor; (v) participating countries should be able to interpret the results in a meaningful way; and (vi) efficiency and cost-effectiveness (OECD 2009, 19; 2014, 27).

Concerning the latter principle, our empirical findings suggest that it creates a drive toward what we might term "meta-standardization" across programs and organizations. Cost-effectiveness was thus central also to the European Commission, and cooperation with the OECD on TALIS helped monitor progress toward the EU strategic objectives more inexpensively than if the European Commission had created its own survey. Moreover, an OECD analyst interviewed for the project stated that since governments hold the OECD to account for unnecessary costs, the efficiency imperative reinforced efforts to align PISA and TALIS. PISA 2015, for example, included an optional teacher questionnaire that had to be aligned with the TALIS items. Importantly, from TALIS 2018 the program will follow a six-year cycle, thereby coinciding with every second round of PISA. This alignment of cycles would appear to raise the potential for a more seamless integration of TALIS into PISA in line with the efficiency and cost-effectiveness principle (Sorensen 2017).

The governments in Finland, England, and Australia were emphatic in asserting their national sovereignty in education policy. However, at the same time, they expected the OECD to exercise leadership in TALIS in terms of epistemological governance. The representatives from government bodies that we spoke with in Australia and England suggested that the OECD's aspiration to provide insights into effective teaching and learning conditions could have been pursued further by way of giving clearer recommendations to governments—a point that cuts across the five first principles mentioned above—and we will return to this critique as it relates directly to ordinalization and its limits. The critique of the Finnish state authorities was more related to the applicability of some of the survey items in the Finnish context. In addition, the Finnish authorities were concerned about the costs and deliverables in TALIS 2013, as they found that their investment in the full package of international options had not proven worthwhile. On this basis, the Finnish state authorities suggested at the time of interview that they were likely to sign up only for the main study in TALIS 2018.

Finally, the accountability of governments toward the OECD—and each other—remains just as vague. Our study corroborated previous findings that governments tend to be guided by domestic interests and ideological preferences in their deployment of international comparisons (Steiner-Khamsi 2010), since the government authorities in the three case systems were more concerned with identifying their own solutions rather than common ones. The sense of peer pressure and need for convergence in education policy thus appeared to be wholly absent, indicating a strong emphasis on self-reliance in the classical liberal sense. Indeed, in the light of the continued political sensitivity of education, it might be part of the appeal of cross-sectional research programs like PISA and TALIS that they cannot measure causality. So, for example, TALIS cannot establish whether teacher job satisfaction depends on participation in professional development, or vice versa (OECD 2009, 22; 2014, 29). Without strong conclusions, the normative pressure on governments to follow specific recommendations remains limited.

The Creation of Comparability

Since the 1990s, the OECD and the European Commission have sought to amplify ordinality with regard to teachers and teaching through decategorization, leveling, standards, and deflection of political conflict (Sorensen 2017). In this respect, we should note that the OECD strategy of communicating unequivocal policy messages also applies in the area of teachers (Fraser and Smith 2017), and we might understand this as a distinct effect of the organization's efforts to amplify ordinality.

However, dissolving the nominally classified lumps of society and liquefying them by means of a scale comes at the expense of reducing the complexity of social reality. We thus recognize in the TALIS survey design the downplaying of alternatives and nominal in-kind differences with the abandonment of the distinction in *Teachers Matter* (OECD 2005, 143–45) between the lumpy nominal categories of "career-based" and "position-based" systems. Furthermore, the TALIS program involves a bias toward constructivist pedagogy that is appealing for the OECD's project because it fits with the ontology of neoliberalism and liberalism's concern with the individual (Robertson 2012; Cerqua et al. 2017). Yet, it is a limited conception of the individual. Resonating with Fourcade's (2016) insight that quantification does not allow for taking the totality of an individual's social situation into account, a researcher in the English TALIS 2013 Center thus told us that research programs such as TALIS tend to adopt a narrow view of individuals within their jobs that exclude important aspects of their social situations. In order to counter this, the English TALIS 2013 Center took the initiative to collect some basic socioeconomic data on the sampled teachers by adding questions on family circumstances to the TALIS teacher questionnaire in England (see Micklewright et al. 2014).

