This is the submitted version of a paper presented at *AERA 2018 Annual Meeting, New York City, NY, USA, April 13-17, 2018*.

Citation for the original published paper:

The ‘Beauty’ of PISA: the Politics of How PISA Scores Are Used to Represent Public Education
In: *AERA 2018 Annual Meeting* AERA

N.B. When citing this work, cite the original published paper.

Permanent link to this version:
http://urn.kb.se/resolve?urn=urn:nbn:se:oru:diva-71827
The ‘Beauty’ of PISA – the Politics of How PISA Scores Are Used to Represent Public Education

Abstract

This paper concerns how expectations on public education are framed in policy discourse, and especially its pictorial representation of OECD’s PISA scores. Respectively 400 images in eight high scoring countries and eight low-performing countries are compared. Some clear differences appear. Strikingly PISA is mainly represented by statistical graphs. But we can also see that there is a tendency towards more pictures of children in PISA-successful countries. In low-performing there are instead a lot of pictures of concerned adults. One country, Sweden, that for long severed from a so-called PISA shock is then further analysed and the origin, as well as the reproduction of these images are traced. The overall purpose of the article is to contribute a new perspective on how representations of education can be gathered and analysed, by focusing on the politics of graphical representations of PISA scores. It is argued the there is an aesthetical dimension in the politics of PISA that frames our picture of education; that shows us what is important and what we should look at. There is also a political dimension in the aesthetics of PISA representations that moves our senses and emotions concerning education – i.e. how to feel about it.

Introduction

Public education and its curricula are formed by culture, traditions of education, political ambitions, subject knowledge and the people in and around schools (e.g., Kliebard, 1992). Education is not only shaped by its history and social life, though. Public hopes, dreams and expectations, also matters. This paper concerns how these expectations are framed in policy discourse, based on the pictorial representation of OECD’s PISA scores in high- versus low-performing countries (N16). The purpose of the paper is to contribute a new perspective on how representations of education can be gathered and analysed, by focusing on the politics of graphical representations of PISA scores. It is argued the there is an aesthetical dimension in the politics of PISA that frames our picture of education; that shows us what is important and what we should look at. There is also a political dimension in the aesthetics of PISA representations that moves our senses and emotions concerning education – i.e. how to feel about it.

A number of researchers have shown interest for the predominance of OECD PISA in the public educational debate and national polices. This include an interest for reliability issues (Allerup, 2007; Kreiner, 2011), simplified interpretation of results (Kamens, 2013; Sjøberg, 2012; Serder & Ideland, 2016), and discrepancies between national curricula and definitions of scientific literacy (Matti, 2009; Nardi, 2008). Policy studies on PISA emphasise aspects of measurement as a ‘governmental technology’ (e.g., Carvalho, 2012; Grek, 2009), which often means, ‘governing by numbers’ (Grek, 2009; Guro, 2014) and governing by comparison (Kamens, 2013; Martens, 2007). Clearly, PISA has become a very important educational and political tool for organising education and justify action (Sellar & Lingard, 2013; Waldow, 2017, Lundahl & Serder forthcoming).
In this paper, I take another perspective and look at PISA as a matter of ‘aesthetic governing’. I investigate how PISA scores are represented in charts and diagrams and how these images help structure specific discourses on public education. The PISA tests generate thousands of graphical images and pictures of public education, which we can easily access using Google. These images are a kind of ‘big data’, i.e., a trail of collective choices (Stephens-Davidowitz, 2017) of how to represent a nation’s PISA score. How can we think of the effects of these images? How do they represent PISA and how do they represent national education policy? The paper especially concern differences in graphical representations between countries with high and low average PISA scores. PISA build on a competitive logic where only a few top countries can be considered successful when the results are presented every three years (Landahl, 2017). This logic thus also produces losers. For some ‘relatively’ low performing countries this may come as a shock, what has been called a ‘PISA shock’ (as in Norway, Haugsbakk, 2013; Tveit, 2014 or in Germany, Waldow, 2009). In this paper one country in ‘PISA shock’, Sweden, is used to see how a certain image of failure is produced graphically.

Which ‘discursive centres’ generate these images and how do the images relate to a more verbal discourse in Swedish educational policy?

**The politics of aesthetics and the aesthetics of politics**

In the scholarly debate about the effects of the PISA assessments, it is often claimed that these kinds of large-scale assessments influence countries’ educational policies, curricula and evaluations of certain standards. PISA measures make educational systems accountable in a numerical way (e.g. Grek, 2009; Guror, 2014; Hultqvist, Lindblad & Popkewitz, 2018). Lundahl (2016) suggests that we should differentiate between numerical governing and aesthetic governing; whereas the former is seen more as a panoptical power (Foucault, 1977/2012) that produces standards through statistical norms and calculations, the latter can be seen as a synoptical power (Mathiesen, 1997) that produces and displays ideals affecting emotions, beliefs, hopes etc.

