OECD Education Working Papers No. 71

The Policy Impact of PISA: An Exploration of the Normative Effects of International Benchmarking in School System Performance

Simon Breakspear

https://dx.doi.org/10.1787/5k9fdfqffr28-en

OECD

Unclassified **EDU/WKP(2012)8**

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development **22-Feb-2012**

English - Or. English

DIRECTORATE FOR EDUCATION

EDU/WKP(2012)8
Unclassified

THE POLICY IMPACT OF PISA: AN EXPLORATION OF THE NORMATIVE EFFECTS OF INTERNATIONAL BENCHMARKING IN SCHOOL SYSTEM PERFORMANCE

OECD Education Working Paper number 71

This working paper was written by Mr. Simon Breakspear, University of Cambridge. He can be contacted at slb89@cam.ac.uk.

JT03316410

Complete document available on OLIS in its original format
This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

English - Or. English

OECD DIRECTORATE FOR EDUCATION

OECD EDUCATION WORKING PAPERS SERIES

This series is designed to make available to a wider readership selected studies drawing on the work of the OECD Directorate for Education. Authorship is usually collective, but principal writers are named. The papers are generally available only in their original language (English or French) with a short summary available in the other.

Comment on the series is welcome, and should be sent to either edu.contact@oecd.org or the Directorate for Education, 2, rue André Pascal, 75775 Paris CEDEX 16, France.

The opinions expressed in these papers are the sole responsibility of the author(s) and do not necessarily reflect those of the OECD or of the governments of its member countries.

Applications for permission to reproduce or translate all, or part of, this material should be sent to OECD Publishing, rights@oecd.org or by fax 33 1 45 24 99 30.

Copyright OECD 2012

TABLE OF CONTENTS

ABSTRACT 4
RÉSUMÉ 4
THE POLICY IMPACT OF PISA: AN EXPLORATION OF THE NORMATIVE EFFECTS OF INTERNATIONAL BENCHMARKING IN SCHOOL SYSTEM PERFORMANCE 5
Introduction 5
Section 1 - PISA and national education policy-making 5
'PISA' shock and policy windows 5
Section 2 – Methodology 8
2.1. Aims and overall approach 8
2.1.1. Research agenda and questions 8
2.1.2. Data collection 9
2.1.3. Sample 9
2.1.4. Limitations of the research 10
Section 3 - Results 10
3.1. Changes in educational policies and practices in light of PISA results 11
3.1.1. Broad analysis of PISA policy impact 11
3.1.2. The role of PISA in policy-making processes and policy responses to PISA. 13
3.2. Use of PISA policy findings in national/federal education debate and policy-making 15
3.2.1. Influence of PISA policy findings 16
3.2.2. Reference to and learning from high-performing PISA countries/economies 16
3.3. The role of PISA in national/federal assessment and evaluation policies and practices 18
3.3.1. Provided a system evaluation for countries/economies that did not previously carry out national/federal assessments 19
3.3.2. Led to the formation, or increased the scope, of a national/federal assessment system 19
3.3.3. Complemented national data and validated national results against an international benchmark20
3.3.4. Used to conduct within-country/-economy monitoring of sub-national regions or specific student groups 21
3.3.5. Used as a best-practice 'model' or 'guide' for the formation and adaptation of national/federal assessment practices 22
3.3.6. Used to evaluate the effectiveness of educational reforms 22
3.4. Setting and revising curriculum standards 23
3.5. Setting and monitoring performance targets and indicators 25
Section 4 Discussion 27
References 29
THE OECD EDUCATION WORKING PAPERS SERIES ON LINE 31

ABSTRACT

Little research has been done into how the results of the Programme for International Student Assessment (PISA) affect national educational reform and policy-making. This paper examines the normative impact of PISA by investigating how, and the extent to which , national policy actors use PISA in policies and practices, to evaluate and improve school-system performance. Drawing on the results of a survey of country practices, the study shows that PISA has become accepted as a reliable instrument for benchmarking student performance worldwide, and that PISA results have had an influence on policy reform in the majority of participating countries/economies.

RÉSUMÉ

À ce jour, rares sont les recherches ciblant l'impact des résultats de l'enquête PISA (Programme international pour le suivi des acquis des élèves) sur les réformes et l'action publique dans les pays. Le présent document examine l'impact normatif du PISA en cherchant à déterminer comment et dans quelle mesure les acteurs politiques des pays utilisent le PISA dans l'établissement de politiques et pratiques, afin d'évaluer et d'améliorer les performances de leur système d'éducation. À partir des résultats d'une enquête sur les pratiques des pays, cet étude montre que le PISA est aujourd'hui communément accepté en tant qu'instrument fiable pour évaluer la performance des élèves dans le monde entier et que les résultats au PISA exercent une influence réelle sur les réformes politiques dans la majorité des pays et économies participants.

THE POLICY IMPACT OF PISA: AN EXPLORATION OF THE NORMATIVE EFFECTS OF INTERNATIONAL BENCHMARKING IN SCHOOL SYSTEM PERFORMANCE

Introduction

This paper seeks to explore the normative impact of the Organisation for Economic Co-operation and Development's (OECD) Programme for International Student Achievement (PISA) on national/federal education policy and policy-making processes. PISA is a triennial international comparative study of student learning outcomes in reading, mathematics and science - the skills judged to be important for adult life in a globalised and knowledge-based society (OECD, 2000; Schleicher, 2007). Whilst originally developed as an instrument for OECD countries, PISA has been adopted as an almost global standard, and is now used in over 65 countries and economies. As an international benchmarking exercise, PISA is designed to monitor outcomes over time and provide insights into the factors that may account for differences in performance within and between countries/economies. Four surveys have been implemented so far: 2000, 2003, 2006 and 2009.

Every three years, the release of PISA results stimulates a global discussion about school reform in both international media (*e.g. The Economist*, *The New York Times*) and at the national level across many OECD and partner countries/economies.[1] Yet, beyond acknowledging that PISA is an interesting news story, research on its effects and use within national education reform and policy-making is scarce. This paper specifically examines the normative impact of PISA by investigating how, and the extent to which, national policy actors use PISA in policies and practices to evaluate and improve the performance of school systems.

The paper is composed of four distinct sections. The first examines the limited extant literature that has explored the policy impact of PISA. The second section outlines and justifies the methodology of the study. The third section provides a description and analysis of the results. Section four discusses the emergent themes and issues.

Section 1 - PISA and national education policy-making

'PISA' shock and policy windows

Few countries/economies enacted large-scale policy changes in response to the release of the first two PISA survey results in 2001 and 2004. In Germany, the education policy debate and changes in light of PISA 2000 were intense (*e.g.* Ertl, 2006). Confronted with lower-than-expected results in student performance, PISA triggered a sustained public debate about education policy and reform that came to be known as 'PISA shock'. The PISA-inspired debate over public education has resulted in a range of significant reform measures, including generating national standards and establishing further support for disadvantaged students, especially those from immigrant backgrounds (Ertl, 2006).

A similar reaction to PISA 2000 occurred in Denmark. Egelund (2008), for example, notes that the results of PISA 2000 raised serious questions about how the well-funded Danish education system yielded only middle-range outcomes, and about why social equity continued to be a problem despite significant investment in social welfare programmes. Egelund (2008) notes that whilst the PISA 2000 results had a significant impact on the education and political debate, there were no policy changes until after an international review of the results and the system was conducted (OECD, 2004). Denmark subsequently

1 . *e.g.* Stake (2007) provides an analysis of the media response to PISA in the USA.

implemented a range of reform policies, including increased national assessment and evaluation, and strategies to target socio-economically disadvantaged and immigrant students (Egelund, 2008).

Japan has also been identified as a country that experienced a 'PISA shock' in the national politics of education reform. Japan was a top performer in PISA 2000, yet in PISA 2003 there was a decline in its performance resulting in a perceived 'crisis' that prompted significant public and political debate on education reform. In response to the decline in PISA performance, the Ministry for Education reversed a contentious yutori (low pressure) curriculum policy and have enacted changes to national assessment practices (Takayama, 2008).

Kingdon's (1995) theory of policy agendas may help explain the role of PISA in these large-scale reform agendas. Kingdon proposed that an 'external shock' could generate a 'policy window' for reform. This so-called window only opens up the potential for a reform agenda to be established. Yet, this policy reform would only occur if and as national actors use the opportunity afforded by lower-than-expected PISA results to legitimate the need for large-scale reform. Yet, even in the cases of Germany, Denmark and Japan, it is difficult to decipher the direct impact of PISA on the speed or breadth of reforms enacted.