In this way, TALIS like other large-scale comparative research programs construct a harmonized and reductionistic outlook on system features as they make educational systems comparable through standardized indicators and measurement (Cardoso and Steiner-Khamsi 2017). Accordingly, the translation of the TALIS 2013 questionnaires posed challenges in Australia, England, and Finland due to context-specific features. Our findings show that the Finnish system was most challenged by the conceptions of education implied in TALIS, undoubtedly related to Finland being the only non-Anglophone country included in our study. All the involved policy actors in Finland, including government authorities, the teacher union OAJ, and the researchers commissioned to implement the survey, thus pointed to the challenges in translating TALIS questionnaires due to differences between established terms and concepts in the Finnish system and those employed in TALIS. Specifically, they contested the applicability of survey items on teacher feedback and appraisal, the distinction between private and public schools, school leadership, and ways of calculating workload. Specifically, "professional development" has now become more familiar in Finland as a term that, by connoting a more individualized and career-oriented approach to professional learning, challenges the previous norm of teachers being considered certified professionals once and for all after completing their master degree (Sorensen 2017).

The observations above corroborate the central argument in the sociology of quantification (Espeland and Stevens 1998; Desrosières 2002) that commensuration and indicator development inevitably involve descriptive as well as prescriptive dimensions. They also reflect the liberal paradox that the ideal of political universality is predicated on a notion of cultural homogeneity that risks curtailing the performance and experience of individual differences and, more specifically, that the pursuit of liberty and formal equality of opportunity tends to come with the requirement of sublimating some nominal differences and categories and taking on board new ones. Among our case systems, Finland was particularly affected by this paradox.

Scaling Populations and Populating Scales

Fourcade (2016) notes that ordinalization is ideally sustained by the inclusion of the largest population possible; the more comprehensive the scale, the more significant and legitimate in terms of objectivity, rational judgment, and as a policy tool. In other words, the scales of comparison are only as legitimate as the number of populations brought in to populate the scale.

As the main institutions of ordinality, the OECD and the European Commission have pursued different priorities with regard to TALIS. For the former, the priority has been to build a critical mass by attracting countries with a high profile internationally due to their size or the reputation of their education systems. For TALIS 2013, OECD indeed succeeded in attracting

more participants to the main study, including some of the countries considered to have higher appeal, such as England, Finland, France, Japan, and the United States. This strategy relates to what an OECD analyst described as the "chicken-and-egg" situation of profiling TALIS where governments would tend to be hesitant and wait for other countries to sign up first—while the OECD TALIS Secretariat would do what it could to highlight the benefits of taking part (Sorensen 2017).

In contrast, the European Commission has sought to encourage as many EU member states as possible to take part in TALIS in order to monitor progress toward the objectives of the EU agendas of the Lisbon Strategy and Europe 2020. The European Commission thus subsidized the international costs for EU member states, on the condition that the government representatives from these states on the TALIS board would advocate that the EU's long-standing priority that teachers' professional development should be included as a policy theme in TALIS (Sorensen and Robertson 2018). The EU was indeed well represented in the first two rounds, with 16 and 19 member states or regions taking part, respectively. Yet, a range of countries are conspicuous by their absence, especially Germany—the most populous country and the largest economy in Europe.

In the participating countries, the challenge of including the largest population possible mainly centered on meeting the survey response rates required by the OECD.[2] In Australia, England, and Finland, meeting these rates required considerable persistence in the national TALIS centers, and state authorities tended to recognize that the relationship to teacher unions was important for recruiting enough schools and teachers to take part in the survey. Among our three case systems, the government authorities in England and especially in Finland consulted teacher unions in the implementation of the survey. In Australia, teacher unions were less involved in the implementation of TALIS 2013 (Sorensen 2017).

Finally, the limited interest in the three "international options" offered in TALIS 2008 and 2013 indicates that statistical data without an elaborate and fine-grained scale are deemed by governments to be of little value. The first and second option included representative samples of teachers and school leaders in primary and upper secondary education, respectively (ISCED levels 1 and 3). The third option, the TALIS-PISA link, concerned surveying a representative sample of teachers of 15-year-olds in schools that had taken part in the most recent round of PISA. The international options were virtually not taken up in TALIS 2008, but they proved more popular in the second round (see table 1). Still, the limited interest appears to render the

---

[2] Seventy-five percent of sampled schools, and 75 percent response rate from all sampled teachers in the country. A school was considered to have responded with 50 percent of sampled teachers responding. The Netherlands and the United States did not meet these response rates in TALIS 2008 and 2013, respectively (OECD 2009, 2014).

TABLE 1
TALIS International Options and Participating Systems

	TALIS 2008		TALIS 2013	
	Number	Systems	Number	Systems
Primary education (ISCED 1) teachers and school leaders	1	Iceland	6	Denmark, Finland, Belgium (Flanders), Mexico, Norway, Poland
Upper secondary education (ISCED 3) teachers and school leaders	0	...	10	UAE (Abu Dhabi), Australia, Denmark, Finland, Iceland, Italy, Mexico, Norway, Poland, Singapore
TALIS-PISA link	0	...	8	Australia, Finland, Latvia, Mexico, Portugal, Romania, Singapore, Spain

Sources.—OECD 2009, 20; 2014, 27.

results much less interesting. Finland signed up for the full package of international options in TALIS 2013, and subsequently the Finnish government authorities told us that they found the level of analysis in the report on ISCED levels 1 and 3 teachers too narrow and descriptive. Furthermore, the OECD never issued a report specifically concerned with the TALIS-PISA link in TALIS 2013 (Sorensen 2017).

