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**DIRECTORATE FOR EDUCATION
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Governing Board

EXTERNAL EVALUATION OF THE POLICY IMPACT OF PISA

26th meeting of the PISA Governing Board

The Hague, 3-5 November 2008

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EXTERNAL EVALUATION OF THE POLICY IMPACT OF PISA:

EVALUATION REPORT

1. At its 23rd meeting, the PISA Governing Board asked the PISA Executive Group to establish criteria and a strategy for evaluating the impact of PISA both on public policy and on key stakeholders, within the OECD Council evaluation strategy and in consultation with the Education Committee. The Executive Group established proposals for this strategy at its meeting in June 2007, which were revised according to the suggestions and comments of the PISA Governing Board. At its 24th meeting, the PISA Governing Board welcomed the revised proposal for the evaluation of the policy impact of PISA [doc. ref. **EDU/PISA/GB (2007)35**].

2. This document reports on the outcomes of the external evaluation of the policy impact of PISA in participating economies performed by external evaluators David Hopkins, Dianne Pennock and Jo Ritzen. The evaluation report was welcomed by the PISA Governing Board at its 24th meeting [doc. ref. **EDU/PISA/GB(2008)35**].

THE GLOBAL EVALUATION OF THE POLICY IMPACT OF PISA

DAVID HOPKINS¹, DIANNE PENNOCK AND JO RITZEN
with ELPIDA AHTARIDOU and KARIN ZIMMER

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- National co-ordinators for organizing the questionnaire data collection, and case study national coordinators for Canada, Hong Kong-China, Norway, Poland, and Spain, for organizing the visits.
- And especially those who responded to the questionnaires, and allowed themselves to be interviewed and contributed evidence for the report

David Hopkins
Dianne Pennock
Jo Ritzen

Preface

In November 2007, the PISA Governing Board asked us to conduct an evaluation of the impact of PISA in participating countries and economies. Given the global importance of PISA on policy research and practice, we were pleased to accept.

Although the report has been prepared within very tight timeframes, it is based on high quality research, solid evidence and a series of country case studies. We are confident that the analysis is defensible and the

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direction of travel, robust. This report, however, is the first, rather than the last word and we particularly feel, as argued in chapter five, that more work needs to be commissioned on the policy impact of PISA.

We would not have completed the evaluation without the support of Elpida Ahtaridou and Karin Zimmer, who have assisted with the data collection and analysis, and the drafting of the report. We, however, remain totally responsible for the report as a whole and, in particular, the interpretations and conclusions drawn from the evaluation.

We hope that the report will contribute to the important and ongoing debate on enhancing the policy impact of PISA.

David Hopkins
Dianne Pennock
Jo Ritzen

24th October 2008

Executive Summary

1. **Chapter 1** provides a brief overview of The Programme for International Student Assessment (PISA) of the OECD and its impact on national policy and policy debates in OECD member and non member countries and economies. PISA is an internationally standardised assessment that monitors the quality of education systems in terms of student outcomes. PISA assesses the ability of 15-year-olds to apply their knowledge in reading, mathematics and science to real life problems, rather than the acquisition of specific curriculum content. Assessments take place every three years and use a framework that is jointly developed by OECD countries. Contextual data are collected through background questionnaires for students and schools and between 5 000 and 10 000 students are typically tested in each country.

2. **Chapter 2** describes the aims and objectives of the evaluation, the research methodology, and discusses the limitations of the research. The following three criteria were established to guide the evaluation:

- The relevance of PISA in participant countries and economies.
- The effectiveness and sustainability of PISA in participant countries and economies.
- The unexpected impacts of PISA.

3. In response, the research design comprised of the following two elements:

- i. a quantitative strand: a total of 905 questionnaires were distributed to policy makers, local government officials, school principals, parents, academics and researchers, and media representatives in 43 countries and economies (of which 24 were OECD member countries) via email. Of these, 548 questionnaires were returned; this corresponds to an overall response rate of 61%. Furthermore, responses were obtained from 42 representatives at the PISA Governing Board, from 33 members of the business community and from 36 representatives of teacher organisations. The construction of the questionnaire followed the evaluation criteria outlined above.
- ii. a qualitative strand: five case study countries and economies were selected, taking into account variations in terms of the levels of impact PISA has achieved, performance in PISA and equity and government structure (centralized/decentralized/federal/regional). Geographical balance was also taken into consideration. The case study countries and economy were: Canada, Hong Kong-China, Norway, Poland, and Spain.

4. **Chapter 3** analysed the quantitative data collected as part of the evaluation.

- The following emerging themes have been identified with regards to the relevance of PISA:
- Policy makers are considered the most significant stakeholder group, both in relation to PISA and its results, and in implementing policies in light of PISA, with local authority officials and school principals second and third, respectively, with regards to the implementation of policies in light of PISA.
- The various stakeholder groups assume relatively low levels of responsibility for the PISA results in their countries.

- PISA seems to be addressing countries' policy needs to a greater, rather than lesser extent.
- Countries and stakeholder groups are increasingly valuing the skills assessed in PISA and are promoting them within their education system.
- PISA is used as a tool for monitoring and evaluating a country's performance and equity.

5. The quantitative data appear to indicate the following in relation to the **effectiveness and sustainability of PISA**:

- The influence of PISA on policy formation, both nationally and locally, is increasing over time.
- The influence of PISA seems to be greater at a national level, rather than at a local level, and has less impact on the school and classroom level.
- In order for the influence of PISA to be increased at all levels in the system, and for it to contribute further to sustainable change, the following are required:
 - a better coordinated and strategic approach for the dissemination of PISA results;
 - further support for various stakeholder groups in interpreting PISA results and in designing strategies for improvement in light of PISA;
 - clearer linkage of PISA results to national or federal assessment strategies; and,
 - greater utilisation of the PISA results by participant countries and economies.

6. **Chapter 4** presented the analysis of the qualitative data and made the following observations.

- **PISA and the goals of the education system:** Countries that see themselves as part of the global village and economy tend to value the skills assessed in PISA. They seem to have promoted them in their education systems for some time and score relatively high in PISA.
- **Policies and initiatives undertaken in light of PISA:** PISA has made an impact on policy in all countries studied. Impact varies from country to country and there seems to be a correlation between performance and the volume of policy initiatives introduced in light of PISA. Countries that rank relatively high in PISA use the PISA results as a mechanism for evaluating their education system, but do not seem to have introduced many policy initiatives directly as a consequence of PISA. On the contrary, in countries that perform relatively poorly, a direct policy impact after the publication of the PISA results is identified. Despite this policy influence, PISA seems to have relatively low impact at the school and classroom levels.
- **PISA and policy coherence and sustainability:** Policy coherence is a complex area. This is for two reasons. The first is that countries by and large did not see educational reform as a holistic issue; rather, they responded with individual reform initiatives. The second is that many countries justify their reforms through their performance in PISA. As a consequence, in general, we found a lack of policy coherence overall.
- **The level of awareness of PISA amongst stakeholders:** The level of awareness of the PISA results varies across countries and across stakeholder groups. However, the more emphasis policy makers and media place on the PISA results, the more awareness is raised at all levels in the

system. Also, the lower a country's ranking, the more awareness is raised at all levels in the system. Last but not least, policy makers, academics and researchers and the media seem to be the stakeholder groups most aware of PISA.

- **Processes that effectively propagate the PISA results:** The relatively high performing countries have mostly developed a series of strategies for the dissemination of the PISA results at different levels in the system. It is evident that if governments deal strategically with the PISA results, then effective propagation is more likely to be achieved.
- **PISA and national monitoring, assessment and evaluation mechanisms:** PISA is regarded by all participating countries as an extremely important measure of the performance of their school system. As such, it is recorded a high level of credibility and influence in all jurisdictions. However, the level of integration of PISA results in national assessment systems vary considerably.

7. **Chapter 5** reviewed both the quantitative and qualitative data and made suggestions as to the future direction of PISA. Stake's Matrix (Stake, 1967) was used to structure the analysis to make judgements about PISA and inform the recommendations.

8. Based on this analysis, a series of **recommendations** were formulated for the PISA Governing Board. They relate to each of the criteria previously discussed:

- Pilot work on attempting to measure the broader outcomes of schooling should be undertaken.
- PISA should give serious consideration to the addition of some form of value added or contextual value added component.
- At a minimum, PISA should produce guidelines of dissemination for those who participate in the programme. The funding of further research on the impact of PISA and countries' expectations of PISA should be given some serious thought.
- The OECD should use the outcomes of PISA to stimulate a more precise debate among participating countries and economies on how various policy options relate to outcomes on PISA assessments.
- Despite financial constraints and the issues of quality clearly articulated above, that PISA should move rapidly to considering ways in which its outcomes can speak more directly to the Board/State/Local, school, classroom levels.
- PISA should consider, at a minimum, the creation of a policy group for countries that request its advice on policy formation and better use of the PISA results.

9. A further and more fundamental recommendation is that the OECD Governing Body funds a programme to explore the policy implications of PISA. If implemented successfully, the proposal offers the possibility of significantly expanding the influence of PISA in the policy domain. Such an approach would allow countries and economies to relate their policy choices more directly to PISA outcomes, to compare policy options between countries and jurisdictions, and eventually, to monitor the impact of changes in policy direction over time.

Chapter 1: The PISA assessments and their impact on national policy in OECD countries

1. This chapter provides a brief overview of **The Programme for International Student Assessment (PISA)** of the OECD and its impact on national policy and policy debates in OECD member and non member countries.

2. PISA is an internationally standardised assessment that monitors the quality of education systems in terms of student outcomes. PISA assesses the ability of 15-years-olds to apply their knowledge in reading, mathematics and science to real life problems, rather than how well they have acquired specific curriculum content. Assessments take place every three years and use a framework that is jointly developed by OECD countries. Contextual data are collected through questionnaires and between 5 000 and 10 000 students are typically tested in each country (OECD, 2006).

3. More specifically, PISA sets out to assess certain key competencies that young adults need to possess in order to be successful in tomorrow's global village and global economy. Each assessment cycle examines in depth students' competencies in one of the domains of literacy in reading, mathematics and science whilst a summary profile of skills is completed for the other two. Between 2000 and 2006 three PISA surveys have been completed. In more detail:

- *The first survey was conducted in 2000:* it focused on reading literacy and measured students' "capacity to understand, use and reflect on written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society." (see page 12 in OECD, 2006). The survey was completed by students in 43 countries (29 OECD member and 14 non-member countries and economies; for 11 of the 43 countries and economies, data was collected in a follow-up study, PISAPLUS, in 2002).
- *The second survey was conducted in 2003:* it assessed students in mathematical literacy and examined young adults' "capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgements and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned and reflective citizen" (see page 12 in OECD, 2006). A total of 41 countries (30 OECD member and 11 non-member countries and economies) participated in the 2003 assessment cycle.
- *The third survey was conducted in 2006:* it had science literacy as its focus and assessed the capacity of students' "scientific knowledge and use of that knowledge to identify questions, to acquire new knowledge, to explain scientific phenomena, and to draw evidence based conclusions about science-related issues, understanding of the characteristic features of science as a form of human knowledge and enquiry, awareness of how science and technology shape our material, intellectual, and cultural environments, and willingness to engage in science-related issues, and with the ideas of science, as a reflective citizen" (see page 12 in OECD, 2006). A total of 57 countries (30 OECD member and 27 non-member countries and economies) participated in this survey.

4. PISA also collects data that relate to broader educational outcomes, such as students' motivation to learn, their home background, their own self-belief and the learning strategies they use when studying. The students' socio-economic background and their attitudes to learning and life-long learning are also recorded. School principals fill-in a questionnaire providing information about their schools, as well.

5. Despite concerns about the methodological limitations of international assessments in general, and in particular of those of PISA (see for example Dohn, 2007; Duru-Bellat and Suchaut, 2005; Goldstein, 2004; Toppings et al, 2003; Prais, 2003), many would agree that the PISA assessments mark a step change

in providing quality evidence of international comparisons. In general, data from international comparisons allow the identification of strengths and weaknesses of countries' education systems in light of the performance of other systems and also track their progress over time. Importantly, PISA:

- provides information on students' performance in competencies that are highly predictive for their future success, though, PISA does not capture the entirety of competencies such as youngsters' interpersonal skills, for example, which are increasingly important (Schleicher, 2007);
- identifies those countries and economies that achieve high standards, but also secure equity in their education systems;
- stresses the characteristics that make such systems successful;
- points out the within and between school variation in each country and across countries; and
- highlights the factors of inequality that influence students in developing their knowledge and skills at home and at school and how these factors interact (i.e. social inequality, gender inequality).

6. The nature and relative robustness of the PISA results, together with the fact that it naturally sets higher standards for all education systems, positions it as probably the most important of the international studies. Thus, PISA has been successful in provoking policy debate and in becoming the point of departure from which relatively informed educational reforms have been initiated. Some would argue that PISA's impact on national debates and policy is also due to the breadth of its international dimension that includes countries as diverse as Korea, Italy, Mexico and the United States and equates, according to the OECD, close to 90% of the world's global economy. Also, as countries compete in that global economy, and economic analysis shows that schooling is important for a country's economic growth, the PISA results could also be perceived as an indication of a country's future economic success. In the same way, it is suggested that the OECD/PISA league tables, that systematically rank participating countries and economies according to their performance, promote competition between countries, which in turn results in reforms of their educational policies (see for example Rinne et al, 2004).

7. An exemplification of the influence of PISA is found in the media attention it has attracted in almost all, if not all, of the countries that participated in its assessments. Thousands of articles have been published discussing the PISA results (see for example *Le Monde*, 2001; *The Times*, 2001; *New York Times*, 2004; *Veja*, 2007; *El País* December 5, 2007; *Helsingin Sanomat*, 2007; for an analysis of the media coverage of PISA in the US see Stack, 2007). Media is the means through which the public predominantly becomes aware of national and global issues and has a reach of millions of people every day. So, when headlines refer to the results of a country's performance in PISA, and sometimes in a sensationalised manner, it is difficult for policy makers to ignore them. In this way, a platform for debate on educational issues is sometimes created. Interestingly, the Deutsches Institut für Internationale Pädagogische Forschung (DIPF; German Institute of International Pedagogical Research) recorded 118 articles published only in German newspapers following the publication of the PISA 2000 results in December 2001, which highlighted the relatively low performance of German students.

8. Indeed, educational policy debates were far more intense in Germany and those other countries that showed relatively poor results in the PISA assessments. Such was their resonance that in both Germany and Denmark it led to major reviews of their education systems and made proposals for reform. As Ertl (2006) recapitulates, in literature related to the effects of PISA 2000 in Germany this has been compared with "the Sputnik shock (Ostermann, 2005) or even with the French Revolution (Herrmann,

2004)". Reforms included the introduction of national standards, a review of the school curriculum and an emphasis on empirical research on pedagogical practice (Ertl, 2006). Mexico, that has also scored relatively low in PISA, has too conducted a relatively small review of its education system, the proposals of which have been welcomed by government officials (Hopkins et al, 2007)².

9. Importantly, countries like Finland, that has consistently ranked high in all PISA assessments and with an education system identified as being of both excellence and equity, have also used the PISA results as a platform for policy debate for further improvement. Government officials from the Ministry of Education and the National Board of Education after the publication of the PISA results suggested that improvement efforts should focus on teachers' training, and developing the Finnish social and health sector to support youngsters with health and social issues they are faced with and that impact on their school performance (Rautalin, 2007). In contrast, analysis of the editorials of *Opettaja-lehti*, the Finnish teachers' union magazine, attributed the country's success in PISA to the work of teachers and asked the Finnish government to acknowledge further teachers' work, ensure their professional development in the future and provide schools with more resources as a reward for the country's ranking (Rautalin and Alasuutari, 2004). Such professional and policy dialogues are essential in order for any education system to improve.

10. In other countries, discussions in light of PISA evolved around a variety of other issues. For example academic reference to peer effects using PISA 2000 and 2003 data is noted in Austria (Schneeweis and Winter-Ebmer, 2007); in Hong Kong-China, discussion on the difference in performance between boys and girls (Yip Chiu, and Ho, 2004); in England an analysis of student performance in PISA and its relation to social segregation (Jenkins, Micklewright and Schnepf, 2008) and many others.

11. Although the above could be considered indicative evidence of PISA's indirect, and in some cases as we have seen, direct impact on national policies, no study has systematically measured the level of PISA's influence on OECD countries' national policy. This is what this research project set out to examine. It also seeks to identify how such impact can be enhanced and so further support improvement across OECD countries.

12. In the next chapter we turn our attention to the evaluation's design and methodology.

Chapter 2: Evaluation design and methodology

13. This chapter describes the aims and objectives of the evaluation; the research methodology; and discusses the limitations of the research.

2.1 Criteria

14. The following three criteria were established to guide the evaluation - these were adapted from the OECD Council's evaluation strategy:

- i. Identify the relevance of PISA in participant countries and economies:

² It is evident that the motives for reform in Denmark, Germany and Mexico were genuine; as proposals for change followed scientific research and expert advice one is confident that these proposed reform changes are thought through and neither instinctive nor serving particular political agendas. One has to be mindful however that PISA or any other international comparative study for that matter could be used to serve specific interests. This can be explained through what Luhmann and Schorr called 'externalisation' (1979). They suggest that the reference to 'world situations' enables policy makers to make the case for educational reforms in their countries that would otherwise be contested.

- And explore:
 - whether PISA addresses the policy needs of participating countries;
 - the relationships between PISA and the goals of the education of participating countries; and
 - the links between the PISA assessments and national or federal assessments.
- ii. Assess the effectiveness and sustainability of PISA in participant countries and economies:
 - And examine:
 - various stakeholders' level of awareness of the PISA results and ways in which the PISA results are being propagated at all levels in the system;
 - the importance placed on PISA as a point of departure for reform;
 - the uses of PISA, if any, to inform policy formation and implementation;
 - PISA's impact, if any, on school and classroom practices;
 - the value added, if any, of PISA to national or federal assessments;
 - PISA's contribution to equity in national or federal systems of education;
 - what impact PISA has had on policy coherence in participating countries; and
 - the impact of PISA on national or federal policies that contributes to sustainable change.
- iii. Identify the unexpected impacts of PISA in participant countries and economies.
 - To evaluate the impact of PISA various stakeholder groups were targeted as potential respondents to the quantitative and qualitative strands. Target groups included:
 - policy makers at the senior level;
 - local government officials;
 - school principals;
 - parents;
 - academics and researchers;
 - media representatives;
 - business community; and
 - teacher associations.

15. The project was carried out between November 2007 and October 2008 and was divided into seven phases of activity. Annex 1 provides a task description for the external evaluation team. The table below provides a brief overview of each project phase.

Table 2.1: Phases of activity

	Activity	Timeline
Phase One	Approval of the terms of reference by the PISA Governing Board (PGB) at the PGB meeting	Oct-07
Phase Two	Review of the relevant literature Design of instruments Questionnaire <ul style="list-style-type: none"> • Questionnaire design • Data-collection protocol Pilot of Questionnaire	November 2007 to January 2008
	Design of instruments Case Studies <ul style="list-style-type: none"> • Protocol for generalisation • Sampling • Case study design Pilot of Case Study method	January and February 2008
Phase Three	Questionnaire <ul style="list-style-type: none"> • Data collection • Data analysis 	February 2008 to May 2008
Phase Four	Case Studies <ul style="list-style-type: none"> • Organisation of visits • Pre-visit data analysis • Visits • Field work and analysis 	May 2008 to July 2008
Phase Five	Integration of quantitative and qualitative data Final report	July 2008 to October 2008
Phase Six	Presentation of the evaluation report to the PISA Governing Board	October 2008
Phase Seven	Presentation of the evaluation report to the OECD Education Policy Committee	November 2008

2.2 Research methodology

16. To respond to the research questions, the research design comprised of the following two elements:

- 1.a quantitative strand: with the distribution of a questionnaire to the 57 countries and economies participating in PISA 2006; and
- 2.a qualitative strand: with five countries as case studies.

2.3 Quantitative Strand

17. An online questionnaire was devised and distributed via e-mail to the 57 countries and economies participating in PISA 2006. The construction of the questionnaire followed the evaluation criteria outlined earlier in this chapter. It consisted of a general part for all the respondents and specific questions for different stakeholders groups. The majority of items were Likert-type but there were also several open-ended questions that required to be filled in. The questionnaire was written in English. Nevertheless,

countries were given the opportunity to translate the questionnaire to their own language, seven of which took up the offer. In January 2008, the questionnaire was piloted in all stakeholder groups in four countries (Austria, Japan, Sweden and the United States), with a total of 19 questionnaires being filled in. Feedback on the questionnaires usability, accuracy and relative effectiveness were incorporated by the external evaluators (details on the questionnaire revision are provided in the project progress report for the 25th meeting of the PISA Governing Board, OECD doc.ref. EDU/PISA/GB(2008)10, Appendix 3). The final questionnaire items are given in Annex 2.

18. After revisions were completed, a total of 905 questionnaires were sent out to policy makers, local government officials, school principals, parents, academics and researchers, and media representatives by the national project coordinators, which were the representatives of the country or economy at the PISA Governing Board. Of these, 548 questionnaires from 43 countries and economies were returned; this corresponds to an overall response rate of 61%. An indication of response rates for these stakeholder groups is given in Table 2.2. The calculation is based on the maximum number of respondents in each stakeholder group as required by the external evaluators. The calculation illustrates that response rates varied between 40% (media representatives) and 88% (local government officials).

19. Countries and economies that participated in the questionnaire data collection included: Australia, Austria, Belgium, Bulgaria, Canada, Chile, Chinese Taipei, Colombia, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hong Kong-China, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kyrgyz Republic, Latvia, Liechtenstein, Lithuania, Luxembourg, Macao China, Mexico, the Netherlands, Norway, Qatar, Serbia, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, and Uruguay.

20. Moreover, 33 responses were collected from business association representatives, and 36 from teacher associations. Together with 42 responses from national coordinators, a total of 659 questionnaires were available for data analysis.

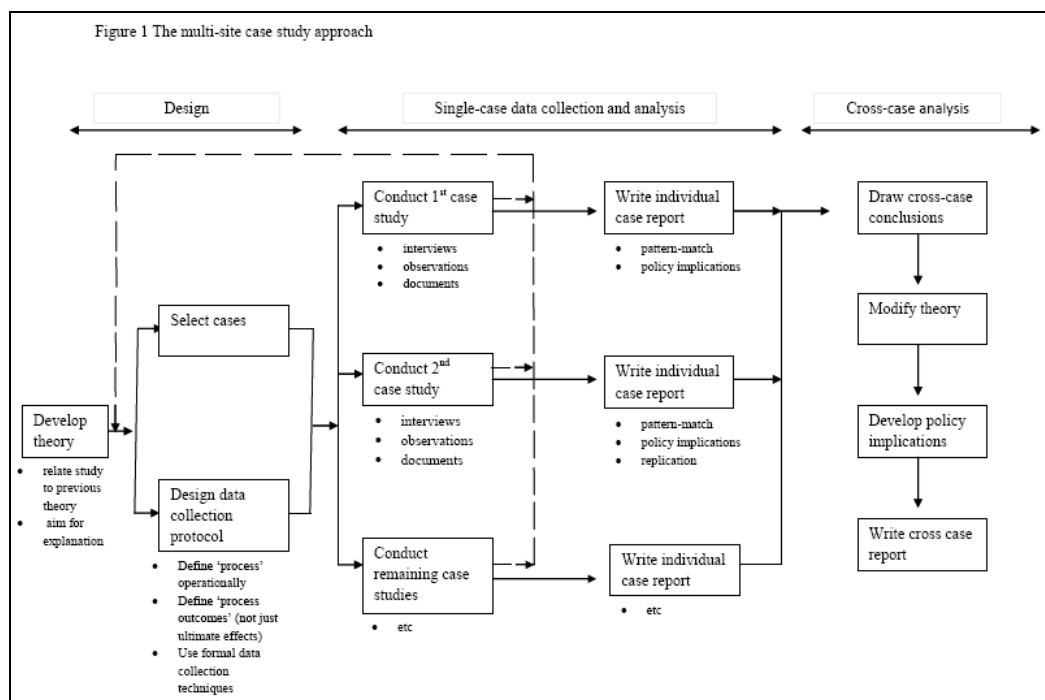
Table 2.2: Questionnaire responses

Stakeholder group	Number of responses	Response rates
Policy makers	149	73%
Local government officials	72	88%
School principals	81	49%
Parents	69	42%
Academics and researchers	128	78%
Media representatives	49	40%

2.4 Qualitative strand

21. Building upon the quantitative results, the qualitative strand used Yin's (1984) Case Study Protocol to guide the in depth multi-site multicultural case study approach. Yin's (1984) approach to multi-site case study design involves designing a data collection protocol, applying it to the single cases and applying it systematically across the cases (see Figure 1). Single-case data are collected and analysed, integrating the information obtained from different data sources. Finally, comparing the individual case reports, in turn, allows for valid cross-case analyses to be drawn (Chapter 4 is structured accordingly).

Figure 2.1: The multi-site case study approach.



Source: Yin (1984).

22. To achieve its aims, the evaluation team was guided by the evaluation criteria adapted from the OECD Council's evaluation strategy and outlined earlier in this chapter, and also established the following analytical framework. Each case study team was required to:

- assess the level of awareness of PISA amongst key stakeholders including the media and business community;
- explore the relationships between the PISA assessments and the goals of the national or federal system of education both formal (set by central government) and informal (goals that are culturally shared by key stakeholders);
- capture organizational structures and processes that effectively propagate the PISA results at all levels in the system (central, local and school level);
- examine effective uses of the PISA data and the policies/initiatives undertaken in light of such utilization that have improved pupil results at a national and school levels;
- analyse the approaches in which the PISA results are used to promote equity at all levels in the system;
- investigate the implementation of policies/initiatives undertaken in light of PISA and, in particular, the ways in which policies arising from the PISA results are integrated with other strategies to achieve school improvement;
- identify examples of effective monitoring and evaluation which use the PISA results to effect improvement at all levels in the system; and

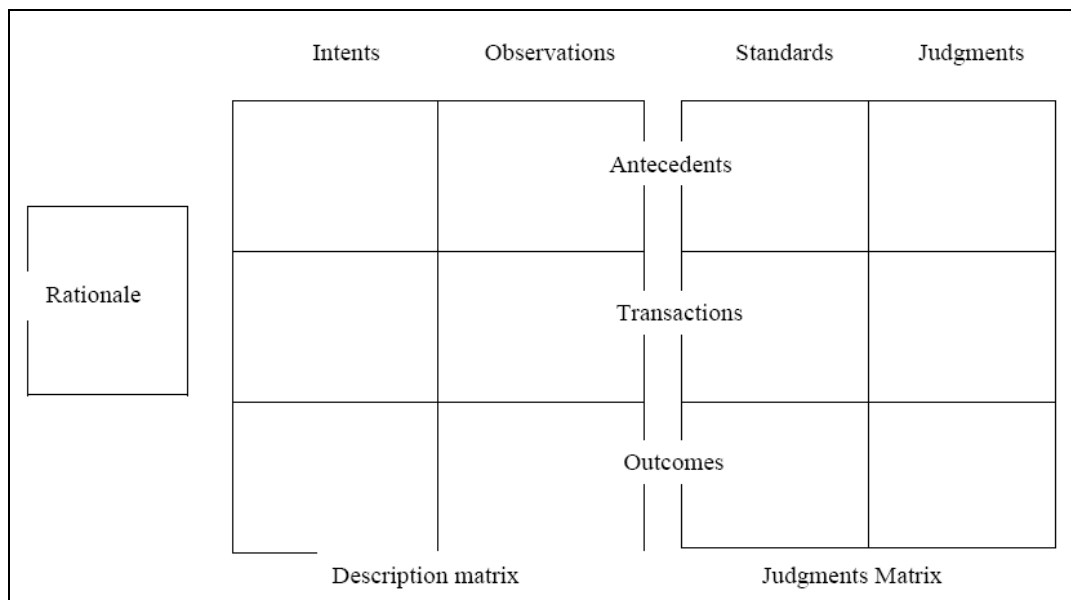
- investigate school practices introduced/adopted both at a school and classroom levels and, in particular, instructional methods implemented in light of the PISA results to improve student learning.

23. Five case study countries and economies were selected taking into account variations in terms of the levels of impact PISA has achieved, performance in PISA, equity and government structure (centralized / decentralized / federal / regional). Geographical balance was also taken into consideration. The case study countries were: Canada, Hong Kong-China, Norway, Poland and Spain.

24. A member of the evaluation team and one national staff were responsible for planning and conducting each of the case studies. Each case study lasted three days. In each of the five case-study countries, up to 38 individuals from the different stakeholder groups took part in interviews and focus groups. Annex 3 details the schedules of the case-study visits for each of the countries.

25. As regards analysing and reporting the research conclusions Stake's (1967) 'countenance of educational evaluation' model was followed. The model is summarised below:

Figure 2.2: Stake's evaluation model



Source: Stake, 1967.

26. Based on the model, a distinction is made between *antecedents*, which are any prior condition that may relate to outcomes, *transactions*, which are what actually occurred – 'the succession of engagements which comprise the process of education' – and *outcomes*, which are the impact of the innovation of those involved, was first carried out. A contrast was then made between the intentions at each phase with observations of what actually occurred. This assumed that there is a relationship between intentions and observations at each phase, and a logical flow through phases related to intentions and an empirical flow through phases related to observations. In this way, the descriptive data gathered and analysed illuminates the situation under review. The results from this methodological approach were a descriptive analysis that should be relatively uncontentious (given that it attempts to be objective) and illuminative (given that it relates intentions to observations).

27. The judgement matrix in the model allowed the application of various criteria –which included national policy and guidelines and educational theory and research and commonly agreed practice. Once the criteria were articulated and set against the programme’s description, the judgments were drawn. This process allows the grounds for deriving to judgments that are clearly defined and open to scrutiny and debate (Chapter 5 is structured accordingly).

2.5 Limitations of the research

28. One has to take into consideration however the limitations that the methodology poses. For this research project and its research methodology, the limitations were:

- *The tight timescale within which the evaluation was completed:* although the tight timescale could have hindered quality, the expertise of the evaluation team and the relatively large number of team members working on the evaluation project minimized such impact.
- *The relatively small number of countries participating in the qualitative strand:* even though the number of case studies was relatively small, the richness of the case study findings in conjunction with the questionnaire results allow for a robust overview of PISA’s impact on national policies to be drawn. However, further research on this area could shed much additional light.
- *The selection of potential questionnaire respondents:* The review team requested specific representation for the case study. Coverage was to include government officials, national or local, journalists, principals, teachers, researchers, business community representatives, parents and students. Thus certain constraints were placed on the country national co-ordinator.
- The identification of potential questionnaire respondents was the responsibility of national coordinators who provided the evaluation team with a list of their suggested participants for approval. In some cases, such selections were considered to be biased by the evaluation team and alternatives were proposed. Although this methodology served well in minimizing biased choices by national coordinators, it was unable to eliminate them entirely.
- In many cases however, the selection of individuals to be interviewed during the case-study visits was determined by other parties such as principals or government personnel. In some cases, such as business representatives, the selection was made simply by personnel availability. The range of responses from solid knowledge of PISA to little knowledge made it evident that selection was indeed as random as was deemed possible based on the criteria for selection.
- *The problem with language:* Although translated questionnaires allowed many respondents who could not read or write efficiently in English to participate in the study, and in cases has made the content of the questionnaire accessible, translations hold the danger of misinterpreting the original meaning. Also, responses to the English questionnaires by participants whose English is their second language could result in distorting results because of the potential misunderstandings. All procedures related to the translation of the questionnaire were at the discretion of countries. Such problems are also relevant to the interviews. The evaluation team used summarising and clarification frequently to avoid misinterpreting participants’ responses.

