The OECD's PISA: Purposes, Impact and Usages[1]

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Introduction

In this paper I consider the global policy significance of the OECD's Programme for International Student Assessment (PISA) and developments within it. Specifically these are extensions of the test's scope, scale and explanatory power (Sellar and Lingard, 2014). The paper positions PISA within the broader context of the OECD itself. The history of the OECD will be briefly outlined, including consideration of the changing place and enhanced significance of education in the overall work of the OECD. The impact of the end of the Cold War in strengthening the OECD as an important global centre of calculation (Latour, 1987, 1999) with real significance for its education work will also be stressed. The end of the Cold War and concomitant rise of globalization has led to growing pressure for international comparative performance data on schooling systems. This in turn has contributed to growing demand for the technical expertise of the OECD and creation by the OECD of a range of other tests that use PISA as the prototype. The broad argument will be that PISA has become an important element in the emerging global governance of education (Lingard et al., 2016) and that the OECD has also become more of a policy actor in its own right (Henry et al., 2001).

Often national policy usage of PISA results in what has been called 'externalisation' (Bendix, 1978; Schriewer, 1990), that is, nations using PISA results as an external justification for subsequent reforms that are put in place and in the process these reforms usually do not draw on the detailed analytical insights that might be drawn from the PISA data. PISA results increasingly have impact on policy making within national systems of schooling (Breakspear, 2012). Takayama (2008) has provided an excellent Japanese example of PISA's impact and externalisation in terms of the Ministry of Education, Culture, Sports, Science and Technology's (MEXT's)'s responses to a (slight) decline in Japan's performance on the 2003 PISA and the usage of such data to legitimate subsequent changes to both the national curriculum and national testing, aligning both more closely with PISA's focus on the 'application of knowledge'.

[1] This paper draws heavily on Sellar and Lingard (2014) and Lingard and Sellar (2016). I have also drawn on research I have conducted at the OECD across the last twenty year and current research I have been conducting in Japan with Dr Keita Takayama.

PISA was first administered in 2000 and then subsequently every three years with the reporting of performance occurring in December of the year subsequent to the administration of the test. PISA measures what it refers to as maths literacy, scientific literacy and reading literacy. One of these domains is emphasised each three years. In 2015 for the first time PISA was administered online with 72 participating nations. There are 34 member nations of the OECD; thus in 2015 more non-OECD members participated in PISA. Interestingly, MEXT in Japan explained the decline in Japan's reading literacy score on the 2015 PISA in terms of this new mode of online assessment (see Komatsu and Rappleye, 2017).

PISA results are reported in respect of quality (a nation's ranked score on each of the tests) and equity (the strength of the correlation between student socio-economic background and performance). High performing nations demonstrate both high quality and weaker correlations between students' socio-economic background and performance, that is, quality and equity go together. This is an important finding of PISA data anaysis. PISA is administered to a stratified sample of 15 year olds in all the participating nations. Since it was first conducted in 2000, PISA has become hugely successful and has received considerable media coverage and attention from politicians and policy makers in many of the participating nations, including Japan. It has also become more important in the OECD's own policy work.

This paper specifically seeks to answer two questions: first, 'What is PISA, how is it developing and how does it work?, and secondly, 'How do PISA performance comparisons get used in national educational system reforms? In what follows a brief history of the OECD and its education work is provided. This demonstrates the enhanced significance of the OECD's education work both within the Organisation and globally. The enhanced scope, scale and explanatory power of PISA will be considered next. The paper will then look at the enhanced policy role of the OECD in education and note the significance of so-called 'PISA shocks' to this situation (Grek, 2009).

The OECD and Education

The OECD was established in 1961, emerging from the Organization for European Economic Cooperation (OEEC), which was funded by the US under the Marshall Plan to reconstruct post war Europe and to serve as something of a bulwark against communism set against the Cold War and also as a showpiece for liberal democracy and capitalist market economies. Japan became a member in 1964 and along with the USA has exerted a quite powerful influence at the OECD.