The Missing Link to Effectiveness

There is a tension at the heart of TALIS due to methodological issues as well as the political embeddedness of the program. On the one hand, TALIS with its emphasis on competitive comparison clearly draws on human capital theory and a neoliberal imaginary (Robertson 2012). Yet, on the other, the program incorporates notions of teacher self-efficacy, job satisfaction, and the voice of teachers, thereby reflecting the "dynamic ebb and flow of human capital and teacher professionalization orientations" that has characterized OECD discourses on teachers over recent decades (Fraser and Smith 2017, 171). In this respect, Risto Rinne and Jenny Ozga (2013) argue that TALIS as a "Knowledge-Based Regulation Tool" is vague and hard to control because it cannot offer conclusions on the relation between what teachers and school leaders report and system performance as measured by student learning outcomes. The OECD itself hints at this tension when pointing out that the survey data, based on self-reports from teachers and school leaders, are subjective and differ from objectively collected data (OECD 2009, 22; 2014, 29). We suggest that the concept of ordinality helps clarify the nature and implications of this uneasy duality that revolves around an ambigious concept of effectiveness.

The entry point for the major policy review resulting in the report *Teachers Matter* (OECD 2005) was an interest in teacher effectiveness, and subsequently the initial outline of the TALIS program (OECD 2006) suggested that the program would address the relationships between the effectiveness of schools and the teacher workforce. From the outset, there has thus been a drive toward the amplification of ordinality, including continuous efforts to create

links and synergies between PISA and TALIS; effectiveness was to be the unifying principle in the construction of scales and the lever in transforming political issues into a scientific debate. However, at the same time, OECD documents and OECD staff acknowledge that the survey design of TALIS does not allow for measuring teacher or teaching effectiveness (Sorensen 2017). The resulting ambiguity concerning what the TALIS concept of effectiveness actually refers to severely curtails the capacity of the program to generate the seemingly morally agnostic communication that could deflect the politics of teachers and teaching into the scientific realm and, more generally, to amplify ordinality in education governance across scales.

The TALIS conceptual framework (OECD 2013) encapsulates the methodological complications and the politics surrounding the TALIS concept of effectiveness. Perhaps it is an indication of the struggles in squaring the circle that a fully fledged conceptual framework for the TALIS program was created only after the first round was completed. The framework acknowledges that since "TALIS does not connect directly with student outcomes, teacher quality and its relationship to student performance cannot be judged" (14). At the same time, the framework pointed out that the concept of "effective teaching and learning conditions" underpinning TALIS 2013 is simultaneously broad and context-dependent:

> In the case of TALIS, effective teaching and learning environments are environments that contribute to positive student learning. The factors, practices, and conditions identified by participants in the priority-rating exercise, such as teacher appraisal and feedback systems, represent the elements that participants agree contribute to positive student learning. TALIS is meant to gather information on specific aspects of the teaching and learning environment that research suggests and country representatives believe contribute to positive student learning. Of course, "effective" teaching and learning may include many other factors that cannot be examined through TALIS or any self-report instrument. (16)

The human capital argument associating effectiveness with student learning outcomes is here substituted with the vague notion of "positive student learning." The OECD must clearly negotiate a delicate balance in the politics of the priority-making exercise in which the participating countries select the policy themes and indicators that they "believe" contribute to student learning. Still, despite these acknowledged limitations of TALIS in associating teachers and teaching with student learning outcomes, the main OECD TALIS reports persistently seek to amplify ordinality by suggesting that the policy themes and findings in TALIS are relevant in one way or another for student learning, a feature that is especially pronounced in the TALIS 2013 report (table 2).