Chapter 3: Discussion of the quantitative strand

29. In this chapter, we report the results of the questionnaire data collection in relation to the relevance, effectiveness and sustainability, and unexpected impacts of PISA in participating countries and economies. The chapter is structured to provide a descriptive analysis of the data, followed by a summary

and an analysis for each of the above criteria. Results are based on responses from all stakeholder groups and a total of 659 respondents from 43 countries that participated in PISA 2006. One country collected a total of 15 responses (four each from policy makers and parents, three from academics and researchers, two from school principals, one each from a media representative and the national co-ordinator), and, with the exception of questions 1.4 and 4.3, submitted the national results over all respondents, only. Results from this country are thus not included when stakeholder specific results are reported.

44. Before analysing the questionnaire results, it is instructive to firstly briefly outline the level of awareness of different stakeholder groups. In summary:

- all stakeholder groups reported a fair level of knowledge of the PISA results;
- in particular, over 85 percent of policy makers, local government officials and academics and researchers report having a relatively high level of knowledge of PISA processes and impact; but
- between a quarter to half of the responding school principals and parents, as well as representatives from teacher associations and the business community perceive themselves as not being familiar with the way in which the PISA process is conducted and the impact it achieves (Figure 3.1, see Annex 4).

3.1. The relevance of PISA in participating countries and economies

45. To identify the relevance of PISA in participant countries and economies questionnaire, respondents were asked to assess the importance of different stakeholder groups in relation to PISA; the importance placed by participant countries of the issues addressed in PISA; the compatibility of PISA with national or federal systems of assessment; the extent to which PISA fairly reflects the performance of students of participant countries and economies; and whether PISA addresses countries policy needs.

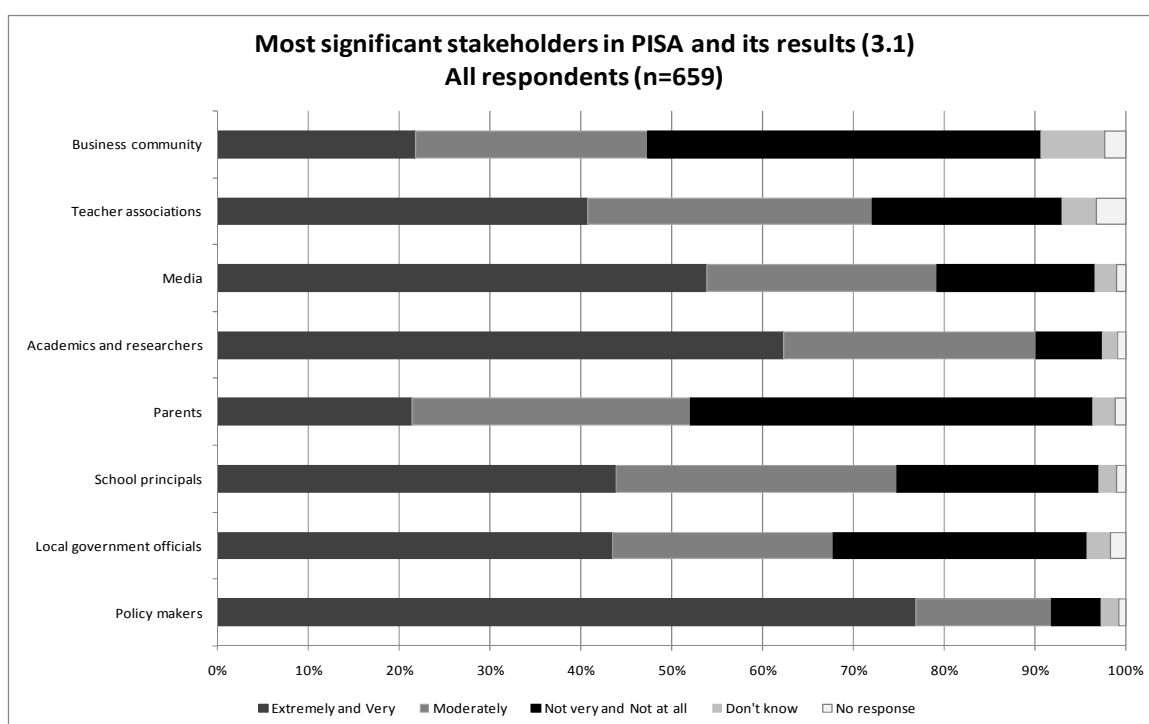
3.1.1 To what extent are different stakeholder groups significant in relation to PISA in participating countries and economies?

46. To identify the importance of different stakeholder groups in relation to PISA in participant countries and economies, respondents were asked to assess the significance of stakeholder groups in relation to PISA, the significance of stakeholder groups with regards to the implementation of policies in light of the PISA results, and the extent of which key stakeholders feel responsible for the PISA results in their own country.

47. As illustrated in Figure 3.2a, policy makers were perceived as extremely significant and very significant stakeholders of PISA by 77% of the 659 respondents, followed by academics and researchers (62%) and the media (54%). Local government officials, school principals and professional teacher associations were regarded as extremely or very significant stakeholders by 44% and 41% of respondents respectively, while between 21% and 28% considered them to be not very significant or not at all significant. Finally, parents and the business community were not generally regarded as highly significant stakeholders of PISA, with 44% and 43% of respondents choosing the response options “not very” or “not at all significant”. Other significant stakeholders included students themselves; teachers and teacher training centres; curriculum developers; institutions of the governmental and non-governmental education sector; and organisations of civil society, like trade unions and employers and medical and industry associations. PISA national centres were also mentioned. Figure 3.2b (see Annex 4) shows that this overall response pattern is similar in all stakeholder groups.

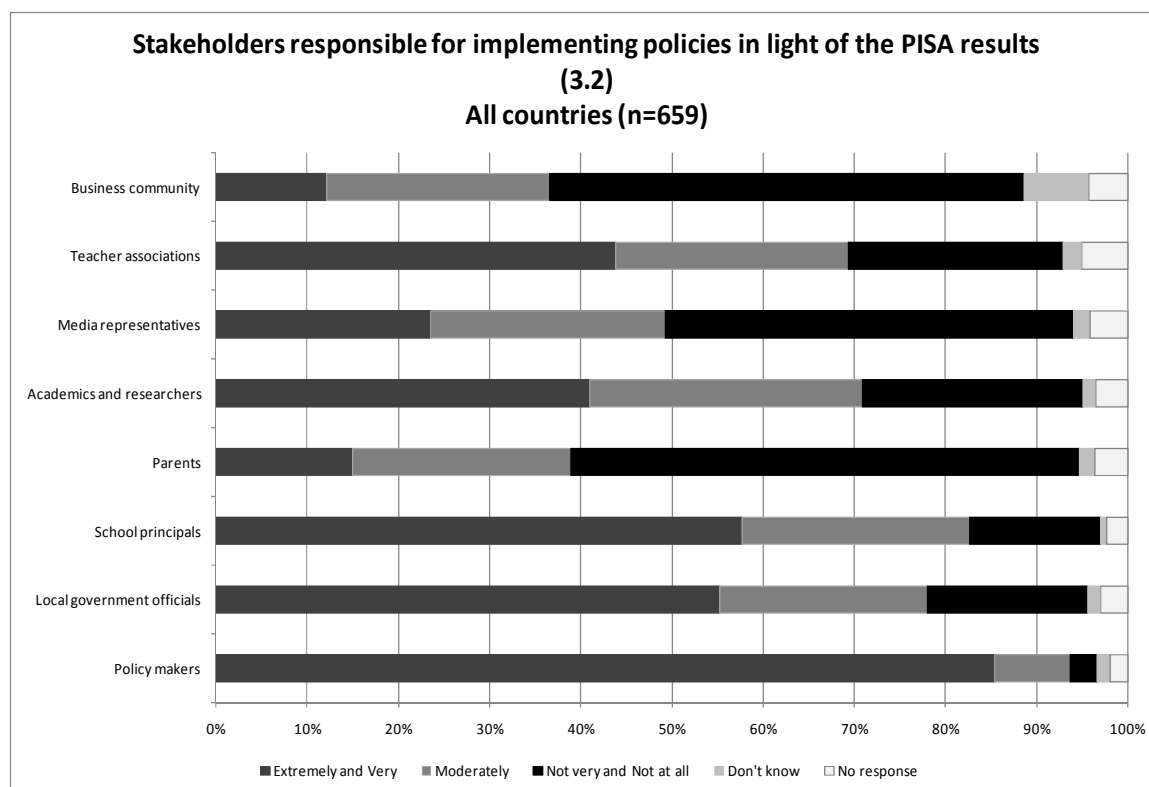
48. Unsurprisingly, a great majority of questionnaire respondents (85%) regarded policy makers as the main stakeholders responsible for implementing policies in light of PISA, followed by school principals and local government officials. Professional teacher associations and academics and researchers were third and fourth, with 44% and 41% respectively (see Figure 3.3a). In contrast, more than half of the respondents (56% and 52% respectively) considered parents and the business community as not very or not at all responsible. This pattern is similar in the responses of all stakeholder groups (Figure 3.3b, see Annex 4). Other stakeholders responsible for the implementation of policies in light of the PISA results included: the students themselves; teachers; support staff and school advisors; education authorities (school councils, school welfare groups, regional education officers, national examination boards, curriculum developers, textbook editors); education institutions (pre-school institutions, universities, teacher training centres and organisations, vocational education agencies); as well as society as a whole.

Figure 3.2a



Question 3.1: Who would you identify as the most significant stakeholders in PISA and its results in your country? Please mark how significant PISA is for each stakeholder, and to which PISA assessment you refer.

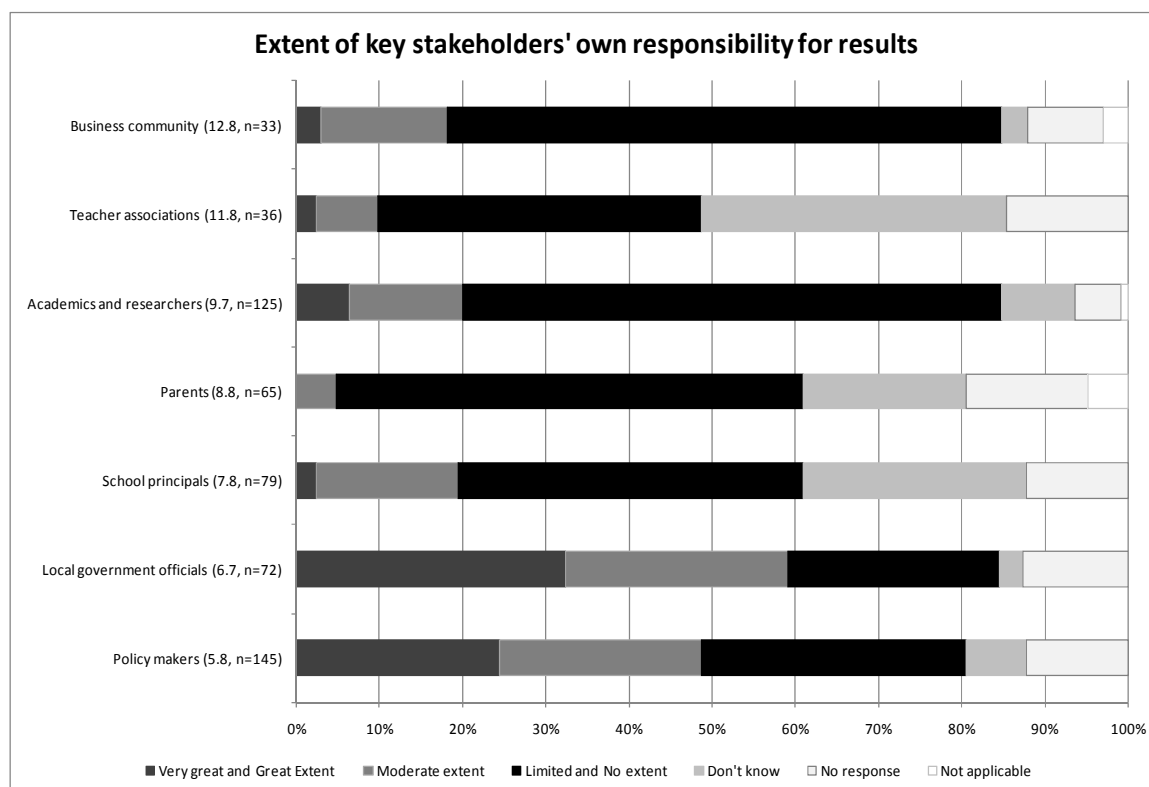
Figure 3.3a



Question 3.2. Who would you identify as being responsible for implementing policies in light of the PISA results in your country? Please indicate the degree of responsibility for each stakeholder and specify to which PISA assessment you refer.

49. As regards the extent to which key stakeholders take responsibility for the PISA results in their own country, and as seen in Figure 3.4, 32% of local government officials and 24% of policy makers reported that their stakeholder group is responsible for the PISA results to a very great or great extent. This is the case for only 2% of school principals and representatives of teacher associations responding to the questionnaire, and for none of the parents. On the other hand, 41% of school principals and 65% of teachers and representatives of teacher associations perceive their stakeholder group to be responsible for the PISA results only to a limited or to no extent. This is also the case for more than half of the respondents for parents (56%), representatives from the business community (67%) and academics and researchers (65%). It must be noted that between 12% and 15% of respondents in each stakeholder group did not respond to this question.

Figure 3.4



Stakeholder specific question (5.8;6.7;7.8;8.8;9.7;11.8;12.8). To what extent do [members of own stakeholder group] feel responsible for your country's results in PISA?

3.1.2 To what extent are the issues addressed in PISA relevant to participant countries and economies?

50. The majority of respondents regarded student performance in reading (78%), mathematics (75%) and science (71%), as well as the international comparisons and rankings (70%) as extremely important or very important aspects of PISA (see Figure 3.5a). This was also the case when reporting on the relationship between home background and student performance (58%), the relationship between school context and student performance (53%) and student interests, motivation and attitudes (48%).

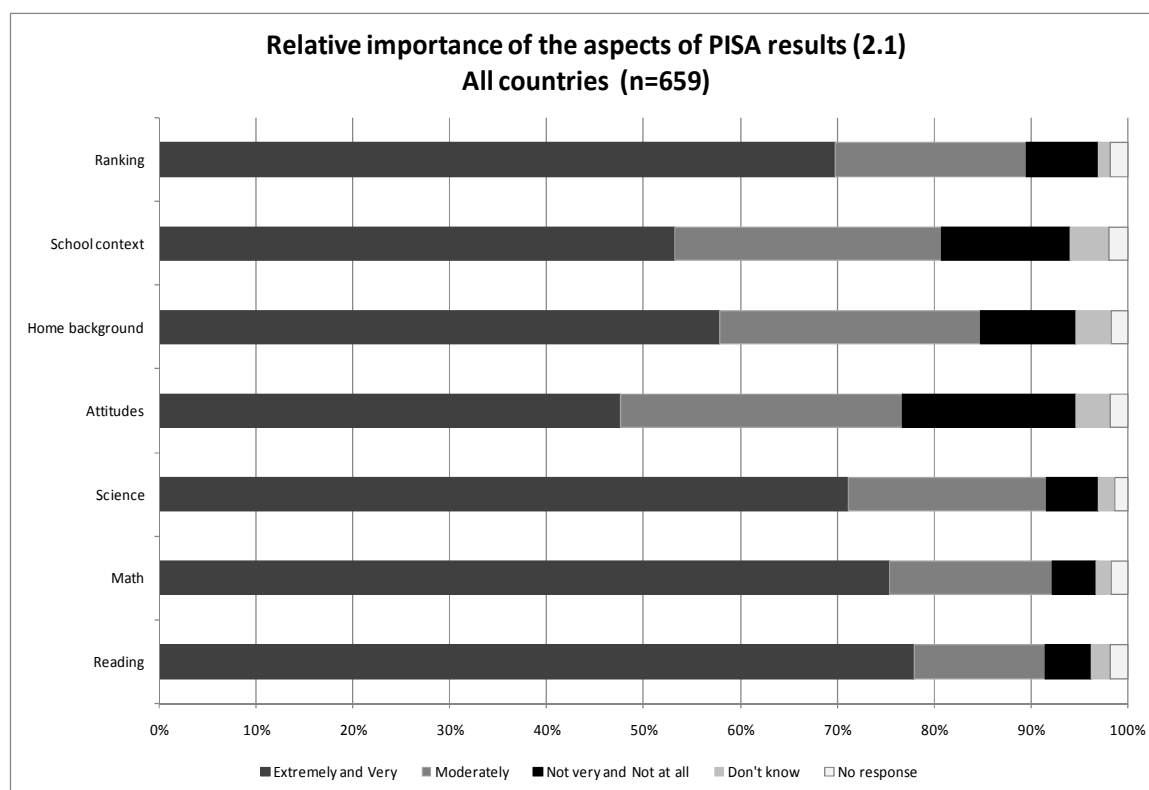
51. Other important aspects of PISA noted by respondents were:

- the analysis of the performance of different groups of students (e.g. by gender, immigrant status, language spoken at home, performance level, school location);
- the relationship between a country's performance and the structure and governance of its education system (e.g. the funding of the education system, resources allocated to schools, the levels of school autonomy, admissions policies and other);
- discussions on school culture, teaching quality and classroom practices (e.g. school discipline and teaching strategies employed);
- the importance of teachers' attributes and working conditions;
- data on trends in performance over time; and

- the procedures and methodology used in implementing PISA in the country (e.g. the implementation practices and standards, the sampling and data processing, the assessment methods and instruments, the formation of a national assessment team).

52. It is interesting to note that the importance attributed to various outcomes of PISA differs by stakeholder group (Figure 3.5b, see Annex 4). National coordinators, policy makers and local government officials taking part in the questionnaire data collection addressed more importance to all the aspects of PISA than the other stakeholder groups, especially school principals and respondents from teaching associations. Local government officials in particular emphasized the importance of the relationship between school context and student performance, which policy makers at the national/federal level tended to de-emphasize. Furthermore, 24% of school principals and 31% of representatives of teacher associations considered the PISA results in relation to students' interest, motivation and attitudes as of little or no importance.

Figure 3.5a



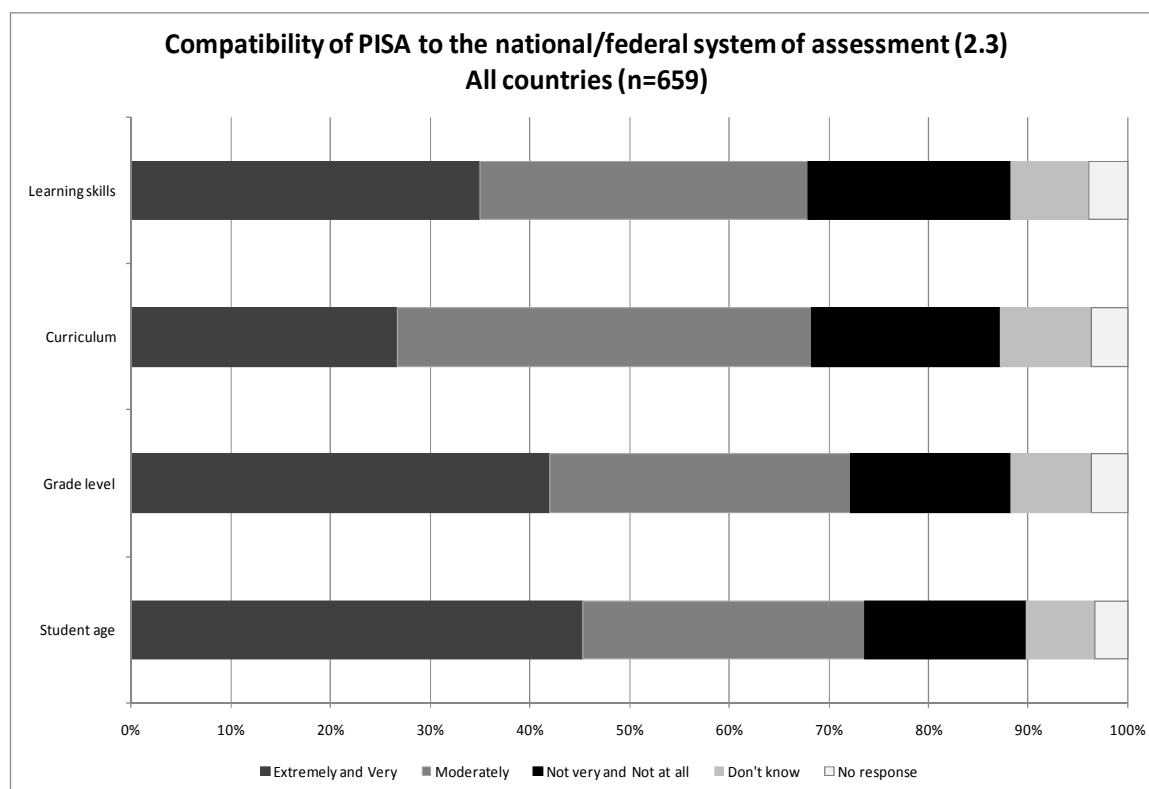
Question 2.1. Which aspects of the PISA results are important in your country? Please specify. [Performance of secondary students in reading; Performance of secondary students in mathematics; Performance of secondary students in science; Student interest, engagement, motivation and attitudes; Relationship between home background and student performance; Relationship between school context and student performance; International comparisons and country ranking; Others]

3.1.3 To what extent is PISA compatible with national or federal systems of assessment in participant countries and economies?

53. Between 16% and 20% of respondents perceived PISA to be not very or not at all compatible with their national or federal system of assessment in terms of the learning skills tested, the curriculum and the grade levels and age of students assessed (Figure 3.6a). However, almost half of the respondents

indicated an extremely high or high compatibility regarding the age of the students tested and the targeted grade levels (45% and 42 % respectively). High compatibility with the national or federal system of assessment in terms of the learning skills tested was reported by 35% of respondents and 27% in terms of the curriculum. Between 10% and 13% did not answer at least one of these questions. The method of assessment was mentioned as a further aspect of high compatibility in some countries and of low compatibility in others.

Figure 3.6a



Question 2.3. How compatible is PISA to the national / federal system of assessment in your country? [In terms of the age of students; In terms of the grade levels targeted; In terms of curriculum content; In terms of learning skills; Other areas]

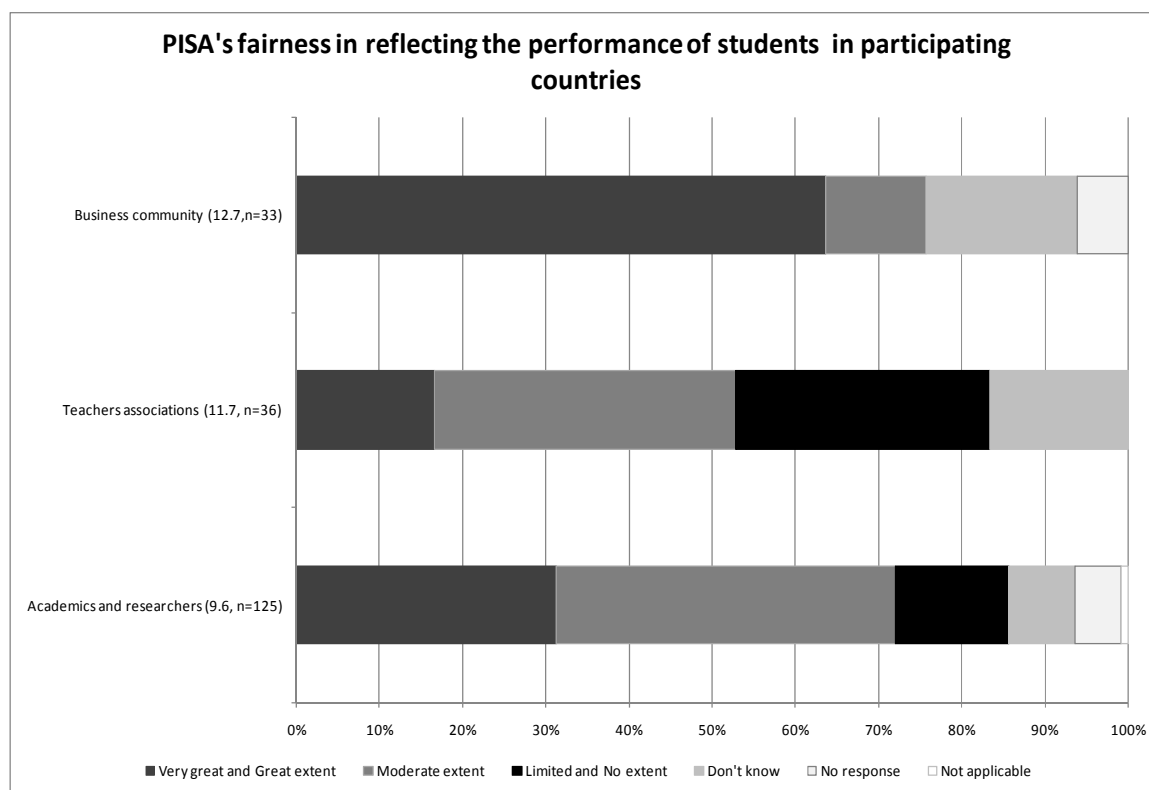
54. Looking at the responses by stakeholder group (Figure 3.6b, see Annex 4) it is worth noting that policy makers judged the compatibility of PISA with the national/federal system of assessment higher in all areas than any other respondent group, while school principals and representatives from teacher associations rated compatibility comparatively low.

3.1.4 To what extent does PISA fairly reflect the performance of students of participant countries and economies?

55. Responding to the question to what extent PISA reflects fairly the performance of students of participant countries 44% of business representatives, 32% of teachers and representatives of teacher associations and 17% of academics and researchers did not answer or indicated that they were unable to answer. Of those that provided an answer, over a third of the academics and researchers and members of the business community (34%) indicated that PISA fairly reflected student performance to a very great or great extent. A lower percentage, that of 9% and 13% of these stakeholder groups judged that PISA fairly reflects student performance only to a limited or to no extent. Interestingly, a relatively low percentage of

teachers and teacher associations (14%) perceived PISA to reflect fairly students' performance to a very great or great extent, whilst 24% agreed that PISA was limited or reflected fairly student performance to a no extent (see Figure 3.7).

Figure 3.7

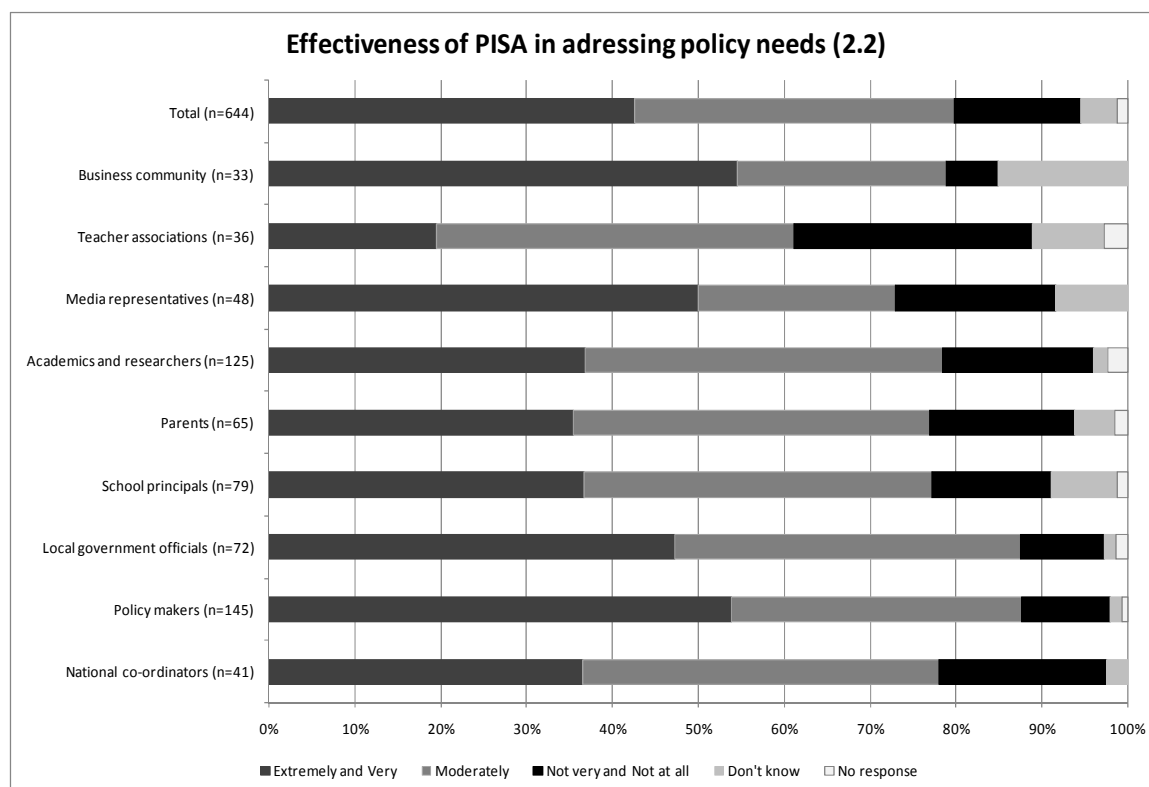


Stakeholder-specific question (9.6; 11.7; 12.7). To what extent do [members of own stakeholder group] in your country think that the PISA assessment reflects fairly the performance of all students in participating countries?

3.1.5 To what extent does PISA address the policy needs of participant countries and economies?

56. Figure 3.8 shows 43% of respondents to perceive PISA to be extremely and very effective in addressing the needs and objectives of their country's education system (Policy makers, local government officials, members of the business community and media representatives were especially positive in their judgments.) A total of 15%, however, indicated that PISA was not very or not at all effective in doing so. A total of 5% of respondents did not provide an answer to this question. Respondents also identified a number of barriers to PISA having a positive impact on policy and practice. These either reflected a distrust of PISA methods and procedures (sometimes attributed to poor dissemination, small sample sizes or ignorance of the statistical methods used). There were also some culturally specific issues, such as a lack of stakeholder interest in PISA; a lack of a "culture of evaluation"; and an inflexibility, or even resistance towards change (sometimes attributed to conflict of interests between different stakeholder groups or between government and the public).

Figure 3.8



Question 2.2. How effective is PISA in addressing the needs and objectives of education policy in your country?