Comparative national case study investigations have shed further light into the differing national responses towards the first two rounds of PISA. Grek (2009) conducted a brief comparative assessment of the way PISA 2000 entered national policy-making in Finland, Germany and the United Kingdom, through both media attention and subsequent education reforms. Grek (2009) highlights three different responses to PISA. First, the 'PISA surprise' of Finland: its high performance and international attention surprised the nation. Second, the 'PISA shock' in Germany, where PISA sparked significant public debate and subsequent policy change. Third, the 'PISA promotion' of the United Kingdom, where little media attention and no reform initiatives followed PISA 2000, yet the results were promoted by the government of the day as a sign of strong outcomes. Grek concludes by arguing that PISA can be used nationally as a governing resource, as it enables policy actors to justify and legitimise proposed reforms based on evidence from internationally comparable data.

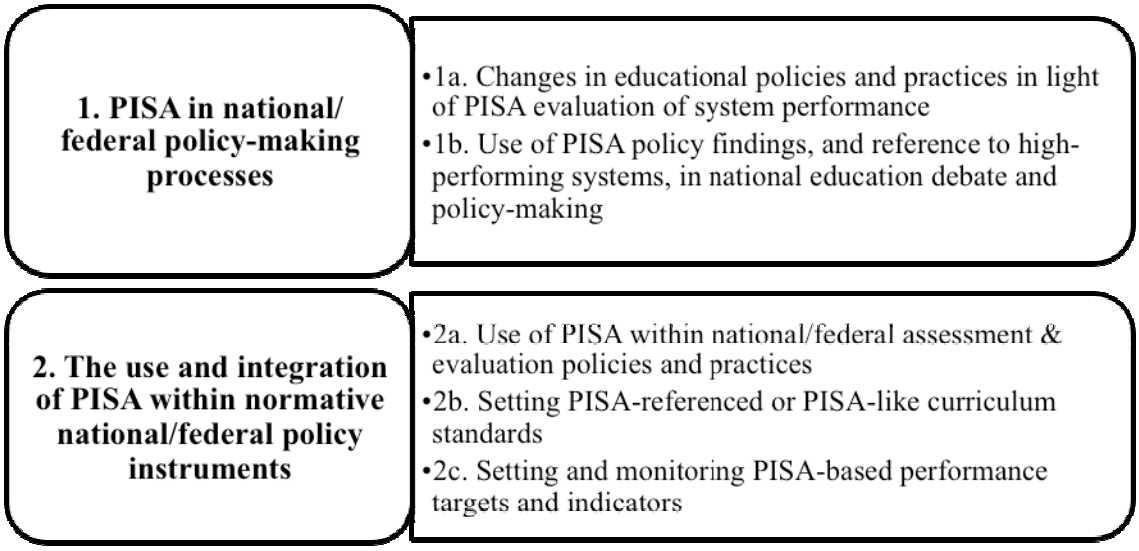
Another recent comparative study[2] sought to investigate the capacity for PISA to prompt broad education policy convergence across Switzerland, Germany, New Zealand, the United Kingdom and the USA (Martens, Nagel, Windzio, and Weymann, 2010). Drawing on expert interviews and policy document analysis, the research highlighted the varied national responses to the release of the first round of PISA results. Both Switzerland and Germany, for example, initiated significant education policy reforms in response to lower-than-expected results (Bieber, 2010; Niemann, 2010). In contrast, the United Kingdom, New Zealand and the USA did not show a shift in national education agendas in response to PISA. Knodel and Walkenhorst (2010) argue that the United Kingdom's lack of policy response to its moderate performance was due to the significant education reforms enacted in England in the years prior to the release of the PISA results. For New Zealand, Dobbins (2010) concluded that high performance on PISA seemed to reinforce existing policies and thus there was no impetus for substantial change. Finally, Dobbins and Martens (2010) propose that, in the case of the USA, substantial domestic evaluation programmes may have ensured that there was prior public awareness of its poor educational outcomes and thus, unlike Germany, there was no external shock. Martens and Niemann (2010) have further developed the notion that a gap between national self-perception of expected performance, and the empirical results, may explain the difference between the USA and German PISA responses.

2 . This research was conducted as part of the 'Transformations of the State' project, which sought to investigate how different nation-states respond to EU governance through the Bologna Process and OECD governance through PISA. The findings of this international project were captured in a recent book (Martens et al., 2010).

An external evaluation of the policy impact of PISA was conducted in 2008 for the OECD PISA Governing Board (Hopkins, Pennock, Ritzen, Ahtaridou and Zimmer, 2008). The evaluation sought to explore PISA's relevance, effectiveness and sustainability, and the unexpected impacts on participant countries and economies. The research consisted of a qualitative strand of 548 questionnaire responses drawn from a range of education stakeholders from across participating countries/economies. Five qualitative case studies were also conduced in Hong Kong-China, Spain, Canada, Norway and Poland. The study covered PISA 2000, 2003 and the initial response to PISA 2006 only. The results revealed that the impact of PISA was greater at the national level than at the local government or school level, with policy-makers identified as the most significant stakeholder group. The report also highlighted that countries increasingly valued the skills assessed in PISA, that the PISA instrument was commonly used for monitoring a country's performance and equity, and that the influence of PISA on policy seemed to be increasing over time. Whilst the study did note that a range of policies and initiatives had been undertaken in light of PISA, the authors also emphasised that such policy initiatives often displayed a low level of policy coherence overall. This paper seeks to build and extend on this broad international analysis of the policy impact of PISA over successive survey rounds.

Many of the aforementioned studies (excluding Hopkins, *et al*., 2008) have focused on analysing whether or not the first round of PISA sparked significant large-scale national reform. This paper goes beyond this initial question to explore the potential normative policy impact of PISA resulting from the repeated use of PISA nationally and its adoption globally as an international standard. Analysis focuses on two areas of inquiry as outlined in figure 1.1: PISA in national policy-making processes; and the use and integration of PISA within normative national/federal policy instruments.

Figure 1.1. Two areas of inquiry



The study investigates the extent to which PISA, as an international standard of school system performance, has been integrated and embedded into national policy and practice. As illustrated in 1.2, particular focus is placed on PISA's role within normative national/federal policies: assessment and evaluation, curriculum standards and performance targets. These normative policy instruments function to set, measure and reinforce what the education system aims to achieve and its desired improvement trajectory.

Figure 1.2. Three types of normative national/federal policy instruments

Section 2 – Methodology

2.1. Aims and overall approach

2.1.1. Research agenda and questions

This paper explores the normative impact of PISA on national education policies and practices, and on policy-making processes. Two areas of inquiry were established to guide the empirical investigation, with a combined total of five sub-research areas (1a, 1b, 2a, 2b and 2c). Specific research questions were generated for each area as outlined below.

Focus area 1: PISA in national policy-making processes

1a. Changes in education policies and practices in light of the PISA evaluation of system performance

- How influential is the PISA evaluation of national system performance in policy-making processes?
- What changes in educational policies and practices have been made in light of PISA analyses?

1b. Use of PISA policy implications and reference to high-performing systems in national education debates and policy-making

- To what extent have PISA policy findings been influential in national education debates and policy-making?
- To what extent have high-performing and successfully reforming PISA education systems been cited in national policy debates and bi-lateral policy learning?

Focus area 2: The use and integration of PISA within normative national policy instruments

2a. The role of PISA in national/federal assessment and evaluation systems

- To what extent do national policy-makers see PISA performance as an important indicator of the effectiveness of the school system?

- What role does PISA, among other national and sub-national forms of assessment, play in evaluating education-system performance?

- To what extent is PISA used to monitor the performance of sub-national regions (*e.g.* states, provinces) or specific student groups?

- How have national learning assessments been linked to PISA or modelled on PISA?

2b. Setting PISA-referenced or PISA-like curriculum standards

- To what extent are the competencies outlined in the PISA frameworks and instrument promoted in the education system?

- Have PISA-referenced or PISA-like standards for learning been established?

2c. Setting and monitoring PISA-based policy performance targets and indictors

- To what extent do senior policy-makers see improving performance on PISA as a path to modernising and improving the national educational system?