Moreover, the main OECD TALIS reports include column charts pitting one system against others—21 in the TALIS 2008 report and 30 in the TALIS 2013 report. Yet, these rankings are not characterized by a unifying set of

TABLE 2
THE EMPHASIS ON STUDENT LEARNING IN TALIS 2013 MAIN REPORT

Chapter	References to Student Learning Outcomes and Achievement
2, "Teachers and Their Schools"	"Teachers play a crucial role in education systems—they are the front-line workers responsible for engaging students and promoting their learning. It is now widely accepted that within schools, teacher- and teaching-related factors are the most important factors that influence student learning." (32)
3, "The Importance of School Leadership"	"These demands require that principals manage human and material resources, communicate and interact with individuals who occupy a variety of positions, make evidence-informed decisions and provide the instructional leadership to teachers necessary for helping students succeed in school." (56)
4, "Developing and Supporting Teachers"	"Ensuring that millions of teachers around the world have the essential competencies they require to be effective in the classroom is one of the keys to raising levels of student achievement." (86)
5, "Improving Teaching Using Appraisal and Feedback"	"Statistically, it can be difficult to prove a direct correlation between teacher appraisal and student achievement.... But when teachers receive continuous feedback on their teaching, it creates opportunities for them to improve teaching practices, which, in turn, can have a powerful impact on student learning and outcomes." (120)
6, "Examining Teacher Practices and Classroom Environment"	"Quality instruction encompasses the use of different teaching practices, and the teaching practices deployed by teachers can play a role in student learning and motivation to learn." (150)
7, "Teacher Self-Efficacy and Job Satisfaction: Why They Matter"	"In education, research has shown that students' self-efficacy has an important influence on their academic achievement and behaviour. Yet there is increasing evidence that teachers' sense of self-efficacy, consisting of efficacy in instruction, student engagement and classroom management, also is an important factor in influencing academic outcomes of students, and simultaneously enhances teachers' job satisfaction." (182)

SOURCE.—OECD 2014.

common underpinning principles, and none of them incorporate measures of student learning outcomes (Sorensen 2017). The sheer diversity in these ordering principles thus confounds the ambiguity concerning what "effective teaching and learning conditions" and "positive student learning" refer to (OECD 2013). While we found that all major actors engaging with TALIS were interested in improving the effectiveness of teachers and endorsed international comparative research and ordinalization—with the implication that some systems are allocated higher status than others—our analysis also shows that the idea of "effective teaching and learning conditions" remains contested in the TALIS ensemble of organizations. This is nowhere more clear than in the varying attitudes concerning the relationship between TALIS and PISA.

PISA as Master Amplifier of Ordinality

As the most potent amplifier of ordinality in education governance globally, the towering presence of the OECD PISA program cannot be ignored in

the discussion of TALIS. The OECD has sought to create synergies between the two programs, yet participating governments have tended to insist that TALIS and PISA be kept separate for methodological as well as political reasons. An OECD analyst told us that participating governments estimated that keeping TALIS as a separate program, with its distinctive identity and governing structure, was more productive for getting teachers' input and meeting the required response rates (Sorensen 2017).

However, our study also highlights that some governments would like the OECD to be bolder in the translation of TALIS data into policy recommendations, including references to the golden standard of student learning outcomes. One policy officer from England's Department for Education pointed out that a limitation of TALIS 2013 was the ambiguity of results and recommendations concerning the best policies of fostering high quality teachers:

> In TALIS, it's really difficult to know, so are we OK, where we are, do we want to be a bit to the left, is the actual best place to be in the middle? That is a bit of a question unanswered, and there's possibly a bit more work that [the OECD] could do in linking up, not necessarily linking TALIS with PISA, but linking the results at country level from one [program] and compare it to the other. Certainly, something that we did straightaway with a lot of the TALIS comparisons was to highlight England in the comparison and then highlight all the countries that perform significantly above England in PISA.

Among the three systems in our study, the interest in turning a PISA lens onto TALIS findings was more pronounced in Australia and England than in Finland. The varying emphases on PISA as master amplifier of ordinality are encapsulated in the groups of comparison adopted in the national TALIS 2013 reports issued by the three national governments (see table 3). The Finnish national report (Taajamo et al. 2014) uses neighboring Sweden, Estonia, Denmark, and Norway as a reference group for comparison with Finnish findings. In contrast, the English national report (Micklewright et al. 2014) compare the English findings with groups of "high performers" and "low performers," defined on the basis of PISA results and, secondarily, results from the Trends in International Mathematics And Science Study (TIMSS) and the Programme for the International Assessment of Adult Competencies (PIAAC). Finally, the reference groups of "PISA Best Average" and the Asian group in the Australian report (Freeman et al. 2014) were conceived at the Australian Government Department for Education (Sorensen 2017). These comparison groups arguably provide the clearest example of how the system-specific outcome patterns of TALIS 2013 in our three case systems to a large extent can be explained by the current state of ordinalization in those systems. In this respect, our study on TALIS resonates with Grek's (2009) argument that the varying outcomes and responses to PISA tend to reflect contextual conditions.