Summary and issues

57. There seem to be qualitative differences between the views of the most important stakeholders in PISA. Policy makers are considered the most significant stakeholder group both in relation to PISA and its results, and in implementing policies in light of PISA. Local authority officials and school principals rank second and third respectively with regards to the implementation of policies in light of PISA, but are seen only as the fourth most important stakeholders in PISA after academics and researchers and the media. Interestingly, the business community were considered of least importance, alongside parents, with 44% of respondents choosing the response options “not very” or “not at all significant”. As PISA assesses skills regarded essential for employment, this finding should give cause for concern. Even more surprising, however, are the relatively low levels of responsibility for the PISA results that country respondents place upon their stakeholder groups. One would have expected, for example, to see the most significant stakeholder groups for implementing policies in light of PISA having a high internal sense of accountability. Nonetheless, only 24% of policy makers believe that their stakeholder group is responsible for the PISA results to a very great or great extent; 32% of local authority officials, 41% of school principals and 65% of teacher associations believe that their stakeholder group is not responsible. Groups such as the academics and researchers and the business community also show relatively low sense of responsibility.

58. As regards the compatibility of PISA with national or federal assessments, PISA seems to be less compatible with countries’ learning skills and curriculum and more compatible with the students’ age and grade level in participant countries and economies. The former is not a surprising finding as the curriculum of some of the participating countries focus on the acquisition of knowledge and values different skills to

the ones assessed in PISA. However, respondents identified the skills assessed in PISA as the most important aspects of PISA, with reading seen as the most significant skill assessed, followed by mathematics and science. In addition, more than half of business representatives and policy makers, half of media representatives and almost half of local authority officials believe that PISA addresses their country's policy needs. We, therefore, hypothesise that the learning skills assessed in PISA are seen as important in participant countries and economies. Additionally, we hypothesise that there is a feeling that the learning skills addressed in PISA should be more systematically addressed in schools and should be used to inform the curriculum, as well as teacher training and professional development.

59. A country's ranking in the PISA league tables was identified as the second most important aspect of PISA, which indicates that PISA is an important part of a countries' monitoring and evaluation mechanisms. Data related to equity were also considered to be very important. Other important aspects of PISA identified by respondents reflect the specific interests of different stakeholder groups and individual countries' contextual needs.

60. In conclusion, a number of important themes emerge from this section:

- Policy makers are considered the most significant stakeholder group, both in relation to PISA and its results, and in implementing policies in light of PISA, with local authority officials and school principals second and third, respectively, with regards to the implementation of policies in light of PISA.
- Surprisingly, there are the relatively low levels of responsibility that the various stakeholder groups assume for the PISA results in their countries.
- PISA seems to be addressing countries' policy needs to a greater, rather than lesser extent.
- Countries and stakeholder groups are increasingly valuing the skills assessed in PISA and are promoting them within their education system.
- PISA is used as a tool for monitoring and evaluating a country's performance and equity.
- PISA outcomes are used in a variety of ways to serve contextual needs and different stakeholder interests.

3.2. The effectiveness of PISA in participating countries and economies

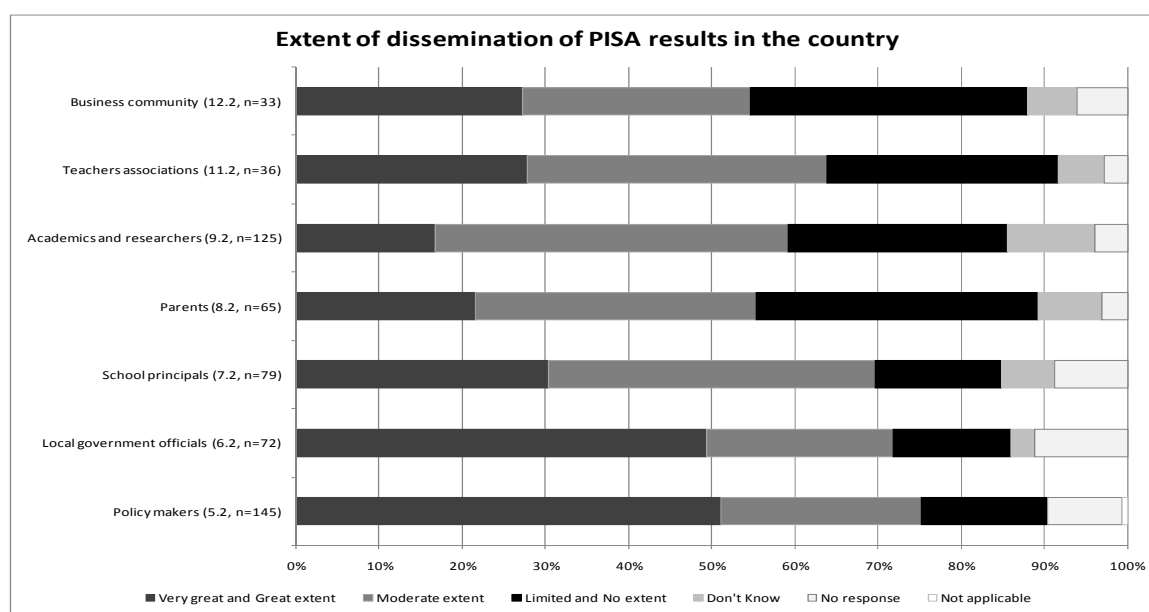
61. In order to explore the effectiveness of PISA, participants were asked to assess the extent to which stakeholder groups and the public are aware of the PISA results; the extent to which the PISA results are useful to participant countries and economies; and extent to which PISA influences policy and practice.

3.2.1 To what extent are different stakeholder groups and the public aware of PISA in participant countries and economies?

62. To assess the extent to which different stakeholder groups and the public were aware of PISA in participant countries and economies, respondents were asked to report the extent to which the PISA results are disseminated in their country; the awareness they raise; and their accessibility by different key stakeholder groups.

63. The majority of policy makers and 30% or more of local government officials, school principals and teachers and members of teacher associations believed that there was a high or very high dissemination of the PISA results in their country (see Figure 3.9). Between 25 and 32% of parents, the business community and academics and researchers felt that the dissemination of the PISA results was limited or did not exist.

Figure 3.9



Stakeholder-specific question (5.2;6.2;7.2;8.2;9.2;11.2;12.2). To what extent are the PISA results disseminated in your country's national / federal system of education?

64. When reporting on the media coverage of the three PISA assessments in their country, 24% of the respondents found the media monitoring of the PISA 2000 results extremely or very effective³. For the PISA 2003 and 2006 results, this was the case for 29% of the respondents. Similar to the extremely and very effective were the percentage of respondents who identified the media coverage of all three PISA assessments as not very or not at all effective (see Figure 3.10).

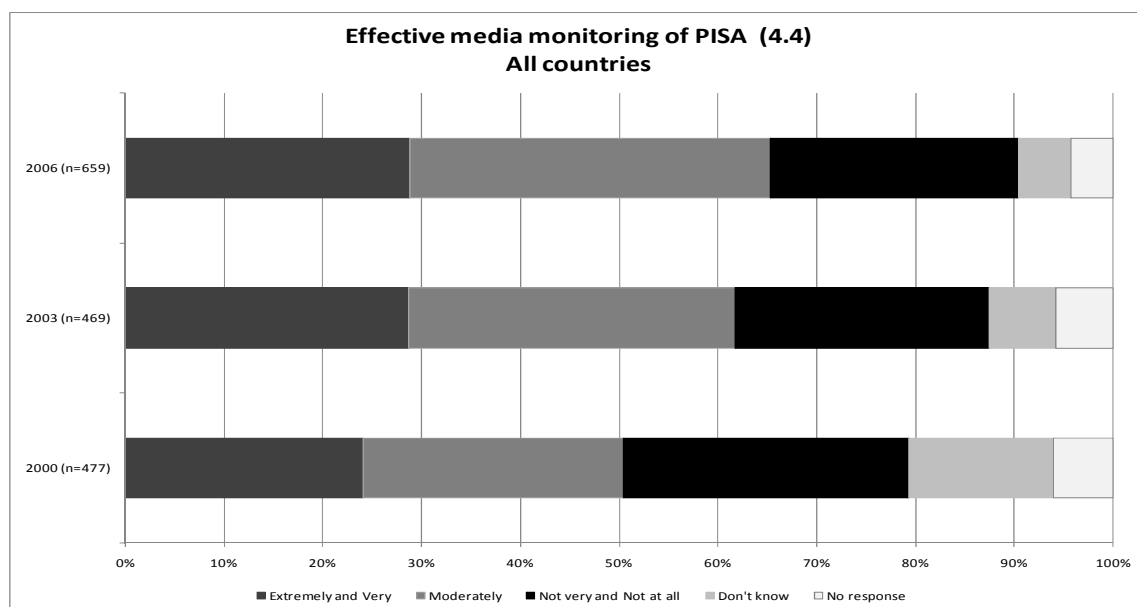
65. Issues most covered in the media were:

- the country's and other countries ranking in the PISA league tables;
- the factors that contributed to countries' performance;
- the comparisons between regions, provinces or states in the country;
- trends in performance outcomes;
- the relationship between countries' performance and equity; and
- critiques of the methods and processes used to collect and analyse the PISA data.

³ In this, as in the following statistics, outcomes for PISA 2000 also include countries that took part in PISA PLUS.

66. Media representatives in particular were invited to assess the level of public awareness of the PISA results. A total of 48% of this group thought that the general public is aware of PISA results to a very great or great extent, whilst 15% believed that the public had limited or no awareness of the PISA results.

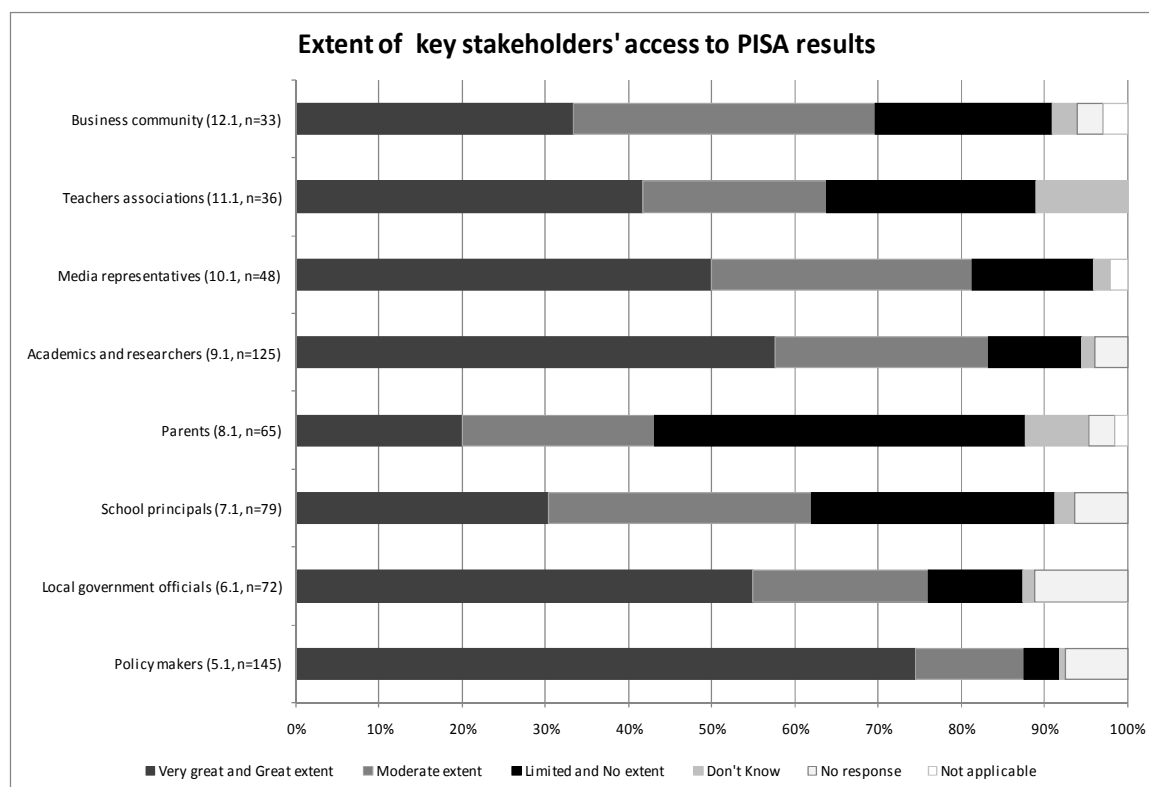
Figure 3.10



Question 4.4. How effectively have the media (e.g. newspapers, radio, television) monitored / reported the impact of PISA in your country?

67. As regards the accessibility of the PISA results, the majority of policy makers (74%), local government officials (55%), academics and researchers (58%) and media representatives (50%) believed that the PISA results were accessible to a very great or great extent in their countries (Figure 3.11). This was also the case for 42% of teachers and members of teacher associations. In contrast, between 25% and 45% of representatives of teacher associations, school principals and parents noted that they had limited or no access to the PISA results. Between 9% and 12% of respondents of these two groups, as well as of local authority officials and teachers and representatives of teacher associations, chose the do not know option or did not answer this question.

Figure 3.11



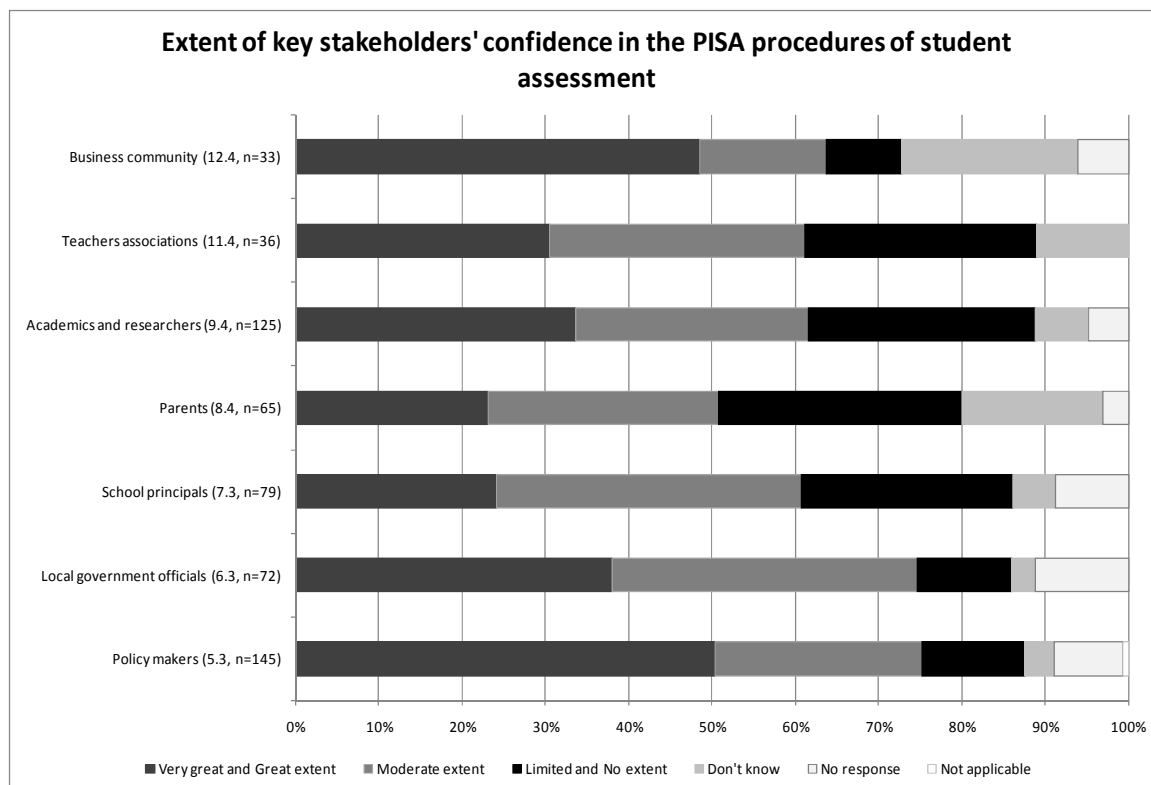
Stakeholder-specific question (5.1;6.1;7.1;8.1;9.1;10.1;11.1;12.1). To what extent do [members of own stakeholder group] have access to the PISA results in your country?

3.2.2 To what extent is PISA useful to participant countries and economies?

68. To assess the usefulness of PISA, key stakeholders were asked to indicate how confident they felt about the procedures PISA uses to assess students; how confident they were in interpreting the PISA results, as well as the level of support they received in order to interpret the PISA results; and indicate their confidence in designing strategies for improvement in light of PISA. Policy makers in particular reported how useful they thought PISA was in policy formation and school principals, to what extent teachers used PISA materials for improving teaching. Stakeholder groups were also asked how effective they thought PISA is in complementing national/federal assessment data or adds value to their countries assessment strategies (see Annex 2).

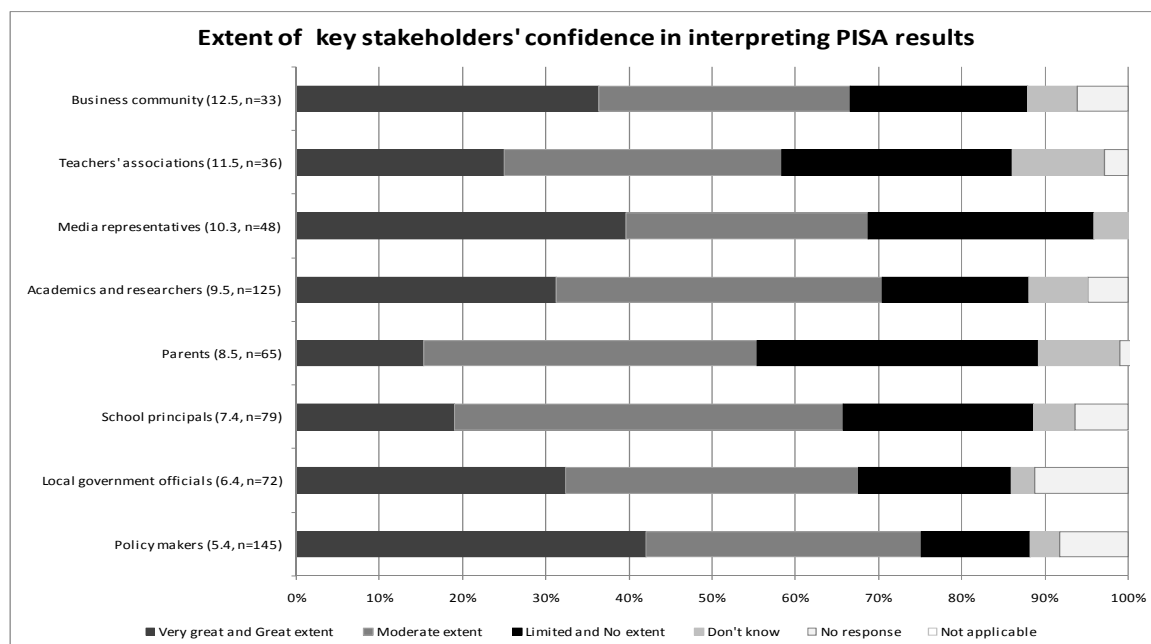
69. A total of 50% of policy makers reported that they had very great or great confidence in the procedures used by PISA and 42% in interpreting its results (Figures 3.12 and 3.13, respectively). Between 23% and 34% of school principals, parents, and teachers and members of teacher associations, however, were found to have limited or no confidence in the PISA procedures and in interpreting the PISA results. Importantly, 58% of parents, and 36% of teachers and representatives of teacher associations suggested that they were offered only limited support or no support in interpreting the PISA results (Figure 3.14). Furthermore, 34% of policy makers reported limited or no support to local government and schools in interpreting the PISA results, 41% of local government officials reported limited or no support to schools, and 52% of school principals reported limited or no support to teachers.

Figure 3.12



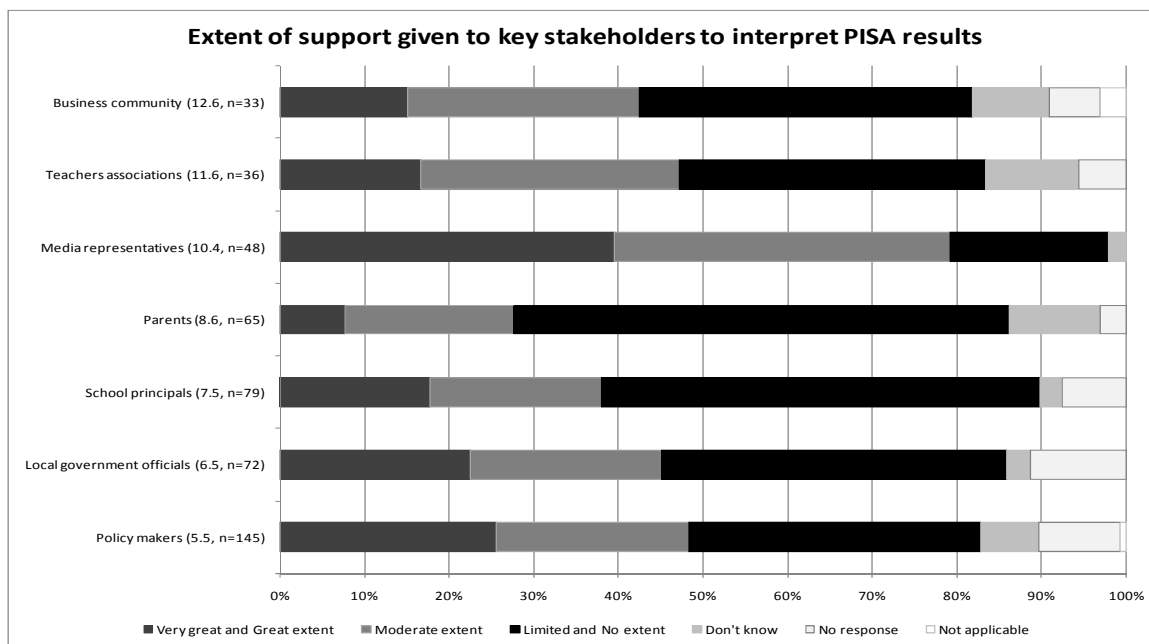
Stakeholder-specific question (5.3;6.3;7.3; 8.4; 9.4; 11.4; 12.4). To what extent are [members of own stakeholder group] confident about the PISA procedures used to assess students in your country?

Figure 3.13



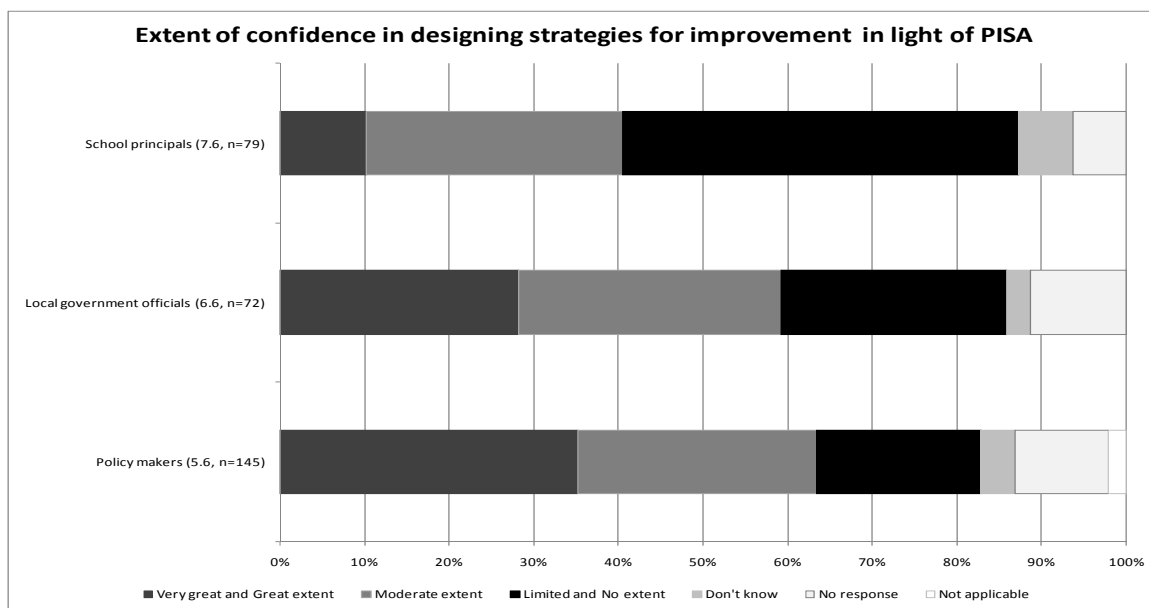
Stakeholder-specific question (5.4;6.4;7.4; 8.5; 9.5; 10.3; 11.5; 12.5). To what extent are [members of own stakeholder group] confident in interpreting the PISA results in your country?

Figure 3.14



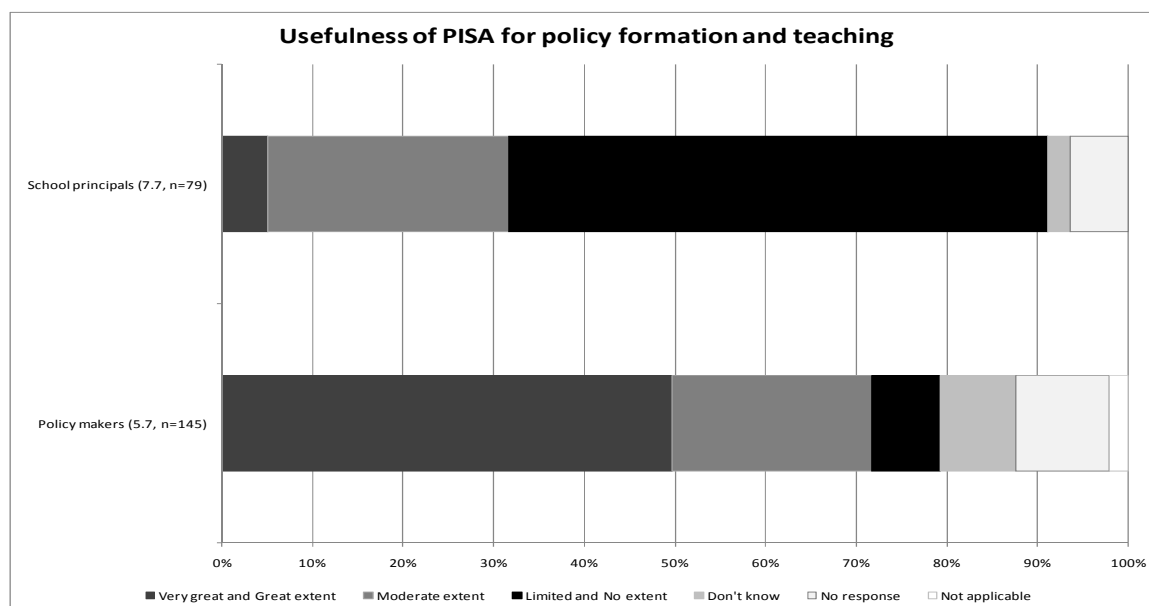
Stakeholder-specific question (5.5; 6.4; 7.5; 8.6; 10.4; 11.6; 12.6). To what extent is support given to [stakeholder-specific group] to interpret the PISA results?

Figure 3.15



Stakeholder-specific question (5.6; 6.6; 7.6). To what extent are [members of own stakeholder group] confident in designing strategies for improvement in light of PISA results?

Figure 3.16



Stakeholder-specific question 5.7. To what extent do Ministers find PISA results helpful in policy formation in your country?

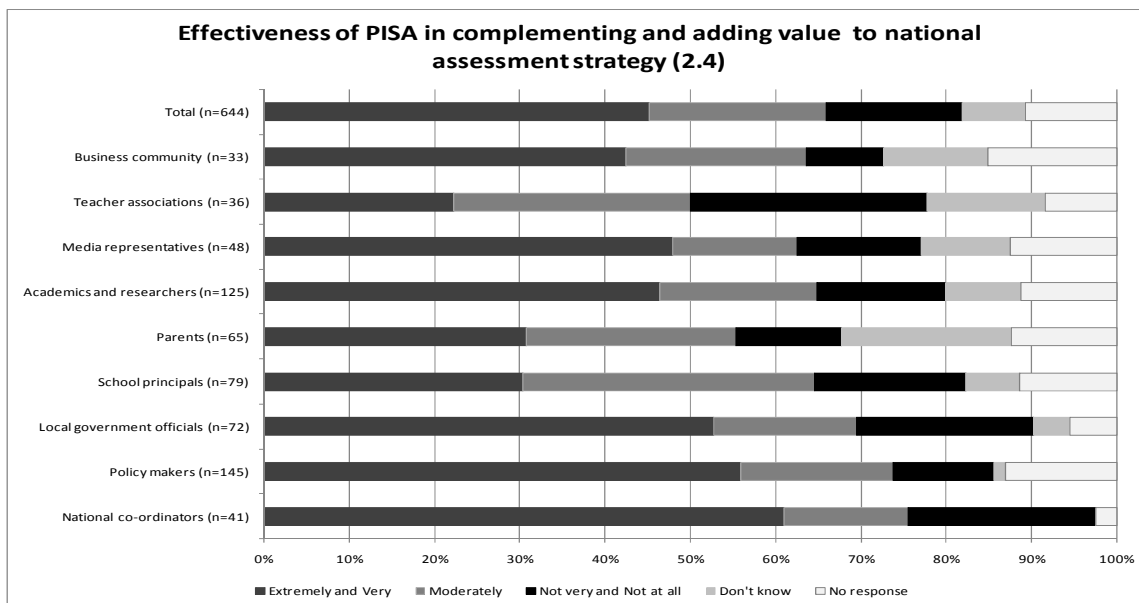
Stakeholder specific question 7.7. To what extent do teachers use PISA materials to improve their teaching in your country?

70. With reference to different stakeholder groups' confidence of designing improvement strategies in light of PISA, 35% of policy makers, 28% of local authority officials and only 10% of school principals felt confident to a high or very high extent (see Figure 3.15). In relation to how useful the PISA results were in informing policy, 50% of policy makers responded highly or very highly. As regards the extent to which teachers use PISA materials to improve their teaching, 59% of school principals reported limited or no use (see Figure 3.16). Between 9% and 21% of policy makers and school principals chose the don't know option or did not provide an answer to this question.

71. As to the extent to which PISA is effective in complementing or adding value to national or federal assessment strategies, 45% of respondents judged PISA to be extremely and very effective, 21% moderately effective and 16% not very or not at all effective (see Figure 3.17). Looking at the responses by stakeholder groups, ratings by policy makers and local government officials were relatively positive, while responses by representatives of teacher associations were comparatively negative. Respondents also identified the uses of PISA in relation to their national assessments and reported that PISA:

- is used as a tool for improving national assessment strategies;
- provides a benchmark for evaluating their country's existing national assessments;
- led to the development of a national assessment strategy and/or an education evaluation institute; and
- provided an indication for performance and other data for countries that do not carry out national assessments.

Figure 3.17



Question 2.4. How effective is PISA in complementing national/federal assessment data and adding value to assessment strategies in your country?