- Have PISA-based national performance targets or indicators been established? What is the focus and nature of these targets?

2.1.2. Data collection

An expert questionnaire, completed by members of the PISA Governing Board (PGB), was the central method of data collection for this study. An online questionnaire and overview of the study's interests were sent via e-mail, in July 2011, to the PGB representatives from the 65 countries/economies that participated in PISA 2009. An identical Word document e-mail version of the survey was also available and requested by six representatives. These national representatives are formally appointed by their governments. Their official role is to oversee the governance of the PISA project and link the international work of PISA back into national ministries of education. They are invaluable informants as they are most likely to understand the extent to which and manner in which PISA is used within their home countries/economies. The purpose of the questionnaire was to gain expert insights on how PISA has been used within national policies and practices across a broad array of contexts at the national/federal and senior policy-maker levels.

The construction of the questionnaire was modelled on the national/federal policy areas of particular interest to the research questions. The survey was written in English, as this is the language in which PGB meetings are most commonly conducted.

2.1.3. Sample

A combined total of 37 representatives from OECD countries/economies and partner countries/economies responded to the questionnaire. OECD countries that participated in the data collection included: Australia, Austria, Belgium (French and Flemish Communities), Canada, Chile, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Turkey, the United Kingdom (England, Scotland and Wales), and the United States of America

(USA). The partner countries/economies Indonesia, Latvia, Singapore and Hong Kong-China also participated in the data collection.

Separate responses were obtained from the French and Flemish Communities of Belgium, and also for the English, Scottish and Welsh education systems of the United Kingdom. Consequently, these responses were analysed and reported separately. A total of 37 different education systems provided separate responses to the questionnaire.[3] For ease of expression, the term *countries/economies* is used to refer to all distinct education systems that provided a response to the questionnaire.

2.1.4. Limitations of the research

This research methodology has a number of limitations. First, the results draw on only one respondent per country/economy.[4] It is possible that a broader range of respondents from each country would have developed a more comprehensive analysis of the use of PISA. Yet, this brief exploratory study aimed to identify, in broad terms, the uses of PISA across multiple countries/economies, without a deep analysis of the way PISA plays into complex policy debates and decisions. The PGB representatives are best placed to provide a snapshot of the connection between PISA and national policies and practices. Qualitative case studies of specific countries/economies could be used to further explore the themes raised in this study, and would benefit from seeking expert opinions from policy-makers at different levels of government as well as from academic institutions.

Second, only a small number of partner countries/economies took part in the questionnaire. It is possible that policy-makers in some of these systems may use PISA differently than how those in OECD countries do, due to limited national capacities in assessment and evaluation.

Third, some of the questionnaire items required respondents to make subjective judgments regarding the extent of influence or role of PISA in policy-making. Comparisons between country/economy responses for these items should be drawn with care, as respondents may have had different interpretations of these terms and ratings.

Fourth, the questionnaire consisted of both multiple-choice and extended-response questions. Whilst all 37 respondents completed the multiple-choice questions, there was substantial variation in the additional information provided by respondents in the extended-response questions. This limits the number of countries/economies for which specific examples of policies and practices can be provided in the results section below.

Section 3 - Results

This section examines the results of the PGB questionnaire as they relate to this study's five specific areas of research:

3.1. Changes in educational policies and practices in light of PISA analysis of system performance;

3.2. Use of PISA policy implications and reference to 'high-performing' systems in national education debate and policy-making;

---

3 . Questionnaires were also received from Uruguay and Brazil. Yet, due to the incomplete nature of these responses, these were not included in the final analysis.

4 . Responses from Sweden and Korea made clear that multiple individuals had taken part in contributing to the final responses that were provided.

3.3. The role of PISA in national/federal assessment and evaluation policy and practices;

3.4. Setting and revising curriculum standards; and

3.5. Setting and monitoring performance targets and indicators.

3.1. Changes in educational policies and practices in light of PISA results

3.1.1. Broad analysis of PISA policy impact

Respondents were asked how influential specific PISA results and analyses have been in informing the policy-making process at the national/federal level in the country they represent. Respondents from 17 countries/economies judged that PISA had been 'very' influential, and respondents from a further 11 countries/economies judged PISA to be 'moderately' influential. The respondents from England-UK, Denmark, and Japan rated PISA as 'extremely' influential, whilst respondents from Finland, France, Indonesia, Luxembourg and Turkey rated PISA as 'not very' influential. The respondent from Belgium (Flemish Community) selected 'don't know.'

Beyond this overall judgment of PISA's influence in national policy-making, respondents were asked to indicate which specific aspects of PISA results, across any survey round, have led to/inspired changes in policy and practice in the country/economy they represent. The PISA result categories included: a) overall international rank; b) reading performance; c) mathematics performance; d) science performance; e) trend performance; f) equity; g) student interest, engagement, motivation and attitudes; and h) other issues. The three response options were 'Yes', 'Partly' and 'No'. These results are shown in Table 3.1.1.

Respondents from 26 different countries/economies indicated 'yes' to at least one category of PISA results. Australia was the only country that did not select either a 'yes' or 'partly' for at least one of the PISA result categories. Respondents indicated that the overall international rank had led to/inspired changes in 19 countries/economies and partially led to change in a further 11 countries/economies. Respondents from 20 countries/economies indicated that results of the PISA reading assessment had prompted policy changes; 16 countries/economies cited performance on the PISA mathematics assessment as leading to policy changes; and 12 countries/economies cited results of the PISA science assessment as leading to policy changes. Only the respondents from Australia and France answered that 'no' change had occurred in response to PISA reading performance results.

Table 3.1.1

Question 18. Which aspects of your country's PISA results (across any survey roun), have led to/inspired changed in policy or practice in your country?

	Yes	Partly	No
A. Overall international rank	**51.4% (19)**	29.7% (11)	18.9% (7)
B. Reading performance	**54.1% (20)**	40.5% (15)	5.4% (2)
C. Mathematics performance	**43.2% (16)**	**43.2% (16)**	13.5% (5)
D. Science Performance	32.4% (12)	**54.1% (20)**	13.5% (5)
E. Trend performance	**40.5% (15)**	29.7% (11)	29.7% (11)
F. Equity	29.7% (11)	**43.2% (16)**	27.0% (10)
G. Student interest, engagement, motivation and attitudes	8.1% (3)	**56.8% (21)**	35.1% (13)
H. Other issues (please state below)	8.1% (3)	8.1% (3)	**83.8% (31)**

Respondents from 15 countries/economies indicated that trend performance had led to policy changes, and respondents from 11 countries/economies noted that equity issues had led to changes. Only respondents representing Austria, Korea and Japan indicated that 'student, interest, engagement, motivation and attitudes', as revealed in PISA results, had led to changes in policy and practice.

An index was formed to summarise the breadth of policy impact across PISA results for each country/economy. The *breadth of policy impact index* was constructed by allocating each country 2 points for each 'Yes', 1 point for each 'Partly' and 0 points for each 'No' across the seven PISA result categories (a-g in Table 3.1.1). A higher score on this index represents policy responses to a broader range of PISA result categories in that country/economy. The combined total for each country/economy is shown in Table 3.1.2. To aid in the interpretation of the results, the table includes the respondents' judgment of how influential PISA had been in national policy-making processes, and also shows the PISA 2009 reading, mathematic and science scores, indicated as above OECD average, OECD average or below OECD average (OECD, 2010a). Table 3.1.2 suggests that it would be wrong to assume that PISA's impact on policy-making is necessarily greater in countries/economies that perform below the OECD average.

High-performing countries such as Korea and Japan have enacted reforms in response to a large range of PISA results. In contrast, a large group of countries that perform below or at the OECD average, including Italy, Indonesia and France, indicated very little policy change in response to PISA.

3.1.2. The role of PISA in policy-making processes and policy responses to PISA.

Respondents were asked to provide further details on the role PISA results play in policy-making processes. Analysis of the results shows several key areas of influence:

- PISA results set the agenda for policy dialogue among policy-makers and experts (*e.g.* Austria, Korea). For example:

  Korea - "*Based on the results of PISA, Korean policy makers have seriously considered the facts that the gender difference has been increased and the student ration of high performances has been lower than the other high-performing countries*."