One way to analyse the synoptical power of PISA is by turning to the French philosopher Jacques Rancière’s diptych *The Aesthetics of Politics* and *The Politics of Aesthetics* (2004; 2010). The first dimension of aesthetic governing emphasises the political as partly an aesthetic affair, whereas the other dimension investigates the political in aesthetics themselves.

Politics is, if we start with the first dimension, about being seen and heard. Politics emerge because of the inevitable contradictions that arise from unequal relations. Therefore, building on Rancière, aesthetic governing can be seen as the struggle for visibility and audibility in a process towards an equality of space concerning the image of the society, among heterogeneous groups.

Political activity is whatever shifts a body from the place assigned to it or changes a place’s destination. It makes visible what had no business being seen, and makes heard a discourse where once there was only place for noise. (1999, 30)

Politics is aesthetic in that it ‘revolves around what is seen and what can be said about it,

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1 In this paper I use a very basic understanding of discourses as specific ways of speaking or writing that result from systematic (but often unconscious) inclusion or exclusion of certain content (e.g. Fairclough 1992).
around who has the ability to see and the talent to speak, around the properties of spaces and the possibilities of time.’ (Rancière 2004, 13). In other words, the distribution of statistical representations of PISA scores establishes at one and the same time something common and shared for some, and exclusive for others.

The other dimension of aesthetics and politics is what the aesthetics make us feel and believe. The political in aesthetics is a normative stance concerning ideals, for example, about what to look like, how to smell, what to feel, etc. We experience the world differently when we have seen it represented in a new way.

In dialogue with Schiller and his statement, that ‘man is only human when he plays’ Rancière tries to understand the efficiency of aesthetics, or the regime of the art. Drawing on Schiller, Rancière claims that “there exist a specific sensible experience that holds the promise of both a new world of Art and a new life for individuals and the community, namely the aesthetic” (2010, 123). In his analyses of the aesthetic Rancière combines art history with the history of labour to illustrate how art have challenge hierarchal, or orthodox, modes of representations of the world. Art and politics is related in that they seek each other out as both being forms of dis-sensus – the re-ordering of the senses. They each, in their own way, effect in a redistribution of the sensible (2010, editor’s note, 3-4). If the aesthetics of politics, is, among other things what we hitherto claimed, a way of visualising another image of society, what then is the politics of art? Where exactly lays its efficiency forming a dissensus – opening up for change?

Rancière continues Schiller’s thought that aesthetics experience bears the edifice of both the art of the beautiful and the art of living. The efficiency the aesthetic experience is related to exactly to this conjunction of the experience of ‘that and’, which according to Rancière, “grounds the autonomy of art, to that extent that it connects it to the hope of ‘changing lives’” (2010, 124). In other words, a beautiful representation of, say an educational system, can not only challenge the orthodox view of education, but it also bears with it promises of change. A negative trend chart, on the other hand, does not just show facts about students’ sinking results; it is also an image that can make us feel sorrow and frustrated. In that way, PISA representations can function as an aesthetic governing of our senses and emotions.

Aesthetic governing thus is the visualisation of alternative ways of behaving and doing public education; it alters sense-making and can change how we perceive and interpret our educational system, what we have achieved and what dreams we have for the future. This is aesthetics in politics. Aesthetic governing also involves the possibility of touching people in other, perhaps more profound ways, compared to rational arguments. This is the political in the aesthetics.

**The Google archaeology of PISA**

One way to empirically investigate the aesthetic governing of PISA is by comparing its representations in different countries. As shown by, for example, Steiner-Khamsi (2003), Ringarp and Rothland (2010), and Grek (2017), the governing power of PISA is not only the OECD’s interpretation of the results, but also how the participating countries choose to use the results. To investigate the aesthetic representations of PISA in different countries, we can
use Google’s image search. To see if there are differences between low-performing and high-performing countries, it is necessary to search every country’s own top-level domain in its own language. At the google.com website it is also possible to choose Settings and change Region settings to the preferred country.