3.2.3 To what extent is PISA influencing policy and practice in participant countries and economies?

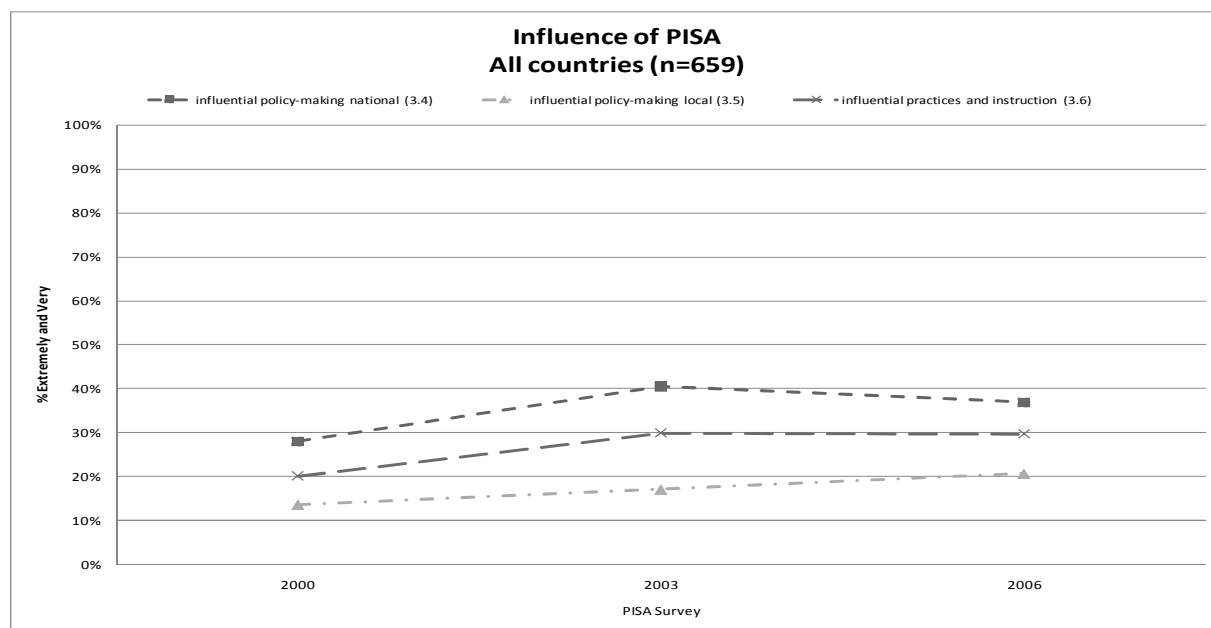
72. Figure 3.18 presents the percentage of respondents that indicated that PISA has been extremely or very influential in policy making at national/federal and local levels and the levels to which it impacted in resulting in altering school practices and improving instruction.

73. For PISA 2000, 28% of respondents saw results to be extremely or very influential in informing policy-making at the national/federal level, whilst 26% reported little or no influence. At the local level, 20% of respondents found PISA 2000 to have a strong influence and 42%, little or none. Finally, 29% of respondents believe that the 2000 results had little or no influence on school practices and instruction.

74. The impact of the PISA 2003 in policy making at national and local levels are relatively higher compared to 2000. In more detail, 40% of respondents reported extreme impact or that PISA 2003 was very influential at the national/federal government level (versus 20% who reported little or no influence), and 30% reported high or very high influence at the local level (against 37% who identified little or no influence). As regards school practices and instruction, 17% found the influence of PISA to be high or very high upon both in contrast to 23% who saw little or no influence.

75. Figures on the influence of PISA 2006 are similar to those of 2003. It is worth mentioning that the PISA 2006 results were published only three months prior to the collection of the questionnaire data, therefore they only capture the perceived impact of PISA 2006 in informing policy and instruction within the short term period of three months.

Figure 3.18



Question 3.4. How influential have the PISA results been in informing the policy-making process at the national / federal level in your country? For the [PISA 2000; PISA 2003; PISA 2006] results

Question 3.5. How influential have the PISA results been in informing the policy-making process at the local government level in your country? For the [PISA 2000; PISA 2003; PISA 2006] results

Question 3.6. How influential have the PISA results been in informing the policies, practices and instruction in your country's education system? For the [PISA 2000; PISA 2003; PISA 2006] results

76. According to the respondents, the educational reforms and/or initiatives most likely to be adopted in light of PISA in participant countries and economies were:

- the development of national standards;
- the establishment of national institutes of evaluation;
- changes in the curriculum or the introduction of national curricula;
- the introduction of educational programmes targeting specific groups of students;
- an increase in the allocation of resources to schools; and
- an increase in collaboration amongst key stakeholders of the education system within and across countries.

77. Respondents also reported changes in school policies and practices (e.g. increased autonomy of schools, establishment or further development of accountability systems, discussion on increasing the number of hours spent in school, introduction of selection examinations); a focus on the development of life skills and those valued by the labour market; the development of an interest in empirical educational

research, and more fine-grained data analyses, in general, (e.g. focussing on gender differences or the influence of socio-economic background).

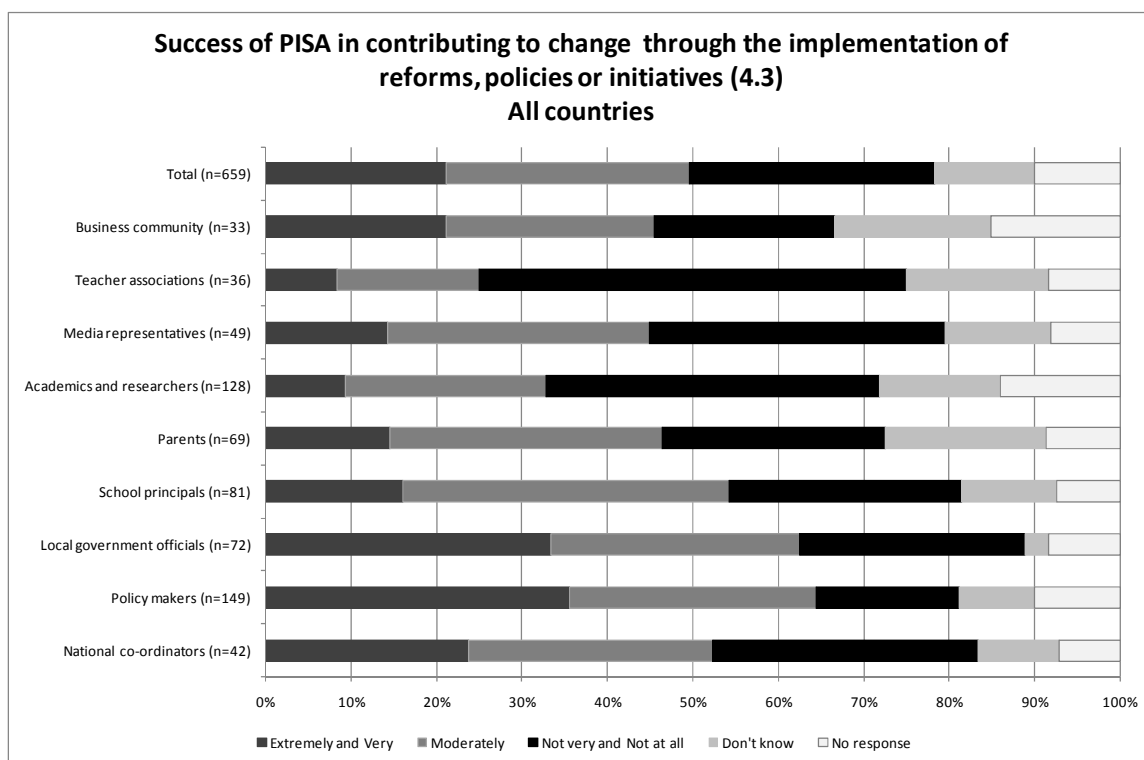
78. The overall level of policy impact of PISA in each country was estimated by combining the respondents' assessment of the extent to which PISA influenced policy-making at the national/federal and local levels in all three PISA assessments. Categorisation was based on the distribution of answers to the questions of countries that returned more than four questionnaires. Deciles were generated from the distribution of respondents who judged that PISA was extremely or very influential in informing policy. PISA was considered to have a comparatively low impact in countries falling into the range from the lowest to the third decile. The policy impact of PISA was considered to be medium in countries from the fourth to the seventh decile and high in countries in the deciles above. This resulted in the following classification:

- *Countries where PISA achieved relatively low levels of impact on policy formation:* Czech Republic; Ireland; Italy; the Netherlands; the Slovak Republic; Turkey; the United Kingdom; Bulgaria; Croatia; Hong Kong-China; Latvia; Lithuania; Romania; the Republic of Serbia; and Uruguay.
- *Countries where PISA achieves relatively medium levels of impact on policy formation:* Australia; Austria; Belgium; Canada; Finland; Greece; Hungary; Iceland; Switzerland; Chile; Chinese Taipei; Colombia; and Qatar.
- *Countries where PISA achieved relatively high levels of impact on policy formation:* Denmark; Germany; Japan; Mexico; Norway; Spain; Sweden; Israel; the Kyrgyz Republic; Macao-China; Slovenia; and Thailand.

3.2.4 Sustainability

79. Initiating and supporting the strategic use of the PISA results for long term sustainable change in participant countries is very much in the interests of PISA and the OECD. A total of 36% of policy makers and 33% of local government officials found PISA to be extremely or very successful in contributing to sustainable change in their country (see Figure 3.19). A total of 38% of school principals and 32% of parents felt that PISA had a moderate success in supporting sustainable reform, and between 35% and 50% of media representatives, parents, representatives from teacher associations and members of the business community thought that PISA was not very or not at all successful.

Figure 3.19



Question 4.3. How successful has PISA been in contributing to long-lasting, sustainable change in your country through the implementation of education reform, development policies or initiatives?

Summary and issues

80. It seems that the influence of PISA on policy formation both nationally and locally is increasing over time (Although PISA 2006 had been published just three months before the questionnaire data was gathered, we already see similar levels of the policy influence of PISA in policy formation). Influence, however, seems to be greater at a national level, rather than at a local level and lesser on school practices and instruction.

81. One of the reasons why PISA seems to have more influence at a national or federal level than the local level and lesser on school practices and instruction, could be the way in which the PISA results are disseminated. Although PISA results are made available in participant countries and economies, the questionnaire responses indicate that the dissemination of the PISA results is not well co-ordinated and a strategic approach to dissemination is possibly lacking, at least in some countries. This is because, accordingly to respondents, most of the dissemination seems to be conducted at the political level and does not seem to reach to the school and classroom levels. Overall, most stakeholder groups apart from policy makers and local authority officials believe that the dissemination of the PISA results is mostly moderate, and a relatively high percentage of the business community and parents think that dissemination is limited or none.

82. The confidence of different stakeholder groups in the PISA procedures, their confidence in interpreting the PISA results and in designing strategies in light of PISA are also important factors in increasing or decreasing the policy impact of PISA at different levels in the system. Unsurprisingly, policy makers seem to have more confidence in the PISA procedures, in interpreting the PISA results and in designing strategies in light of PISA than any other stakeholder group. The business community also

shows relatively high levels of confidence in the PISA procedures and in interpreting the PISA results. Interestingly, there are higher percentage scores from the business community and the media in interpreting the PISA results than there are for academics and researchers. School principals and teacher associations appear to have relatively low confidence in interpreting the PISA results. This is probably not surprising when one relates it to the relatively low levels of support in interpreting the PISA results that these stakeholder groups indicate they receive, and to the possible lack of strategic dissemination of the PISA results. As regards the designing of strategies for improvement in light of PISA, policy makers and local government officials have less confidence in designing policies in light of PISA than interpreting the PISA results. School principals show relatively low levels of confidence in this respect. These results suggest that these stakeholder groups seem to be in need of further support in interpreting the PISA results and in designing strategies for improvement in their country in light of PISA.

83. A factor that positively contributes to PISA's influence in policy formation and school practices and instruction seems to be that making use of PISA is seen as more effective than not in complementing or adding value to national or federal assessment strategies. Most respondents judged PISA to be extremely and very effective (45%) in doing so. Looking at the responses by stakeholder groups, ratings by policy makers and local government officials were relatively positive, while responses by representatives of teacher associations were comparatively negative. This could be due to the dichotomy in the philosophies that is sometimes found in these stakeholder groups in the domain of monitoring and assessment. In addition, respondents have described a variety of helpful ways in which the PISA results have been used in their country.

84. Last but not least, PISA is claimed to contribute to long term sustainable change to a fair extent by some stakeholder groups (e.g. policy makers and local government officials for example) but to a relatively low extent according to others (e.g. academic and researchers, school principals and teacher associations).

85. In summary, it would appear that:

- The influence of PISA on policy formation, both nationally and locally, is increasing over time.
- The influence of PISA seems to be greater at a national level, rather than at a local level, and has less impact on school practices and instruction.
- PISA is also seen to contribute to long term sustainable change to a fair extent by some stakeholder groups.
- In order for the influence of PISA to be increased at all levels in the system and for it to contribute further to sustainable change, the following are required:
 - a better coordinated and strategic approach for the dissemination of PISA results;
 - further support for various stakeholder groups in interpreting PISA results and in designing strategies for improvement in light of PISA;
 - clearer linkage of PISA results to national or federal assessment strategies; and,
 - greater utilisation of the PISA results by participant countries.

3.3 The unexpected/unplanned impacts of PISA in participating countries and economies

86. Most respondents identified the following as unexpected or unplanned impacts of PISA on policy and practice:

- high levels of public interest in the PISA results;
- high levels of debate in light of PISA amongst different stakeholder groups;
- discussions that seek to place responsibility to particular groups and individuals for a country's performance;
- an increase in collaboration between different stakeholders and schools for improving their country's results in PISA and their education system in general;
- use of the PISA results as a justification of the principles that underpin a country's education system and its architecture as well as the employment of a particular type(s) of assessment(s); and
- an increase in the interest of different stakeholder groups in empirical educational research.

Summary and issues

87. It is clear that PISA has had some unexpected impacts in participant countries and economies. In particular:

- Most of the impacts identified by the questionnaire respondents - such as the high levels of public interest in the PISA results, the increase of educational debate in light of PISA, increased collaboration between different stakeholders and schools as a result of PISA and greater use of empirical educational research –have the potential to support school improvement efforts.
- One of the other main impacts of PISA results is the way in which countries use them to justify their education system, their policy choices and employment of particular type(s) of assessment(s) approaches. This can have either a positive or a negative effect. When such justifications encourage discussions on how policy can be improved then one could assume a positive impact. However, if the PISA results are used as a means of policy legitimisation of educational reforms that would otherwise be contested and that obscures discussion of how the system can be further improved, impact may well be negative (see footnote in Chapter One that refers to Luhmann and Schorr's characterisation of this phenomenon, 'externalisation').
- The search for specific stakeholder groups or individuals for a country's relatively low performance, which could nurture a culture of 'blame', can only stifle improvement.

Suggestions on how PISA can be improved

88. Chapter 3 has presented and descriptively analysed the quantitative data. Before moving to the qualitative data and analysis and in order to further contribute to the final chapter of this report, we outline the recommendations of the questionnaire respondents on how PISA could be improved. These are ordered under the criteria used in Chapter 5 *Analysis, Conclusions and Recommendations* to assess the effectiveness of PISA.

Relevance

- PISA to focus on issues related to the teaching workforce and how it is developed and sustained.

Technically

- PISA to maintain the delivery of up-to-date, high-quality data;
- PISA to increase the accessibility and understandability of PISA procedures and methodology;
- PISA to increase sample sizes to allow for analyses on the regional or school level;
- PISA to focus on value added in participant countries and economies as well as link the PISA results to other studies to gauge performance changes over time;
- PISA to use a full computer-based testing in all assessment areas;
- PISA to improve measurement in sub-domains for trend purposes, further assessment of interdisciplinary subject areas and of writing competence as part of a literacy assessment;
- PISA to write a more elaborate and simplified technical report targeted at less experienced analysts of the data set;
- Dissemination and awareness
- PISA to improve its dissemination strategies;
- PISA to promote and disseminate the PISA results at the local, regional, state and national level;
- PISA to encourage national collaboration amongst key stakeholders in participant countries and economies as well as encourage interaction with neighboring countries; and
- PISA to support countries efforts to strategically disseminate the PISA results at all levels in the system.

Impact

a. Policy impact

- PISA to provide country-specific policy recommendations to participant countries and economies;
- The OECD to be in closer collaboration with the countries participating in the PISA results;
- PISA to provide additional in-depth analysis of national results;
- PISA to focus on sharing good practice nationally and internationally; and
- PISA to provide further national validation and coordination of PISA and the national examination and educational targets.

b. School level impact

- PISA to inform countries' curricula in light of the skills and competencies tested in PISA; and
- PISA to increase focus on learning processes and strategies.

c. Equity

- PISA to provide or support country efforts to conduct additional in-depth analysis of national and regional results focusing on contextual differences, socio-economic factors and immigration, and issues of equity in general.

Chapter 4: Discussion of the qualitative strand

89. Chapter four is dedicated to the analysis of the qualitative data. It provides a descriptive account of each of the five case-study visits to: Canada, Hong Kong-China, Norway, Poland and Spain, and discusses issues arising. As noted in chapter two, the methodology underpinning this chapter is based on Yin's approach to multi-site case study.

90. The first three sections of the chapter introduce the case study visits, describe the education systems of the case study countries and economy, and give an overview of some pertinent results in PISA. In the following, to maintain the confidentiality of respondents when using the outcomes from the survey, national findings have been anonymised. The case studies will be referred to as Country A, Country B, Country C, Country D and Country E, in random order.

4.1 Introduction to the case study visits***4.1.1 The case study visit to Canada***

91. The evaluation team visited three jurisdictions in Canada. Interviews took place with the coordinators of PISA – Human Resources and Social Development Canada, the Council of Ministers of Education, Canada, and Statistics Canada. Interviews in the provinces were held with government officials, researchers and the media (see Annex 3 for a schedule of the case study visit).

92. Education in Canada is a provincial responsibility. The examination of the policy impact of PISA will be drawn from all three case studies and comprise the Canadian case study. One province has scored high in the PISA results, another scored at about the Canadian average, and one ranked relatively low in the Canadian context in the PISA results.

4.1.2 The case study visit to Hong Kong-China

93. During the case study visit, 40 representatives were drawn from various educational groups to be interviewed - school principals, teachers, media, government officials, teachers, curriculum developers, a member from the business community, teacher and parent associations, policy makers, researchers, parents and students (see Annex 3). The wide representation provided the broad perspective sought by the evaluation team. It was agreed that the responses of the individuals would not be published.

94. In 2002, Hong Kong-China as an economy participated in PISA along with ten other countries through PISA Plus. Because of its participation in all three PISA assessments, it has been able to compare itself to all participating countries/economies in PISA-Plus and to the PISA assessment administered in 2000 to 15-year-old students in the OECD countries, as well as to all countries/ economies participating in

PISA 2003 and 2006. The case study of five countries or economies will provide a slightly more in-depth perspective of the policy impacts of PISA.

4.1.3 The case study visit to Norway

95. The case study of Norway involved visits to two school districts, as well as discussions with senior policy makers and politicians in the Ministry of Education and the Directorate for Education and Training. In addition, there were meetings with researchers, journalists and representatives from the business community (see Annex 3). PISA has had a significant impact on education and policy in Norway. This is the so-called 'PISA shock'. Prior to the first administration of PISA, the Norwegians believed that their education system was among the best in the world. This belief was part of the national consciousness. After the publication of the first PISA results, this confidence was undermined, given Norway's relatively poor performance. The publication of the results of PISA 2006 has received a lot more attention in media and in the public than earlier results of international assessments. One reason for the increased attention in 2006 is that it coincides both with the results from PIRLS 2006 and with the results of the new national tests in reading literacy, numeracy and in English. For example, the Prime Minister referred to it in his 2008 New Year's Eve message.

4.1.4 The case study visit to Poland

96. One of the team members met with a large group of representatives of the secondary education sector. This visit followed up on earlier contacts with Minister Handke, who originated substantial reforms in secondary education in the years 1999, as well as the State Secretary at that time responsible for the reforms. There was also opportunity to discuss the PISA impact with the present State Secretary and senior officials in the Ministry. This was coupled with visits to schools where there were meetings with school principals and parents, both in Warsaw and the region of Lublin, and representatives of non-government organisations, of academics, of teacher unions and an education newspaper, as well as a general newspaper. Also, regional and local government officials gave their input (see Annex 3).

97. Poland participated in all of the PISA studies with the clear notion on the part of the Government to act on the results in the period of transition after the demise of the Soviet Union.

4.1.5 The case study visit to Spain

98. The National PISA Coordinator organised an extensive interaction program between a member of the evaluation team and representatives of the Spanish education community, as well as of the media. This included national and local policy makers, school principals, parents and students, business community representatives, academics/researchers, teachers' associations, as well as journalists. The visit included a site trip to the Basque country with an intensive program discussing PISA and education (see Annex 3).

4.2 A description of the case study countries' education systems

4.2.1 The education system in Canada

99. Canada, a bilingual country offering instruction in both French and English, is made up of ten provinces and three territories, whereby each provincial and territorial government is responsible for its own education system. Therefore, the educational administration and structure, curriculum development and delivery, as well as teacher education, rest uniquely the responsibility of ministers of Education.

100. Despite the differences in education systems, many similarities exist across the country. So, through the Council of Ministers of Education, Canada, ministers of Education come together on issues of common interest. Ministry /department personnel also work on projects deemed important by their

ministers. For instance, ongoing collaboration on assessments has allowed the thirteen jurisdictions to compare curricula in reading, writing, mathematics and science, and agree on the important elements of assessment frameworks; determine the criteria to be assessed; establish sampling procedures, and undertake comprehensive marking sessions to ensure comparability across jurisdictions and between the languages assessed.

101. All Canadian students learn common skills in the key areas assessed in PISA and these subject areas provide a common ground for performance assessment on a Canadian level. Ministers of Education recognized that achievement in these areas could serve as useful indicators of an education system's performance. In order to be accountable to Canadians, the three PISA partners (Human Resources and Social Development Canada, Statistics Canada and the Council of Ministers of Education, Canada) and ministers of Education determined that each province had a sufficient sample of students assessed to allow for provincial feedback on performance and, where possible, in both official languages.

102. The three territories have not participated in PISA due to the challenges associated with with implementing PISA in such small populations.

4.2.2 The education system in Hong Kong-China

103. The educational system of Hong Kong-China has been involved in evidence-based organisational change for a number of years. In response, school administrators have been involved in developing self-renewal frameworks and strategies for managing change and implementing curriculum. The present education reform dealing with curriculum reform initiated in 2002, and has been the primary focus of the educators as was repeatedly stated in interviews with government officials responsible for education, researchers, principals and teachers.

104. Another major change with which schools are dealing is the relatively new tracking system. Prior to 2000, Hong Kong-China grouped students into five ability levels called bands; following the school examination and government examination in grades 5 and 6, students were allocated for appropriate placement within secondary schools. Presently, the five bands have been reduced to three bands, with about 33% of the students placed in each band. In addition to the tracking change that is reasonably recent, some major curriculum changes taking place, such as the teaching of Liberal Studies, an across-curricular program, are to be implemented in September 2009.

105. As was stated by several individuals interviewed, the PISA results for Hong Kong-China support the government's reform direction.

4.2.3 The education system in Norway

106. The Norwegian national assembly and the Government are responsible for the development of Norway's educational objectives; and the Ministry of Education and Research is responsible for their implementation. The principle underpinning such educational policy in Norway is of equal right to education for all, independent of their socio-economic background and ethnicity.

107. In 1994, there was a major reform in upper secondary education, which also introduced a statutory right for all pupils to secondary education, either general or vocational. In 1997 this was followed by a curricular reform in primary and lower secondary education. This reform introduced compulsory schooling for all children in Norway when they reach the age of six, and primary and lower secondary education was extended to 10 years. A new national curriculum was also developed in connection with these reforms and to also ensure that government educational standards are met. The running and administration of primary and lower secondary schools is the responsibility of local authorities, whilst it is

the role of schools to equip students with the knowledge, skills and attributes for their future economic prosperity and well-being.

108. The introduction of the reform "Knowledge Promotion" in 2006 has provided all grades with new curricula with clearly stated competence objectives. The curriculum has emphasised basic skills in being able to express oneself orally and in writing, in reading, in numeracy and in the use of digital tools.

109. All levels in upper secondary education and training are adopting new curricula with clearly stated competence objectives. The curricula place a general emphasis on basic skills in being able to express oneself orally and in writing, in reading, in numeracy and in the use of digital tools.

4.2.4 The education system in Poland

110. Poland and other Eastern European countries expected that they would score high in the PISA results when compared to other education systems in the world. Hence, the news of their relatively low performance came as a serious disappointment.

111. Polish secondary education used to be tracked, with one track being preparatory to university and the other a vocational track. The system as a whole was very much oriented to rote learning. The Polish education legislation applies for the whole country. The regional and local authority over schools is limited. Since 1999, there has been an overhaul of the system in successive steps, with the introduction of:

- autonomous primary and secondary schools;
- a comprehensive school for 13-16 year olds; and
- outcome oriented learning.

4.2.5 The education system in Spain

112. The education system of Spain is highly decentralized in governance, with regional authority for education, under an overall framework of a central legislation. This legislation, for example, leaves 45% of the core curriculum in autonomous regions open to those regions, not necessarily in co-official languages (35% in other regions, chapter II, article 6, page 3 of the Organic Law of May 2006). Regions clearly compete in terms of excellence in schools. PISA provided a mirror which did not confirm the expected ranking in educational performance by region.

4.2.6 The performance of the case-study countries and economies in PISA, and the relationship of student performance and the student's socio-economic status

113. Table 4.1 gives an overview of the mean performance of these participating countries and economy in PISA in reading, mathematical and scientific literacy, as well as in problem-solving literacy, which was assessed in PISA 2003 only (OECD 2001, 2004, 2007). The competency scales are constructed such that the OECD average performance is set to 500, and the standard deviation of performance across the OECD area to 100, in the cycle in which the assessment area is at the focus of the assessment (2000 for reading literacy, 2003 for mathematical literacy, and 2006 for scientific literacy).

114. Canada and Hong Kong-China showed mean performance levels that were above the OECD average in all assessment areas and PISA cycles, while the mean performance of Spain was below the OECD average throughout. The mean performance of Norway in reading, mathematical and scientific literacy was at OECD average in PISA 2000, and below OECD average in PISA 2006. In reading literacy,

the assessment area for which trends are available from 2000 to 2006, mean performance dropped by 21 competency points (roughly a fifth of a standard deviation).

115. An opposite trend can be observed for Poland, where mean performance was below the OECD average in PISA 2000 and at OECD average in PISA 2006, in all assessment areas. The mean performance in reading literacy increased by 29 competency points from PISA 2000 to PISA 2006 (about a third of a standard deviation).

Table 4.1. Performance of 15-year-olds in PISA

Participating Country or Economy	PISA Cycle	Reading Literacy		Mathematical Literacy		Scientific Literacy		Problem Solving	
		Mean Score	SE	Mean Score	SE	Mean Score	SE	Mean Score	SE
Canada	2000	534	(1.6)	533	(1.4)	529	(1.6)	529	(1.7)
	2003	528	(1.7)	532	(1.8)	519	(2.0)		
	2006	527	(2.4)	527	(2.0)	534	(2.0)		
Hong Kong-China	2000*	525	(2.9)	560	(3.3)	541	(3.0)	548	(4.2)
	2003	510	(3.7)	550	(4.5)	539	(4.3)		
	2006	536	(2.4)	547	(2.7)	542	(2.5)		
Norway	2000	505	(2.8)	499	(2.8)	500	(2.8)	490	(2.6)
	2003	500	(2.8)	495	(2.4)	484	(2.9)		
	2006	484	(3.2)	490	(2.6)	487	(3.1)		
Poland	2000	479	(4.5)	470	(5.5)	483	(5.1)	487	(2.8)
	2003	497	(2.9)	490	(2.5)	498	(2.9)		
	2006	508	(2.8)	495	(2.4)	498	(2.3)		
Spain	2000	493	(2.7)	476	(3.1)	491	(3.0)	482	(2.7)
	2003	481	(2.6)	485	(2.4)	487	(2.6)		
	2006	461	(2.2)	480	(2.3)	488	(2.6)		
OECD average	2000	500	(0.6)	500	(0.7)	500	(0.7)	500	(0.6)
	2003	494	(0.6)	500	(0.6)	500	(0.6)		
	2006	492	(0.6)	498	(0.5)	500	(0.5)		

*Note: SE denotes the standard error of the estimate. Hong Kong-China took part in the PISA PLUS assessment, for which data were collected in 2002.

116. How differences in socio-economic contexts of students and schools are related to performance differences of students and schools may serve as an indicator of how equitable learning opportunities are distributed in the education system.

117. To assess the impact of socio-economic background on student performance, PISA collected detailed information from students on various aspects relating the economic, social and cultural status of their families, including information on the occupational status of the father and mother, their level of education, and access to educational and cultural resources at home. These aspects were summarized in a single index, the PISA index of economic, social and cultural status of students, ESCS. This index was

constructed such that about two-thirds of the OECD student population are between the values of -1 and 1, with an average score of 0 (for a more detailed description, see OECD, 2007, p. 211, footnote 10). On average, the socio-economic background of 15-year-olds in Canada and Norway was above the OECD average in PISA 2006, while it was below in Hong Kong-China, Poland and Spain (Table 4.2, first column).

118. The overall impact of home background on student performance tends to be similar for all assessment areas. Table 4.2 illustrates the relationship of student performance and socio-economic status for scientific literacy, the focus area of the most recent PISA assessment 2006. Two indicators are presented: the size of the performance gap associated with a given amount of socio-economic difference (i.e. the slope of the socio-economic gradient), and the proportion of performance variation that is explained by the socio-economic background (i.e. the strength of the socio-economic gradient).

Table 4.2. Relationship of student performance in science and student socio-economic status in PISA 2006

Participating Country or Economy	PISA Index of Socio-Economic Background (ESCS)	Slope of the Socio-Economic Gradient			Strength of the Socio-Economic Gradient		
		Overall effect*	Within School Effect**	Between School Effect***	Percentage Explained Variance Overall	Percentage Explained Within School Variance	Percentage Explained Between-School Variance
Canada	0.37	33	23	44	8.2	4.1	39.4
Hong Kong-China	-0.67	26	9	64	6.9	1.0	39.8
Norway	0.42	36	31	29	8.3	5.8	37.6
Poland	-0.30	39	35	21	14.5	11.1	48.0
Spain	-0.31	31	24	21	13.9	7.2	49.2
OECD average	0	40	21	64	14.4	4.9	57.2

Note: Highlighted figures indicated a statistically significant difference from the OECD average ($\alpha=0.05$).

* Student-level score point difference associated with one unit of the ESCS.

** Student-level score point difference associated with one unit of the student-level ESCS.

*** Student-level score point difference associated with one unit of the school-level ESCS.

119. The slope of the socio-economic gradient, i.e. the score point difference associated with one unit of the ESCS, is an indication of the extent of inequality in science performance attributable to socio-economic factors. It was below the OECD average in Canada, Hong Kong-China and Spain, and at OECD average in Norway and Poland (second column in Table 4.2). In Hong Kong-China and Canada, this effect was primarily mediated between schools (as is the case on average in OECD countries); in Poland the within-school effect was stronger than the between-school effect (third and fourth column in Table 4.2).

120. The strength of the socio-economic gradient gives an indication of how much individual student performance varies above and below the gradient line, and is expressed by the percentage of performance

variation explained by socio-economic background (see the rightmost columns in Table 4.2). It was at or below OECD average for all case-study countries and economies.