- National policy actors use PISA results as evidence to argue that national performance needs improvement overall, or in a specific area. For example:

  England-UK - "*Overall ranking and trend performance in PISA demonstrates that other countries are improving at a faster rate and overtaking us, therefore demonstrating the necessity for the reforms set out in last year's white paper*."

- PISA indicators define performance and equity issues (*e.g.* variance between schools).

- PISA results are used as one of multiple indicators to inform policy decisions and development (*e.g.* Australia, Scotland-UK, Hong Kong-China). The respondent from Scotland-UK noted:

  "*PISA is a key measure, in particular our decline in the international rankings and the strong socio-economic background effect, but policy decisions are taken on the basis of a balance of international and national evidence*."

Table 3.1.2.

Country/Economy	Breadth of policy impact index	Informing policy-making process	PISA 2009 reading	PISA 2009 mathematics	PISA 2009 science
Republic of Korea	14	Very	Above	Above	Above
Austria	13	Very	Below	Average	Below
Hungary	13	Very	Average	Average	Average
Japan	13	Extremely	Above	Above	Above
Israel	13	Very	Below	Below	Below
Germany	12	Very	Average	Above	Above
Sweden	12	Very	Average	Average	Below
Poland	12	Very	Above	Average	Above
Ireland	11	Very	Average	Below	Above
Latvia	11	Very	Below	Below	Below
England-UK	11	Extremely	Average	Average	Above
Denmark	10	Extremely	Average	Above	Average
Greece	10	Very	Below	Below	Below
Norway	10	Very	Above	Average	Average
Slovak Republic	10	Very	Below	Average	Below
Estonia	9	Very	Above	Above	Above
Wales-UK	9	Very	Below	Below	Average
Chile	8	Moderately	Below	Below	Below
Luxembourg	8	Not very	Below	Below	Below
Mexico	8	Very	Below	Below	Below
Netherlands	8	Moderately	Above	Above	Above
Turkey	8	Not Very	Below	Below	Below
Finland	7	Not Very	Above	Above	Above
Hong Kong-China	7	Moderately	Above	Above	Above
Scotland-UK	7	Moderately	Above	Average	Above
Slovenia	6	Very	Below	Above	Above
Spain	6	Moderately	Below	Below	Below
USA	6	Moderately	Average	Below	Average
Belgium (Flemish Community)	5	Don't Know	Above^	Above^	Above^
Singapore	5	Moderately	Above	Above	Above
Belgium (French Community)	4	Very	Above^	Above^	Above^
Indonesia	4	Not very	Below	Below	Below
Italy	4	Moderately	Below	Below	Below
Portugal	4	Moderately	Average	Below	Below
Canada	3	Moderately	Above	Above	Above
France	1	Not very	Average	Average	Average
Australia	0	Moderately	Above	Above	Above

^ Is the overall Belgium national performance

- PISA results are used as an external trigger for large-scale public debate on education and relatively rapid policy dialogue and policy change (*e.g.* Germany and Denmark). For example, the respondent from Germany stated:

  "*The PISA-2000 results were rather disappointing and had a high impact on educational policy. People often refer to this as some sort of beneficial PISA shock ... The German States started many programmes and projects at the regional/local level as well as at the federal level to approach the problems that PISA had revealed*."

Respondents were also asked to provide details of the nature of the changes to policy or practice and explain how PISA results were connected to these changes. An analysis of the open responses revealed a broad range of policies and initiatives, including:

- Formation, expansion and improvements to national/federal assessment and evaluation systems (further examined in Section 3.3);
- Revision of curriculum standards, often to include and emphasise PISA-like competencies (*e.g.* Ireland, Germany, Greece and Norway) (further examined in Section 3.4);
- Setting and monitoring performance targets and indicators (further examined in Section 3.5);
- Strategies aimed at specifically improving reading/literacy performance (*e.g.* Japan and Ireland);
- Promoting equity through school financing (*e.g.* Austria, Belgium [Flemish] and Hungary);
- Postponing student tracking decisions (*e.g.* Belgium [French Community]);
- Strategies to monitor and improve the proportion of poor or top PISA performers (*e.g.* Korea and European Union);
- Strategies and discussions on how to improve student engagement and attitudes (*e.g.* Austria, Japan and Korea);
- Promoting competency-based teaching and learning (*e.g.* Hungary); and
- Additional resources for infrastructure development for natural sciences (*e.g.* Latvia).

3.2. Use of PISA policy findings in national/federal education debate and policy-making

PISA produces policy findings through both a quantitative analysis of the policy factors associated with high performance and equity across systems,[5] and through further case-study analysis of the reforms and policies implemented in high-performing or improving PISA countries.[6]

5 . Reported in both the PISA Initial Report for each survey round and through additional thematic reports.

6 . For example, the recent publication, *Strong Performers and Successful Reformers: Lessons from PISA for the United States* (2010b).

3.2.1. Influence of PISA policy findings

PISA aims to draw policy lessons and implications for the factors that are associated with high performance and equity. Respondents were asked to rate whether or not six areas of PISA policy analysis[7] have been influential in national policy-making processes. Response options were 'Yes' and 'No'. As shown in Table 3.2, 'Assessment and accountability' policy findings have had the broadest influence, with respondents from 29 countries/economies judging that this finding had been influential in national policy-making processes. This finding is well supported by the reported changes to national/federal assessment policies and practices outlined in Section 3.2. Between 11 and 13 respondents rated that the five other major policy areas had been influential in their country/economy. Some respondents emphasised that PISA policy findings had confirmed the countries'/economies' previously determined policy direction rather than contributing to new policy decisions (*e.g.* Sweden and Singapore).

Table 3.2

Question 20. Which areas of PISA policy analysis have been influential in national policy-making processes?

Policy areas	'Yes'
a. Assessment and accountability	29
b. Learning environment	13
c. Early childhood education	13
d. Resource invested and allocation	12
e. Student selection and tracking	11
f. Governance (*e.g.* autonomy, choice, private/public).	11

One policy implication of interest is selection and tracking. Whilst these processes are not relevant to all education systems, PISA findings have played an influential role in policy discussions on this issue in 11 countries/economies. Of particular interest among these countries is the group of European countries that has a history of selection and tracking. These include Austria, Belgium, Denmark, Germany, Hungary, Luxembourg, Poland and the Slovak Republic. The respondent from Chile also noted that PISA findings related to selection and tracking have been cited during discussions of that country's General Education Law.

3.2.2. Reference to and learning from high-performing PISA countries/economies

Respondents from 24 countries/economies judged that the policies of, or references to, high-performing or successfully reforming PISA systems have been influential in policy-making processes. Some respondents identified a more general influence of PISA high-performing systems on policy:

> Scotland-UK - "*In general the practices of high-performing countries are part of the evidence based used in developing policies. No Individual country of country's policies has been specifically influential.*"
>
> Australia - "*Australia is strongly interested in PISA-identified high performing and successfully reforming systems, and considers these results when formulating educational policy. However,*

7 . These policy areas were derived from the key sub-sections of the PISA 2009 initial report, Volume IV (OECD, 2010c).

Australia recognises that it is not always possible or desirable to introduce specific policies from other countries, as the country-specific context must be taken into account."

The systems of Finland, Korea, Shanghai-China, Singapore, Canada, Australia and New Zealand were frequently cited as being influential in policy-making processes. Many respondents noted the influence of more than one system. For example, the respondent from Chile wrote:

"*The experiences from several countries have been considered when developing different educational policies. For example, Finland is quoted in regard to equity, high performance, teacher training and absence of a high stake assessment system. The United Kingdom was reviewed for curriculum, institutional organization and, recently, for assessment consequences. And some US states .... Massachusetts for assessment and accountability. Other countries considered as well are Australia, Korea, New Zealand and Spain*."

Finland was the most commonly listed influential country/economy. Respondents from Denmark, Norway and Sweden noted a broad interest in Finnish policies as they seek to understand the performance differences between their Scandinavian systems. For example:

Sweden - "*In Sweden, much attention has been given to Finland and the Finnish success in PISA, given the many common elements of our education systems. Factors of relevance are the teacher education, support of individual students, special education, early intervention when students need extra resources, among others*."

A diverse group of 11 additional countries/economies also emphasised the influence of Finland. This group consists of the French and Flemish Communities of Belgium, Chile, Greece, Japan, Latvia, Poland, Singapore, the Slovak Republic, Slovenia, and Spain. Open-responses made clear that a number of countries/economies had a particular interest in the Finnish approach to teacher recruitment, training and early intervention for student support. For example:

- Spain - "Finnish ways to select the best candidates to become teachers … initial teaching training policies are currently used to inner discussions about our own initial teaching training system."