Unlike many other international organisations, the OECD works largely through 'soft' rather than coercive power, that is, through its 'technical expertise' and its unique positioning 'as an important node in a transgovernmental network where policy experts can meet, interact and devise coordinated responses to common policy challenges' (Eccleston, 2011, p. 246).

The OECD describes itself as:

> … a club of like-minded countries. It is rich, in that OECD countries produce two thirds of the world's goods and services, but it is not an exclusive club. Essentially membership is limited only by a country's commitment to a market economy and a pluralistic democracy. (OECD 1994, p. 4)

More recently in much of its own documentation the OECD describes itself thus: 'The OECD is a unique forum where governments work together to address the economic, social and environmental challenges of globalization'. Of course, in the context of the end of the Cold War and the collapse of the Soviet bloc, and with the emergence of a global economy, many more nations meet these membership criteria, to which has been more recently added a commitment to human rights.

The enhanced significance of the technical data work of the OECD globally, and within the OECD and across Directorates, can be traced back to the soul searching of the Organization following the end of the Cold War. The fall of the Soviet bloc challenged a central *raison d'etre* of the Organisation, that is, as a bulwark against Communism. In that context, and also against the backdrop of the enhanced significance of supranational political units, particularly the EU and the related rise of new regionalisms (e.g. NAFTA, APEC), set against neo-liberal globalization, the OECD has worked hard and largely been successful in retaining its global policy relevance through its international comparative data and statistical work.

Six additional nations have joined the OECD since the end of the Cold War and there are now thirty-four members.[2] However, the OECD increasingly has policy influence beyond this membership, working around development issues as well as with 'economies in transition'

[2] Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

and the BRIC nations (Brazil, Russia, lndia, China).[3] The rise of the latter raises issues to do with enlargement of the OECD membership, given the increasing global significance of these nations in economic terms. In contrast to pressures for enlargement, some scholars have argued that the OECD's smallish and homogeneous membership has allowed it to retain coherence and has enhanced its effectiveness (Woodward, 2009; Mahon and McBride, 2008). The OECD's quite European focus raises issues of its ongoing role in the context of what has been called the 'Asian century' and the acknowledgment of the geo-political and economic rise of China. The OECD also carries out significant secretarial work in respect of the G 8 and G 20 nations, which enhances its potential influence with the BRICs, including China.

In reconstituting its policy remit, the OECD now constructs itself as a centre of policy expertise and comparative international data, based on its programmes of measurement, comparison and analysis. At a macro level it has been an important proselytizer of neo-liberal market capitalism, while at the same time documenting some of the negative social effects in the growth in inequality to flow from this paradigm (OECD, 2011). However, the post Global Financial Crisis period has witnessed the OECD seeking somewhat tentatively for a new narrative of economic reform.

Henry and colleagues (2001, p. 7) describe the OECD as a 'geographic entity, an organizational structure, a policy-making forum, a network of policy makers, researchers and consultants, and a sphere of influence'. They also argue that, in respect of education, the OECD has become more of a policy actor in its own right during the post-Cold War era (see also Jakobi and Martens, 2010), with its technical expertise helping to constitute a global education policy field (Lingard and Rawolle, 2011) by establishing a commensurate space of measurement of national education performance, through what Lawn and Lingard (2002) call a 'magistrature of influence' above the nation. This influence, they suggest, works through, 'a new class of deterritorialized trans-national policy actors, … a policy elite which act across borders, display a similar habitus, have the feel of the same policy game' (p. 292). (See here also Lingard, Sellar and Baroutsis, 2015.)

The place of education work within the OECD has changed dramatically since its establishment, moving from an initial 'inferred role' for education and no independent structural location (Papadopoulos, 1994) to its incorporation into the remit of the Directorate for Social Affairs, Manpower and Education in 1975, which was subsequently reconstituted

[3] The slippage between the use of 'nations' and 'economies' in OECD discourse is symptomatic of its largely economic focus and the ways in which other policy domains, including education, are framed in this way.