4.3 PISA and national systems of education

4.3.1 PISA and the goals of the national system of education

4.3.1.1 PISA and the goals of the education system in Country A

121. The dominant belief in Country A seems to be that education promotes the whole child and although basic skills are important, other qualities are seen to be important as the goals for the educational system. There were mixed feelings in the 1990's whether testing was harmful to students and therefore should not be part of Country A's system of education. The country's performance in PISA came as a surprise and sparked an intense debate on the need for a radical re-think in educational policy. It also resulted in a relative shift on how student assessment is viewed in the country, with political parties and the public becoming far more open and positive to testing and outcome based education. Questions by the media about the values of Country A's education system have been raised in light of PISA. This has contributed to the change in attitude; however the tradition of the importance of social goals and values still persists.

4.3.1.2 PISA and the goals of the education system in Country B

122. The goals of the education system are currently changing, aiming to prepare students for the global village and the global economy. To achieve this, the direction of travel is towards a more outcome-based education system.

123. It seems that PISA is the 'guide' for the construction of its new educational aims. Interviewees suggested that Country B has to move away from encouraging students to acquire subject knowledge and move towards developing their comprehension, problem solving, reasoning and strategic thinking, as well as any other skills that PISA assesses.

4.3.1.3 PISA and the goals of the education system in Country C

124. There is a strong link between the goals of Country C's education system and PISA. Country C sees itself in a global context and aims to prepare students for the global village, and the skills assessed in PISA are closely linked with those promoted in the country. Interestingly, sometimes reference was made to a "natural confluence" between PISA and where the education system was heading. One of the administrative entities' educational aims have changed as a direct impact of their position in the PISA league tables. It now sees PISA and what it assesses as part of the road to improvement, as a measure of where this administrative entity needs to move towards.

125. PISA's focus on educational performance and equity is also at the heart of the educational mission.

4.3.1.4 PISA and the goals of the education system in Country D

126. Country D has decided to modernise its education system and bring it in line with the impact of globalization. Hence, Country D has had a strong commitment of policy makers at the national level to using PISA as part of even more substantial effort to strengthen international benchmarking and national quality control.

4.3.1.5 PISA and the goals of the education system in Country E

127. Although PISA has not been the catalyst for change, there are some interesting inter-relationships between PISA and the goals of education. The areas assessed in PISA are considered of great importance in the taught curricula in Country E. For instance, one reading specialist spoke to the educational reform in promoting reading begun in 2002, whereby “reading to learn” in school became a key task. A new curriculum framework was defined that emphasised four major reading skills, and new measures were introduced using multiple reading sources to replace the old curriculum.

128. For internal purposes, government personnel responsible for education has plotted in a comprehensive way a progress map for Country E’s education, benchmarking education outcomes. The map takes into account curriculum, assessment and quality assurance. PISA is also taken into account in the mapping and viewed as one important element for both assessment of 15-year-olds (a key stage) and for quality assurance.

129. Educators and curriculum developers have examined the PISA frameworks in light of Country E’s curriculum frameworks and are satisfied that they are complementary. For instance, it was noted that problem-solving was a strength in the curriculum, as was the emphasis on attitudes in science. To find these two areas assessed within, PISA reinforced its value as an assessment tool. In addition, the value in science of self-concept and self-efficacy were all-important for student’s life-long learning. The examples provided suggest shared educational philosophy in PISA and Country E; in terms of curriculum development, Country E considers this complementarity an affirmation of the government’s curriculum reform.

130. Tracking has been a topic of considerable discussion in some countries as a result of PISA. The reduction of the number of stratified strands in schools could be considered a government direction supporting the position of some countries that desegregation may promote equity across schools.

4.3.1.6 Cross case study issues

131. Those countries that see themselves as part of the global village and economy tend to value the skills assessed in PISA. They seem to have promoted them in their education systems for some time and score relatively high in PISA.

132. Countries that are consciously modernising their educational systems are changing the goals of their education systems and are usually making use of those of PISA. These countries see the development of global citizens that are able to live and work in any country in the world, endorse the skills assessed in PISA and examine ways to incorporate them into their curricula.

4.3.2 Policies and initiatives undertaken in light of PISA

4.3.2.1 Policies and initiatives undertaken in Country A in light of PISA

133. It would appear that PISA has influenced educational policy and practice in four particular ways:

- First, the impact of the PISA results has led, as has been noted previously, to a questioning of some of the traditional values underpinning Country A’s education, and more openness to reform generally. This greater acceptance of reform is documented in government publications signalling a comprehensive programme for reform over the coming years.
- Second, there have been significant developments in the national system of assessment since the first administration of PISA. Testing now occurs in six different grades. There appears, however,

to be a continuing debate over whether the purpose of the testing is formative - to improve student learning; or summative – to hold schools and teachers to account.

- Third, PISA has stimulated considerable curriculum development and change. This has not only been in terms of curriculum content, reading, mathematics and science; but also in the area of ‘competency development’ and learning skills. This latter development reflects PISA’s emphasis on application.
- Fourth, PISA and the debate on quality have encouraged some local authorities to pursue their own reform strategies independent of the national government. An excellent example shows the impetus stemming from PISA has been used to introduce a comprehensive school improvement programme. This has led to an impressive revising of standards and monitoring results in schools, including those in areas of high deprivation and ethnic diversity.

4.3.2.2 Policies and initiatives undertaken in Country B in light of PISA

134. The education system in Country B has undertaken significant reforms, particularly of the curriculum, as already mentioned. Although the PISA results were not identified as the key driver for such reforms, the improved performance of administrative entities in PISA is widely attributed to the educational reform programme.

4.3.2.3 Policies and initiatives undertaken in Country C in light of PISA

135. The impact of PISA on policy varies across the country, yet there seems to be a correlation between performance and impact. The impact of PISA in one of the administrative entities, that scored high in PISA, was described as more of a “natural confluence” between PISA and where the administrative entity is going, than a direct relationship. In some administrative entities, discussions about policy formation in light of PISA were mainly held at a governmental level; in others PISA is seen as a driver for discussions that led to a number of policy changes.

136. It is worth briefly discussing here the ‘huge’ impact of PISA in the country. Interviewees stressed that the impact of PISA was seen as even more significant than that of some national assessments, and led to ongoing change in education. Immediately after the 2001 release of the PISA results, nine focus groups were held with education partners to discuss how to improve the country’s education system. These involved close to 200 parents, teachers, members of local bodies and parent school associations, as well as students, local staff, and educational consultants. Alongside the discussions, a study compared the results in different administrative entities and explored the reasons for their different performance. Consequently, in 2003, a policy document was released and focussed governmental activity as never before. The document extended beyond PISA in its vision and objectives, and was backed up with funding commitments. With a change of government, a new policy document was released in 2007.

137. Although policy changes introduced as a direct or indirect impact of PISA were very much based on contextual needs, we are able to identify the following patterns:

- i. *Revisions of the curriculum:* Revision of the curriculum content and in particular of the areas of underperformance took place. For example, the country identified a slippage of its students in one assessment domain in PISA, and although not seen as a direct impact of PISA, the curriculum is currently undergoing revision to emphasize application and the use of knowledge and skills to solve real problems – similar to the focus of PISA tests. There is also an increased emphasis on higher order thinking skills and literacy. Officials looked at the gaps between the kind of knowledge that PISA was assessing, and what the teachers were

teaching. PISA influenced the introduction of extensive changes in the delivery of education - a cross-curricular approach, a focus on critical thinking rather than rote memorization and a change in focus from content to learning how to learn.

- ii. *Efforts to align curriculum, assessment and instruction:* Curriculum revisions were integrated into assessments and great emphasis was given on better linking assessment and instruction. It was recognised that a lot more work is needed on assessment literacy, so that teachers can use it as a teaching modification tool. The use of assessment is being built into teacher training for new curricula. Academics and researchers suggested that teachers are limited in their capacity to take the results and apply them to the student learning.
- iii. It is worth mentioning some of the current PISA-related activities in this area, which include the creation of a literacy test that will be linked at the student level to create a common scale. By using literacy-based items in this test, as done in PISA, the objective is to work towards the goal of making connections to prior knowledge and personal experience.
- iv. There are efforts to dovetail the current national assessment with PISA through the analysis of the science curriculum. A high level of correlation was possible due to the emphasis on science literacy in science teaching, reflective of the PISA focus.
- v. *Increased focus on accountability:* The country moved from a report card system to a system of accountability for results in the school. Leadership awards and letters of congratulations are sent to areas of higher performance and different letters sent out to areas with poor and declining performance. Accountability is being positioned as an investment rather than an expense, and standards are being used to improve on student achievement. An accountability pillar has been established with the grade level of achievement of students reported to the parents and nation-wide. This shows the PISA results as a key motivation for the introduction of standardised testing and linking international and national assessments. Furthermore, there is a particular focus on assessment and the national authorities are working with the local authorities to develop an accountability model. PISA results at the subnational level and results of exams at the local and school levels are presented at these meetings as the starting point for improvement. The authorities use a consensus building model for the development of policy initiatives that are culturally relevant. Principals, as well as local government officials, are now on board. The government authorities will be publishing school report cards in October and the schools are to give themselves targets based on their results in sub-national exams.
- vi. *Limited impact of PISA at school and classroom levels:* The interviews indicated that there is little impact of PISA at a school and classroom levels. It is also too early to assess the impact of the initiatives introduced to support impact at those levels in Country C.

138. Policy initiatives in light of PISA on a national level include a national assessment, and Country C published the results of its first test recently. The age group for this assessment is below 15 and the tests are timed so that the same cohort will be tested by PISA at 15. This assessment focuses on the same major and minor subject domains. To enhance the continuity of the tests, it is necessary to find a way of linking the cohorts.

4.3.2.4 Policies and initiatives undertaken in Country D in light of PISA

139. The results from PISA were not decisive, but were taken into account and played a role in the elaboration of a new education act that introduced some organisational and curriculum reforms in the

national education system. PISA, for example, contributed to decisions such as including a compulsory hour of reading in all grades of compulsory education and the augmentation of hours for mathematics and science. It also had influence in the inclusion in the curriculum and the evaluation of the key competences.

140. The passing of the law was difficult because the then ruling party did not have the absolute majority in the country's parliament. A lot of negotiation was necessary. It was perceived that PISA did not play a helpful role in this debate; it was just used to criticize the government.

4.3.2.5 Policies and initiatives undertaken in Country E in light of PISA

141. No policy initiatives have been undertaken as a direct result of PISA at either the government or school level; for the moment, such undertakings are not relevant to education in Country E. However, some interviewees alluded to the fact that greater use of PISA results would occur if the results, as well as the large data-base, were made more understandable to the schools and connected to school practices.

142. It was suggested by curriculum specialists that further work is needed to bring the reports down into the schools to make the assessment relevant to the teachers in terms of such things as teaching strategies. PISA is viewed as an assessment at the system level and, as such, not as detailed as the national assessments, which are all aimed at the school level making them relevant to schools and/or teachers.

143. Other national assessments using a curriculum-based framework to design the assessment have also been perceived as having greater impact on teachers.

4.3.2.6 Cross case issues

144. PISA has made an impact on policy in all countries studied. Impact varies from country to country, and there seems to be a correlation between performance and the volume of policy initiatives introduced in light of PISA. Countries that rank relatively high in PISA use the PISA results as a mechanism for evaluating their education system, but do not seem to have introduced any policy initiatives directly in light of PISA. On the contrary, in countries that perform relatively low, we identify a direct policy impact after the publication of the PISA results.

145. Policies introduced directly or indirectly in light of PISA have tended to focus on the following areas:

- *Revisions of the curriculum:* of all areas assessed in PISA and, in particular, of areas of underperformance.
- *Efforts to align the new curriculum with assessment and instruction:* through revisions of assessments and incorporations of such changes into teacher training in some cases.
- *Focus on accountability:* with the introduction of national testing for some countries and the refinement of countries accountability frameworks.

146. Despite this policy influence, PISA seems to have relatively low impact at the school and classroom levels.

4.3.3 PISA as a data source for school improvement and equity

4.3.3.1 PISA as a data source for school improvement and equity in Country A

147. Country A's participation in international assessments like PISA, PIRLS and TIMSS has resulted in a stronger emphasis on the need for improvement of the performance of its education system with stronger focus on basic skills and development of monitoring and quality assurance systems. Country A has a high level of spending in education compared to the OECD average, over half of which is explained by small class sizes and higher teacher salaries. A significant aspect of the stress on equity in country A's schools is the emphasis on democracy, team work and personal development. Although the above policies have not been introduced as a direct impact of PISA, interviewees have noted that the country's results in PISA have informed the formation, change or retaining of such policies.

4.3.3.2 PISA as a data source for school improvement and equity in Country B

148. Country B has introduced on a broad scale achievement measurement and international benchmarking. It links its reforms to school improvements, so that the goal of making further progress on internationally benchmarked achievement, in the PISA areas of reading, science and mathematics, but also on early school leaving, upper secondary completion rates and life-long learning participation.

149. Equity is not much debated. In part, this is due to history and, in part, due to the PISA results. The PISA results indicate a low and declining standard deviation in the scores and a relatively low between-school variance in the slope of the socio-economic gradient, all indicators of relatively equitable outcomes. To decrease the percentage of low achievers in reading is a policy objective in which Country B has been very successful.

4.3.3.3 PISA as a data source for school improvement and equity in Country C

150. The idea of "natural convergence" of the directions of education and the information provided by PISA best describes the link of PISA and school improvement and equity sometimes observed in Country C, as policy changes are trying to achieve a 'convergence'. PISA provides useful information for school improvement and in considering how equity is being achieved and how it might be improved. In general, Country C is particularly interested in policies and practices in high performance countries, as well as those that do well in supporting equity.

151. However, none of the administrative entities observed seem to be doing much of secondary analysis of the PISA results, and some suggested that such an analysis would be beneficial in supporting school improvement in their jurisdictions. Some example of the utilisation of PISA results in addressing equity issues and initiatives are outlined below:

- i. The use of the PISA secondary analysis in the case made for the reduction of class size in 2003, allowing the existence of very influential document that led to major changes in the education system.
- ii. The government, which provides funding for PISA, has made the policy decision to use oversampling. The government is responsible for providing the data. National bodies specialised in education can help administrative entities with the analysis and consideration of the data.
- iii. A study was started in 2000 to track the pathways of 15 year olds every two years until they reach the age of 30. By starting with the same age cohort as PISA in 2000, they are able to link the PISA results with the continuing results from this study. When the study

cohort reaches 24 years of age, they will be re-assessed in reading to measure skills loss and gain. The government's interest in this longitudinal survey is to track the development of human capital and the influence of pre-postsecondary education; PISA results have been found to be predictive of postsecondary pathways.

4.3.3.4 PISA as a data source for school improvement and equity in Country D

152. PISA has made contributions that other international assessments have not made, and these are going to be used in national assessments as well (namely, the SES factor, the gradient curve, multi-level analysis, etc.), both at the national and sub-national level.

153. The compatibility between PISA and national assessments was not very high until 2006. There is more compatibility, however, with the new general diagnostic evaluation established after 2006.

154. PISA results have shown that the differences between schools in Country D are very small. If the socio-economic effect is controlled for, there is no difference between the results of public and private schools. The main differences in Country D are between social groups; this is the reason why the impact of the school context is high, as children from disadvantaged social classes normally attend public schools. The home background of students makes a difference in the results.

4.3.3.5 PISA as a data source for school improvement and equity in Country E

155. In 2006, Country E displayed high levels of student performance in science and a below-average impact of economic, social and cultural status on student performance, suggesting a high average quality in learning opportunities in the country's basic education.

156. However, there is significant between-school variation. The issue of equity and equality across schools was researched by Country E prior to the administration of the first cycle of PISA. One result of this research was to desegregate students. That is, to collapse the five ability levels called "bands" to which students were allocated in secondary school, into three bands. Academic intake in schools varies from 1 (high student ability) to 3 (low academic ability). PISA results were not a factor in promoting this direction, but data drawn from future PISA endeavours may support it. This initiative could be considered a government direction supporting the position of some PISA countries and economies that desegregation may reduce between-school variation.

157. Based on PISA results, researchers of Country E appear to be monitoring the difference in gender equity across the subject areas assessed and examining it in relation to what is happening across participating countries and economies.

158. In Country E, other areas being researched based on the PISA database concern equity among students from different parental backgrounds. The performance results are examined in light of these characteristics: students living with single-parent and other family types, students and the influence of a differing socio-economic status, and parental education.

159. The research on equity and excellence undertaken by the researchers of the country's PISA centre may well result in a more comprehensive approach to promoting equity at all levels of the education system. However, presently it is unclear to what extent there is a link to PISA in promoting the policy of equity in the field of education in the country.

4.3.3.6 Cross case study issues

160. All case study countries but one see PISA as fundamental for their drive for school improvement and equity. Countries use or are contemplating using in the future data gathered by PISA. Such decisions are based on their contextual needs. Data are used to:

- decrease socio-economic inequity;
- reduce between-school variation;
- decrease gender inequity; and
- support life-long learning.

161. Evidently, secondary analysis of the PISA data at a country level will support further countries' school improvement efforts and equity. There have been suggestions that PISA should also include secondary analysis for individual countries.

4.3.4 *PISA and policy coherence and sustainability*

4.3.4.3 PISA and policy coherence in Country A

162. Policy coherence in light of PISA is a problematic issue in most countries, and Country A is no exception. It is clear that PISA has impacted on policy and educational reform. There have been, as noted above, a number of policy initiatives following the publication of the PISA results. On the evidence we were able to gather, this response was a reaction against a poor performance on PISA and resulted in a form of policy borrowing from more successful systems, in particular, the introduction of more accountability and some curricula developments. It is difficult to describe this reaction as a comprehensive, coherent and strategic approach to reform. There are exceptions, e.g. an administrative entity which introduced a coherent programme of reform following PISA that resulted in a significant and impressive raising of standards.

4.3.4.4 PISA and policy coherence in Country B

163. PISA reflects broadly the policy aims of Country B. Country B has shown also to be close to PISA, by participating through academic staff in the preparation of the PISA assessment. There is a strong connection between these academics and the policy makers.

4.3.4.1 PISA and policy coherence in Country C

164. Although differences exist across the country, policy makers share many common goals. They share the same concerns about ensuring that immigrants are supported in their learning and achieve to their full potential. They undertake measures to ensure gender equity in all subjects and have expressed particular concern about boys being significantly outperformed by girls in reading. PISA provides essential data on all of these concerns when assessing 15-year-olds.

165. Educational policies are based on research findings and, for policy makers, PISA is an important source of data on differences in performance, based on such things as family background, school choice, and parental education.

166. The variables studied in PISA mirror the areas of interest expressed by policy makers. Other issues addressed by educators, such as student attrition, can draw on the PISA data about student attitudes, motivation to learn, aspirations, and parental expectations.

167. Policy makers have viewed accountability to its constituents as essential. For this reason, they have used large-scale assessment programs at a national and, more recently, at an international level through PISA. They view PISA as an important component of accountability for educational output.

4.3.4.5 PISA and policy coherence in Country D

168. The Institute of Evaluation in Country D, which is responsible for PISA, is very closely related to policy making in the country. The policy coherence is strong.

4.3.4.6 PISA and policy coherence in Country E

169. Although not always explicitly stated by those interviewed, Country E's documentation suggests that the educational philosophy of Country E and PISA appear to be in synch. There is concordance between Country E's policies and strategies for improving its schools and the recommended directions suggested by PISA, for example, regional reports concerns in achieving gender equity, in minimizing performance disadvantage for students with a migration background, in valuing social equity across schools, in promoting self-regulated learning strategies and in the afore-mentioned appreciation of common curriculum underpinnings.

4.3.4.7 Cross case study issues

170. Policy coherence is a complex area. This is for two reasons. The first is that countries by and large did not see educational reform as a holistic issue; rather, they respond with individual reform initiatives. The second is that many countries justify their reforms through their performance in PISA. As a consequence, in general we found a lack of policy coherence overall, and this is an issue we return to in the final section.

4.4 Level of awareness of PISA amongst stakeholders and the propagation of the PISA results

4.4.1 The level of awareness of PISA amongst stakeholders

4.4.1.1 The level of awareness of PISA amongst stakeholders in Country A

171. There is a very high level of awareness of PISA in Country A amongst key stakeholders including the business community, the public and even the children. The level of awareness has increased during the three PISA administrations. This has become particularly acute given the poor performance of Country A on PISA and the fact that its ranking has dropped during the three administrations. In his New Year's speech in 2008 the Prime Minister referred to Country A's poor performance in PISA and outlined the strategies in which the government intended to improve the country's performance.

172. There is a great deal of media attention to PISA in Country A. Discussions focus on the values of the education system and its lack of developing student skills to enter competitively the global world. There also seems to be a link between the media attention and the political focus on PISA. In general, PISA is considered a reliable measurement by stakeholders.

4.4.1.2 The level of awareness of PISA amongst stakeholders in Country B

173. The level of awareness of PISA is limited to policy makers, local government officials and academics and researchers. The business community and parents seem to have little knowledge of what PISA assesses and of its implications.

4.4.1.3 The level of awareness of PISA amongst stakeholders in Country C

174. The level of awareness of the PISA results in Country C varies across stakeholder groups, and is very much related to performance. There are two patterns, however, that emerge:

- the more emphasis policy makers and media place on the PISA results, the more awareness is raised; and
- the lower the ranks, the more awareness is identified throughout the levels in the system; and the higher performance, the lower the awareness of the various stakeholders and, in particular, of those in schools, businesses and the public.

175. In general, stakeholder groups in Country C expressed an understanding of what PISA assesses and were familiar with their ranking in relation to others, both nationally and globally. In particular, policy makers and academics and researchers in the high scoring jurisdictions in PISA were more informed about what PISA assesses, and demonstrated a sophisticated understanding of its implications, as well as their confidence in designing policies in light of PISA. However, there is an indication that the awareness of policy makers at lower levels, such as education officers, for example, is more superficial than sophisticated.

176. Schools and teachers were aware of the results, but their awareness remains low as the PISA results do not seem to apply directly to their experience according to the interviewees in some administrative entities. In others, however, there seems to be more awareness at those levels thanks to the distribution and presentation of the results to various stakeholder groups.

177. The media is the main medium through which public and business are made aware of the PISA results. The media focuses on the national and international results, especially PISA – with stories on page one, which has increased the level of awareness of business and the public, but this is a one-day wonder in terms of coverage. There is no sustained coverage, so the interest is fleeting and public and business awareness as a result is relatively low. This is not the case, however, for all regions, and the evaluators visited an administrative entity, where the business community is very much aware of the PISA results, and some companies have even provided financing to help address some of the educational problems revealed by PISA.

178. The regular release of OECD's *Education at a Glance* also evokes media interest, as it often presents the PISA results in a new light, with a broader spectrum for educational discussion in Country C.

4.4.1.4 The level of awareness of PISA amongst stakeholders in Country D

179. The awareness of PISA is high throughout the country, largely due to the media coverage and especially the coverage of the 2006 PISA assessment, which landed in Country D like a bomb. Subsequently, there has been an active communication policy on the part of the government on PISA, so that even better informed parents have “heard” of PISA (but often with the digital connotation: good result/bad result). Several administrative entities decided to oversample in order to have a representative sample. In these regions, the awareness of PISA is much higher amongst all stakeholders.

4.4.1.5 The level of awareness of PISA amongst stakeholders in Country E

180. Levels of awareness vary considerably among those interviewed with regard to PISA, the results, and the subjects assessed. Government officials, as well as principals, researchers, education curriculum developers and one education reporter had very good knowledge of PISA.

181. Principals were well aware of PISA and the results since their schools had participated in the assessments. Teachers were only slightly aware of the assessment despite presentations of results having been made in their schools, and the provision of numerous newsletters presenting both general information and specific details about PISA. Teachers stated they had read about the PISA 2006 results in the newspapers.

182. Education reporters varied in their knowledge of PISA from being well versed to far less so. Teacher associations, and the business community had little knowledge of PISA and the areas assessed. Students who participated in PISA, of course, were well aware of the subject areas in which they were assessed, but of little else. Although parents were keenly interested in the fact that their children had participated in PISA, an international assessment, and viewed this as an additional opportunity for learning, they had no knowledge of PISA, or the subjects in which they were assessed.

4.4.1.6 Cross case study issues

183. The level of awareness of the PISA results varies across countries and across stakeholder groups. However, we are able to identify the following patterns:

- the more emphasis policy makers and media place on the PISA results, the more awareness is raised at all levels in the system;
- the lower a country's ranking, the more awareness is raised at all levels in the system;
- the higher a country's performance, the lower the awareness of the various stakeholders;
- policy makers, academics and researchers and the media seem to be the stakeholder groups most aware of PISA; and
- lower levels of awareness are identified at a school level, among parents, the public and the business community.

4.4.2 Processes that effectively propagate the PISA results

4.4.2.1 Processes that effectively propagate the PISA results in Country A

184. The responsibility to administer and follow up on PISA is centralized nationally, and this national body therefore plays a critical role in disseminating PISA results. Some of the dissemination strategies employed are:

- A publication of a report based on the country's results.
- A national conference organized immediately after the publication of the PISA results for researchers, policy makers, school authorities and school leaders.

- All schools having participated in PISA get a report on their results in relation to the national and international results.

185. It is important to note that the media have played a prominent role in the dissemination of the PISA results and that much of the debate has been conducted at the political level. This appears to have had a negative effect on the educational debate, as teachers seem to become nervous when education receives so much political attention, and there is a tendency for them to reject political proposals. It also seems that once one moves below the national level, these stakeholders do not universally know what to do with PISA outcomes (see, however, the exceptions mentioned before).

4.4.2.2 Processes that effectively propagate the PISA results in Country B

186. There seems to be no strategy with regards to the dissemination and propagation of the PISA results in Country B. The media is mainly the means through which PISA is known. However, some interviewees perceived the media coverage as not being helpful. This is due to their representation of the country's performance as 'good' or 'bad', and their assumption that 'bad' performance is due to 'bad' teaching.

187. There are currently discussions for investing in the dissemination and propagation of the PISA results. Interviewees stressed that a cost-benefit analysis of such an investment and its benefits for improving the education system as a whole is important beforehand.

4.4.2.3 Processes that effectively propagate the PISA results in Country C

188. Country C pays particular attention to the dissemination of the PISA results. At a national level, dissemination and propagation efforts aim to inform policy makers at national and sub-national levels, academics and researchers and educators about the PISA results; encourage debate; support the dissemination of the results at local level; and identify ways of using them to improve. At a national level, the following initiatives have been introduced:

- A joint press conference is held when the results are first released that brings-in a lot of press attention, followed by a publication and a press release.
- In February 2008, a nation-wide symposium was held on PISA and a new testing system, looking at the research, findings and implications. Government officials, researchers, and educators attended the two-day event.
- The team responsible for the implementation of PISA in the country encourage the use of the PISA results in further research:
 - through research conducted to advise ministers and cabinet, the commissioning of research with specific goals and requirements, undertaking research, and encouraging students to use PISA in their research.
 - by using the PISA data in a number of public reports, as well as in the fulfilment of custom requests for secondary analysis.
 - by investigating a workshop for research coordinators to enable them to analyse the PISA data. This endeavour reaches beyond dissemination to application.

189. At a sub-national levels we found:

- Information on the PISA results is made available on a web site.
- A press release is issued featuring the first results of PISA.
- The PISA results are incorporated in a brochure on studies of achievement that is distributed widely to schools, school boards and other educational stakeholders.
- The results are referred to by senior politicians and educational officials in speeches and documents.
- A media release highlights its comparative results.
- There is consideration being given to doing regional reports with the next PISA tests.
- The PISA results are being integrated into instructional training as part of the growing emphasis on assessment literacy.
- The regional results are sent to the schools, especially those who participated.
- A body, made up of teachers, parents, principals, trustees and representatives of official organizations, gets a briefing on PISA and the participants are asked to carry this information back to their constituencies.
- A program is being put in place to help the research officers in some school boards use the PISA data, even if it is not available at the school board level.
- There was extensive media attention when the results were first published and they are used in presentations and discussions by senior policy makers .
- The government is working to build the capacity to use the data in schools. This involves developing the capacity to understand and apply the data, rather than the ability to manipulate it. A government body will supply all analyses that the schools and teachers may request. A related project involves a group of Grade 7 and 8 teachers working with reading and mathematics assessments. The teachers develop formative assessments, apply them, analyze the results, discuss and implement changes in response to the results, and work towards improved summative evaluation results.
- A number of universities use the richness of the PISA datasets to do further research.

4.4.2.4 Processes that effectively propagate the PISA results in Country D

190. Organized discussions have been encouraged by the national government. However, PISA is not connected directly (one on one) to specific elements of the education system (like: the curriculum, teacher training or finance) and the need for propagation of the PISA results has been viewed as limited.

4.4.2.5 Processes that effectively propagate the PISA results in Country E

191. The PISA centre was set up specifically to deal strategically with all aspects of PISA research. As such, this centre plays a critical role in disseminating the PISA results:

- It holds a press conference at the time of the international release to disseminate results, a printed report, and a summary; PISA has received very good media coverage.
- The results are referenced regularly by senior politicians and educational officials in speeches and documents.
- The centre collaborates with two major educational institutions in the country in disseminating brochures to schools, teachers, students and parents, both promoting the programme and sharing the results.
- Members of the national centre were invited by schools to meet with principals and teachers and speak to the results.
- The centre, in collaboration with the major educational institutions mentioned above publishes regular newsletters.
- The centre also publishes special editions and articles within a series on educational policy studies, and holds international conferences and workshops involving other participating PISA countries and economies.
- The institutions work closely with the centre to keep abreast of PISA activities and regional reports; they hold seminars with curriculum specialists.
- The institution invited academics and subject experts to offer workshops for professional development where PISA results are introduced as reference points.
- Principals share results of PISA with their staff and communicate results with parents and students. How the latter is done and in what depth, were not noted.

192. The process for propagation of PISA results appears quite strategic, the awareness of PISA varies substantially amongs different sectors – policy makers, curriculum specialists, and some academics are aware and make better use of PISA, yet there is not the expected result of achieving wide awareness of PISA at the school and teacher levels.

4.4.2.6 Cross case issues

193. The relatively high performing countries, have mostly developed a series of strategies for the dissemination of the PISA results at different levels in the system. It is evident that if governments deal strategically with the PISA results as in Country C and Country E, then effective propagation is more likely to be achieved.

194. It is clear that PISA will not impact at the school level by mechanisms of national level seminars alone. Best practice from Country E suggests that direct communication with school principals and teachers might make a difference. Unfortunately, responses to questions on impact are predominantly anecdotal.

195. Some countries do not have comprehensive strategies for the dissemination of PISA results. In these countries, the media play the most important role in the dissemination and much of the debate resides at the political level. Yet, effective propagation should not be left to the media alone, but if it is, then it is likely to have a negative impact.

4.4.3 PISA and national monitoring, assessment and evaluation mechanisms

4.4.3.1 PISA and national monitoring, assessment and evaluation mechanisms in Country A

196. As has already been seen, one of the key impacts of PISA on policy in Country A has been in the domain of monitoring and assessment. The introduction of national tests in the early part of this decade has flown in the face of a dominant tradition that at one extreme regards testing as damaging to students. We have already noted the introduction of diagnostic test indifferent grades, and the promise of tests in further grades. Despite this, there still seems to be a debate as to whether these tests are for formative or summative purposes, and what their authentic impact is on school and classroom practice. The administrative entities we visited are contrasting in this respect. Some use assessment data as a driver for school improvement, while the utilisation of assessment data in others was far less systematic. The clear conclusion from the evidence collected for this evaluation is that although Country A has extended its approach to monitoring and assessment in light of PISA, such ways of working in support of higher levels of student achievement are still to be fully embedded in the system.