Some of the pictures retrieved from Google use tags (Machin, 2012) that increase the likelihood of finding them using a search engine, i.e., someone wants them to stand out. Google also uses a built-in page-rank algorithm, making it easier to find popular pages others have linked to (Orlikowski, 2007). So, even if this kind of ‘Google archaeology’ needs to be developed further, we can assume that Google results quite accurately represent a nation’s pictorial discourse concerning PISA. However, a major problem with this methodology is linked to how Google generates search hits. The results are valid for the specific date of the search. If a lot of people look at and link to other pictures after our image search has been carried out, we will get another retrieval. In other words, the method is weak when it comes to the possibility to replicate the study. The interesting thing though, about using Google searches in discourse analyses is that the retrievals both represent how a webpage administrator chose to tag her/his page and how the ‘audience’ appreciate it; the page-rank algorithm. The weakness of the method is thus also a strength. The retrievals adopt to peoples changing search and link patterns.

In this study I have looked at how PISA was represented in 16 countries when searching images on Google under ‘OECD PISA country name’. Basically, eight countries below average and eight above average has been chosen. The particular countries/regions are chosen to represent really high and really low (Shanghai vs Mexico) scores. Other countries has been chosen based on an idea that they can reflect Sweden; e.g. Nordic and Baltic sea countries, Germany for having sustained a ‘Pisa shock’ in the early 2000s, Russia for having a long low-performing trend like Sweden and Australia for falling results like Sweden. When searching Google for images, about 400 hits will be presented on the first page. I have systematically classified these pictures using a manual count. As shown in table 1, most of them are statistical charts or diagrams of various kinds. There are also many pictures of children and adults. In this case the main search was carried out during the first half of September 2016. When double checking the retrievals in January 2018 for some of the countries, delimiting the search date up till September 7 2016 the exact number of retrievals had change slightly all though the general pattern sustained. For Sweden the 2018 search result showed a slight increase in total number of charts and a slight decline in pictures of people compared to the search carried out 18 months earlier. Thus, the general pattern sustained.

The purpose with classifying the images for every country is to illustrate variation in the pictorial discourse. The variation between low and high performing countries has not been tested for statistical significance. For that it would have been necessary to randomise the

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2 See Stephens-Davidowitz, 2017 for a comprehensive discussion on the strengths and weaknesses of this methodology.
3 For a brief introduction see also: [https://en.wikipedia.org/wiki/PageRank](https://en.wikipedia.org/wiki/PageRank)
selection of the countries or to look at all of them. The conclusions drawn from the variation in table 1 is there for somewhat tentative.

The next step has been to look closer into the country of Sweden (as an example of a low-performing country) to see where most of these pictures had their origin, the ‘epicentre’ of the pictorial discourse, and try to understand its particular political context. To do this I have looked at where the pictures are published, and from that tried to find their origin in primary sources by cross reading OECD reports and reports from the National Agency for Education.

**Understanding graphs – Seeing like PISA**

In her influential article, Seeing like PISA (2016), Radhika Guror proposes that PISA contribute to a certain way of understanding education. ‘Seeing like PISA’ – is appropriating ‘a reductionist, synoptic and largely economic view that has been facilitated by the development of international indicators and large-scale comparative assessments’ (Guror 2016, 599). But PISA is, Guror argues, more than a way of representing existing conditions. It is also about creating new conditions, it is not just descriptive but also performative. ‘The changes ‘seeing like PISA’ is bringing about are deep-rooted, and it is likely that the effects will be long-term Guror writes, ‘[s]ome of these effects may only manifest themselves in the next 15 or 20 years’ (2016, 600).

In her argumentation Guror implies that we gotten used to a PISA logic, and especially then the numerical synoptic logic of large scale assessments like PISA. The advantage of this logic is also its disadvantage.

> The value of a synoptic view is that it is available ‘at a glance’ – providing easily absorbed and easily represented information. PISA’s league tables, on which 15-year-old children from distant and diverse parts of the world are all gathered and organised into obedient rows and columns on a single spatio-temporal frame (Gorur, 2011), are a perfect example of such a synoptic view. (Guror 2016, 604)

This synoptical logic brings distant object closer together and construct a possibility to compare education across countries, but can we actually learn from these comparisons? What do they tell us about education?

In this paper it will be shown that this ‘getting used to’ the synoptical logic of numbers is an effect of the aesthetic power of statistical representations in graphs and pictures. Not of course solely. Verbal discourse is probably more influential, but graphs are part of it, and also one neglected way of analysing PISA discourse.

There exists very little research on analysing graphs and images of education. However the effects of statistical representations on education has been debated, not least in comparative education, since the 1920s (Goodman 2013). Isak L. Kandel (1881-1965) for example didn’t think that education was an objective science that could be progressed by statistics. He believed that norms for education had to be qualitative and formulated through a social
process (Ibid, 130). Never the less, Kandel and other scholars in the field of comparative education continued to develop numerical and graphical standards for representing school systems and their outcomes throughout the 20th century (Lundahl, 2014; Landahl & Lundahl 2017). To understand how statistical representations govern our sense we can look at early ‘exhibitions on statics’.