TABLE 3
Reference Groups in National TALIS 2013 Reports

Australia	England	Finland
OECD average, based on 23 OECD countries and subnational entities	Eight "low performers": Abu Dhabi, Brazil, Bulgaria, Chile, Malaysia, Mexico, Romania, and Serbia	Sweden, Estonia, Denmark, and Norway
Four Asian countries: Japan, Korea, Malaysia and Singapore.	Nine "high performers": Japan, Korea, Singapore, Finland, Estonia, Netherlands, Belgium (Flanders), Canada (Alberta), and Australia	
"PISA Best Average": Canada (Alberta), Estonia, Finland, Belgium (Flanders), Japan, Korea, Netherlands, Poland, and Singapore		

Sources.—Freeman et al. 2014; Micklewright et al. 2014; Taajamo et al. 2014.

We should thus not confuse the modest uptake of the TALIS-PISA link as an international option with the deep interest that some participating governments, as well as the European Commission (see European Commission 2015), have in triangulating results from the two programs, however spurious this might be in methodological terms. The limited adoption of the TALIS-PISA link is most likely a reflection of the chicken-and-egg dynamics of bringing governments on board, reinforced by the acknowledgment that scales with only a few positions are less legitimate and interesting in political terms.

Conclusion

António Nóvoa and Tali Yariv-Mashal (2003) suggested that in global education governance the findings and recommendations of comparative research appear to matter less than the very circulation of the language of international measures and performance indicators. In this sense, the most fundamental best practice is to engage in comparisons and to create the conditions that enable comparability. We agree, and we contend that Fourcade's (2016) concept of ordinalization is potentially groundbreaking for the scholarship on education governance and comparison in that it enables epistemic gains into the nature of that language, the modalities and ideological anchors of comparison, and the possibilities and limits of quantification in governance.

Our main findings in this article concern the relative shift in emphasis toward ordinalization in OECD education governance from the 1990s and the fact that it has been constrained over the first two rounds of the TALIS program. In the process, we have demonstrated the specific characteristics of TALIS. In line with critical realist ontology, our aspiration is not to put forward generalizing truth claims in terms of the actual patterns and relations that might trigger or constrain the mechanism of ordinalization. The particular constellations of these are unlikely to be representative or generalizable (Sayer 2010), though the diversity of political and organizational interests involved in TALIS is a characteristic feature of OECD education governance

more generally. Rather, we argue that our findings concerning the increased emphasis on ordinalization as a mode of OECD governance can be extrapolated to a wide range of contemporary governance and research instruments that revolve around the vertical ordering of political entitites and social groups at various spatial scales and in different locations, especially in the context of a focus on global economic competitiveness realized through education. At the transnational and regional scales, this would, for example, include the increasing number of international large-scale assessments (Fischman et al. 2019). Crucially, the particular outcome patterns of ordinalization with regard to these instruments are bound to be shaped by contextual conditions, and these would need to be established empirically.

Three mutually implicated points need to be made by way of conclusion, related to the nature and workings of comparison as an OECD mode of governance, the strategic and relational nature of global education governance, and the prospects for political liberalism in this respect. First, we show that the existence of the TALIS program reflects that the nominal category of teachers has been amplified to great effect. However, the amplification of ordinality with regard to teachers remains fragmented and ultimately muted because the program is subject to normative-political and methodological issues. Methodologically, the survey format of TALIS and the sheer complexity of creating transnational standards for what constitutes a "good teacher" have direct implications for how far ordinalization can be taken. Politically, the issues that TALIS covers remain deeply contentious. In combination, this means that there is little basis in TALIS, notwithstanding decades of incremental development in transnational statistics and indicators, for the unequivocal policy messages and the bureaucratic/technical "pursuit of objectivity" (cf. Porter 1995) for which the OECD has gained its normative legitimacy. While TALIS has created more open-ended representations of the existing nominal differences between systems, our analysis highlighted that some governments find that TALIS is not bound together sufficiently by a unifying concept of effectiveness. In response, they turned to the PISA measures of student learning outcomes. The level of amplification of ordinality in the latter program stands in contrast with TALIS, epitomized by the fact that, whereas belonging to the Top 5 in PISA is now deployed in political discourse as an intrinsically meaningful measure of quality, TALIS remains very far from generating ordinal scales that take on lives of their own around arbitrary cutoff points. In this way, the conceptual lens of ordinalization has helped us unpack the multiple workings of comparison in global education governance and "the limits of the possible" (cf. Mundy 2007, 351) for TALIS as an exercise in the ordinal classification of teacher workforces.