4.4.3.2 PISA and national monitoring, assessment and evaluation mechanisms in Country B

197. Country B has introduced testing at grades 6 and 9 and for 15-year-olds that are very similar to those of PISA.

4.4.3.3 PISA and national monitoring, assessment and evaluation mechanisms in Country C

198. PISA is considered an important measurement of educational performance and its results are taken very seriously at the government level. From the perspective of senior policy makers, PISA is perceived as an effective comparative measure of the cumulative knowledge and skills of students towards the end of their compulsory schooling and as a strong indicator of the readiness of young people as they prepare to either enter into post-secondary education or into the workforce. PISA is part of the monitoring and evaluation of the effectiveness of the education system. In the national assessments, initiatives are being introduced in an attempt to align them with PISA. In sub-national assessments, there is a lesser attempt to align since the sub-national assessments are curriculum-based, versus the literacy-based PISA. Policy makers do, however, compare the PISA frameworks with their own assessment framework criteria, as they view PISA as an excellent tool against which to gauge their work.

199. PISA is used as part of the triangulation of student assessment at the sub-national, national and international levels. For some administrative entities, PISA is an important component in the overall performance evaluation. However, more prominence is given to regional data in relation to the other measures. In others, similar weight is given to all three assessments. In still others, PISA is seen to have changed the culture of how educational quality is measured. Regional assessments were not taken seriously in some administrative entities and were seen as more of a task and obligation than as significant measures. There, the results of PISA 2000 have contributed to raising the profile of regional assessments as important tools for monitoring and evaluation measures of educational quality.

4.4.3.4 PISA and national monitoring, assessment and evaluation mechanisms in Country D

200. Many administrative entities have decided to have a representative PISA sample in 2006 as a regional assessment. In one region, there is a discussion for an assessment of all 15-year-old students (as a

“national” test). The new general diagnostic evaluation was presumably inspired by previous national experience and by PISA.

4.4.3.5 PISA and national monitoring, assessment and evaluation mechanisms in Country E

201. According to most interviewees, the general public and mass media of Country E have concentrated primarily on its ranking among the participating countries and economies in each area assessed. The media also have made this the primary theme of their discussions. As previously noted, the government has perceived its ranking in PISA as a confirmation of the success of its reform directions, a position questioned by some researchers. The researchers’ concern is that insufficient time has elapsed to bring about such positive results, while little other evidence has been proffered as proof of this position. On the other hand, researchers have analysed other outcomes of PISA, published articles on their research, and presented at international and national conferences about their findings. The country’s national PISA team has appealed to other international researchers to write articles on their country’s findings and specific characteristics addressed by PISA to inform educational stakeholders of potential policy levers.

4.4.3.6 Cross case study issues

202. PISA is regarded by all participating countries as an extremely important measure of the performance of their school system. As such, it is recorded a high level of credibility and influence in all jurisdictions. However, the level of integration of PISA results in national assessment systems vary considerably. In Country C, for example, PISA is triangulated against and complemented by national and regional assessment systems; in Country A, it is simply an independent measure. A number of jurisdictions, however, are considering a closer alignment of their national assessment systems with PISA, and this seems to be an emerging trend.

4.5 Unplanned/ unexpected impact of PISA

4.5.1 PISA and its unplanned/unexpected impacts

4.5.1.1 PISA and its unplanned/unexpected impacts in Country A

203. The high levels of debate in light of the PISA results amongst different stakeholder groups was the unplanned/unexpected impact of PISA identified by the interviewees. The impact of this ‘PISA shock’ was unprecedented and still reverberates. Such discussions focused on the country’s accountability system, the introduction of educational standards and the need for curriculum reform. These changes, however, have been essentially reactive, but the overall unplanned/unexpected impact of PISA in Country A has been to create a high level of volatility in debates over policy and practices.

4.5.1.2 PISA and its unplanned/unexpected impacts in Country B

204. Hardly any of the impact of PISA was planned. The involvement in PISA was based on the general notion of the need for benchmarking in order to further school improvements.

4.5.1.3 PISA and its unplanned/unexpected impacts in Country C

205. Besides the national results in PISA, through oversampling, the country also has produced sub-national results from the assessment. In addition, since 1993, Country C has administered national assessments targeting roughly the same age group and the same three subject domains as PISA. Although there are differences in the goals of the two assessments and in the content, the PISA results have confirmed the levels of performance achieved by students in each administrative entity and the overall

rankings across them. This gives testimony to senior policy makers that their assessment practices are pedagogically sound and the results, reliable.

206. Although Country C did fairly well in the assessment of science literacy in PISA 2000 and 2003, it was very surprised to find that it was only outperformed by very few countries in 2006. The reason for this warrants a closer look since it is equally important to know the reasons for very good performance, as well as for weak performance.

4.5.1.4 PISA and its unplanned/unexpected impacts in Country D

207. The most unexpected impact was on the regional level. If the influence of the socio-economic factor is detracted, the national average is not considered lower than the OECD average. On the other hand, the results of some administrative entities are much higher. Other administrative entities, however, have much lower results. This led to the conclusion that it is not the education system that does not work (as it is essentially identical across the country). Interviewees in country D believed that the basic explanation of the achievement levels is in other factors that we cannot measure (social cultural level, educational tradition, etc.).

208. When the socio-economic effect is corrected, the results of all administrative entities improve, more particularly those with lower results.

4.5.1.5 PISA and its unplanned/unexpected impacts in Country E

209. There seems to have been only one unexpected impact, the tremendous improvement of students in reading performance. Government officials, curriculum specialists, researchers and principals stated that they were particularly pleased with the reading results in 2006; this achievement was mainly due to the improvement among the lower performing students. Government officials and educators have referenced this positive outcome in public notices and speeches.

210. Science was also an area in which Country E's 15-year-old students performed extremely well and little note was made of this, other than by science teachers and science curriculum developers. Almost everyone focused on the reading results because of the dramatic improvement in the performance of students.

4.5.1.6 Cross case study issues

211. There are a number of unexpected but welcomed impacts of PISA in the case-study countries, all of which have been positive and, in one way or another, have supported in improvement in countries' education systems. Some of the unexpected impacts identified are:

- the high levels of debate in light of the PISA results amongst different stakeholder groups that lead to changes in a country's education system;
- a verification of the effectiveness of a country's education because of its perceived 'good performance in PISA', resulting in an increase in confidence in the education system;
- the focus on regional differences and the exploration of factors that contribute to such differences, as well as towards between-school variation; and
- PISA continues to serve as a tool of accountability for countries.

4.6 Suggestions on how PISA can be improved

212. This chapter on the case study component of the evaluation has followed an established approach to multi-site case study that has resulted in the structure of the analysis just reported. In conclusion, and in preparation for the final chapter, it is instructive to summarise the responses of interviewees as regards their suggestions on how PISA could be improved. We have ordered these under the criteria used in the final chapter to assess the effectiveness of PISA.

Relevance

- PISA to integrate students' broader social outcomes in its assessment framework and not confine itself to students' cognitive abilities; and
- PISA to give more emphasis to the contextualisation of data.

Technically

- PISA to reduce the time between the administration of the test and the announcement of the results;
- PISA to consider using computer adaptive assessment in order to provide immediate results;
- PISA to reduce the testing time for students;
- PISA to consider administering the school questionnaire electronically; and
- PISA to develop similar testing instruments to measure other learning in history, social sciences, economics and second languages (in particular English as a-Second Language).

Dissemination and awareness

- PISA to develop its communication strategies and better use the media for its exposure;
- OECD could stimulate more public debates about the usefulness of the data and the character of the survey;
- OECD could hold a major forum with each cycle to inform the educational environment and promote discussion about policy implications among countries; and
- PISA could be promoted more extensively to the universities.

Impact

a. Policy impact:

- OECD to provide policy orientations or advice to countries;
- OECD should work closely with ambassadors to help them understand the data and the findings as important information about a country's potential economic health and growth;

- OECD could hold a major forum with each cycle to inform the educational environment and to promote discussion about policy implications among countries;
- OECD could provide information on how PISA results could be used to evaluate the own assessment and evaluation procedures and instruments; and
- OECD should set up funding for research that would look at speculative questions and exploratory issues concerning PISA to really push forward on what people know and expect from PISA.

b. School level impact

- PISA to expand its data collection to include more information on school processes, teacher training, and classroom data.

Chapter 5: Analysis, discussion and recommendations

213. In previous chapters we have presented, within the limitations already noted, a fairly comprehensive picture of the impact of PISA in participating countries and economies from a quantitative and qualitative perspective. In this chapter, we attempt to analyse and discuss this range of data and make some suggestions as to the future direction of PISA.

214. As was mentioned in chapter 2 on methodology, we will be using Stake's Matrix to structure the analysis of this wealth of data. Robert Stake's evaluation model (Stake, 1967) has a distinguished record in assisting evaluators draw robust conclusions from the investigation of complex situations. Although we compress the temporal domain in his original model, we make full use of the analytic structure that contrasts the two phases in both the Description and Judgement matrices to make judgements about PISA and to inform our recommendations. To recapitulate:

- The Description Matrix includes:
 - *Intents* – what the programme set out to deliver
 - *Observations* – what the programme actually did deliver
- The Judgement Matrix includes:
 - *Standards* – an objective view on what the programme should be delivering
 - *Judgements* – the analysis of the previous three stages allows reliable judgements to be drawn about the effectiveness of the programme which can provide the basis for subsequent recommendations.

215. It is this flow of argument that we now follow.

5.1 Description Matrix - Intents

216. PISA, apart from setting out to assess certain key competencies that young adults need to possess in order to be successful in tomorrow's global village and global economy, is also interested in:

- i. Being relevant to participant countries and economies and:

- addresses the policy needs of participating countries;
 - relates with the goals of the education of participating countries; and
 - links with national or federal assessments.
- ii. Having an impact on and contributing to the sustainability of educational practice in participating countries, for example, by:
- ensuring that its results are being adequately used at all levels in the system;
 - being a departure for reform and informing policy formation and implementation;
 - impacting on school and classroom practices;
 - adding value to national or federal assessments;
 - supporting equity in national or federal systems of education;
 - enhancing policy coherence in participating countries; and
 - contributing to sustainable change.

5.2 Description Matrix – Observations

217. Based on the quantitative and the qualitative data, we derived the following observations, which are noted on the summaries of the data in Chapters 3 and 4:

5.2.1 Quantitative strand

5.2.1.1 Relevance of PISA

218. The following emerging themes have been identified with regards the relevance of PISA:

- Policy makers are considered the most significant stakeholder group, both in relation to PISA and its results, and in implementing policies in light of PISA, with local authority officials and school principals second and third respectively, with regards to the implementation of policies in light of PISA.
- Surprisingly, there are the relatively low levels of responsibility that the various stakeholder groups assume for the PISA results in their countries.
- PISA seems to be addressing countries' policy needs to a greater rather than lesser extent.
- Countries and stakeholder groups are increasingly valuing the skills assessed in PISA and are promoting them within their education system.
- PISA is used as a tool for monitoring and evaluating a country's performance and equity.

5.2.1.2 Effectiveness and sustainability of PISA

219. In summary, the quantitative data appear to indicate the following in relation to the effectiveness and sustainability of PISA:

- The influence of PISA on policy formation both nationally and locally is increasing over time.
- The influence of PISA seems to be greater at a national level rather than at a local level and has less impact on school practices and instruction.
- PISA is also seen to contribute to long term sustainable change to a fair extent by some stakeholder groups.
- In order for the influence of PISA to be increased at all levels in the system and for it to contribute further to sustainable change, the following are required:
 - a better coordinated and strategic approach for the dissemination of PISA results;
 - further support for various stakeholder groups in interpreting PISA results and in designing strategies for improvement in light of PISA;
 - clearer linkage of PISA results to national or federal assessment strategies; and,

5.2.1.3 Unexpected impacts of PISA

220. It is clear that PISA has had some unexpected impacts in participant countries and economies. In particular:

- Most of the impacts identified by the questionnaire respondents – such as the high levels of public interest in the PISA results, the increase of educational debate in light of PISA, the increased collaboration between different stakeholders and schools as a result of PISA and the greater use of empirical educational research – all have the potential to support school improvement efforts.
- One of the other main impacts of PISA results is the way in which countries use them to justify their education system, their policy choices and employment of particular type(s) of assessment(s) approaches. This can have either a positive or a negative effect. When such justifications encourage discussions on how policy can be improved then one could assume a positive impact. However, if the PISA results are used as a means of policy legitimisation of educational reforms that would otherwise be contested and obscures discussion of how the system can be further improved, impact may well be negative (see footnote in Chapter One that refers to Luhmann and Schorr's characterisation of this phenomena, 'externalisation').
- The search for specific stakeholder groups or individuals for a country's relatively low performance, which could nurture a culture of 'blame', can only stifle improvement.

5.2.2 Qualitative strand

5.2.2.1 PISA and the goals of the education system

221. Some countries see themselves as part of the global village and economy and tend to value the skills assessed in PISA. They seem to have promoted them in their education systems for some time and score relatively high in PISA.

222. Countries that are consciously modernising their educational systems are changing the goals of their education systems and are usually making use of those of PISA. These countries see the development of global citizens that are able to live and work in any country in the world, endorse the skills assessed in PISA and examine ways to incorporate them into their curricula.

5.2.2.2 Policies and initiatives undertaken in light of PISA

223. PISA has made an impact on policy in all countries studied. Impact varies from country to country and there seems to be a correlation between performance and the volume of policy initiatives introduced in light of PISA. Countries and economies that rank relatively high in PISA use the PISA results as a mechanism for evaluating their education system, but do not seem to have introduced any policy initiatives directly in light of PISA. On the contrary, in countries that perform relatively low we identify a direct policy impact after the publication of the PISA results.

224. Policies introduced directly or indirectly in light of PISA have tended to focus on the following areas:

- *Revisions of the curriculum:* of all areas assessed in PISA, and in particular of areas of underperformance.
- *Efforts to align the new curriculum with assessment and instruction:* through revisions of assessments and incorporations of such changes into teacher training in some cases.
- *Focus on accountability:* with the introduction of national testing for some countries and the refinement of countries accountability frameworks.

225. Despite this policy influence, PISA seems to have relatively low impact at the school and classroom levels.

5.2.2.3 PISA as a data source for school improvement and equity

226. All case study countries but one see PISA as fundamental for their drive for school improvement and equity. They use or are contemplating using, in the future, data gathered by PISA. Such decisions are based on their contextual needs. Data are used to:

- decrease socio- economic inequity;
- reduce between school variation;
- decrease gender inequity; and
- support life-long learning.

227. Evidently, secondary analysis of the PISA data at a country level will support further countries' school improvement efforts and equity. There have been suggestions that PISA should also include secondary analysis for individual countries and economies.

5.2.2.4 PISA and policy coherence and sustainability

228. Policy coherence is a complex area. This is for two reasons. The first is that countries by and large did not see educational reform as a holistic issue; rather, they respond with individual reform initiatives. The second is that many countries justify their reforms through their performance in PISA. As a consequence, in general, we found a lack of policy coherence overall and this is an issue we return to in the final section.

5.2.2.5 The level of awareness of PISA amongst stakeholders

229. The level of awareness of the PISA results varies across countries and across stakeholder groups. However, we were able to identify the following patterns:

- the more emphasis policy makers and media place on the PISA results, the more awareness is raised at all levels in the system;
- the lower a country's ranking, the more awareness is raised at all levels in the system;
- the higher a country's performance, the lower the awareness of the various stakeholders;
- there is less awareness in poorer countries with smaller education policy establishments;
- policy makers, academics and researchers and the media seem to be the stakeholder groups most aware of PISA; and
- lower levels of awareness are identified at a school level, among parents, the public and the business community.

5.2.2.6 Processes that effectively propagate the PISA results

230. The relatively high performing countries have mostly developed a series of strategies for the dissemination of the PISA results at different levels in the system. It is evident that if governments deal strategically with the PISA results, then effective propagation is more likely to be achieved.

231. It is clear that PISA will not impact at the school level by mechanisms of national level seminars alone. Best practice from Country C suggests that direct communication with school principals and teachers might make a difference. Unfortunately, responses to questions on impact are predominantly anecdotal.

232. Some countries do not seem to have fully comprehensive strategies for the dissemination of PISA results. In these countries, the media play the most important role in the dissemination and much of the debate resides at the political level. Yet, effective propagation should not be left to the media alone, but if it is, then it is likely to have a negative impact.

5.2.2.7 PISA and national monitoring, assessment and evaluation mechanisms

233. PISA is regarded by all participating countries and economies as an extremely important measure of the performance of their school system. As such, it is recorded a high level of credibility and influence in all jurisdictions. However, the level of integration of PISA results in national assessment systems vary considerably. In Country C, for example, PISA is triangulated against and complemented by regional assessment systems; in Country A, it is simply an independent measure. A number of jurisdictions, however, are considering closer alignment of their national assessment systems with PISA and this seems to be an emerging trend.

5.2.2.8 Unplanned/ unexpected impact of PISA

234. There are a number of unexpected, but welcomed impacts of PISA in the case-study countries and economy, all of which have been positive and, in one way or another, have supported in improvement in countries' education systems. Some of the unexpected impacts identified are:

- the high levels of debate in light of the PISA results amongst different stakeholder groups that lead to changes in a country's education system;
- a verification of the effectiveness of a country's education because of its perceived 'good performance in PISA', resulting in an increase in confidence in the education system;
- the focus on regional differences and the exploration of factors that contribute to such differences, as well as towards between-school variation; and
- PISA continues to serve as a tool of accountability for countries.

5.3 *Judgement Matrix - Standards*

235. Here, we will need to articulate a set of standards that one would expect from a world leading international benchmarking programme for student assessment.

- **Relevance** – does the programme cover the entire issues one would expect?
- **Technical** – is the programme robust in terms of validity, reliability and operational efficiency?
- **Dissemination and awareness** – are there adequate processes in place to disseminate the results of the programme and to encourage learning from it?
- **Impact** –
 - a. **Policy Impact:** does the programme stimulate intelligent discussion about reform and a range of policy option? Does it initiate reform?
 - b. **School Level Implications:** does the programme have the information to stimulate action for change and improvement power for those working in schools?
 - c. **Equity:** does the programme serve as a data source that supports countries' efforts for equity?

- **Policy coherence and sustainability** – does the programme contribute to sustainable change and policy coherence?

5.4 Judgement Matrix - Judgements

236. It needs to be stated at the outset that there was overwhelming support for the PISA concept and programme by virtually all respondents across all jurisdictions. Despite particular concerns from countries and individuals, this position was virtually universal even amongst academic respondents who one would suspect to be far more discerning, given their level of technical knowledge about the programme. We should, however, not be too overawed by this response, given that many of those interviewed had only a relatively superficial knowledge of the programme. It should not disguise issues that PISA needs to confront as the programme looks towards its future development. Rather, this level of support should be taken as an endorsement of the need for the programme – it has certainly captured the zeitgeist, and is proving to be a powerful lever in the global quest for raising educational standards. This should not, nevertheless, distract us from a more analytic assessment of the programme based on the evidence we were able to gather. Following the analysis of the previous three stages of the evaluation matrix we now present a series of judgements on the overall effectiveness and impact of PISA. In this section, we review those proposals that given the analytic process we feel to be valid, comment on them and then make at least one specific recommendation under each heading.

- **Relevance** – PISA’s commitment to assessing the application of knowledge, rather than the acquisition of curriculum content was clearly endorsed by all respondents. Similarly endorsed is the focus on the education of 15-year-olds and the three core areas of reading, mathematics and science literacy. All respondents also regarded the arrangement positively that has each domain, being a major focus every third assessment and a minor focus for the others. In all these areas, current PISA practice was regarded enthusiastically.

237. There were, however, five areas where possible changes were identified:

- i. There was a concern in some jurisdictions that PISA was not capturing the experience of the whole child – such as emotional development, interpersonal skills, social and civic awareness.
- ii. Similarly, there was an interest in PISA developing similar testing instruments to measure other learning in history, social sciences, economics and second languages.
- iii. Some interest was expressed at having PISA assessments conducted at other age levels.
- iv. The desirability of extending the focus of PISA on the performance of major cities was raised by some.
- v. Some respondents queried whether a more frequent pattern of assessment was possible.

238. These are all issues that the PISA Governing Board may wish to consider. The general opinion of respondents, nonetheless, and it is one that we as evaluators endorse, is that PISA should not risk the quality of its product by expanding its range of assessment components. The perceived quality of PISA is the main reason it has become established the leading international benchmark of educational progress. For the time being, PISA should work hard at continuing to enhance quality and not sacrifice this for a broader range of activity, unless it is very clear that there are sufficient resources available and that the quality of the key product will not be jeopardised. In the words of one respondent, ‘PISA should stick to

its knitting.’ *The one exception to this could be some pilot work on attempting to measure the broader outcomes of schooling.*

239. **Technically** – PISA was regarded as having high levels of validity and reliability by all those interviewed and was generally seen as an exemplary survey instrument. This was a consistent opinion even among the academic and research community, who as noted above could have been expected to be more critical. Our admittedly somewhat cursory review of the research literature also suggested widespread support for PISA technically. There was one critical paper submitted to the evaluation from a Scandinavian researcher, but this raised issues that either PISA was already addressing or lay outside of its field of influence. So we draw the conclusion that PISA well meets international technical standards.

240. There were, however, a number of design issues raised during the evaluation that many felt would have a positive impact of the utility and development of PISA. Among these were the following:

- There was a relatively strong feeling among respondents as to whether PISA could accommodate ‘value added’ or even ‘contextually value added’ measures, as well as publishing the raw results of its assessments. This, it was claimed, would not just add credence to PISA’s focus on equity, but also provide a fairer basis for comparison.
- Concerns were raised in a number of jurisdictions as to the length of time it took to report on testing. It was questioned as to whether PISA could reduce the time between the administration of the test and the announcement of the results. To many, this was a real concern.
- There was also some interest as to whether more technological innovation would enable more rapid feedback. Computer adaptive assessment was seen as a possible way to provide more immediate results.
- There was some interest in how far PISA was able to differentiate performance at the lower end of the achievement spectrum.
- There was some interest in whether PISA could reduce the time that the test takes to administer.
- Finally, some researchers wondered whether PISA should provide more technical detail before the data was downloaded, especially concerning the weights applied to the data.

241. Although the overwhelming opinion was that PISA met high technical standards, the PISA Governing Board may wish to address the issues raised above. The judgement of the evaluation team is that, in general, these issues are ones that PISA would normally consider as part of its ongoing quality control and that some technical advance in some areas may be possible. ***However, the evaluation team suggests in concert with many respondents that PISA give serious consideration to the addition of some form of value added or contextual value added component.*** The one caveat here is that, as above, this should not jeopardise PISA’s pursuit of its core mission at the very highest levels of quality.

242. **Dissemination and awareness** – One of the issues to emerge strongly from both the quantitative and qualitative strands of the evaluation was that the dissemination process was perceived to be relatively weak in most jurisdictions. Dissemination, however, is a vague term and although we have attempted to define it clearly for the purposes of this evaluation, it was still open to a degree of conceptual pluralism on the part of our respondents. Dissemination is only useful in so far as it serves the purpose of a dialogue on educational policy and reform. It is not a goal in itself (as most countries have taken it), but related to the policy debate. The responsibility for dissemination, anyway, does not solely lie with PISA but predominantly with participating jurisdictions. So this is complex terrain. The view of respondents was

that, although most countries produced customised reports and press releases at the time of the release of results, the main influence of PISA was on policy makers and researchers. It may be that, given current resources, that is as much as should be expected.

243. All this, notwithstanding, there were a number of issues raised that demand some level of recognition and response.

- That, through National Project Managers of PISA, the shared seminars on methods of disseminating the results to encourage new and vital approaches in countries should be continued.
- The OECD should encourage the holding of more international seminars. The examples of Austria, Germany and Japan who have held major conferences to share PISA results are illustrative.
- PISA should develop its communication strategies and better use the media for its exposure.
- The OECD could stimulate more public debate about the usefulness of the data and the character of the survey.
- PISA could be promoted more extensively to universities to use as a social survey and more systematic research on secondary analyses encouraged.

244. These are all useful suggestions that the evaluation team feel that the PISA Governing Board should consider. As previously noted, the issue of dissemination is a complex one and whose responsibility it is, remains unclear. ***Despite this, and in addition to the points just raised, it is our suggestion that at a minimum, PISA should produce guidelines of dissemination for those who participate in the programme.***

Policy Impact

245. It is clear that politicians and senior policy makers found PISA *universally* helpful in pursuing their reform agendas. Interestingly, this utility was independent of how well the particular jurisdiction scored on PISA. Many countries have used PISA as a means of legitimising their reform efforts e.g. in Countries A, D, E and B where the Prime Minister specifically stated in last New Year's speech the importance of PISA for their educational reforms. Other jurisdictions have used their relatively low performance on PISA to encourage subsequent educational success.. It was generally regarded that PISA was stimulating a global conversation on school reform and enabling jurisdictions to locate their own performance within a global context.

246. It is clear that in all countries reviewed, PISA has informed policy and as such, has had an impact. It is difficult to establish what would have happened without the PISA information, but it is certain that PISA sometimes led to reforms, sometimes broadened and deepened reforms, and sometimes encouraged reforms. For example, in Countries B and D reforms were stimulated by the PISA results. In other countries, reforms would have happened anyway, but these were deepened and broadened because of PISA.

247. Despite these positives, there was also a feeling that more could be done in this respect. Two clear and distinct proposals stand out:

- i. OECD could provide more information on how PISA results could be used to evaluate more current policy initiatives.

- ii. Additionally, some felt that OECD should set up funding mechanisms for research that would look at speculative questions and exploratory issues concerning PISA to really push forward on what is known and expected from PISA.

248. The evaluation team would endorse all of these suggestions. In particular, it strongly advises the OECD that it uses the outcomes of PISA to stimulate a more precise debate among participating countries and economies on how various policy options relate to outcomes on PISA assessments. This is an issue we pick up later and in more detail in this chapter.

School Level Implications

249. One of the ironies of PISA is that although it focuses relentlessly on the achievement of students, it has relatively little to say about how the conditions of learning can be improved and less about giving school leaders tools to achieve this end. For example, many of our respondents wanted more information on the quality of teaching and its relationships with PISA performance; some wondered if this could be achieved at least initially by expanding the background questionnaire. Similarly, there were requests for more information about school leadership and its potential impact on student performance. There are also examples of where local jurisdictions have developed systemic reform strategies based on PISA, with already impressive results e.g. Denmark and Country A.

250. There seem to be two strikingly clear issues here:

- i. The opportunity to disaggregate data to Board/State/Local, school, classroom levels. The ability for PISA to speak more directly to the local level was widely requested but the sampling issues involved were admittedly seen to be problematic.
- ii. PISA to expand its data to include more information on school processes, teacher training, and classroom data. In particular, many wanted more information on the quality of teaching and leadership; on what measures could be taken to improve the reading level of boys and sustain gender equity in science and mathematics; on teaching methods that are used to improve the performance of immigrant students: all of these and their relationship with PISA performance.

251. These seem to be eminently sensible proposals, clearly in line with PISA's mandate. ***Given financial constraints and the issues of quality clearly articulated above the judgement emanating from this issue is that PISA moves rapidly to considering ways in which its outcomes can speak more directly to the Board/State/Local, school, classroom levels.***

Equity

252. Evidently, the fact that PISA points out the within and between school variation in each country and their regions and across countries, and the factors of inequality that influence students in developing their knowledge and skills at home and at school are two of the most important outcomes of PISA. Almost all countries visited are in agreement with the above statement and see PISA as fundamental for their drive for school improvement and equity. PISA, however, does not seem to move the data to another level. If PISA is serious about equity, it should consider the case study countries' suggestion to provide secondary analysis of data for equity upon request.

Policy coherence and sustainability

253. The issue of policy coherence and sustainability permeates this evaluation report. Although PISA undoubtedly has impact, the nature and form of this impact appears to be unpredictable. There are

examples in Denmark, Mexico and Germany where PISA has led to systematic review and policy formation. But as we have seen, these examples tend to be the exception, rather than the rule. Because of the importance of this issue, we devote the following section of the chapter to discuss it. Without wishing to pre-empt that discussion, we would suggest that **as a minimum, PISA considers the creation of a policy group for countries who request advice on policy formation in light of PISA results.**

5.4 Moving from Assessment to Explanation⁴

254. There was a strong feeling that PISA could do more to assist in sharpening the debate on policy options. At present, the process of policy-making post-PISA, as seen in this evaluation, remains at a fairly rudimentary level. In general, there appear to be three direct actions in light of PISA.

- The first is where a country or economy following usually a poorer than expected performance engages in curriculum development related to PISA domains and problem solving. The evaluation has pointed to a number of examples of this, as in Countries A and C.
- The second is where there is the adoption of policy options from other countries and economies, but without systematic use of evidence; we are calling this tendency ‘policy confluence’. We have seen this tendency in Denmark and Germany.
- The third is where a local area engages in policy development and school improvement related to local contexts and political imperatives using PISA as a stimulus. A good example from this evaluation would be the work of some administrative entities in Country A.

255. All of these activities, although critically important in individual jurisdictions, have arisen somehow unsystematically, and there was a strong feeling that PISA could do more to encourage activity in this area by providing more evidence on the range of policy options available, patterns of linkage related to particular contexts and some evidence on impact.

256. PISA now has a secure future with plans for further rounds of data gathering up to 2015 and beyond. But despite an extensive database on student performance globally, the policy drivers that may or may not be associated with the performance of individual countries have not yet been subject to systematic scrutiny. Although PISA data offers the opportunity for international benchmarking, it should also help countries and economies to develop insights into what kinds of good instructional practices, school organisation and system level decisions make a difference. As far back as their meeting in March 2004, OECD education ministers underlined:

- The importance of international collaboration in defining and monitoring educational quality and welcomed the contribution that PISA has made in this area.
- That PISA results, by showing that some countries are successfully combining high performance standards with a socially equitable distribution of learning opportunities, had sent out an important and encouraging message, namely that social disadvantage does not inevitably correlate with poor performance.
- Invited the OECD to take the development of PISA further, with the aim to better assist countries in understanding the processes that shape quality and equity in learning outcomes within their educational, social and cultural contexts.

⁴ Some of the following discussion is drawn from a previous OECD paper prepared by a member of the evaluation team on the Policy Implications of PISA, OECD doc.ref. EDU/PISA/GB(2006)5.

257. We propose the development of an analytical framework for comparing educational policies and practices. The framework would enable countries and economies to relate PISA outcomes more closely to their own policy agenda and those of other PISA participants to see if there are patterns of policy options that could not only begin to explain relative performance on PISA, but also help raise them. This could be achieved through the following four steps.