The Swedish historian Anders Ekström (2000) suggests that the visualization of statistics served a very crucial governing function in the early 20th century. It educated the public through the exhibition of images, graphs, that could simply ‘speak for themselves’ and thus convince through a seemingly unmediated form of realism that at the same time can be morally impelling (2000). In other words, national statistics can imprint certain emotions, of being modern, falling behind global development etc. In a similar way we can say that PISA statistics today are exhibited in various OECD reports but maybe more importantly to each country, in the country’s own governments reports, or National education agencies reports. The visualisation of educational statistics can be assumed to have governing consequences for how we see, understand and feel about our educational system. When researchers, governments or National agencies produce and exhibit statistical representations it is intentionally to reduce complexity in order to attract interest and govern understanding of ‘educational data’, such generated by PISA. Lundahl (2008) has introduced the concept of a ‘quick language’ in an attempt to understand the need for performance measurements and statistics in schools. A quick language is a way to reduce complexity by creating a common language, enabling a smooth transfer of information in the field of education. Producing data and good statistics is not a quick thing, however. The quick language thus is more about communication, the dissemination of data, and how it connects various actors, who may otherwise find it difficult to communicate with one another.

This is also the spirit of the many guidelines on statistic representation written by data producing organisations such as EU, OECD and national governments and their agencies (e.g OECD 2007, Queensland Government Statistician’s Office 2015). In the report Making Data Meaningful the United Nations Economic Commission for Europe (UNECE) have prepared a guiding framework for European statisticians where it is stated in the introduction:

We have all heard the old adage: “a picture is worth a thousand words”. One of the best techniques for understanding data is to visualize the numbers as a picture. This can make it far easier to see a pattern or it can expose patterns that might otherwise have been concealed. /…/ You should make the effective presentation of data an integral part of your statistical production process. As data visualization is such an important part of communicating statistical trends and relationships, it must be an on-going activity, not an afterthought. /…/ Readers can easily understand visual presentations. Charts and maps have an impact on nearly everybody through newspapers, television, the Internet and books. It is much easier to understand statistics presented as a chart or a map, rather than long lists of numbers - assuming, of course, that the visual presentations are produced correctly. (UNECE, 2008, 7).

Clearly there is a self-understanding in the statistical community that statistical representation is about reducing complexity in order to communicate data intelligibly. In relation to the kind of data produced by OECD’s PISA study we can expect certain kinds of graphical representations. In literature on statistical representations certain kinds of graphs are usually
recommended for specific data. When it comes to descriptive statistics it is common to distinguish between categorical/nominal, ordinal, continuous/quote and interval data.

*Category data* are data which fall into one of two or more discrete categories, but with no intrinsic ordering to the categories. For PISA we here have for example all the countries. Graphs suitable for categorical data are bar graphs (both horizontal and vertical), clustered bar graphs and stacked column charts. *Ordinal data* reminds about categorical data, but with a clear ordering to the variables. When it comes to education this can be about levels of education classified into primary school, secondary school, higher education etc. Bar graphs and histograms are suitable for presenting ordinal data.

Data on a numeric scale are usually treated as *continuous data* or *quote data*. For example, numbers of individuals scoring between 0 and 600 points on a PISA test. Other examples of continuous data include height, time, mass, etc. Graphs suitable for continuous data include line graphs and scatter plots. Interval data, finally, are data that have both an order, and an equal spacing between categories. For example, the rank between different countries in PISA. Continuous data can be converted to interval data for reporting purposes. Graphs suitable for interval data include bar graphs, histograms and box-whisker plots.

Given that the data produced by PISA is continuous data that can be combined with categorical and ordinal data, we can predict that the representation of PISA, as retrieved with image google, at least when it comes to its scores would be about bar graphs, line graphs, histograms and maybe some box-whisker graphs. But are there other images connected to PISA? And is there a variation between different countries/cultures, or between high and low performing regions/nations, when it comes to what graphs they produce/display? If so, how can we understand that? What is the potential governing effect of the aesthetics in PISA data? In other words, what image of education do we see, when we are seeing like PISA?