Second, our study highlights the strategic and relational nature of TALIS, and how the OECD, the European Commission, and three governments relate to ordinalization as a mode of governance. Consistent with the critical realist

notion of emergence, our findings show that there are limits to the legitimacy granted to the OECD by governments. In this way, our study corresponds with Karen Mundy's (2007, 352) contention that OECD's work in education is the "locus of much crossnational debate and contestation" and that this work is also shaped by domestic politics and educational interests. In the case of TALIS, the relationship between governments and teacher unions stand out in this respect. The sensitivity with which the OECD and many governments treat the relationship to teachers and their unions indicates that teachers collectively—domestically and transnationally—have considerable leverage in engaging with and contesting the transnational standardization and ordinal classification of their qualifications, learning, beliefs, and practices.

Third, the methodological and political issues at the core of TALIS have thus far hindered the program in advancing the deep embedding of political liberalism in the standards and definitions of the "good teacher." Like any other policy instrument, TALIS could not be expected to transcend the twin paradoxes of liberalism, but our findings indicate more fundamental challenges in the program. Thus, in terms of a transnational politics of freedom, it remains unclear the ways in which TALIS constitutes a source of mutual learning among policy makers, teachers, and researchers owing to the vagueness of the results; and as a politics of government, the ambiguity of the central concept of effectiveness undermines common efforts to increase the efficiency of the teacher workforce. In this way, the TALIS program at this stage effectively emphasizes the individualistic "self-reliance" of system stakeholders to make sense of the findings, rather than collectivistic "self-realization" (cf. Olssen 2000), since the program provides little support in terms of realizing the liberal promises of freedom and equality of opportunity. What is more, TALIS inevitably asserts a measure of cultural homogeneity that impinges on long-standing system differences to varying degrees, despite elaborate procedures in TALIS to ensure cross-cultural validity of scales and indices (OECD 2009, 2014).

Fourcade's (2016) analysis of how social processes revolve around the intersection of three types of comparison stops short of discussing the prospect of progress and amelioration associated with ordinalization. Therefore, it is a pertinent point that ordinal comparison is indispensable to the identification and amelioration of inequalities. Our findings do not exclude the possibility that in some settings, results from TALIS might be used for ameliorative purposes to the benefit of teachers and students, yet the lack of a stable rank-ordering criterion of effectiveness means that the program risks becoming an instrument for the mere performance of counting—rather than providing a knowledge basis with the capacity to actually deliver on the liberal promises of freedom and equality of opportunity.[3] TALIS appears to have

---

[3] We are grateful to an anonymous reviewer for making this point.

gained a normative traction, with 48 governments having signed up for TALIS 2018. However, our findings suggest that if the program is to stimulate a substantial transnational debate on quality and equality with regard to teachers and teaching, the OECD would need to find new ways to deflect political contestation through the statistics and standards employed in TALIS and, more broadly, to clarify the benefits of the program as a common exercise in international comparison. In this respect, the fact that cross-sectional research instruments such as TALIS cannot measure causality highlights the need for complementary and context-specific research. If international large-scale comparative research is to make any contribution to ameliorate conditions for students and teachers, participating governments would thus have to move beyond the current state of affairs in which data and results from such studies tend to be selectively used for legitimizing domestic education agendas and sparking short-term aspirations to climb higher in the rankings (Fischman et al. 2019). Finally, such efforts would need to recognize that the contemporary framing of the quality of teaching and teachers as the defining issue in education is predicated on the blinkered, and potentially distracting, argument that these factors are deemed more politically amenable than the more decisive external factors of social background and student abilities (Connell 2009). These issues, intimately associated with the "persistently lumpy politics" (Fourcade 2016, 188) of quantification, as well as the possibilities and limits of transnational education governance (Mundy 2007), call for further inquiry of future rounds of TALIS and other governance instruments based on comparative research.

References

Brown, Wendy. 1993. "Wounded Attachments." *Political Theory* 21 (3): 390–410.

Cardoso, Manuel, and Gita Steiner-Khamsi. 2017. "The Making of Comparability: Education Indicator Research from Jullien De Paris to the 2030 Sustainable Development Goals." *Compare* 47 (3): 388–405.

Carroll, Peter, and Aynsley Kellow. 2011. *The OECD: A Study of Organisational Adaptation.* Cheltenham: Elgar.

Cerqua, Anthony, Clermont Gauthier, and Martial Dembélé. 2017. "Pedagogical Orientations and Foundations in the Discourse Emanating from the OECD's TALIS Initiative." In *The Impact of the OECD on Education Worldwide*, ed. A. W. Wiseman and C. S. Taylor. Bingley: Emerald.

Connell, Raewyn. 2009. "Good Teachers on Dangerous Ground: Towards a New View of Teacher Quality and Professionalism." *Critical Studies in Education* 50 (3): 213–29.