as the Directorate for Education, Employment, Labour and Social Affairs (DEELSA) in 1991. However, the ascendency of education in the OECD began in earnest during the mid-1990s, with the emergence of neo-liberal global capitalism (Harvey, 2005), through a combination of developments, including: the ratification of new policy positions on education (e.g. lifelong learning and knowledge-based economies framed by human capital theory); the creation of the Indicators of Education Systems (INES) programme and the publication of *Education at a Glance* (Henry et al., 2001; Jakobi and Martens, 2010); the alignment of statistical data categories and data sets held by the OECD, UNESCO and Eurostat (Grek et al., 2009); and the emergence of PISA. At this time, member countries, particularly the US under President Reagan and in the long aftermath of the *Nation at Risk* report, were demanding regular and reliable data on the comparative performance of their education systems and the education work of the OECD evolved in response. As Eccleston (2011, p.248) argues, the policy influence of an international organization such as the OECD is enhanced when its rational/technical agendas align closely with the prevailing political sentiments.

In 1997, the concept of PISA was officially launched, and an assessment has taken place every three years since it was first administered in 2000. In 2002 Education became an autonomous Directorate within the OECD and as the data developments gathered apace has enhanced its influence both within the OECD, across Directorates and in global governance in education, taking on a preeminent role in this respect. Indeed, Rinne and colleagues (2004) speak of the OECD as an 'eminence grise' in global education.

The rise of the OECD as an influential soft power in global education policy and global education governance is linked to the' economization' of education policy and what we might see as the simultaneous 'educationizing' of economic policy, all linked to the growing significance of the skills agenda for the OECD across multiple Directorates. The publication of the cross-directorate OECD *Skills Strategy* (OECD, 2012) in 2012 demonstrates the enhanced status of education within the OECD. The influence of human capital theory on the broad economic policy positions adopted and promoted by the OECD has led to education becoming a central concern in much of the Organisation's work. Indeed, the OECD (2012, p. 10) considers that 'skills have become the global currency of 21st-century economies'. This conception of skills draws theories of human capital, lifelong learning and knowledge-based economies into an overarching policy narrative that presents education and training as a primary site of policy intervention to improve, simultaneously, both the well-being of individuals and the economic strength of nations.

The OECD's skills agenda is being reciprocally reinforced by the Organisation's capacity to measure them through programs such as PISA and the more recent PIAAC (Programme for International Assessment of Adult Competencies). This also strengthens the internal positioning of the Education Directorate and its data work. For example, PISA data are now always used in the flagship national *Economic Surveys* produced by the Economics Directorate, which have been central to the work of the OECD since its inception in 1961. Further, PISA data are now included in the *Going for Growth* reports that contribute to the work of the G 20. Further, the Directorate for Financial and Enterprise Affairs successfully lobbied to have financial literacy assessed as part of the 2012 PISA survey, which further strengthened the cross-Directorate usage of PISA and the position of the Education Directorate. The skills agenda is now at the very heart of the OECD's post-Cold War economic work.

While PISA is currently being championed within the OECD, this has been made possible, at least in part, by demands from member countries for the educational data it provides. The increasing value placed on measurement, comparison and quantitative data as an evidence base for national policy making has driven interest in programs such as PISA from members. Many nations have developed national testing as a complement to PISA. Japan's national test in Part B adopts PISA-style application of knowledge questions.

Countries opt into PISA and pay to participate. This opting in and paying to participate is indicative of the enhanced global significance today of PISA and the related use of international comparative systemic performance data in global and national governance in education and in processes of policy development and enactment within nations (Jakobi and Martens, 2010). It is important to note, as well, that there is encouragement from the OECD for countries to participate in PISA and to use it to implement policy reform and to benchmark school system performance globally. The Education and Skills Directorate at the OECD is ambitious for more nations to participate in their expanding testing regimes; for example, PISA for Schools, PIAAC, PISA for Development. This is contributing to the expansion of the scope, scale and explanatory power of PISA, which is the focus of the next section of this paper.