**Exhibiting PISA scores – the aesthetics of politics**

One way of looking at how PISA scores can represent alternative realities is by looking at the image that appear when we google PISA in various countries. First of all we realise that OECD’s PISA is a very good example of what Rancière refers to as the aesthetics in politics. In February 2018 ‘OECD PISA’ brings out about 470.000 hits at Google.com. This is slightly more retrievals than you get from googling the famous ‘Tower of Pisa’ (404.000 hits), that was built in the 13th century. OECD clearly has made a brand out of PISA – made it visible and heard of – since the first test in year 2000. But what does the image education that PISA produces look like, is it one united image that expressions like ‘seeing like PISA’ indicates, or does PISA representations look differently in different countries.

When classifying the results retrieved in the way described in the method section The Google archaeology of PISA, we clearly see that statistical charts dominate the results in all countries. Seeing education like PISA is thus very much about focusing on its outcomes (cf Guror 2016), as we would have guessed from the kind of data PISA produces. But we also find quite many pictures of children and of adults. Interestingly we can see that there is a tendency towards more pictures of children in PISA-successful countries. In low-performing countries like Sweden, there are instead a lot of pictures of concerned adults (Table 1). One of the is the
Division Head and coordinator of PISA, Andreas Schleicher. Others are politicians and people working at the National agency for education. Clearly PISA stirs up emotions that in themselves becomes aesthetic political representations.
<table>
<thead>
<tr>
<th>Country/region</th>
<th>PISA rank 2012</th>
<th>Graphs</th>
<th>Of which are trend graphs</th>
<th>Pupils/children</th>
<th>Adults</th>
<th>Andreas Schleicher</th>
<th>Tower of Pisa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai (.ch)</td>
<td>1</td>
<td>143</td>
<td>4</td>
<td>75</td>
<td>10</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Soumi (.fi)</td>
<td>7</td>
<td>95</td>
<td>4</td>
<td>61</td>
<td>36</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Eesti (.ee)</td>
<td>8</td>
<td>46</td>
<td>2</td>
<td>44</td>
<td>67</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Polska (.pl)</td>
<td>12</td>
<td>145</td>
<td>7</td>
<td>29</td>
<td>19</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Nederland (.nl)</td>
<td>13</td>
<td>84</td>
<td>5</td>
<td>13</td>
<td>17</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Suisse (.ch)</td>
<td>14</td>
<td>92</td>
<td>8</td>
<td>16</td>
<td>21</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Deutschland (.de)</td>
<td>17</td>
<td>162</td>
<td>6</td>
<td>70</td>
<td>16</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Australia (.com.ua)</td>
<td>19</td>
<td>274</td>
<td>12</td>
<td>11</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Norge (.no)</td>
<td>27</td>
<td>80</td>
<td>9</td>
<td>19</td>
<td>85</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>USA (.com/ncr)</td>
<td>29</td>
<td>245</td>
<td>8</td>
<td>8</td>
<td>2</td>
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<td>0</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lietuva (.lt)</td>
<td>36</td>
<td>130</td>
<td>4</td>
<td>20</td>
<td>29</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Sverige (.se)</td>
<td>38</td>
<td>161</td>
<td>48</td>
<td>28</td>
<td>57</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Россия (.ru)</td>
<td>39</td>
<td>135</td>
<td>15</td>
<td>21</td>
<td>16</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 1. Google image results for search term ‘OECD PISA Country’. Pictures of people from the covers of PISA reports, and pictures obviously not about school and education, are not included. Pictures of the Tower of Pisa has been accounted for as a measure of control. This search was carried out in September 2016.

There is a slight tendency towards more pictures of adults in low performing countries. However, this is not always the case. One reason why there might be more adults in some low performing countries and not in others, can be related to the degree in which media holds adults (policy makers) accountable for lower performances than expected. Which in turn can be related to a national political climate; if they so to speak play the ‘blame game’ or not.

The USA and Australia stands out with their many graphs (tables not included here), of which few are trend graphs, and almost no pictures of children or adults (Table 1). Looking deeper into Sweden, the country makes extensive use of trend graphs, illustrating the concern in Sweden about a ‘school system in free fall’ (Fig. 1).

Table 1: OECD PISA Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Images</th>
<th>Trend Graphs</th>
<th>Children</th>
<th>Adults</th>
<th>Lowest</th>
<th>USA</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>México (.com.mx)</td>
<td>53</td>
<td>220</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Perú (.com.pe)</td>
<td>65</td>
<td>154</td>
<td>16</td>
<td>9</td>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. 1. ‘Learning the literacy of PISA graphs. Google image results for the search term ‘OECD PISA Sverige’ (Sweden), Screen dump September 2016.