Cussó, Roser, and Sabrina D'Amico. 2005. "From Development Comparatism to Globalization Comparativism: Towards More Normative International Education Statistics." *Comparative Education* 41 (2): 199–216.

Desrosières, Alain. 2002. *The Politics of Large Numbers: A History of Statistical Reasoning.* Cambridge, MA: Harvard University Press.

Espeland, Wendy N., and Mitchell L. Stevens. 1998. "Commensuration as a Social Process." *Annual Review of Sociology* 24 (August): 313–43.

European Commission. 2015. *Strengthening Teaching: New Evidence from Teachers Compiled by Eurydice and CRELL.* http://ec.europa.eu/dgs/education_culture/repository/education/library/policy/teaching-profession-practices_en.pdf.

Fairclough, Isabela, and Norman Fairclough. 2012. *Political Discourse Analysis: A Method for Advanced Students.* Abingdon: Routledge.

Fischman, Gustavo E., Amelia Marcetti Topper, Iveta Silova, Janna Goebel, and Jessica L. Holloway. 2019. "Examining the Influence of International Large-Scale Assessments on National Education Policies." *Journal of Education Policy* 34 (4): 470–99.

Fourcade, Marion. 2016. "Ordinalization: Lewis A. Coser Memorial Award for Theoretical Agenda Setting 2014." *Sociological Theory* 34 (3): 175–95.

Fraser, Pablo, and William C. Smith. 2017. "The OECD Diffusion Mechanisms and Its Link with Teacher Policy Worldwide." In *The Impact of the OECD on Education Worldwide*, ed. A. W. Wiseman and C. S. Taylor. Bingley: Emerald.

Freeman, Chris, Kate O'Malley, and Frances Eveleigh. 2014. *Australian Teachers and the Learning Environment: An Analysis of Teacher Response to TALIS 2013: Final Report.* Melbourne: ACER.

Gilman, Nils. 2003. *Mandarins of the Future: Modernization Theory in Cold War America.* Baltimore: Johns Hopkins University Press.

Godin, Benoît. 2006. "The Knowledge-Based Economy: Conceptual Framework or Buzzword?" *Journal of Technology Transfer* 31 (1): 17–30.

Grek, Sotiria. 2009. "Governing by Numbers: The PISA 'Effect' in Europe." *Journal of Education Policy* 24 (1): 23–37.

Grek, Sotiria. 2016. "Knowledge Actors and the Construction of New Governing Panoramas: The Case of the European Commission's DG Education and Culture." *Educação & Sociedade* 37 (136): 707–26.

Henry, Miriam, Bob Lingard, Fazal Rizvi, and Sandra Taylor. 2001. *The OECD, Globalisation and Education Policy.* Oxford: Pergamon.

Hopfenbeck, Therese N., and Kristine Görgen. 2017. "The Politics of PISA: The Media, Policy and Public Responses in Norway and England." *European Journal of Education* 52 (2): 192–205.

Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers through Society.* Cambridge, MA: Harvard University Press.

Lingard, Bob, and Sam Sellar. 2016. "The Changing Organizational and Global Significance of the OECD's Education Work." In *The Handbook of Global Education Policy*, ed. K. Mundy, A. Green, B. Lingard, and A. Verger. Chichester: Wiley-Blackwell.

Martens, Kerstin. 2007. "How to Become an Influential Actor—the 'Comparative Turn' in OECD Education Policy." In *Transformations of the State and Global Governance*, ed. K. Martens, A. Rusconi, and K. Lutz. London: Routledge.

Meyer, Heinz-Dieter, and Aaron Benavot, eds. 2013. *PISA, Power, and Policy: The Emergence of Global Educational Governance.* Oxford: Symposium Books.

Micklewright, John, John Jerrim, Anna Vignoles, Andrew Jenkins, Rebecca Allen, Sonia Ilie, Elodie Bellarbre, Fabian Barrera, and Christopher Hein. 2014. *Teachers in England's Secondary Schools: Evidence from TALIS 2013.* London: Department for Education.

Morgan, Clara. 2007. "OECD Programme for International Student Assessment: Unraveling a Knowledge Network." PhD dissertation, School of Public Policy and Administration, Carleton University.

Mundy, Karen. 1998. "Educational Multilateralism and World (Dis)Order." *Comparative Education Review* 42 (4): 448–78.

Mundy, Karen. 2007. "Global Governance, Educational Change." *Comparative Education* 43 (3): 339–57.

Nóvoa, António, and Tali Yariv-Mashal. 2003. "Comparative Research in Education: A Mode of Governance or a Historical Journey?" *Comparative Education* 39 (4): 423–38.