Expanding PISA and related skills assessment work

PISA has been a great success for the OECD and has expanded significantly since its

introduction. This expansion includes (a) widening the *scope* of the assessment to measure a broader set of skills and competencies; (b) increasing the *scale* of the assessment to cover more countries, systems and schools; and (c) enhancing the *explanatory power* of the assessment for policy makers and educators. These areas of expansion are well illustrated in the Education and Skills Director, Andreas Schleicher's (2010) comments on the future of PISA and the OECD's assessment work in education:

> The long-term future lies with multi-layered assessment systems that extend from classrooms to schools to regional to national to international levels [*scale*], that measure not just what students know but also how students progress, that are largely performance-based, that make student's thinking visible, and that allow for divergent thinking [*scope*]. Also, these assessments must generate data that teachers, administrators, and policy-makers can act upon [*explanatory power*]. (p. 434)

Scope: Measuring more dimensions of human capital

PISA essentially provides a measure of the flow of human capital from schooling systems. The concept of human capital has evolved since it was popularized in the 1960s, particularly in response to related changes in the global economy, the nature of work and new forms of governance in advanced capitalist nations. Feher (2009) argues that the concept now incorporates a wide set of qualities beyond the academic skills and competencies gained through education and training. Indeed, any capacity or characteristic that can be measured and correlated with improved future economic outcomes can be considered part of one's human capital, which the OECD defines as 'the knowledge skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being' (OECD 2001).

Investments in human capital are no longer made only during an initial period of education and training in anticipation of future returns. As Feher (2009) has shown, changes associated with the financialization of economic capital can also be understood as applying to human capital:

> [I]n the neoliberal world of globalized and unregulated financial markets, corporate governance is concerned less with optimizing returns on investment

> over time than with maximizing the distribution of dividends in the short run. Accordingly, its major preoccupation is with capital growth or appreciation rather than income, stock value rather than commercial profit. … [I]f we apply this major strategic shift in governance to human capital, it appears that an investor in his or her human capital is concerned less with maximizing the returns on his or her investments — whether monetary or psychic —than with appreciating, that is, increasing the stock value of, the capital to which he or she is identified. (Feher 2009, p. 27)

As both Deleuze (1995) and Rose (1999) have argued, education is no longer limited to specific institutional sites, but is now a matter of diffuse and perpetual learning across the life cycle to sustain and increase the value of one's human capital. This shift registered in the OECD's education work during the 1990s with the valorization of lifelong learning (OECD 1996b; Jakobi and Martens 2010), and the current expansion of its human capital assessment programmes can be seen as an effort to keep pace with the proliferation of sites in which human capital now changes in value, as life 'become[s] a continuous economic capitalization of the self' (Rose 1999, pp. 160-161).

For the OECD, measuring flows of human capital from schooling does not provide a sufficient picture of the human capital stocks of nations. Thus, drawing on earlier adult literacy surveys, PIAAC was introduced to augment PISA by providing an assessment of human capital stocks among adult populations (16-64 year olds).

The OECD has identified a need to improve its measurement of traits associated with innovation and entrepreneurship (OECD, 2010): the capacity to develop and profit from 'new products and processes'. The challenge here is to quantify traits that *might* have value for as yet future innovations. These traits are inherently less tangible than established knowledge and skills that are required for existing production processes. This analytical focus draws on a body of work examining non-cognitive behavioural or personality traits as dimensions of human capital (Jencks 1979; Bowles, Gintis and Osbourne 2001; OECD 2002). These traits can be considered to represent more enduring dispositional *potential* for human capital appreciation, in contrast to specific technical or academic skills that are susceptible to obsolescence with technological and economic change. However, the value of particular personality traits is strongly context dependent and efforts to identify and quantify these traits complicate the measurement of human capital (Bowles *et al.* 2001).

The expanding scope of PISA is a response to changing conceptions and conditions of human capital and constitutes an expansion of the dimensions of human beings that are subject to measurement and commensuration. An important function of the OECD is what Espland (2000, p. 73) calls 'commensurative work', which involves using numbers to compare disparate things and requires 'elaborate coordination, discipline, technical expertise, the capacity to invest in long-term projects, and money'. The OECD is undertaking commensurative work in relation to a widening set of human qualities thought to be part of an extended conception of human capital.