- Greece – "Finnish education system has influenced the policy debate about how the quality of the Greek education system might further improve. Moreover, it has also informed policy-making processes concerning educational reform in Greece. Precisely, Finnish curricula have provided useful inputs (especially regarding PISA-like competencies) in the Greek curricula revision processes."

- Slovak Republic – "Finland is the most inspiring system for our educational policy, mostly in the spheres of teacher appraisal, the position of teachers in society, school financing, autonomy of schools and freedom of creation of curricula."

For some countries/economies, their PISA peers of interest were high-performers that achieved particularly well in a specific area. The respondent from the French Community of Belgium cited the progress among Polish students. The respondent from Korea noted that:

"Although Korea has showed strong performance in PISA reading, the reading policy and curriculum of the countries/economies which indicate the higher percentage of top-level students, such as New Zealand and Australia, are considered to be further investigated".

The respondent from Singapore stated that the:

"examples of Finland and Shanghai in supporting weak performers or weak schools are instructive as we review our own strategies."

3.3. The role of PISA in national/federal assessment and evaluation policies and practices

Respondents were asked to rate the extent to which policy-makers in their country/economy see PISA performance as an important indicator of the effectiveness of the school system. As illustrated in Figure 3.3, only Israel and England-UK rated PISA as 'extremely' important in this regard. Respondents from 24 countries/economies rated PISA as 'very' important and nine respondents rated PISA as 'moderately' important. Turkey and the partner country Indonesia rated PISA as 'not very' important as an indicator of the effectiveness of the school system.

Figure 3.3.

	Response Percent	Response Count
Extremely	5.4%	2
Very	**64.9%**	**24**
Moderately	24.3%	9
Not very	5.4%	2
Not at all	0.0%	0
Don't know	0.0%	0

Q7. To what extent is PISA performance seen by policy-makers in your country as an important indicator of the effectiveness of the school system?

An analysis of the responses to open-ended questions on this subject highlights six key ways the PISA instrument had been used:

1. Provided a system evaluation for countries/economies that did not previously carry out national/federal assessments;

2. Led to the formation, or increased the scope, of a national/federal assessment system;

3. Complemented national data and validated national results against an international benchmark;

4. Used to conduct within-country/economy monitoring of sub-national regions or student groups;

5. Used as a best-practice 'model' or 'guide' for the formation and adaption of national/federal assessment policies and practices; and

6. Used to evaluate the effectiveness of educational reforms.

3.3.1. Provided a system evaluation for countries/economies that did not previously carry out national/federal assessments

Large–scale national assessments other than PISA were in operation in all countries/economies except for Greece, Latvia and Poland. For these countries/economies, PISA provided an important tool for evaluating the system. The respondent from Greece explained:

> *"PISA has provided policy-makers with useful information and tools to improve the quality and efficiency of the existing education system in Greece. More specifically, PISA results were used as a basis both for detecting systemic weaknesses of our existing education system and informing the revision of compulsory education curricula."*

3.3.2. Led to the formation, or increased the scope, of a national/federal assessment system

Respondents from 24 countries/economies indicated that PISA had influenced the development of new elements of a national/federal assessment strategy (*e.g.* the formation of new national assessments or adaptation of existing assessments). Respondents were also asked to provide details of these changes and judge the extent to which these changes had been a direct consequence of the country's/economy's engagement with PISA.

In many countries/economies, including Austria, Germany, Hungary, Ireland, Japan, Luxembourg, Norway, Poland and the Slovak Republic, PISA was judged to have played a significant role in highlighting the need to initiate further national/federal assessments in order to strengthen the evaluation and monitoring of student learning outcomes. Examples of country/economy responses include:

- Slovak Republic -"*Under the influence of PISA, we implemented new national measurements of reading and mathematics, as a direct consequence of poor results of our country in PISA 2003 and 2006 cycles."*

- Japan - *"It had been decided to introduce a national assessment of student performance after the release of the PISA 2003 results in 2004, and actually implemented since 2007. PISA-type assessment items are being used in the national assessment."*

- Ireland - "PISA has helped to identify the need to better assess the learning outcomes of students at second level. However, the assessment instruments, to be implemented nationally in 2012 in a systematic manner, are standardised tests and as such are not directly influenced by PISA. However, the monitoring and evaluating function of such tests is."

In other countries/economies, involvement in PISA was judged to have led to increasing the scope of national assessments across subjects or years (*e.g.* Korea and Sweden). The respondent from Sweden noted:

> *"There has been an increase in the number of subjects tested within the national assessment system. It is likely that the Swedish PISA results in science contributed to the introduction of national tests in biology, chemistry and physics for 12- and 15-year-olds as well as the development of diagnostic material in science for the earlier years in compulsory school. The introduction of national tests in mathematics in grade 3 (9-year-olds) is also partly another result of Sweden's PISA engagement."*

3.3.3. Complemented national data and validated national results against an international benchmark

Respondents from some countries/economies emphasised that PISA results complement national data derived from national/federal assessments. For a group of high-performing countries/economies PISA analysis is used to compare and validate data from their own national and sub-national assessments, even though national data remained more influential in system evaluations. Respondents emphasised that the PISA assessment of competencies complemented national assessments, which often focused on testing knowledge outlined in national/state curricula. PISA also allowed policy-makers to assess important disaggregated results, such as low and high achievers, the impact of socio-economic and immigrant background, and attitudes towards learning. Examples of country/economy responses included:

> Canada - *"PISA is used by Canadian provinces as a complementary indicator to monitor overall system performance as well as tracking results over time for specific subpopulations. It is also used to monitor the change in key variables associated with learning (e.g. reading enjoyment)."*
>
> Hong Kong-China – "*The functional approach of measuring application of knowledge to daily life is consistent with the national assessment in Chinese, English and Mathematics."*
>
> Singapore - *"PISA data complements national assessment data to inform us about the effectiveness of the education system. This includes information about top and low performers; and the different types of schools."*
>
> Spain - *"PISA is currently used as a means of comparing and contrasting our data generated by national and regional assessment studies. PISA is an important referent."*

Some countries/economies indicated that policy-makers have sought to more effectively accommodate and integrate PISA within their overall assessment strategy. Changes cited included taking into account the timing of PISA when planning the subjects/domains to be assessed by other national programmes (*e.g.* Belgium [Flemish]), and seeking to minimise the burden of testing on both schools and assessment authorities (Finland). The respondent for Canada noted:

> *"The national assessment program was redesigned in 2007 to better complement PISA in terms of schedule, target population and subject areas covered."*

Respondents were asked if existing national or sub-national assessments had been 'linked' to PISA by, for example, including PISA items in national or sub-national assessments. Respondents in eight countries/economies indicated that some form of linking had occurred. Analysis of the open responses revealed a variety of linkages: comparing the performance of the same cohort of students on a national assessment and PISA without statistical linkage (*e.g.* Slovenia); inclusion of some PISA items or PISA-like items in national assessments (*e.g.* Austria); and incorporating PISA international benchmarks within their current national or sub-national assessments (*e.g.* Canada). Examples included:

- Canada – "*Validation of provincial performance levels in British Columbia and Ontario.*[8]
- Chile - *"We administered our previous year national assessment to the PISA ninth grade PISA 2009 sample. In 2006 we took the grade option and it coincided with our national assessment. This was done with the idea of linking national and PISA results, which is part of our future plans."*

8 . See - *Linking provincial student assessments with national and international assessments,* http://dsp-psd.pwgsc.gc.ca/Collection/Statcan/81-595-MIE/81-595-MIE2003005.pdf

- Mexico – *"We linked PISA 2006 results with ENLACE (Ministry of Education national assessment) in 2008."*

- USA – *"Three states have embedded PISA items in their state assessments to help with setting proficiency levels in their state assessments."*

3.3.4. Used to conduct within-country/-economy monitoring of sub-national regions or specific student groups

Respondents from 14 countries/economies (Australia, Belgium [Flemish Community], Canada, Denmark, Estonia, Finland, Israel, Italy, Mexico, Poland, Slovenia, Spain, Singapore and the United Kingdom) indicated that PISA was used by national actors to monitor the performance of sub-national regions (*e.g.* states, provinces) or specific student groups. To do so, countries/economies must often choose to test a larger student sample that is stratified by region or particular student groups.