OECD. 1990. *The Teacher Today: Tasks, Conditions, Policies.* Paris: OECD.

OECD. 1995. *Education at a Glance: OECD Indicators.* 3rd ed. Paris: OECD.

OECD. 2001. *The New Economy: Beyond the Hype; Final Report on the OECD Growth Project, Executive Summary.* Paris: OECD.

OECD. 2005. *Teachers Matter: Attracting, Developing and Retaining Effective Teachers, Education and Training Policy.* Paris: OECD.

OECD. 2006. *Outline of OECD International Survey of Teachers, Teaching and Learning.* http://www.oecd.org/eco/growth/35967859.pdf.

OECD. 2009. *Creating Effective Teaching and Learning Environments: First Results from TALIS.* Paris: OECD.

OECD. 2013. *Teaching and Learning International Survey TALIS 2013: Conceptual Framework.* http://www.oecd.org/edu/school/TALIS%20Conceptual%20Framework _FINAL.pdf.

OECD. 2014. *TALIS 2013 Results: An International Perspective on Teaching and Learning.* Paris: OECD.

Olssen, Mark. 2000. "Ethical Liberalism, Education and the 'New Right.'" *Journal of Education Policy* 15 (5): 481–508.

Paine, Lynn, and Kenneth Zeichner, eds. 2012. "The Local and the Global in Reforming Teaching and Teacher Education." Special issue of *Comparative Education Review* 56 (4).

Papadopoulos, George S. 1994. *Education 1960–1990: The OECD Perspective.* Paris: OECD.

Pawson, Ray. 1996. "Theorizing the Interview." *British Journal of Sociology* 47 (2): 295–314.

Porter, Theodore M. 1995. *Trust in Numbers: The Pursuit of Objectivity in Science and Public Life.* Princeton, NJ: Princeton University Press.

Resnik, Julia. 2006. "International Organizations, the 'Education–Economic Growth' Black Box, and the Development of World Education Culture." *Comparative Education Review* 50 (2): 173–95.

Rinne, Risto, and Jenny Ozga. 2013. "The OECD and the Global Re-regulation of Teachers' Work: Knowledge-Based Regulation Tools and Teachers in Finland and England." In *World Yearbook of Education 2013: Educators, Professionalism and Politics; Global Transitions, National Spaces and Professional Projects,* ed. T. Seddon and J. Levin. Abingdon: Routledge.

Robertson, Susan L. 2012. "Placing Teachers in Global Governance Agendas." *Comparative Education Review* 56 (4): 584–607.

Rose, Nikolas. 1991. "Governing by Numbers: Figuring Out Democracy." *Accounting, Organizations and Society* 16 (7): 673–92.

Sayer, Andrew. 2010. *Method in Social Science: A Realist Approach.* 2nd ed. Abingdon: Routledge.

Simola, Hannu, Jenny Ozga, Christina Segerholm, Janne Varjo, and Vibeke Normann Andersen. 2011. "Governing by Numbers." In *Fabricating Quality in Education: Data and Governance in Europe*, ed. J. Ozga, P. Dahler-Larsen, C. Segerholm, and H. Simola. New York: Routledge.

Sobe, Noah W. 2013. "Teacher Professionalization and the Globalization of Schooling." In *World Yearbook of Education 2013: Educators, Professionalism and Politics; Global Transitions, National Spaces and Professional Projects*, ed. T. Seddon and J. Levin. Abingdon: Routledge.

Sorensen, Tore B. 2017. "Work In Progress: The Political Construction of the OECD Programme Teaching And Learning International Survey." PhD thesis, Graduate School of Education, University of Bristol, https://www.researchgate.net/publication/318529888_Work_In_Progress_The_Political_Construction_Of_The_OECD_Programme_Teaching_And_Learning_International_Survey.

Sorensen, Tore B., and Susan L. Robertson. 2018. "The OECD program TALIS and Framing, Measuring and Selling Quality Teacher™." In *International Handbook of Teacher Quality and Policy*, ed. M. Akiba and G. LeTendre. New York: Routledge.

Steiner-Khamsi, Gita. 2010. "The Politics and Economics of Comparison." *Comparative Education Review* 54 (3): 323–42.

Taajamo, Matti, Eija Puhakka, and Jouni Välijärvi. 2014. *Opetuksen ja oppimisen kansainvälinen tutkimus TALIS 2013.* Opetus- ja kulttuuriministeriön julkaisuja 2014:15. Helsinki: Opetus- ja kulttuuriministeriö.

Tröhler, Daniel. 2014. "Change Management in the Governance of Schooling: The Rise of Experts, Planners and Statistics in the Early OECD." *Teachers College Record* 116 (9): 1–26.