In conjunction with efforts to identify traits evident in PISA performance and associated with future success, this evolution in OECD human capital metrics is most clearly illustrated by the introduction of personality trait measures in PIAAC. In 2012 PIAAC assessed, for the first time, the skills of 16-64 year olds in 23 nations, with the findings published in October 2013. Like PISA, PIAAC assesses literacy, numeracy and problem-solving skills, but was conducted as a largely computer-based survey. The PIAAC background questionnaire also assesses personal traits such as 'grit' (persistence and self-discipline), locus of control, political efficacy and social trust (OECD, n.d.). This mode of testing has also been utilised by the OECD's new PISA for Development and is a way that this new test for developing nations will seek to test out of school 15 year olds.

The scope of what PISA measures has also been expanded and now includes, financial literacy, capacity for collaborative work, and into the future will consider measures of creativity and global citizenship and competence. The move to on-line testing for PISA will also enhance the scope of what it potentially measures.

Scale: enhancing the global coverage of the OECD's PISA and related measures

Participation in PISA has increased significantly since the first assessment in 2000 and this reflects a spatiotemporal expansion that is widening the pool of human capital assessed by the OECD through incorporating more countries and new sub-national sites of assessment (e.g.

municipalities and schools).[4] The OECD is ambitious in this way and with the take up of PISA for Development hopes to cover a huge number of nations across the globe. PISA-based Tests for Schools are currently being used in some nations around the globe (e.g. the USA and Spain) and will enable global benchmarking at the individual school level. As a result, the OECD's education work is becoming multi-scalar, more flexible and covering more of the global population. This particularly the case as China and India begin to participate in PISA, and as PISA for Development is put in place in respect of the UN's post-2015 education sustainability agenda.

Twenty-eight OECD members and four non-member countries participated in PISA in 2000. In 2012 all 34 OECD countries, plus an additional 31 non-member countries and economies participated; in 2015 there were 38 nations that participated in addition to the 34 OECD member nations, more than double the original number of participants and a considerable expansion of non-member participants. Notably, all of the countries being targeted through the OECD's Enhanced Engagement programme (Brazil, China, India, Indonesia), except for South Africa, now have some degree of participation. Shanghai-China participated for the first time in 2009 and two provinces in India (Tamil Nadu and Himachel Pradesh) participated in PISA+ 2009, which assessed ten economies that were unable to meet the timelines for participation in the standard PISA assessment, including Malaysia, Venezuela (Miranda) and United Arab Emirates. The reach of PISA now extends into new regions of Asia, South America, North Africa and the Arab Gulf, and importantly includes each of the BRIC nations.

The effects of the global expansion of PISA were well illustrated in the wake of Shanghai-China's outstanding performance in 2009. Shanghai's top performance in its first assessment, along with the strong performance of other East Asian nations such as Singapore, Hong Kong, South Korea and Japan has encouraged the US, UK and Australia to 'look East' for education policy ideas (Sellar and Lingard 2013). The popularity of the recently published edited collection, *Surpassing Shanghai: An Agenda for American Education Built on the World's Leading Systems* (Tucker 2011), signifies this shift of perspective in global policy learning and the benchmarking of education systems. The gaze has been diverted to these high-

[4] PISA already has sub-national applications through (a) the participation of cities such as Shanghai and Hong Kong; and (b) the oversampling of countries in the UK, or state systems in countries such as Australia and the US, which enables internal comparisons based on PISA.

performing East Asian nations, which have become important 'reference societies' for many nations and systems; Australia and England for example. The value and influence of PISA as a tool for comparison increases as the number of participating countries and economies expands, and the participation of new economic powers such as China and India is particularly important for its contemporary global reach, relevance and impact, as will be PISA for Development.

The development and implementation of PISA-based Tests for Schools in the US, UK, Spain and Canada represents a further expansion through rescaling the assessment. A 2012 pilot programme provided school level analysis using PISA-based items and was designed to enable schools to compare their performance against other schools globally. The trial was oversubscribed in the US and generated strong political interest in the UK. The test itself is freely available to schools and able to be implemented on demand, which is a significant departure from the triennial synchronous main PISA assessments of nations and systems. Like PIAAC, PISA-based Tests for Schools provide a clear example of how PISA is being expanded through the adaptation and extension of its successful model. The same will be the case with PISA for Development.