The analysis revealed that PISA is used as a monitoring policy tool in a group of large federal systems where education is mostly controlled at the state/provincial level. These countries include Australia, Canada, Germany and Mexico. Australia reports on the PISA performance of six states and two territories annually in the Report on Government Services. Since 2003, Mexico has over-sampled in order to obtain a representative sample of each of the 32 federal entities (also attempted to gain a better distribution between secondary/lower secondary and between urban/ rural populations). Other examples included:

- Canada – *"Since education is the exclusive responsibility of provinces and territories in Canada, each province monitors PISA results very closely to validate their own provincial data and other national level results."*

- Germany - *"PISA was used to monitor the performance of the 16 federal Lander in 2000, 2003 and 2006. Since the initial of a national assessment in 2009, PISA has no longer been used for this level of monitoring."*

Drawing on both the results of the questionnaire and PISA sampling information in the PISA 2009 initial report (OECD, 2010), it is clear that student samples are also stratified at the regional level in Spain (15 regions, adjudicated), Italy (21 regions, non-adjudicated), and the United Kingdom into Scotland (adjudicated), England, Northern Ireland and Wales (non-adjudicated). Yet the extent to which these regional results are used for monitoring is beyond the scope of this study. The respondent from Finland noted that student results were monitored at the regional level, and in PISA 2009 two regions out of nine in Austria participated, but this is not set to continue for PISA 2012. In Denmark, additional instances of PISA testing have been used to monitor sub-national groups and students:

> *"PISA is used for extra testing of bilingual students and one Danish municipality has used PISA 3 times for testing all of the students in the municipality (9th grade)."*

In Poland, PISA has been used to assess older cohorts (16- and 17-year-olds).

Analysis of the open responses found that monitoring of performance by student language group has been conducted in Finland (Finnish-speaking and Swedish-speaking) and Israel (Hebrew- and Arabic-speaking). Sweden over-sampled students with a foreign background in PISA 2000 and PISA 2003 in order to further analyse this sub-group. Yet this was not continued for PISA 2006 and PISA 2009.

3.3.5. Used as a best-practice 'model' or 'guide' for the formation and adaptation of national/federal assessment practices

Open-ended responses from respondents highlighted that PISA has been used as a best-practice 'model' or 'guide' for the design of new national assessments and adaptations to existing assessments. Examples included:

- Hungary – *"The Hungarian Assessment of Basic Competencies is not linked to PISA by anchor items, so not exactly the same scale is used, but the framework of the national assessment system is based on the model of PISA." "PISA has a great impact on the design and the framework of the Hungarian Assessment of Basic Competencies. Data analysis and reporting is also similar to the methods established by PISA."*

- Korea - *"Test developers and subject area experts are trying to benchmark and reflect the item type, assessment frameworks, as well as the content of PISA assessment to some extent."*

- Slovak Republic - *"Our national measurements at the level of primary schools (testing of ninth-grade students) have been influenced by PISA evaluation framework in following spheres - structure of tests, cognitive levels, assessment of questions etc. The reason of this linking is that our national measurements should evaluate skills that are essential for everyday life and lifelong learning in the similar meaning as PISA has."*

- Italy - *"The frameworks used as a basis for national assessments are specifically modelled on PISA and other international survey frameworks."*

Respondents from France and Chile emphasised the role of PISA in guiding technical and methodological changes to the way national assessment are conducted:

- France - *"Since 2003, national assessments on large samples use the methodology of PISA to establish competences scales. It's a direct consequence of France's engagement with PISA."*

- Chile – *"... improving procedure, manuals, item construction, statistical analysis and keeping records."*

In some high-performing countries/economies, the national assessment goals and practices were judged by respondents to be already consistent with the PISA instrument. Consequently, the model of PISA provides a departure point for dialogue, validation and innovation in national assessments. For example, Singapore:

> *"Since the late 1990s, Singapore has been making changes to the item types in our national exams to test for higher-order thinking. PISA items have provided us with good ideas as we consider how to assess the learning outcomes that are valued in the Singapore education system."..."How PISA implements computer-based assessments informs our own efforts in computer-delivered assessments in our national examinations."*

3.3.6. Used to evaluate the effectiveness of educational reforms

Respondents from 10 countries/economies indicated that PISA was used to monitor or evaluate the effectiveness of specific or large-scale policy reforms. Examples included:

- Hong Kong-China – *"English as medium of Instruction Policy, Parental Involvement Policy and Educational Decentralisation Policy."*

- Poland - *"PISA is important in monitoring the massive educational reform which started in September 1999 on ISCED 1 and 2 level" and in 2001 for ISCED 3 level.*

- Singapore – *"Along with other studies, PISA is used to provide an indication of the effectiveness of our initiatives to promote critical and inventive thinking; help under-achievers; and maximise the potential of students."*

Other respondents indicated that PISA would be used as an indicator of the effectiveness of recent or soon-to-be-enacted reforms. For example, for Ireland, there is an expectation that later rounds of PISA will "*be used to evaluate the effectiveness of the recent national literacy and numeracy strategy and curricular reforms*." Similarly, the respondent for Austria indicated that PISA 2012 would be used to evaluate the effectiveness of reforms initiated after 2007, which could not be reasonably be assessed by PISA 2009 due to the time lag of reform effects. Other relevant country/economy examples included:

- England-UK –*"PISA 2009 performance will be an informal baseline from which to measure the success of reforms currently being put in place."*

- Israel – *"PISA will serve as one indicator for the effectiveness of a program set to boost scholastic achievement in middle schools."*

- Mexico – *"An improvement in PISA results will be one of the indicators considered for the assessment of the Education Sector Programme (PROSEDU) 2007-2012 Objective 1. The results of PISA 2009 and an instrument PISA-type were used on the evaluation of ISCED reform."*

3.4. Setting and revising curriculum standards

Respondents were asked to rate the perceived level of alignment between PISA competencies and the goals of the education system as set by the government. Respondents from 19 countries/economies judged the two to be 'very' aligned and a further 15 judged them to be 'moderately' aligned. The respondent from Japan noted the two were 'extremely' aligned, whilst the respondents from Greece and Luxembourg determined that PISA competencies and the goals of their education systems were 'not very' aligned.

Respondents were asked whether national or sub-national curriculum standards have been created or adjusted with reference to PISA or PISA-like competencies. Questionnaire respondents from 16 countries/economies judged that national or sub-national curriculum standards had been created or adjusted (a 'yes' response). Respondents were also asked to provide details of the nature of these standards, and make a judgment as to the extent to which these changes were a direct consequence of the country's engagement with PISA (Question 4). Analysis of the open-ended responses highlighted the following four roles and uses of PISA in setting standards and revising curricula:

i. *Curriculum standards and goals already aligned with PISA competencies, so no pressure for change exists (Australia, Canada, Singapore, Sweden and Hong Kong-China).*

ii. *Policy-makers and experts have assessed PISA frameworks among other international and national examples in discussing and revising curricula and standards.*

   – Ireland - "*National comparisons of curricula with the PISA frameworks and assessment have fed into the overall influence of the PISA results*."

- USA – "*PISA has been assessed, along with other frameworks, in the formation of the new Common Core Standards*."

- Slovenia -"*Indirect influence of PISA assessment and PISA-like competencies in the setting and interpretation of national curriculum standards*."

- Hong Kong-China - "*PISA framework has been widely discussed by the curriculum experts of the government*."

iii. *Revision of curriculum standards, with an explicit attempt to align with PISA frameworks or include PISA-like competencies.*

For example, curriculum developers/reviewers have tried to reflect PISA competencies in national curricula in Korea (*e.g.* revision of science curriculum standards) and Mexico (lower secondary level). Other examples included:

- Chile – "*PISA's reading framework had a great impact in curriculum reform and in the content and performance standards*."[9]

- Japan - "*After the release of the PISA 2003 results in 2004, it was decided to revise the national curriculum (courses of study) to incorporate the fostering of PISA-like competencies and to improve the student academic performance*."

- Slovak Republic - "*Key competencies in reading, mathematics and science characterised in detail by PISA were implemented into national curriculum standards in the Slovak Republic. These competencies did not have a tradition in our previous educational system*."