If we compare Sweden with the USA, or Lithuania and Russia (which had about the same
position in PISA as Sweden in 2009 and 2012), they don’t make nearly as much use of trend graphs; neither do the top-performing countries. Australia’s downfall 2003-2012 has been similar to that in Sweden (see Fig 2) however this has not resulted in as many published trend graphs. Only 4 percent of the Australian graphs among the retrievals are trend graphs compared to Sweden’s 30 percent. Maybe, one explanation to this difference is that Australia still is above average whereas Sweden has fallen below average.

Fig. 2. Australia’s performance on PISA 2000-2012. Source: https://rd.acer.org/article/pisa-2012-how-australia-measures-up

In PISA 2015, Sweden stopped its ‘downfall’ in the PISA ranking, which instantly resulted in a new kind of trend chart, indicating a sudden break (Fig. 3), or a ‘dent in the curve’ [hack i kurvan’ in Swedish] as it was described at the press conference held by the National Agency for Education (https://www.skolverket.se/om-skolverket/press/pressmeddelanden/2016/pisa-2015-presenteras-1.255868) (see Fig. 3). Obviously, some older pictures are among the results here due to the fact that Google displays the most viewed images during this period; but we can also clearly see, from this screen dump of the first retrievals (Fig. 3), the appearance of a new set of trend charts trending upwards.
The fact that graphs are so dominant in all countries illustrates a ‘new literacy of education’, where the results of public education are seemingly easy to measure and compare (Hamilton, 2012). ‘By ‘flattening’ education into a standardised, decontextualised phenomenon, education à la PISA has become portable’, Guror writes (2016, 607). In this way OECD managed to claim an important political area, making heard of, and not least visible, the strength of comparisons through International Large Scale Assessments – an important part of their livelihood. However, the collective image of OECD’s PISA is heterogeneous. This implies that there are a lot of local uses of PISA representations. The extreme prevalence of trend graphs in the chosen example of Sweden, indicates a discursive pre-occupation with crises, blame game and lack of development; this is consistent with the educational politics the conservative government Sweden used between 2006 – 2014, which proclaimed a ‘school crisis’ already in 2005, without (at least then) having any evidence from international statistics (see also Lundahl et al., 2017). This kind of discourse amounts to a choice between pictures, and that choice leaves trails in the ‘digital archaeology’ of Swedish education. The pictures represent something more than the factual state of Swedish education. They represent a specific discourses that have the possibility to affect our senses and emotions.

**PISA graphs and educational crisis - The politics in aesthetics**

Where do all these graphs come from? Where are they reproduced and how are they used? If we only look at where the Swedish graphs are published up till September 2016 we see that there is a dominance for blogposts, the major newspapers and teacher union magazines.
Somewhat surprisingly only one graph was published at the National Agency for Education’s (NAE) website (www.skolverket.se) but many images, especially from NEA, are also published at Slideshare.net, Pinterest.com and similar services (Table 2).

<table>
<thead>
<tr>
<th>Kind of websites</th>
<th>Graphs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private blogs</td>
<td>55</td>
</tr>
<tr>
<td>Official blogs/website</td>
<td>48</td>
</tr>
<tr>
<td>Foreign sites</td>
<td>18</td>
</tr>
<tr>
<td>Magazines</td>
<td>10</td>
</tr>
<tr>
<td>Slidshare, Pinterest, Twitter</td>
<td>9</td>
</tr>
<tr>
<td>Daily press</td>
<td>8</td>
</tr>
<tr>
<td>The Swedish parliaments</td>
<td>5</td>
</tr>
<tr>
<td>OECD</td>
<td>5</td>
</tr>
<tr>
<td>The Bureau of Statistics</td>
<td>2</td>
</tr>
<tr>
<td>The National Agency for Education</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>161</strong></td>
</tr>
</tbody>
</table>

**Table 2.** Kind of websites where graphs retrieved when googling OECD PISA Sweden up till September 7 2016 are published.

We see that private blogs and official blogs stands for the major part of the published graphs, in total 97 out of 161. The private blogs often belong to individuals active in the school debate. The official blogs are often teacher unions and other institutions concerned with education. Traditional daily press stands only for eight of the graphs and weekly/monthly magazine for additionally 10. Quite a few graphs from the Swedish retrieval have international origin. Many of the have been published in The Guardian in text concerning Sweden.

From table 2 we see that the graphs are reproduced a lot in private and official blogs. We can also look at the intensity in which an audience look at PISA, however then not especially at charts and graphs. Not surprisingly, using the tool Google trends (trend.google.com) we see that there globally is a higher interest for OECD PISA every time new PISA reports are released (Fig. 4), but with a decreasing interest over the years.
We can also see that Sweden shows relatively more interest in PISA than any other country (Fig. 5). Among the other top countries we see three high performing countries and Germany, previously a PISA shock country but now above average. In other words, in Sweden it seems like it is the low scores, or how these scores are framed and used in the national discourse on education, that makes Swedes Google PISA.