Explanatory power: Providing more influential evidence for policy makers

Expansion of the scope and scale of PISA is being complemented by efforts to increase the explanatory power of the programme's findings. The policy impact of PISA has been significant in some countries, and is increasingly shaping national policy debate in many more. Significant actors in the Education Directorate believe that the significance and impact of PISA would be enhanced if its explanatory power were enhanced. In their view, this means attempting to link PISA scores with teacher classroom pedagogy: the 'holy grail' of educational research.

Two examples of expansion geared toward increasing explanatory power are the current efforts to improve the quality of background data collected during PISA assessments and to link PISA with findings from other programmes, such as the Teaching and Learning International Survey (TALIS) (Kaplan & Turner 2012). Much of the analytical power of PISA data derives from the identification of relationships between testing outcomes and background data about students and schools. A number of questionnaires are administered with PISA, including a standard student background questionnaire, which is used to gather

data on socioeconomic status and student attitude, and a school principal questionnaire, as well as other optional questionnaires.

A related issue in respect of the explanatory power of PISA is the absence of a teaching questionnaire and the gap this creates in explaining outcomes. TALIS is the OECD's programme to assess teacher working conditions and learning environments in schools through teacher questionnaires. It was first conducted in 2008 and the second round was completed in 2013. Overseen by the OECD, a number of countries are now experimenting with linking TALIS and PISA results and if successful the assessments could be aligned from 2018. There will also be a video study of teacher classroom practices as part of this experiment.

Increasing the explanatory power of PISA analyses is closely linked to the expansion of its scope to measure a wider set of competencies, including efforts to identify the power of PISA tests items to predict future success (OECD, 2013). There is a clear link here between measuring more dimensions of human capital and increasing the explanatory power of the assessment. For example, innovations in assessment methodology based on the use of computers (computer adaptive testing) allow the capture of data on new skills areas, while also providing greater insight into the skills being tested. In PISA 2012, participating countries and economies could opt into a computer-based assessment of problem solving skills, which enables the dynamic measurement of the processes and strategies employed by students, as they work through tasks, and not simply their capacity to arrive at the correct outcome. In 2015 this dimension was further extended to include collaborative problem solving, expanding the dimensions of human capital being assessed to incorporate both dynamic and interpersonal competencies.

Efforts to increase the explanatory power of PISA raise questions about the claims that can be supported by the evidence generated by the OECD's educational metrics and analyses. A significant issue for the Organisation, as well as users of their products, is that of causation. Burns and Schuller (2007, pp. 22-23) note that:

> Causation is a particularly problematic concept, but one that demands attention from policy makers who are responsible for allocating resources and accountable for the effects of these allocations. The debate reaches into the OECD's own work: OECD, and certainly the Education Directorate within it, would certainly

> claim to base policy recommendations on evidence, but the nature of evidence varies considerably. … It would be fair to acknowledge that there is no unanimity within OECD on where exactly to draw the lines around what counts as evidence, nor how it might best be used.

The widespread and prominent media coverage that PISA has enjoyed, including commentary from OECD staff in national and international media, often promotes particular policy settings or education reform agendas as contributing to PISA performance (see Baroutsis and Lingard, 2017). One prominent example is the development, in conjunction with the edu-business Pearson, of the *Strong Performers and Successful Reformers in Education* video series, which is based on case studies with stakeholders in strong performing or improving countries and provides stories 'behind the data' about 'what works' in these particular systems.

The OECD's Education and Skills Directorate as a policy actor

As noted already, Henry and colleagues (2001) and Jakobi and Martens (2010) argued some time ago now that the OECD had become amore of a policy actor in its own right. My subsequent research would strongly support that observation and suggest that this role has been strengthened further across the recent past. This is not to deny that the education agenda for the Directorate is set by member nations' education ministers, nor to deny the role of the PISA Governing Board in PISA and related testing work. This is also not to deny that the OECD sits at a node of relations between the OECD and member nations. Yet since the first administration of PISA in 2000, PISA has become more significant in the emergent global education policy field and in the global governance of education. This can be seen in the expanded scope and scale of PISA and in the attempt referenced earlier to extend the explanatory power of PISA results. Interestingly in the Japanese schooling context Saitama prefecture has been attempting to link local test results with teacher classroom pedagogy. Andreas Schleicher has visited Saitama recently and there is a now a constant flow of conversation between OECD officials and Saitama personnel, as the OECD works on enhancing the explanatory power of PISA.