258. **A first step would lie in identifying and describing key policy drivers that underpin educational policies and practices in countries and economies, most notably in those that display consistently high levels of quality and equity throughout their education system in important cognitive and non-cognitive learning outcomes.** This will require a careful mapping of the evidence on the entire range of policy drivers available to governments in improving educational outcomes and equity in countries and economies. Rather than seeking to relate such policy drivers separately to observed education performance patterns - and then to derive hypotheses from this as to their relative importance - the idea here would be to define a multidimensional “policy space” in which the policy drivers establish the dimensions. Countries and economies could then be positioned in this “policy space”, depending on the configurations and extent to which the different policy drivers are valued and prevalent in their systems. It would then become possible to compare the configurations of policies and practices across PISA participants and also to portray policy trajectories over time. As the dimensions in this “policy space” will eventually define the scope and power of subsequent analytic work, countries and economies will have to carefully consider and agree what policy drivers to include and how to define them. Several considerations will need to be born in mind. The dimensions will need to respond to educational issues that are high on national or federal policy agendas, and where the international comparative perspective can offer important added value to what can be accomplished through system-level analysis and evaluation. Second, while they need to be measured in ways that are as comparable as possible, they also need to be as country-specific as is necessary to allow for the reflection of historical, systemic and cultural differences between countries and economies. Third, the dimensions need to be portrayed in ways that are as simple as possible while remaining as complex as necessary to reflect multi-faceted educational realities. Finally, making the exercise manageable will require to keep the number of dimensions as small as possible while, on the other hand, the resulting “policy space” needs to be as comprehensive as necessary to situate education systems across countries and economies in different cultural contexts, facing a broad range of educational challenges.

259. A significant risk in analytic work involving performance data is that policy drivers are examined in isolation and causal inferences are made that are not empirically supported, or that do not translate across systems or cultures or even over time. It would, therefore, be important to examine the policy drivers identified in the first step as a set. Indeed, while there is often agreement on the ingredients of successful education policies, it is their appropriate mix that is usually subject to debate. At the same time, even though there are a range of system level policy options available to governments in their efforts to improve outcomes and reduce inequities, the entire set of potential levers is rarely considered at one time. **The second step in this process, therefore, seeks to establish a framework or heuristic that defines the relationships between the policy drivers (i.e. the relationships between the dimensions in the “policy space”) and the ways in which they are intended to help improving quality and equity in educational outcomes in the different contexts of participating countries and economies.** Such a framework can guide analytic work and help governments reflect on how best to balance policy drivers in a comprehensive approach to systemic educational reform.

260. If countries reach agreement on the relevance of key policy drivers and how various configurations of these might interrelate and shape learning outcomes in national contexts, **an important third step will consist of defining the policy drivers in ways that allow for comparisons across countries and economies.** This will be a prerequisite for examining country policies and practices in ways that provide a basis for useful international interchange and collaboration. For example, while most

countries and economies would now consider the establishment of “educational standards” as one of the key policy drivers, the approaches to standard-setting in OECD countries range from the definition of broad educational goals, like in Finland, up to the formulation of concise performance expectations in well-defined subject areas, as in England. There is also considerable debate within and across countries and economies as to how standards can best be harnessed to raise educational aspirations, establish transparency over educational objectives and content, and provide a useful reference framework for teachers to understand and foster student learning while avoiding the risks of narrowing the curriculum and teaching to the test. Establishing templates that would combine qualitative and quantitative descriptions of the dimensions in the “policy space” in meaningful and cross nationally comparable ways would thus be a critical third step in the exercise. A particularly important element in such templates would be the definition of the “delivery chains” through which the policy drivers at system, institutional and individual levels are thought to influence learning outcomes. Without strong and testable hypotheses on this, work risks to get carried away in discussions on belief systems in the subsequent fourth step. The outcomes of this third step would also be expected to influence the longer-term strategic design and development of PISA, in particular the context questionnaires and analytical instruments.

261. Such an approach provides the basis for linking evidence from PISA to policy options selected by member countries. However, this remains just an attractive but abstract idea, unless it reflects the reality and context in which countries operate and then acts heuristically to motivate action. **The fourth step of the process would thus consist of using the framework to map policy practice in countries**, i.e. to review the intended, implemented and achieved policies and practices at significant depths in a selection of countries. The intent here would be to compare the use of the various policy drivers of the framework among countries and economies. In addition, information would be collected on the educational infrastructure and differences in social context and institutional structures among countries and economies. These in-depth reviews are likely to reshape some of the policy drivers as well as the framework, as national review teams will undoubtedly discover important additional dimensions in countries and economies that were not been accounted for initially. Similarly, the assumptions and heuristics behind the framework may change as this is tested against the reality in countries and economies. The process is, therefore, likely to involve some iteration between steps 1, 2, 3 and 4.

5.5 Conclusion and Recommendations

262. Based on this analysis we now formulate a series of **recommendations** that the PISA Governing Board may wish to consider. They relate to each of the criteria previously discussed and we have restricted ourselves to one recommendation per criteria. The evaluation team suggests in concert with many respondents, that:

1. Pilot work on attempting to measure the broader outcomes of schooling should be undertaken.
2. PISA should give serious consideration to the addition of some form of value added or contextual value added component.
3. At a minimum, PISA should produce guidelines of dissemination for those who participate in the programme. The funding of further research on the impact of PISA and countries' expectations of PISA should be given some serious thought.
4. The OECD should use the outcomes of PISA to stimulate a more precise debate among participating countries and economies on how various policy options relate to outcomes on PISA assessments.

5. Despite financial constraints and the issues of quality clearly articulated above, that PISA moves rapidly to considering ways in which its outcomes can speak more directly to the Board/State/Local, school, classroom levels.
6. PISA should consider, at a minimum, the creation of a policy group for countries that request its advice on policy formation and better use of the PISA results.

263. These very clear recommendations reflect the outcomes of the evaluation and in our opinion are worthy of consideration by the PISA Governing Board. But in many ways, these are only the tip of the iceberg. As we have already noted there is an overarching issue emanating from the evaluation that was so significant we discussed it at greater length in the previous section.

264. A further and more fundamental recommendation is that the OECD Governing Body funds a programme to explore the policy implications of PISA as outlined above. If implemented successfully, the proposal offers the possibility of significantly expanding the influence of PISA in the policy domain. The proposed approach will allow member countries to relate their policy choices more directly to PISA outcomes, to compare policy options between countries and jurisdictions, and eventually to monitor the impact of changes in policy direction over time. The potential significance of this proposal should not be underestimated. Much as the development of macro-economic models in the post World War Two period brought order and coherence to the debates on economic strategy, so the development of an analytic framework related to PISA that capitalises on the natural variation in educational performance that can be observed across countries offers a similar prize in the arena of education policy.

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ANNEX 1: TASK DESCRIPTION FOR EXTERNAL EVALUATION TEAM

Tasks

1. The team evaluating the policy impact of PISA, consisting of David Hopkins, Dianne Pennock, and Jo Ritzen is responsible for:
 1. Contributing to the development of a questionnaire to assess the policy impact of PISA, providing guidelines for its use and developing a case study design.
 2. Carrying out case-study visits in four to six countries or economies.
 3. Drafting case-study reports for four to six countries or economies.
 4. Drafting and reviewing an evaluation report.

Description of outputs following the case-study visits

2. At the end of each visit, the evaluation team will draft a case study report, which will form the basis for the cross-case analyses which the evaluation team will develop.
3. The evaluation team will submit an evaluation report to the PISA Governing Board, which will include the comparative analysis across cases and will contain the following chapters:
 - **Executive summary** – containing the main findings of the evaluation and its key recommendations.
 - **Introduction** – containing an overview of the evaluation’s aims and objectives as well as a descriptive account of the history of PISA; of the three assessments conducted; and of the methodology used for each assessment.
 - **Methodology** – containing a descriptive account of the methodology used and its limitations.
 - **Results of the questionnaire data collection** – containing a descriptive account of the quantitative results with regards to PISA’s relevance, effectiveness, sustainability of policy impacts and unexpected/unplanned impacts.
 - **Discussion of the case-study strand** – containing a qualitative cross-case analysis of the country visits with regard to PISA’s relevance, effectiveness, sustainability of policy impacts and unexpected/unplanned impacts.
 - **Conclusions and Recommendations** – containing conclusions drawn from the analyses and a series of recommendations for the improvement of PISA’s impact in the mid and long term.
4. A member of the evaluation team will be invited to present the evaluation report to the PISA Governing Board and the Education Policy Committee in November 2008.

ANNEX 2: QUESTIONNAIRE

1. Please note that this is a version adapted for paper presentation. The original questionnaire is on-line and was distributed to respondents via e-mail (for details, see chapter 2). Sections 1 to 4 were distributed to all respondents, while sections 5 to 12 of the questionnaire are stakeholder-specific.

Evaluating the impact of the Programme for International Student Assessment (PISA) Paper version of the questionnaire (originally administered in electronic format)							
Section 1: General information about yourself							
1.1	Which country do you live in?						
1.2	When did you first hear about PISA?						
1.3	How did you first hear about PISA?						
1.4	How knowledgeable are you about PISA? <i>Please tick as appropriate.</i>						
		Extremely	Very	Moderately	Not Very	Not at all	Don't Know
	In terms of the results of the various PISA surveys:						
	In terms of the way in which the process is conducted by the OECD and in participating countries:						
	In terms of the impact of PISA on policy and practice:						
Section 2: The relevance and effectiveness of PISA in your country							
Please comment on the relevance and effectiveness of PISA for your country. <i>Please tick as appropriate.</i>							
2.1	Which aspects of the PISA results are important in your country? <i>Please specify.</i>	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
	Performance of secondary students in reading:						
	Performance of secondary students in mathematics:						
	Performance of secondary students in science:						
	Student interest, engagement, motivation and attitudes:						
	Relationship between home background and student performance:						
	Relationship between school context and student performance:						
	International comparisons and country ranking:						
	Other aspects A:						
	Other aspects B:						
	Other aspects C:						
	Other aspects D:						
	Other aspects E:						

**Evaluating the impact of the Programme for International Student Assessment (PISA)
Paper version of the questionnaire (originally administered in electronic format)**

Section 1: General information about yourself

1.1 Which country do you live in?

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1.2 When did you first hear about PISA?

--

1.3 How did you first hear about PISA?

--

1.4 How knowledgeable are you about PISA? *Please tick as appropriate.*

In terms of the results of the various PISA surveys:

In terms of the way in which the process is conducted by the OECD and in participating countries:

In terms of the impact of PISA on policy and practice:

	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
In terms of the results of the various PISA surveys:						
In terms of the way in which the process is conducted by the OECD and in participating countries:						
In terms of the impact of PISA on policy and practice:						

Section 2: The relevance and effectiveness of PISA in your country

Please comment on the relevance and effectiveness of PISA for your country.

Please tick as appropriate.

2.1 Which aspects of the PISA results are important in your country? *Please specify.*

Performance of secondary students in reading:

Performance of secondary students in mathematics:

Performance of secondary students in science:

Student interest, engagement, motivation and attitudes:

Relationship between home background and student performance:

Relationship between school context and student performance:

International comparisons and country ranking:

Other aspects A:

Other aspects B:

Other aspects C:

Other aspects D:

Other aspects E:

	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
Performance of secondary students in reading:						
Performance of secondary students in mathematics:						
Performance of secondary students in science:						
Student interest, engagement, motivation and attitudes:						
Relationship between home background and student performance:						
Relationship between school context and student performance:						
International comparisons and country ranking:						
Other aspects A:						
Other aspects B:						
Other aspects C:						
Other aspects D:						
Other aspects E:						

2.2	How effective is PISA in addressing the needs and objectives of education policy in your country?	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.3	How compatible is PISA to the national / federal system of assessment in your country?	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
	In terms of the age of students:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	In terms of the grade levels targeted:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	In terms of curriculum content:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	In terms of learning skills:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other areas A:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other areas B:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other areas C:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other areas D:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other areas E:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2.4	How effective is PISA in complementing national/federal assessment data and adding value to assessment strategies in your country?	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	How is this done? <i>Where possible, please give examples.</i>	<input type="text"/>					
2.5	What are your suggestions for increasing the relevance and effectiveness of PISA in your country? <i>Please specify.</i>	<input type="text"/>					
Section 3: Policy implementation and the influence of PISA in your country							
3.1	Who would you identify as the most significant stakeholders in PISA and its results in your country? <i>Please mark how significant PISA is for each stakeholder, and to which PISA assessment you refer.</i>	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
	Policy makers:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Local government officials:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	School principals:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Parents:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Academics and researchers:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Media:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Professional teacher associations:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Business community:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other stakeholder A:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other stakeholder B:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other stakeholder C:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other stakeholder D:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	Other stakeholder E:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Where possible, please give details of each stakeholder's involvement.

3.2 Who would you identify as being responsible for implementing policies in light of the PISA results in your country? *Please indicate the degree of responsibility for each stakeholder.*

	Extremely	Very	Moderately	Not Very	Not at all	Don't Know
Policy makers:						
Local government officials:						
School principals:						
Parents:						
Academics and researchers:						
Media:						
Teacher professional organizations:						
Business community:						
Other stakeholder A:						
Other stakeholder B:						
Other stakeholder C:						
Other stakeholder D:						
Other stakeholder E:						

Where possible, please give details of each stakeholder's responsibilities.

3.3 How influential has the publication of the PISA results in the media (e.g. newspapers, radio, television) been in your country?

	Extremely	Very	Moderately	Not Very	Not at all	Don't Know

3.4 How influential have the PISA results been in informing the policy-making process at the national / federal level in your country?

	Extremely	Very	Moderately	Not Very	Not at all	Don't Know

3.5 How influential have the PISA results been in informing the policy-making process at the local government level in your country?

	Extremely	Very	Moderately	Not Very	Not at all	Don't Know

3.6 How influential have the PISA results been in informing the policies, practices and instruction in your country's education system?

	Extremely	Very	Moderately	Not Very	Not at all	Don't Know

3.7 What are your suggestions for increasing the influence of PISA in informing policy and practice in your country? *Please specify:*

Section 4: The impact of PISA in your country

4.1 What policies and initiatives for education reform / development have been put in place as a consequence of PISA in your country? *Please list all policies / initiatives implemented.*

Initiative A:
Initiative B:
Initiative C:
Initiative D:
Initiative E:
Initiative F:

Where possible, please give details of the relationship of a policy / initiative with PISA.

--

4.2 What would you identify as the most significant areas where PISA has had an impact with regard to education policy and practice at the national / federal, local government, school, and community levels? *Please list all areas of impact identified and indicate the level to which each impact relates.*

Impact A:
Impact B:
Impact C:
Impact D:
Impact E:
Impact F:

4.3 How successful has PISA been in contributing to long-lasting, sustainable change in your country through the implementation of education reform, development policies or initiatives?

Extremely	Very	Moderately	Not Very	Not at all	Don't Know

4.4 How effectively have the media (e.g. newspapers, radio, television) monitored / reported the impact of PISA in your country?

Extremely	Very	Moderately	Not Very	Not at all	Don't Know

4.5 What would you identify as the barriers to PISA having a positive impact on policy and practice in your country? *Please list the barriers identified, and also indicate how severe these barriers are.*

Barrier A:
Barrier B:
Barrier C:
Barrier D:
Barrier E:

Extremely	Very	Moderately	Not Very	Not at all	Don't Know

Please outline your suggestions as to how these barriers can be overcome in order to increase the impact of PISA in your country.

4.6 What would you identify as unexpected or unplanned impacts of PISA on policy and practice in your country's education system? Please list the unexpected / unplanned impacts identified, and give details of their relationship with PISA.

Section 5: Specific questions to policy makers

Please tick as appropriate.

	Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
5.1 To what extent do policy makers have access to the PISA results in your country?							
5.2 To what extent are the PISA results disseminated in your country's national / federal system of education?							
5.3 To what extent are policy makers confident about the PISA procedures used to assess students in your country?							
5.4 To what extent are policy makers confident in interpreting the PISA results in your country?							
5.5 To what extent is support given to local government and schools to interpret the PISA results?							
5.6 To what extent are policy makers confident in designing strategies for improvement in light of the PISA results?							
5.7 To what extent do Ministers find PISA results helpful in policy formation in your country?							
5.8 To what extent do policy makers feel responsible for your country's results in PISA?							

5.9 This question is concerned with the impact of the PISA results on the policy making process in your country. For example, was there debate in Parliament, new legislation or adjustment of legislation under the prerogative of ministerial authority? Please list reforms, policies or initiative.

Impact A:
Impact B:
Impact C:
Impact D:
Impact E:
Impact F:

5.10 What are your suggestions for improving the impact of PISA in your country? Please specify.

Section 6: Specific questions to local government officials

Please tick as appropriate.

	Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
6.1 To what extent do local government officials have access to the PISA results in your country?							
6.2 To what extent are the PISA results disseminated in your country's national / federal system of education?							
6.3 To what extent are local government officials confident about the PISA procedures used to assess students in your country?							
6.4 To what extent are local government officials confident in interpreting the PISA results in your country?							
6.5 To what extent is support given to schools to interpret the PISA results?							
6.6 To what extent are local government officials confident in designing strategies for improvement in light of PISA results?							
6.7 To what extent do local government officials feel responsible for your country's results in PISA?							

6.8 What in general is the reaction of schools to PISA in your country? *Please list.*

6.9 What are your suggestions for improving the impact of PISA in your country?
Please specify.

Section 7: Specific questions to school principals

Please tick as appropriate.

		Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
7.1	To what extent do teachers have access to the PISA results in your country?							
7.2	To what extent are the PISA results disseminated in your country's national / federal system of education?							
7.3	To what extent are school principals confident about the PISA procedures used to assess students in your country?							
7.4	To what extent are school principals confident in interpreting the PISA results in your country?							
7.5	To what extent is support given to teachers to interpret the PISA results?							
7.6	To what extent are school principals confident in designing strategies for improvement in light of PISA results?							
7.7	To what extent do teachers use PISA materials to improve their teaching in your country?							
7.8	To what extent do school principals feel responsible for your country's results in PISA?							
7.9	What in general is the reaction of teachers to the PISA results in your country? <i>Please list.</i>							
7.10	What are your suggestions for improving the impact of PISA in your country? <i>Please specify.</i>							

Section 8: Specific questions to parents

Please tick as appropriate.

		Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
8.1	To what extent do parents have access to the PISA results in your country?							
8.2	To what extent are the PISA results disseminated in your country?							
8.3	To what extent is PISA useful in giving parents a better idea of the educational levels or standards in your country in comparison with other countries?							
8.4	To what extent are parents confident about the PISA procedures used to assess students in your country?							
8.5	To what extent are parents confident in interpreting the PISA results in your country?							
8.6	To what extent is support given to parents to interpret the PISA results in your country?							
8.7	To what extent do parents think that PISA affects their child's education in your country?							
8.8	To what extent do parents feel responsible for your country's results in PISA?							

8.9 What in general is the reaction of parents to the PISA results in your country?
Please list.

8.10 What are your suggestions for improving the impact of PISA in your country?
Please specify.

Section 9: Specific questions to academics and researchers

Please tick as appropriate.

		Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
9.1	To what extent do academics and researchers have access to the PISA results in your country?							
9.2	To what extent are the PISA results disseminated in the universities of your country?							
9.3	To what extent is PISA a topic of academic research in your country?							
9.4	To what extent are academics and researchers confident about the PISA procedures used to assess students in your country?							
9.5	To what extent are academics and researchers confident in interpreting the PISA results in your country?							
9.6	To what extent do academics and researchers in your country think that the PISA assessment reflects fairly the performance of all students in participating countries?							
9.7	To what extent do academics and researchers feel responsible for your country's results in PISA?							

9.8 What are your suggestions for improving the impact of PISA in your country?
Please specify.

Section 10: Specific questions to the media

Please tick as appropriate.

		Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
10.1	To what extent were the media provided with information about the PISA results by their national agency for their articles and reviews in your country?							
10.2	To what extent is PISA useful in giving the media a better idea of the educational levels or standards in your country in comparison with other countries?							
10.3	To what extent are the media confident in interpreting the PISA results in your country?							
10.4	To what extent is support given to the media to interpret the PISA results?							
10.5	To what extent was the general public informed of the PISA results in your country (via television, radio, newspaper)?							
10.6	To what extent did the general public react to the PISA results after they were reported in your country?							

10.7 What were the most popular topics related to the PISA results which were publicly reported and discussed beyond the international rankings in your country? *Please list the topics, and indicate to which assessment(s) you refer.*

Topic A:	
Topic B:	
Topic C:	
Topic D:	
Topic E:	
Topic F:	
Topic G:	
Topic H:	
Topic I:	

10.8	What were the most popular methods used by the media in reporting data and conclusions from PISA in your country? <i>Please list the methods and indicate to which assessment(s) they refer.</i>	<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>									
	Method A:										
	Method B:										
	Method C:										
	Method D:										
	Method E:										
	Method F:										
	Method G:										
	Method H:										
	Method I:										
10.9	What in general is the reaction of the main political parties to the PISA results in your country? <i>Please list the reactions, and where possible, please give examples.</i>	<table border="1"><tr><td> </td></tr></table>									
10.10	What in general is the reaction of schools to PISA in your country? <i>Please list.</i>	<table border="1"><tr><td> </td></tr></table>									
10.11	What are your suggestions for improving the impact of PISA in your country? <i>Please specify.</i>	<table border="1"><tr><td> </td></tr></table>									

		Section 11: Specific questions for representatives of teacher professional associations						
<i>Please tick as appropriate.</i>		Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
11.1	To what extent do the teacher professional associations have access to the PISA results in your country?							
11.2	To what extent are the PISA results disseminated in your country?							
11.3	To what extent is PISA considered useful in giving the teacher professional associations a better idea of the educational levels or standards in your country in comparison with other countries?							
11.4	To what extent are the teacher professional associations confident about the PISA procedures used to assess students in your country?							
11.5	To what extent are the teacher professional associations confident in interpreting the PISA results in your country?							
11.6	To what extent is support given to teacher professional associations to interpret the PISA results in your country?							
11.7	To what extent do the teacher professional associations in your country think that the PISA assessment fairly reflects the performance of all students in participating countries?							
11.8	To what extent do the teacher professional associations feel responsible for your country's results in PISA?							
11.9	What in general is the reaction of the teacher professional associations to the PISA results in your country? <i>Please list.</i>							
11.10	What are your suggestions for improving the impact of PISA in your country? <i>Please specify.</i>							
		Section 12: Specific questions for representatives of the business community						
<i>Please tick as appropriate.</i>		Very Great Extent	Great Extent	Moderate Extent	Limited Extent	Not at all	Don't Know	Not applicable
12.1	To what extent does the business community have access to the PISA results in your country?							
12.2	To what extent are the PISA results disseminated in your country?							
12.3	To what extent is PISA considered useful in giving the business community a better idea of the educational levels or standards in your country in comparison with other countries?							
12.4	To what extent is the business community confident about the PISA procedures used to assess students in your country?							
12.5	To what extent is the business community confident in interpreting the PISA results in your country?							
12.6	To what extent is support given to the business community to interpret the PISA results in your country?							
12.7	To what extent does the business community in your country think that the PISA assessment fairly reflects the performance of all students in participating countries?							
12.8	To what extent does the business community feel responsible for your country's results in PISA?							
12.9	What in general is the reaction of the business community to the PISA results in your country? <i>Please list.</i>							
12.10	What are your suggestions for improving the impact of PISA in your country? <i>Please specify.</i>							
Thank you for your participation and for taking the time to complete this questionnaire.								

ANNEX 3: SCHEDULE FOR CASE-STUDY VISITS**PISA STUDY VISIT AGENDA: Canada**

Evaluator: David Hopkins and Pierre Brochu

Dates: 27-30 July 2008

Date	Time	Status & Affiliation	Duration
27 July 2008	19:00 - 21:00	1 External expert	2h
28 July 2008	10:00 - 11:00	1 Member of PISA team	1h
	11:00 - 12:00	1 Senior policy maker	2h
	13:00 - 14:45	1 Researcher	1h
	14:45 - 15:30	1 Assessment specialist	45m
29 July 2008	08:00 - 09:00	1 Senior policy maker	1h
	09:10 - 09:30	Welcome to the Ministry, and introduction to programme by a programme analyst	20m
	09:30 - 10:00	2 Senior policy makers	30m
	10:00 - 10:30	1 Researcher	30m
	10:30 - 11:00	2 Senior policy makers	30m
	11:00 - 12:00	1 Assessment specialist	1h
	13:30 - 14:15	1 Member of PISA team	45m
	14:15 - 15:00	1 Member of PISA team	45m
	15:00 - 15:30	1 Journalist	30m
	15:30 - 16:00	1 Researcher	30m
	17:15 - -	2 Members of PISA team	?
30 July 2008	9:30 - 10:15	1 Assessment specialist	45m
	10:15 - 11:00	1 Senior policy maker	45m
	11:00 - 12:00	1 Senior policy maker	1h
	12:00 - 13:30	1 Assessment specialist/senior policy maker	1h30
	13:30 - 14:30	1 Researcher	1h

PISA STUDY VISIT AGENDA: Hong Kong-China

Evaluator Team: Dianne Pennock and Esther Sui Chi Ho

Dates: 2-4 July 2008

Date	Time	Status & Affiliation	Duration
02 July 2008	08:45 - 09:45	Morning briefing	1h
	09:45 - 10:45	1 National coordinator	1h
	10:45 - 11:30	1 Journalist	45m
	11:30 - 12:15	1 Journalist	45m
	13:00 - 15:00	3 Academic/researchers (roundtable)	2h
	15:30 - 16:30	1 Business community representative	45m
03 July 2008	08:45 - 09:30	1 Local government official	45m
	09:30 - 10:30	3 Representatives from teachers' associations (roundtable)	45m – 1h
	10:30 - 12:00	2 Members of HKPISA team	1h30
	14:30 - 15:30	1 School principal	1h
	15:30 - 16:15	4 School staff	45m
	16:15 - 17:00	3 Parents and 3 students	45m
04 July 2008	18:00 - 19:00	3 HSC committee parent representatives	1h
	08:45 - 09:45	1 Policy maker	1h
	09:45 - 12:00	3 Local authority officials	2h15
	14:30 - 15:30	1 School principal	1h
	15:30 - 16:15	4 School staff	45m
	16:15 - 17:00	3 Parents and 3 students	45m

PISA STUDY VISIT AGENDA: Norway

Evaluator: David Hopkins and Anne Berit Kavli

Dates: 11-13 June 2008

Date	Time	Status & Affiliation	Duration
11 June 2008	12:00 – 12:30	Members of PISA team	30m
	13:00 – 13:30	1 Senior policy maker	30m
	14:00 – 14:30	1 Local government official	30m
	15:00 – 16:00	Representatives of teacher associations	1h
12 June 2008	09:00 – 10:00	1 Local government official	1h
	10:00 – 11:00	School staff	1h
	11:00 – 12:00	1 Parent representative	1h
	12:30 – 14:00	Reseachers from Tromsø	1h30
	14:00 – 15:00	1 Journalist	1h
13 June 2008	10:00 – 11:00	1 Senior policy maker	1h
	11:00 – 11:30	1 Member of the PISA team	30m
	12:00 – 12:30	2 Journalists and 1 government official	30m
	12:30 – 13:00	Representatives of business community	30m
	13:00 – 13:30	Headmasters from Oslo schools	30m

PISA STUDY VISIT AGENDA: Poland

Evaluator: Jo Ritzen and Stanislaw Drzazdzewski

Dates: 1-4 June 2008

Date	Time	Status & Affiliation	Duration
02 July 2008	09:00 - 10:00	Briefing meeting, Ministry of National Education	1h
	10:00 - 11:00	1 Senior policy maker	1h
	11:30 - 12:30	2 Senior policy makers	1h
	14:00 - 15:00	3 members of the Polish PISA team	1h
	15:30 - 16:00	1 Press representative	30m
	16:30 - 17:30	1 NGO representative	1h
03 July 2008	10:00 - 11:00	1 Local authority official	1h
	11:30 - 12:30	1 Head master (ISCED 2)	1h
	13:00 - 14:00	1 Head master (ISCED 3)	1h
	15:30 - 16:30	2 Local government officials	1h
	17:00 - 18:00	1 Teacher training representative	1h
04 July 2008	09:00 - 10:00	1 Representative of teacher trade unions	1h
	10:30 - 11:30	Researchers	1h
	12:00 - 13:00	Debriefing meeting at the Ministry of National Education	1h