When we look closer at the Swedish case and at the particular graphs published, we see that even if few graphs are published at the website National Agency for Education it becomes evident when looking at the Swedish main country reports published by NAE are the

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4 The graph shows where the search term was most popular during the specified time period. The values are calculated on a scale from 0 to 100 where 100 is the place where the search term was most popular compared to the total number of searches in the current location. The value 50 is the place where the search term was half as popular, and 0 is a location where there is insufficient data for the search term. Note that a higher value means a higher proportion of all search queries, not a higher number of queries. This means, for example, that a small country where 80% of the search queries are "PISA" get roughly twice as high as a huge country where only 40% of the search queries are "PISA".

5 We must also note that these countries all have a very good digital infrastructure. But still, the relative order between them cannot be explained by this circumstance.
epicentre for many of the graphs. In every participating country the responsible Agency for education starts to receive the country result from OECD about 6 months prior to the international PISA release date. This allows for the countries to write their country reports. These reports are then presented at a national press conference and the graphs used there disseminates though traditional media and social media such as the afore mentioned private blogs.

Some examples of very central graphs in the 2012 report and reproduced among the Google retrievals are Fig. 6 and Fig 7.

![Fig 3.8](image.jpg) Genomsnittlig årlig förändring av medelvärdet i matematik.

**Fig. 6.** The yearly change in mathematics PISA results between 2003 and 2012. National Agency for Education, main report 2013, p. 64.

The charts illustrate the yearly change in mathematics results between 2003 and 2012 and the text tells us that Sweden dropped 16 points from 2009 and 31 points from 2003. Comparably worse than any other country – ‘Sweden's fall in results since 2003 is also the largest measured decline of all participating countries in PISA 2012’ (NAE, 2013, 63).

Even more reproduced among the Google retrievals are the kinds of graphs, illustrating Sweden’s position at a certain level of knowledge. These graphs were published in the Sciences and in Reading comprehension:
Fig. 7. Percentage of pupils performing on level 5 or higher, PISA Science test 2012 (NAE 2013, p. 98)

Finally, the most reproduced graphs of 2012 and 2015 we find in the National Agency for Education summary reports (Fig 8 and 9).
Fig 8. Sweden's relative (standardized) position compared with the average of the 25 countries that participated in all five PISA surveys, in reading comprehension, mathematics and science. NAE (2013b, p. 28)

For most people reading Fig. 8 right will not come easy. The image just illustrates Sweden’s relative position which goes from just above average to just below average (0.7 standard deviation). At the same time, the image can easily be read like falling from a top position to a bottom position. The graph also indicates a continuing fall between the years of measure but we really don’t know what happened say between 2007 and 2008. The same can be said about the ‘dent in the curve’-graph supporting the 2015 report (Fig. 9). The fall could have stopped already in 2010 followed by a two year statues que and then the rise starts from 2012 – or 2013. We don’t know for sure, but the three year interval hidden behinds these graphs can
potentially have effect when we interpret the effects of specific reforms that meanwhile occurred.

Fig. 9. Sweden's relative (standardized) position in relation to the 33 OECD countries as a in all four PISA studies since 2006 in reading comprehension, mathematics and natural sciences. (NAE 2016, p. 51).

All of these charts are very illustrative, they clearly show Sweden’s relative position to other countries participating in PISA, and they show trend over year. The extreme prevalence of trend graphs in Sweden indicate a discursive preoccupation with crises, blame and lack of development. This is consistent with the educational politics the conservative government Sweden used between 2006 – 2014 that started to proclaim a school crisis already in 2005, without any ‘proof’ in international statistics (see also Lundahl et al 2017, Ringarp 2017, Tveit & Lundahl 2017). The discourse of a school crisis was strengthened in 2012 when Sweden’s PISA results continued to drop. The trend graphs like Fig. 8 clearly signals dropping results, but it is a choice to call it ‘a school in free falling’. The expression ‘a school system in free fall’ [‘en skola i fritt fall’ in Swedish] generates more than 2,200 results on Google.se. A search in the national media database, Retriever, show that in 2013 and 2014 this expression was used in printed daily press over 300 times. This way that graphs becomes represented in our language is an evident example of how the politics in aesthetics moves our senses. The relatively high degree of Swedes googling PISA might indicate that PISA is used more actively in Swedish politics that in other countries (Fig 5). Other studies have shown that PISA scores the last 15 year in Sweden has become the main cause for political reforms
Discussion - The governing effects of PISA aesthetics