The ambitious broadening of PISA and the development of the range of other tests that use PISA as the prototype also are indicative of the policy actor role of the OECD. These initiatives by and large were initiated by the Directorate. And, of course, the Director of Education and Skills, Andreas Schleicher has been central to the policy actor role. Schleicher

is a huge presence in education globally and participates in many national education policy forums and reforms, as well as overseeing the OECD's education policy and testing agenda.

Following the release of the results of the first PISA in 2001, there was what has been called a PISA shock in Germany (Grek, 2009). This occurred because Germany performed comparatively badly and this measure was at odds with the national perception that Germany had a very high quality schooling system. Germany subsequently put in place various reforms to respond to this PISA shock. The point I would make here is that this PISA shock for Germany and subsequent systemic reforms because of the poor results gave real legitimacy to PISA as an international large scale assessment. Subsequent PISA shocks, for example in Japan following the release of PSA results for 2003 (Takayama, 2008), have strengthened the legitimacy of PISA and its international standing, while enhancing its role in the global governance of education. It might also be accurate to say there was something of a PISA shock in Finland as well when it 'topped' the first three PISA results. In 2009 PISA Shanghai performed even better than Finland at the top of the performance league table and catalysed a PISA shock in Australia, the USA and England (Sellar and Lingard, 2013). The gaze on PISA performance now turned to the high performing East Asian nations with many of these becoming new reference societies. One response of this PISA shock in Australia was that the Prime Minister legislated for Australia to be back in the top five nations on PISA by 2025.

If one looks at the OECD's own documentation, one can also see an articulation of a policy actor role. The OECD has argued that PISA is about making reform happen in systems of schooling. Specifically, the OECD has argued, "Evidence suggests that international pressure and competitive environments are more likely to diffuse a sense of ineluctability of some reforms among various stakeholders and the public at large' (OECD, 2008, p. 315). Additionally, the OECD has argued, 'Experience shows that more comprehensive reforms are possible when there is widespread recognition of the need for a change to take place – e.g. in case of external pressure, competitive threat or common enemy' p.335). Thus I would argue that PISA is designed to unsettle national perceptions and the creation of so-called PISA crises has become one of its purposes. I would also stress how important the media has been in strengthening the policy and political influence of PISA with its emphasis on a nation's positioning on the global league table of performance.

Conclusion

This paper has demonstrated significant developments in the scope, scale and explanatory power of the OECD's PISA, as it has taken on greater salience in global governance of education, often complemented by national testing. The OECD actually argues that international comparative data and national data are both necessary, as one looks outward, the other inward. This situation reflects the significance of data and data flows in global and national educational governance today.

PISA has also become a prototype for other tests developed by the Education and Skills Directorate, which have enhanced and will continue to enhance the significance of the OECD's education work globally. Related, Andreas Schleicher has become one of the most powerful policy actors on the globe. PISA and these related developments have also been important to the enhanced significance of the Directorate's work inside the OECD. The German PISA shock of 2002 and subsequent national shocks (for example, Japan, 2004, Australia, 2010) have also enhanced the legitimacy, standing and salience of PISA globally and within national policy making.

The analysis provided has also demonstrated how the OECD and the Education and Skills Directorate have also become policy actors in their own right. An intention of the international comparative measures associated with the OECD's PISA has been to precipitate or catalyse reform within national schooling systems. However, national systems most often appear to use PISA performance data to externalise a justification for reforms often underway and often not deeply grounded in secondary analyses associated with PISA. Full and sensible usage by nations of the complex secondary analyses of PISA data, especially in respect of equity considerations, would seem to be a better basis for policy reform. Instead, nations appear to be catalysed into reform measures in response to PISA data on the basis of changes in the nation's rankings on the quality measure on PISA.

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