- Spain - "*The LOE (Organic Law of Education, 2/2006, 3rd May) acknowledges basic or key competencies as a fourth element of the curriculum (objectives, content, evaluation criteria and competencies). The influence of PISA literacies on this innovation cannot be denied*."

- Norway – "*In the latest curricular reform in Norway - The Knowledge Promotion, LK2006 - basic skills in reading and mathematics are included in all subject curricula*."

Responses from Greece and Luxembourg, the two countries/economies that rated the least alignment between PISA competencies and the current goals of the education system, indicated movement towards reforms that will include PISA competencies within national curriculum standards. The respondents noted:

- Greece - "*Greek students' low achievement in the PISA survey have inspired revisions in existing compulsory education curricula. More specifically, the design of these new curricula has been informed by PISA-like competencies (*i.e. *skills and knowledge, motivation and attitudes that are relevant for life).*"

- Luxembourg – "*New school reforms are now being reflected upon for implementation in 2013. These include definition of achievement standards, new/adapted methods of teaching, learning and assessment that emphasise on the measuring how students are able to use what is learnt in real-life situations*."

9 . For further details, see *PISA 2009 Initial Report,* Vol V, *Box F: Chile, p 85.*

iv. Setting national proficiency standards for PISA.

In Australia and Canada, the national proficiency standards for students in PISA have been set at level 3 on the international scales.

3.5. Setting and monitoring performance targets and indicators

PISA-based national or sub-national performance targets or indicators have been set in 18 countries/economies,[10] namely: Australia, Belgium (Flemish and French Communities), Canada, Denmark, Finland, France, Hungary, Ireland, Israel, Ireland, Japan, Mexico, the Netherlands, Poland, Slovenia, the Slovak Republic, Turkey and Wales-UK. Analysis of open-ended responses revealed the diversity of target types, number of targets, the stakeholders who set them (*e.g.* the Prime Minster or a national assessment institute), and the documents in which those targets have been elaborated (*e.g.* whitepaper, growth strategy, etc.). The specific country targets are outlined in Table 3.5. Target types included:

i. Relative rank of country in international performance. These are goals dependent on the relative performance of other countries/economies;
ii. Specific national PISA score, range of scores in each domain, or perform at the OECD average;
iii. Increases in number of high-performers and decreases in percentage of students scoring at or below PISA proficiency Level 2, the baseline proficiency level; and
iv. Equity goals, including variance between schools.

Some countries/economies have used a range of target types and indicators.

In addition to these country/economy performance targets, some responses from European countries also emphasised that the council of the EU included a PISA-based target for low achievers within the strategic framework for European cooperation on education and training ("ET 2020"). The target states that by 2020 the share of pupils performing below PISA proficiency Level 2 should be less than 15%.

10 . The response from Spain also indicated that national performance targets were set. But the description of these targets did not meet the intended definition of targets and thus was excluded from this list.

Table 3. 5. Overview of PISA-referenced performance targets and indicators

COUNTRY	Targets/Indicators
Australia	PISA used as key national performance measures of numeracy, science literacy and literacy. These are expressed in the Measurement Framework for Schooling in Australia (ACARA, 2010). The proportion of students achieving at or above the proficient standard (defined as Level 3) on the OECD PISA combined mathematics, reading and science scale. No specific target is set.
Belgium – (Flemish Community)	The indicator 'Share of 15-year-olds performing at level or below in reading literacy' is used in the Flemish 'Pact2020'–a future-oriented action plan that was agreed by all Flemish social partners in 2009. The indicator is used to monitor an overarching goal of improving the quality of life and reducing poverty. Specifically, the PISA indicator is referred to in the context of literacy. As the target concerns literacy of the whole population, no specific target has been set for the PISA indicator.
Belgium (French Community)	In the Contrat pour l'école[a], which is a set of goals assigned to the education system on the basis of a broad consultation of the educative community, PISA is mentioned several times. Some of the targets for 2013 are linked to PISA: - The students' results in reading, mathematics and science should at least reach and preferably surpass the OECD average, and the proportion of weak students should decrease. - The between-school variance in student performance should decrease from 56% to 40% and the school segregation level should be less than 40%. - The variance in results in the main subjects explained by the track should progressively be reduced.
Canada	Some Canadian provinces have expressed PISA-related performance targets in general terms, such as 'improving PISA score' or 'improving PISA ranking'.
Denmark	Rank - a goal of Denmark to be in the top five in PISA. The goal was set by the Danish Prime Minister in January 2010.
Finland	The goal for national performance for each domain, expressed as a range of PISA scores. The goal is set in the state budget by the government and approved by the parliament.
France	For PISA 2012, the target is 17% for low-achieving readers.
Ireland	In the national literacy and numeracy strategy. [b] target-setting on the basis of PISA is included as follows: - Increase the percentage of 15-year-old students performing at or above Level 4 (*i.e.* at the highest levels) in PISA reading literacy and numeracy tests by at least five percentage points by 2020; - Halve the percentage of 15-year-old students performing at or below Level 1 (the lowest level) in PISA reading literacy and numeracy tests by 2020.
Israel	Improve Israel's absolute and relative standing on the PISA scale. Increase in the percent of students at the upper part of scales, and reduce the percent of students at the lower end of the scales.
Japan	The government established the "New Growth Strategy" on 18 June 2010 that included various goals to be achieved by the year 2020. PISA is referred to in one of the strategy's goals: to see Japan's overall student performance at the top level among the participating countries. The aim is also to reduce the number of poor performers and increase the number of high performers; make the mean scores of each domain close to those of the top-performing countries; and increase the proportion of students who respond positively to the attitudes- and interest-related items to above-average levels.
Mexico	Objective 1 of the Education Sector Programme 2007-2012 establishes as a goal for 2012 to raise performance on PISA to 435 points as an average for both mathematics and reading, taking the average score of 392 points, attained in PISA 2006, as the base. The Agreement for the Articulation of Basic Education asserts that the whole curriculum should set a vision for 2021 that includes generalising the competencies described at PISA Level 3; eliminating the gap between the students who perform below Level 2 and those who perform at or above that level.

Poland	Polish education strategy seeks to reduce the number of low-achievers in reading, math and science as defined by the ET 2020 benchmark.
Netherlands	Raise average scores in three PISA domains and increase number of students at highest proficiency levels.
Slovak Republic	The Ministry of Education sets its performance targets in relation to performance of the country on PISA. The Ministry, as sole stakeholder, sets the targets with the aim of achieving the OECD average or better in the following round.
Slovenia	There are no officially set performance targets based on PISA. However, the 2011 White Paper on Education states that Slovenia should rank in the top third of developed countries/economies in PISA-like assessments.
Turkey	National performance targets are determined according to the country's score on PISA and the OECD average.
Wales	The Minister has voiced aspirations for improvement in PISA performance and PISA related skills.

a. This document can be located at: http://www.enseignement.be/index.php?page=25230

b. Ireland's national literacy and numeracy strategy document can be found at: http://www.education.ie/admin/servlet/blobservlet/lit_num_strat.pdf?language=EN&igstat=true (p18)

Section 4 Discussion

This paper has sought to examine the normative impact of PISA by investigating how, and the extent to which, national policy actors use PISA in policies and practices to evaluate and improve school-system performance. The results make clear that PISA is becoming an influential element of education policy-making processes at the national level. Furthermore, the findings provide preliminary evidence that PISA is being used and integrated within national/federal policies and practices of assessment and evaluation, curriculum standards and performance targets.

Policy-makers across nearly all PISA-participating countries/economies see PISA as an important indicator of system performance, and there is evidence that the PISA evaluation has the potential to 'define' the policy problems and set the agenda for policy debate at the national and state levels. Results from the early rounds of PISA triggered large-scale PISA shock in a small group of countries/economies, such as Germany and Denmark. This study provides evidence that the majority of countries/economies have initiated policy reform and initiatives - to varying extents - in direct response to the PISA evaluation at some point across the survey rounds. Countries/economies that have demonstrated the most substantial policy responses to PISA included those that perform above, at and below the OECD average. Overall, PISA seems to have become accepted by policy–makers as a valid and reliable instrument for internationally benchmarking current system performance and the relative changes in outcomes over time.