The fact that PISA has been dominating the discourse on education that last decades is widely recognised (Grek 2009, Guror 2016). It is also well known that different countries make local, or selective, interpretations of PISA scores, often to suit national and or specific political interests (Steiner-Khamsi 2003, Waldow 2017). In a Nordic context, Daniel Pettersson et al (2017, 1) found a ‘parallel mix of OECD discourses and national discourses’ creating a ‘narrative in which evaluations and assessments appear natural, self-evident and rational as well as highly adaptable to national settings’. The discursive influence of PISA on national educational discourses has previously mainly been studied as a verbal or structural matter. In this paper I argue that this kind of governing also can be understood as aesthetical. This in two ways. The aesthetics of PISA politics is firstly about exhibiting and establish a certain image of education. OECD puts ‘education at a glance’ as global, comparable, changeable and competitive. That image of education makes it portable, as Guror puts it: ‘Its ideas and philosophies are seen as being readily and easily transportable across the world, so that lessons from Shanghai and Singapore can be implemented in Azerbaijan or Peru’ (Guror 2016, 607). This is, in Rancière’s terminology making seen and heard of a discourse previously invisible and silent. OECD made International Large Scale Assessment one of the driving forces in inter/national educational reform work. Where previously local authorities, like national researchers in the field of education had the ears of the politicians, today PISA scores and OECD policy recommendations is what mainly counts (Pettersson et al 2017; Lundahl & Serder forthcoming).

Secondly, we have a politics of the PISA aesthetics. As shown, various countries use different images when reporting on PISA scores. There seems to be a difference between high and low performing countries when it comes to which images are used. High performing countries tend to signal hope and optimism through images of children whereas concerned adults are more usual for low-performing countries. However, the general image of PISA is that of charts, tables and graphs. This is quite logical in relation to the kind of data that are represented. But here we find unmotivated differences between the countries, where the chosen case Sweden, stands out in its preoccupation with (negative) trend graphs. The use of these graphs further coincides with a verbal discourse connotative to the image, metaphor, of ‘a school in free fall’ or ‘a dent in the curve’. As shown by others, falling PISA scores can be picked up in a ‘politics of crises’ to legitimize new reforms (not necessarily motivated by the scores as such). This paper shows that this discourse is strengthen with help from politics inherent in the aesthetics of PISA representations. But there is also a structural effect to the usage of these graphs. They can re-order our senses. When it comes to PISA-graphs they for example tend to create what Goodman (2013) mentions as a ‘now-time’ and a ‘dislocationless logic’, where history and culture loses their meaning to educational reform. Seeing education through these kinds of aesthetic representations is looking at education emptied of history and culture. It dis-sensus us from our experience of what education actually is about and replaces that sense with an anonymous summary of actions, neatly presented as a graph.

Concluding remarks

When describing PISA in Sweden, there is obviously a preoccupation with Sweden’s downfall over the last three measures. Why Sweden is failing in PISA, and what to do about
it, are interesting questions, but based on these pictures we can also raise questions of another kind: what knowledge travels, where does it go and through what media. What shape does knowledge about education have and when does it change its shape, and for what reason? Pictures like the ones presented in this paper are the perfect “quick language” (Lundahl, 2008) – especially on the ‘Highways of Google’. They transfer fast, and allow for translations without a spoken word. They can be understood in intended ways or in unintended ways – it doesn’t really matter – and they strongly structure the discourse and attach countries to a specific ‘image’. Like every language, the quick graphical language includes some and excludes others. Arguably, like numbers, it is a perseverative – it alludes to senses and emotions. This is the aesthetic power of graphs.

In a recent paper, Theodore Porter (2016) writes:

> Numbers, properly designed and presented, can help to reveal the play of power and even provide a basis for challenging it, but scrupulous interpretation, including effective visual tools, have to be part of the mix. /…/ It is equally important to generate numbers that can be used to challenge power.

I suggest that we also ask ourselves: how can we generate images of education that challenge non-scrupulous visualisation and use of numbers? How can we re-visualise international education in a ‘thicker’ and more complex way, e.g., combining PISA results with other images of education, like films and photos of education. It is evidently so that the graphs and charts produced by OECD and national agencies for education spreads fast and that it often is the simpler ones that disseminates. An increased awareness of the semantics of PISA at these agencies might reduce the simplification of educational discourse.

With this paper, finally, I would like to encourage researchers in the science of education to further make use of systematic media searches for images and pictures – to further scrutinise the aesthetics in politics and the politics of aesthetics in the realm of education.
References


http://dx.doi.org/10.1787/9789264030336-en