Beyond being an external monitor of system performance, there is evidence that PISA has now been embedded within national/federal systems for assessment and evaluation. Across a range of countries/economies, PISA has provided a large-scale evaluation for systems that did not previously conduct national/federal assessments; has promoted the increased scope of national assessment systems; and been used to monitor sub-national regions and student groups. In other countries/economies with more sophisticated national/federal assessment systems, PISA is used to complement national data and validate national results against an international benchmark. There is also evidence that some policy-makers have used the PISA assessment frameworks and instrument as a best-practice 'model' or 'guide' in formulating improved national/federal assessment policies and practices. Furthermore, a substantial group of countries/economies has explicitly sought to incorporate and emphasise PISA-like competencies in revised

national standards and curricula. This impact on assessment and standards may be best interpreted as policy transfer and learning from the international to the national level (Dolowitz and Marsh, 2000; Stone, 2001; 2004).

There is also evidence that PISA has been embedded as an external global standard for setting system goals and evaluating system progress. A substantial number of countries/economies have set PISA-based national performance targets. These policy targets often define measurable system goals in terms of relative rank or absolute PISA score. Targets focused on improving the performance of low-achieving students – defined as below PISA proficiency Level 2 – have been adopted across a broad range of countries/economies and at the supranational level by the EU. PISA-based policy targets further incorporate PISA norms into the national/federal education system. Furthermore, respondents from a group of countries/economies that have recently enacted, or are in the process of initiating, education reforms highlighted the expected role of future PISA surveys in evaluating the effectiveness of these national reform strategies. These finding underscore a shift towards international, external accountability for system performance and improvement through PISA.

PISA policy findings have also had an impact on national policy. The PISA-based policy findings drawn from the factors associated with higher performance have played an influential role in the policy-making processes of the majority of countries/economies, particularly those related to assessments and accountability. In the specific area of student selection and tracking, analysis of PISA results has directly challenged the historical norm of school organisation in a group of education systems in Europe that traditionally track their students. Furthermore, there is evidence that referring to high-performing PISA systems has been influential in the policy-making process of at least half of the countries/economies. The education policies of Finland have been cited most broadly across countries/economies, signalling that, through its performance in PISA, Finland is regarded as a key source for cross-national policy learning and borrowing. It is possible that reference to PISA high-performing countries may help policy actors to legitimise and justify their intended reform agenda within contested national policy debates (Steiner-Khamsi, 2003; 2010).

The analysis of this paper suggests that PISA plays an important function for policy-makers as they seek to evaluate and improve system performance in response to the demands of the global knowledge economy. This paper provides preliminary evidence that PISA has an influential normative effect on the direction of national education policies, although the extent of influence varies across countries/economies. In some PISA participating countries/economies, policy-makers have made only small policy adjustments to respond to the PISA evaluation and align system policy settings with international standards. Yet there is evidence that in other countries/economies, policy actors have responded quickly to PISA evaluations of their system and have moved to incorporate the PISA norms and standards more deeply into the national/federal policy processes and instruments. In these contexts, PISA may come to increasingly shape, define and evaluate the key goals of the national/federal education system. On a broader level, the analysis discussed in this paper reveals the emerging role and influence of the OECD as an international education monitor and policy actor.

References

Bieber, T. (2010). Playing the Multilevel Game in Education – The PISA Study and the Bologna Process triggering Swiss Harmonization. In K Martens, N. Alexander Kenneth, M. Windzio, & A. Weymann (Eds.), *Transformation of Education Policy*. Basingstoke: Palgrave.

Dobbins, M. (2010). Education Policy in New Zealand – Successfully Navigating the International Market for Education. In K Martens, N. Alexander Kenneth, M. Windzio, & A. Weymann (Eds.), *Transformation of Education Policy*. Basingstoke: Palgrave.

Macmillan.Dobbins, M., & Martens, K. (2010). A contrasting case: The USA and its weak response to internationalisation processes in education policy. In K Martens, N. Alexander Kenneth, M. Windzio, & A. Weymann (Eds.), *Transformation of Education Policy*. Basingstoke: Palgrave.

Dolowitz, D., & March, S. (2000). Learning from abroad: The role of policy transfer in contemporary policy making. *Governance* 13(1), 5-24.

Egelund, N. (2008). The value of international comparative studies of achievement - a Danish perspective. *Assessment in Education: Principles, Policy & Practice*, *15*(3), 245-251.

Ertl, H. (2006). Educational standards and the changing discourse on education: the reception and consequences of the PISA study in Germany. *Oxford Review of Education, 32*(5), *619–634.*

Grek, S. (2009). Governing by numbers: the PISA effect in Europe. *Journal of Education Policy*, *24*(1), 23-37.

Hopkins, D., Pennock, D., Ritzen, J., Ahtaridou, E., & Zimmer, K. (2008). External Evaluation of the Policy Impact of PISA. OECD doc. EDU/PISA/GB(2008)35/REV1. Paris: OECD.

Kingdon, J. (1995). *Agendas, Alternatives, and Public Policy* (2nd ed.). New York: Harper Collins.

Knodel, P., & Walkenhorst, H. (2010). What's England got to do with it? British Underestimation of International Initiatives in Education Policy. In K Martens, N. Alexander Kenneth, M. Windzio, & A. Weymann (Eds.), *Transformation of Education Policy*. Basingstoke: Palgrave.

Martens, D. K., Nagel, A.-K., Windzio, M., & Weymann, A. (2010). *Transformation of Education Policy*. Basingstoke: Palgrave.

Martens, K., & Niemann, D. (2010). Governance by comparison: How rating and ranking impacts national policy-making in education. No.139, TranState working paper. University of Bremen. Collaborative Research Center 597: Transformations of the State.

Niemann, D. (2010). Turn of the tide new horizons in German education policy: Making through IO influence. In Kerstin Martens, A.-K. Nagel, M. Windzio, & A. Weymann (Eds.), *Transformation of Education Policy*. Basingstoke: Palgrave.

OECD. (2000). *Measuring student knowledge and skills: The PISA 2000 assessment of reading, mathematics and science literacy*. Paris: OECD

OECD. (2004). *Denmark: Lessons from PISA 2000*. Paris: OECD.

OECD. (2010a). *PISA 2009 results: What students know and can do. Student performance in reading, mathematics and science. Volume I.* Paris: OECD.

OECD (2010b) *Strong performers and successful reformers in Education: Lessons from PISA for the United States*. Paris: OECD.

OECD. (2010c). *PISA 2009 results: What makes a school successful? Resources, policies and practices. Volume IV*. Paris: OECD.

Schleicher, A. (2007). Can competencies assessed by PISA be considered the fundamental school knowledge 15-year-olds should possess? *Journal of Educational Change*, *8*(4), 349-357.

Stack, M. (2007). Representing School Success and Failure: media coverage of international tests, *Policy Futures in Education, 5*(1), 100-110.

Steiner-Khamsi. (2003). The politics of league tables. *Journal of Social Science Education*, *1* (on-line journal SOWI).

Steiner-Khamsi, G. (2010). Presidential Address The Politics and Economics of Comparison. *International Education*, 54, 323-342.

Stone, D. (2001). Learning lessons, policy transfer and the international diffusion of policy ideas. No. 69/01, CSGR Working paper. The University of Warwick.

Stone, D. (2004). Transfer agents and global networks in the "transnationalisation" of policy. *Journal of European Public Policy*, *11*(3), 545-566.

Takayama, K. (2008). The politics of international league tables: PISA in Japan□s achievement crisis debate. *Comparative Education*, *44*(4), 387-407.

Takayama, K. (2010). Politics of Externalization in Reflexive Times: Reinventing Japanese Education Reform Discourses through "Finnish PISA Success." *Comparative Education Review*, *54*(1), 51-75.

THE OECD EDUCATION WORKING PAPERS SERIES ON LINE

The OECD Education Working Papers Series may be found at:

- The OECD Directorate for Education website: www.oecd.org/edu/workingpapers
- The OECD's online library, SourceOECD: www.sourceoecd.org
- The Research Papers in Economics (RePEc) website: www.repec.org

If you wish to be informed about the release of new OECD Education working papers, please:

- Go to www.oecd.org
- Click on "My OECD"
- Sign up and create an account with "My OECD"
- Select "Education" as one of your favourite themes
- Choose "OECD Education Working Papers" as one of the newsletters you would like to receive

For further information on the OECD Education Working Papers Series, please write to: edu.contact@oecd.org.