PISA STUDY VISIT AGENDA: Spain

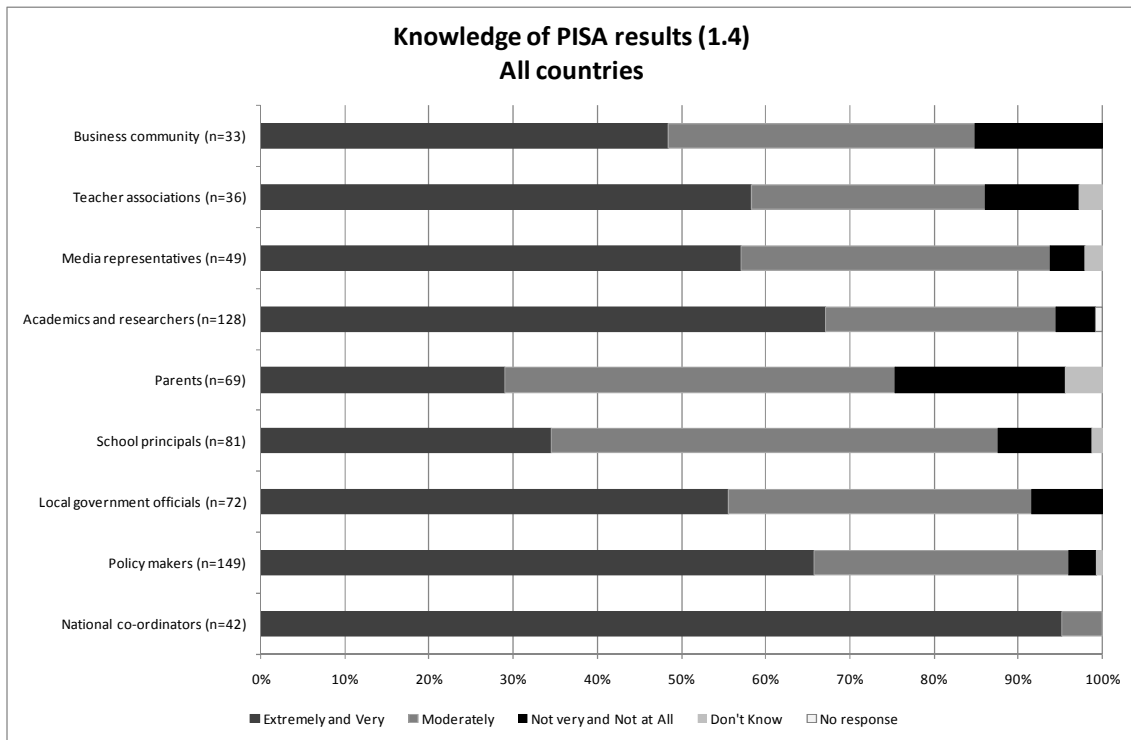
Evaluator team: Jo Ritzen and Flora Gil

Dates: 26-28 May 2008

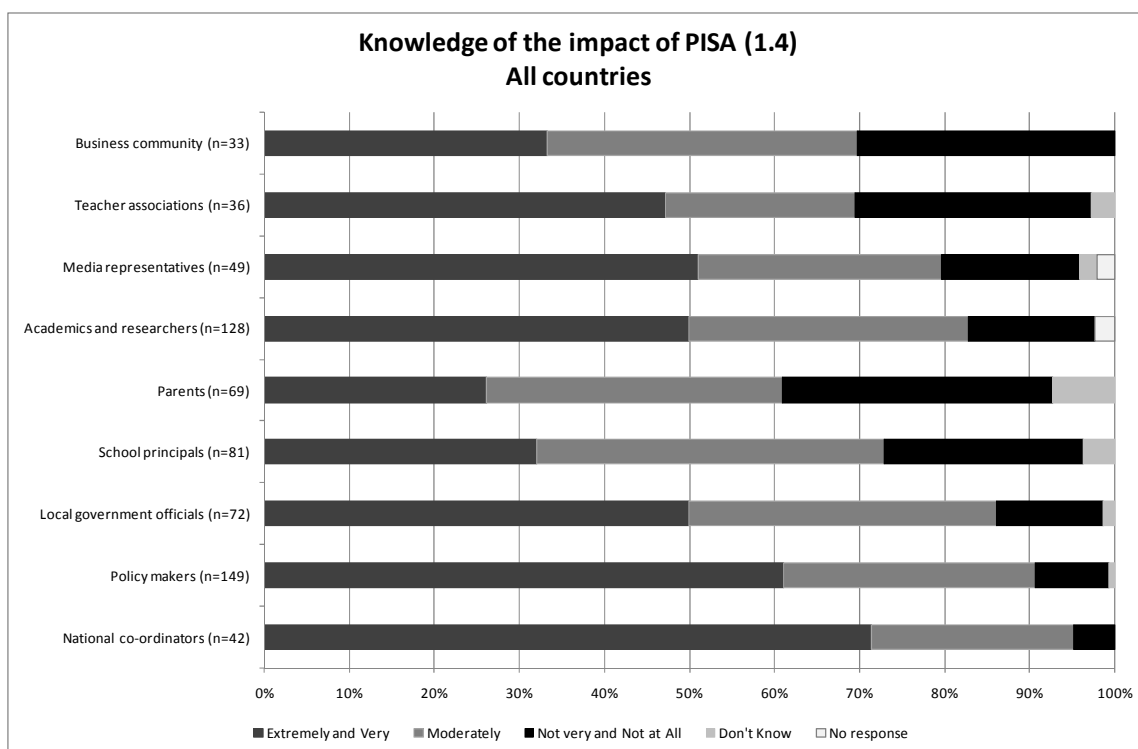
Date	Time	Status & Affiliation	Duration
26 May 2008	08:30 - 09:30	Morning briefing	1h
	09:30 - 10:30	1 National coordinator	1h
	10:30 - 12:00	2 Members of PISA team	1h30
	12:00 - 13:00	1 Policy maker	1h
	13:00 - 15:00	1 Policy maker	1h
	19:00 - 20:00	1 Local authority official	1h
	20:00 - 21:30	1 Local authority official	1h
27 May 2008	10:00 - 11:00	1 School principal	1h
	11:00 - 11:45	4 School staff	45m
	11:45 - 12:30	3 Parents and 3 students	45m
	14:30 - 15:30	1 School principal	1h
	15:30 - 16:15	4 School staff	45m
	16:15 - 17:00	3 Parents and 3 students	45m
28 May 2008	08:30 - 09:15	1 Business community representative	45m
	09:15 - 11:15	3 Academic/researchers (roundtable)	2h
	11:45 - 12:30	3 Representatives from teachers' associations (roundtable)	45m
	12:30 - 14:00	2 Journalists	1h30
	14:00 - 15:30	Debriefing session and lunch	1h

ANNEX 4: FURTHER ANALYSES OF QUESTIONNAIRE DATA

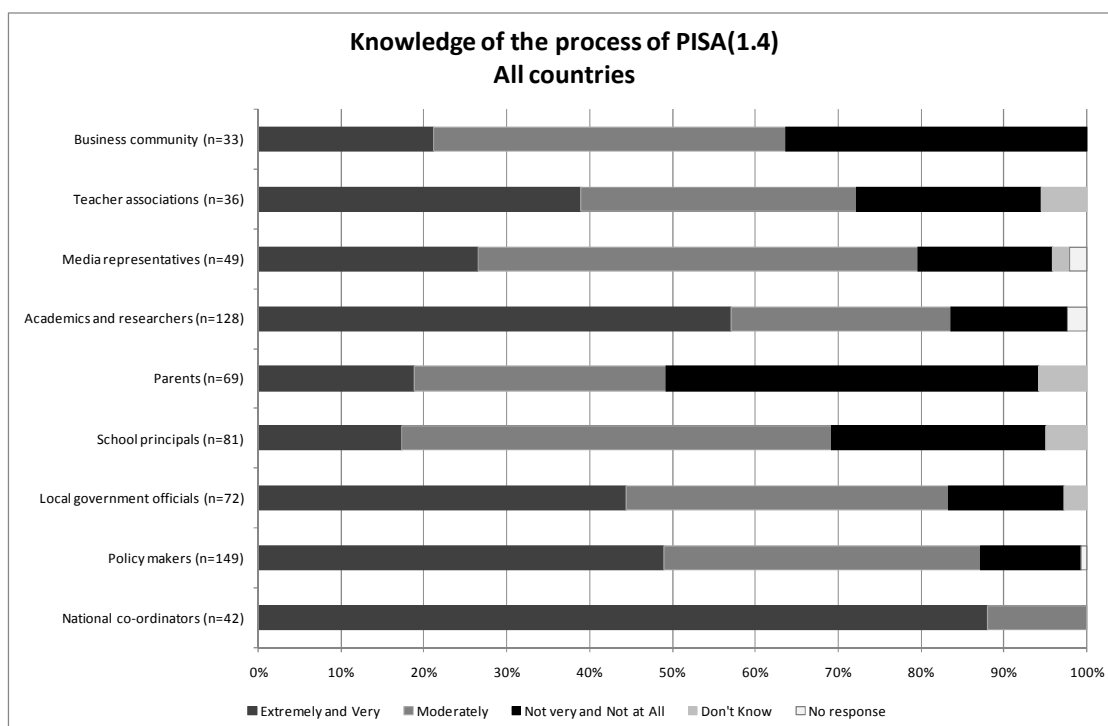
Figure 1



Question 1.4: How knowledgeable are you about PISA? In terms of the results of the various PISA surveys

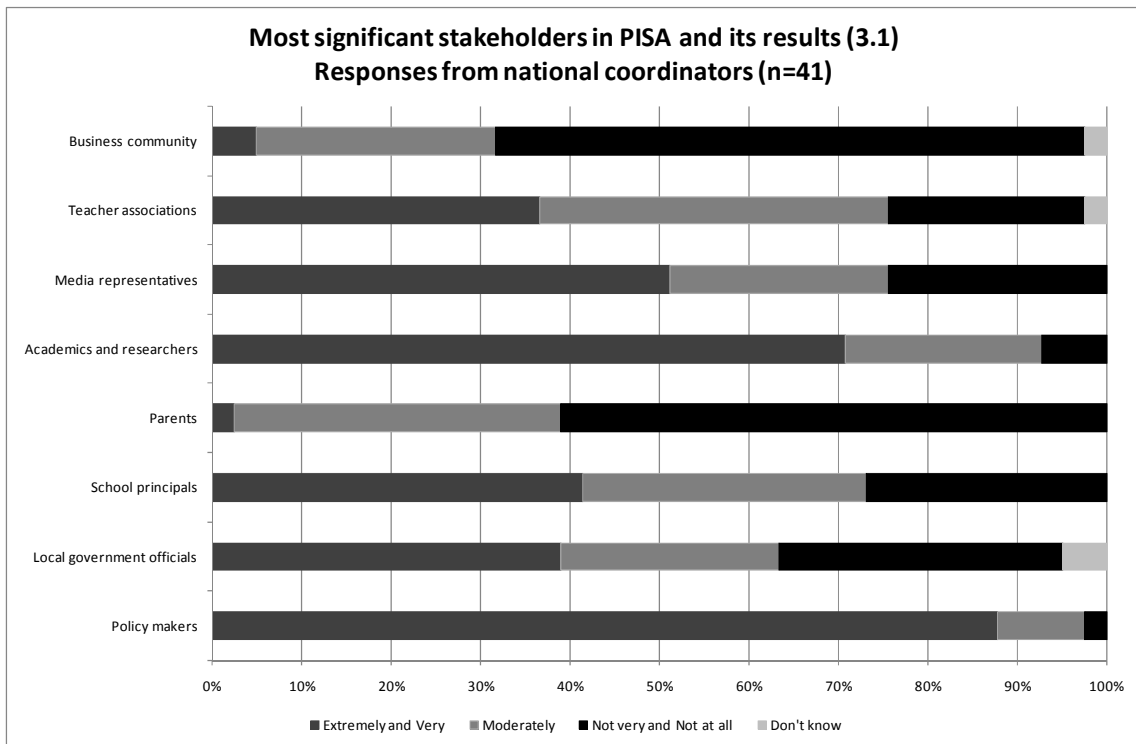


Question 1.4: How knowledgeable are you about PISA? In terms of the impact of PISA on policy and practice.

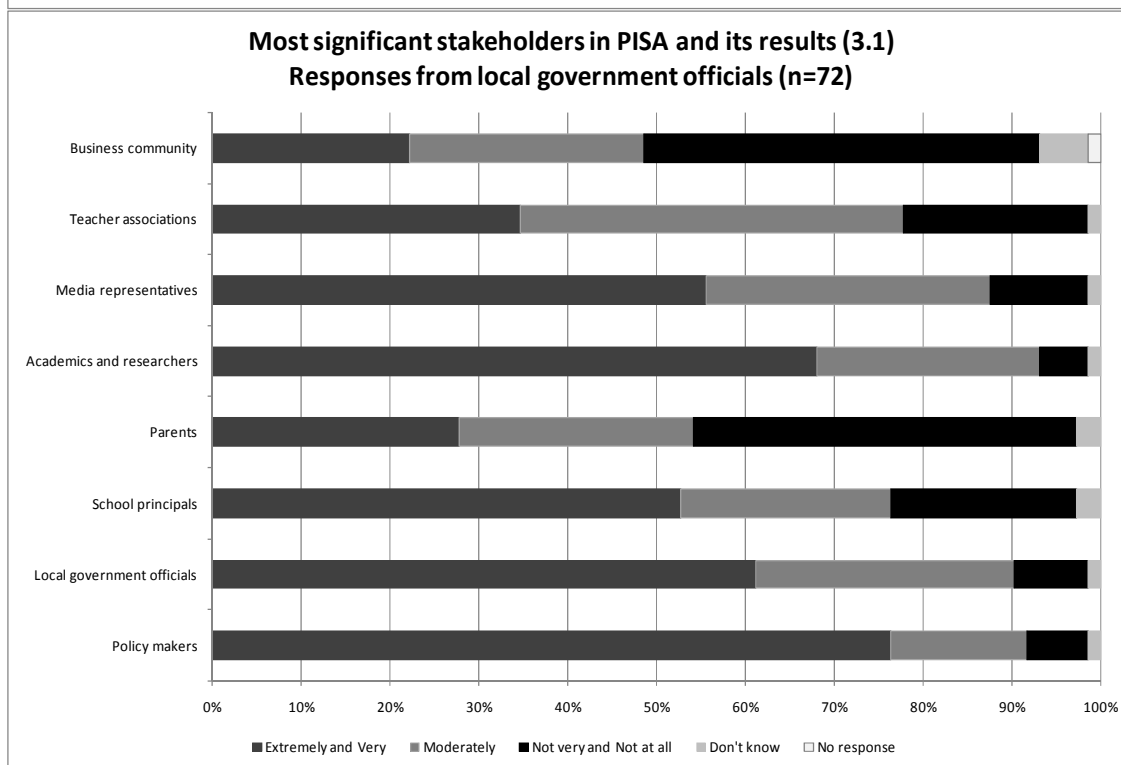
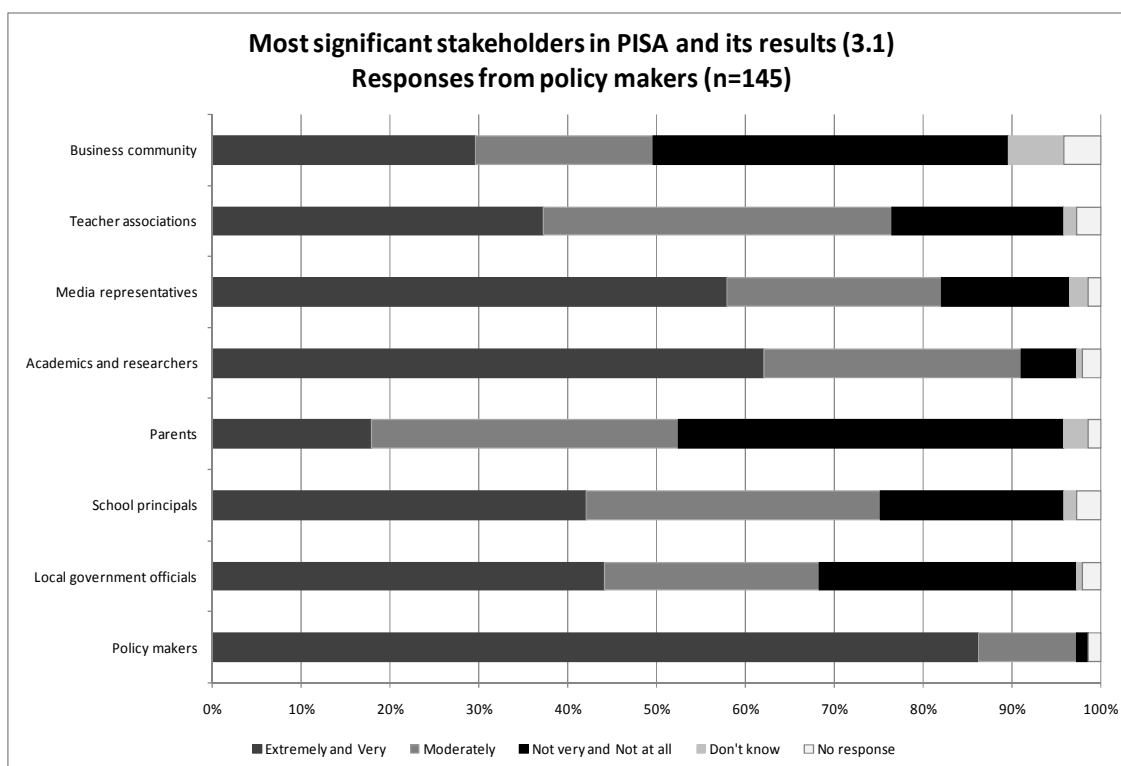


Question 1.4: How knowledgeable are you about PISA? In terms of the way in which the process is conducted by the OECD and in participating countries.

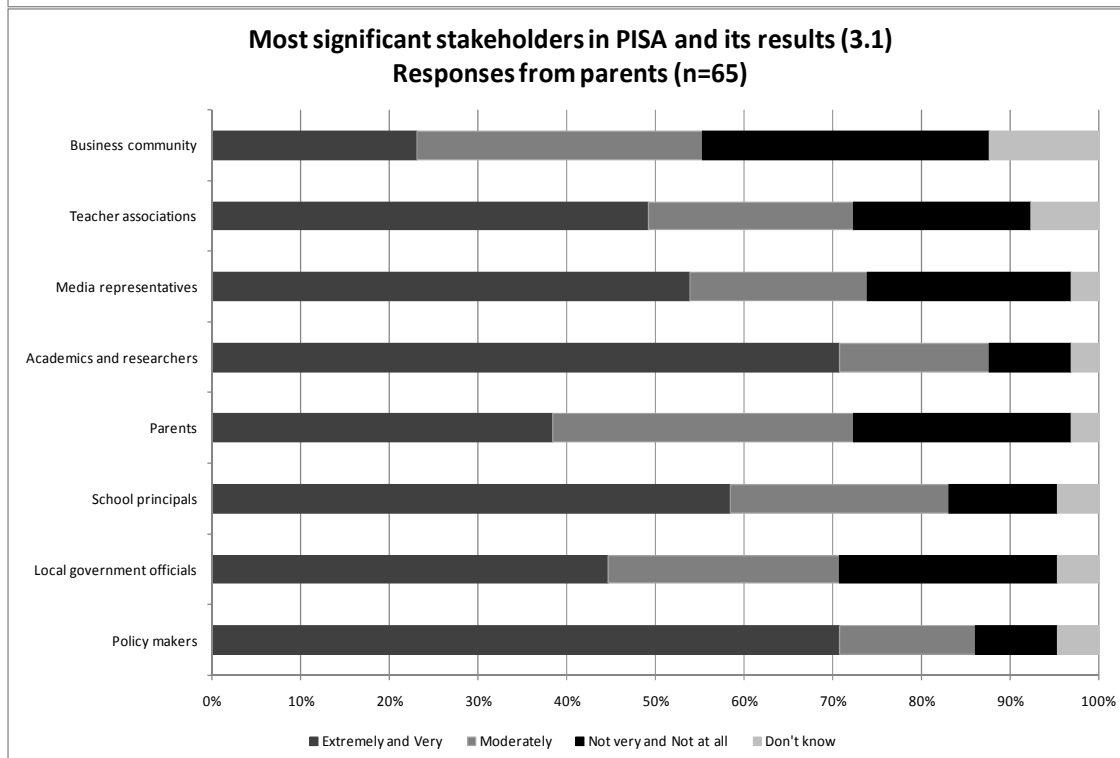
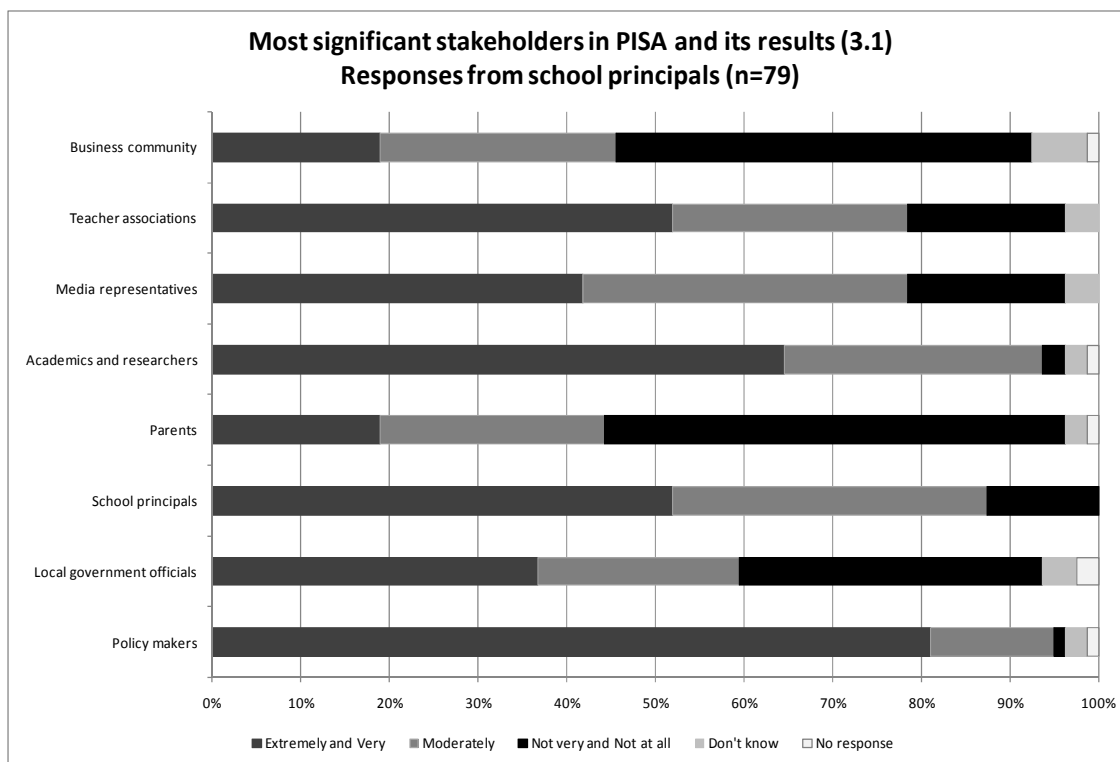
Figure 2b



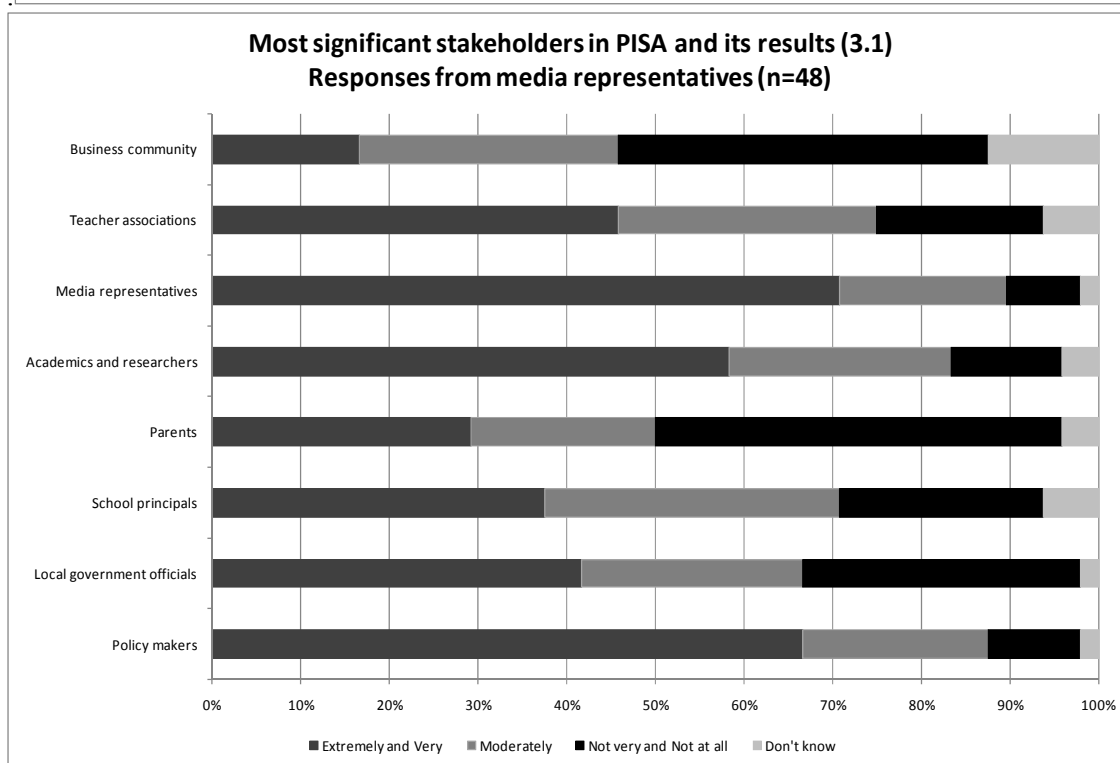
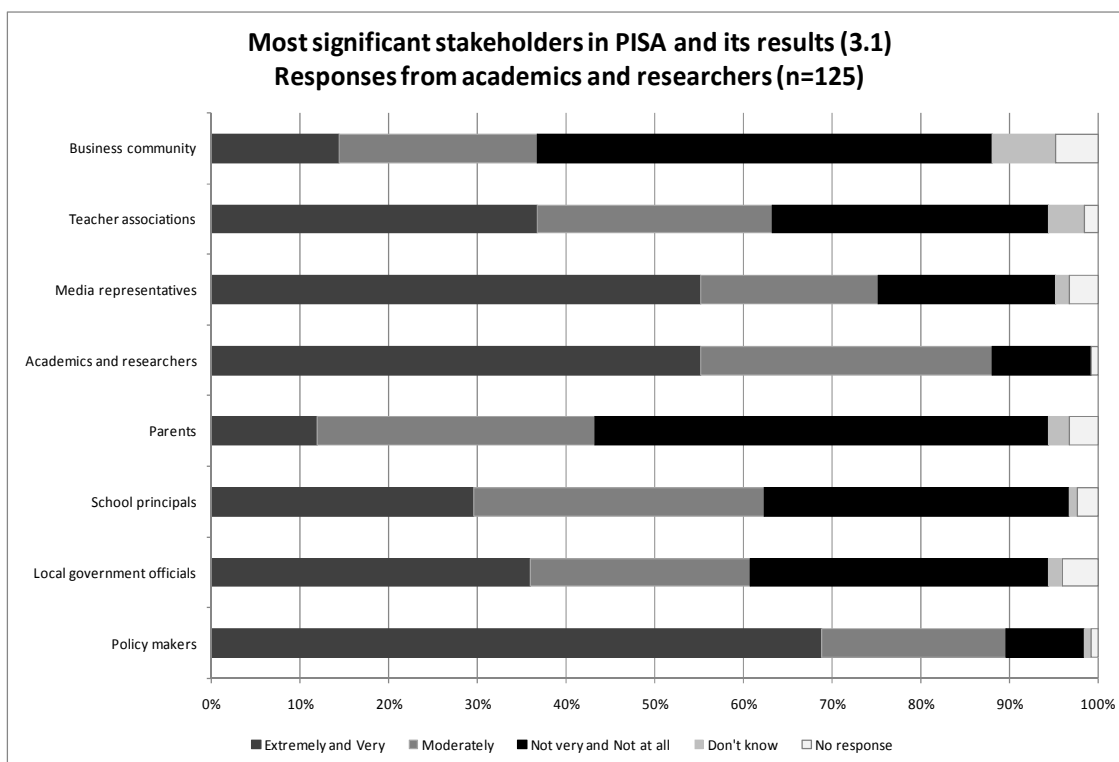
Question 3.1: Who would you identify as the most significant stakeholders in PISA and its results in your country? Please mark how significant PISA is for each stakeholder, and to which PISA assessment you refer.



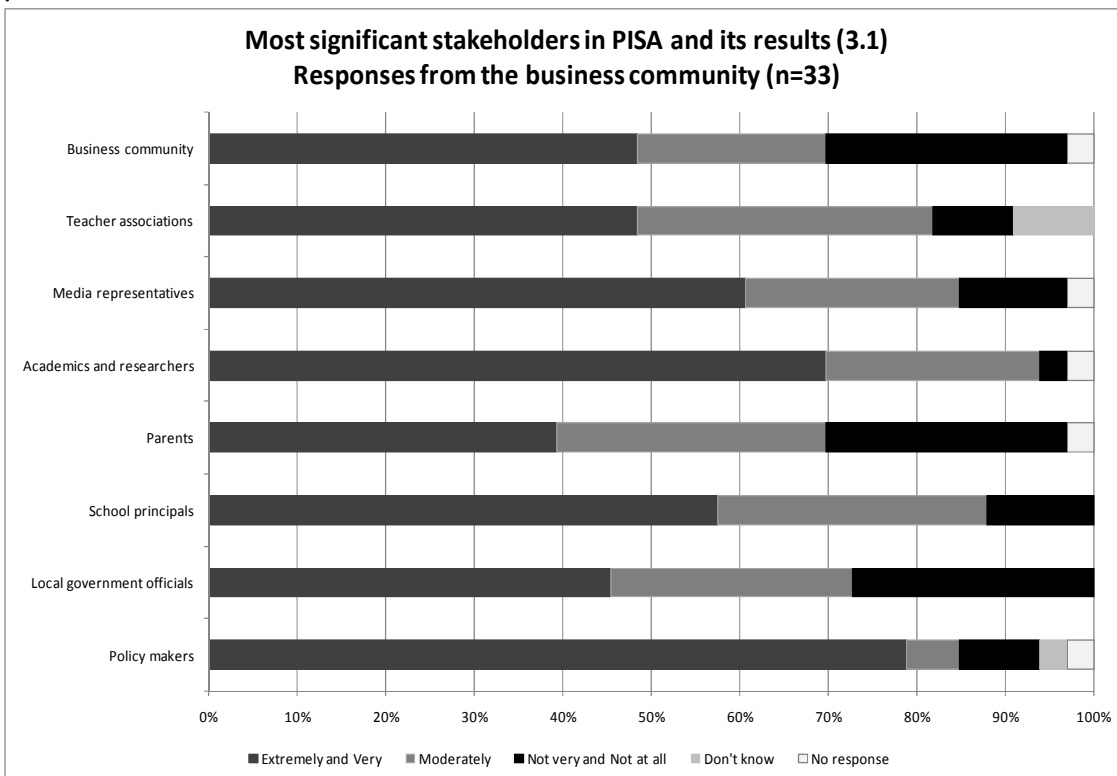
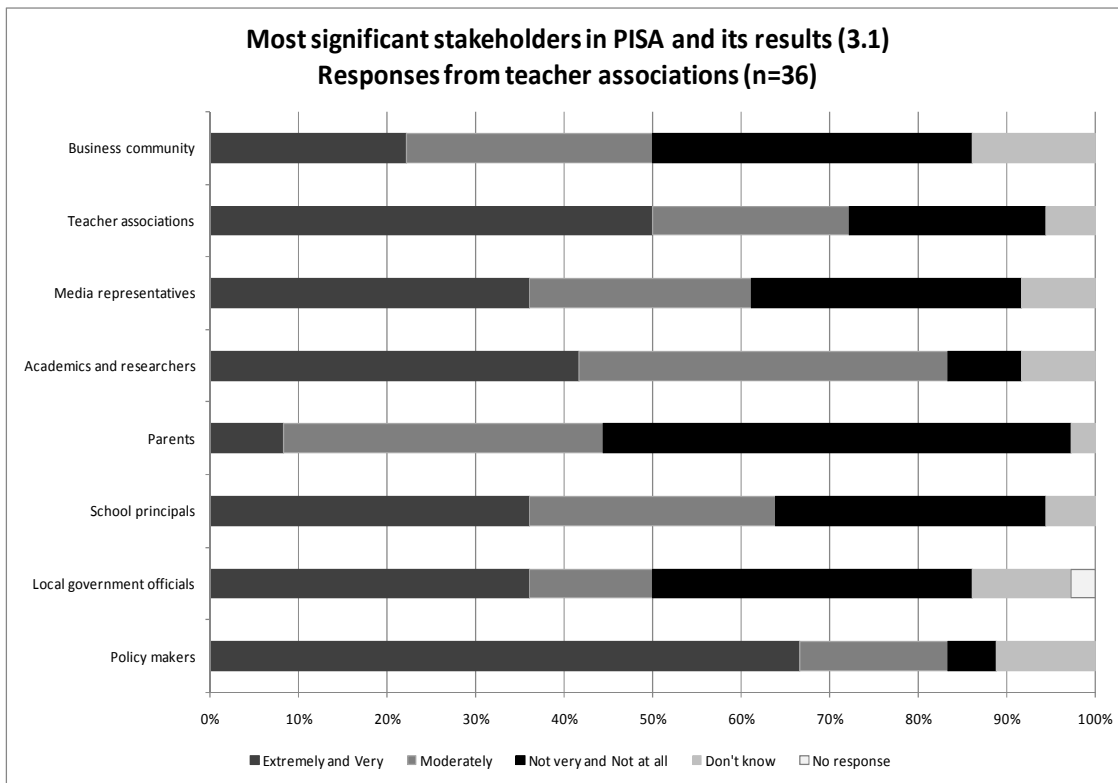
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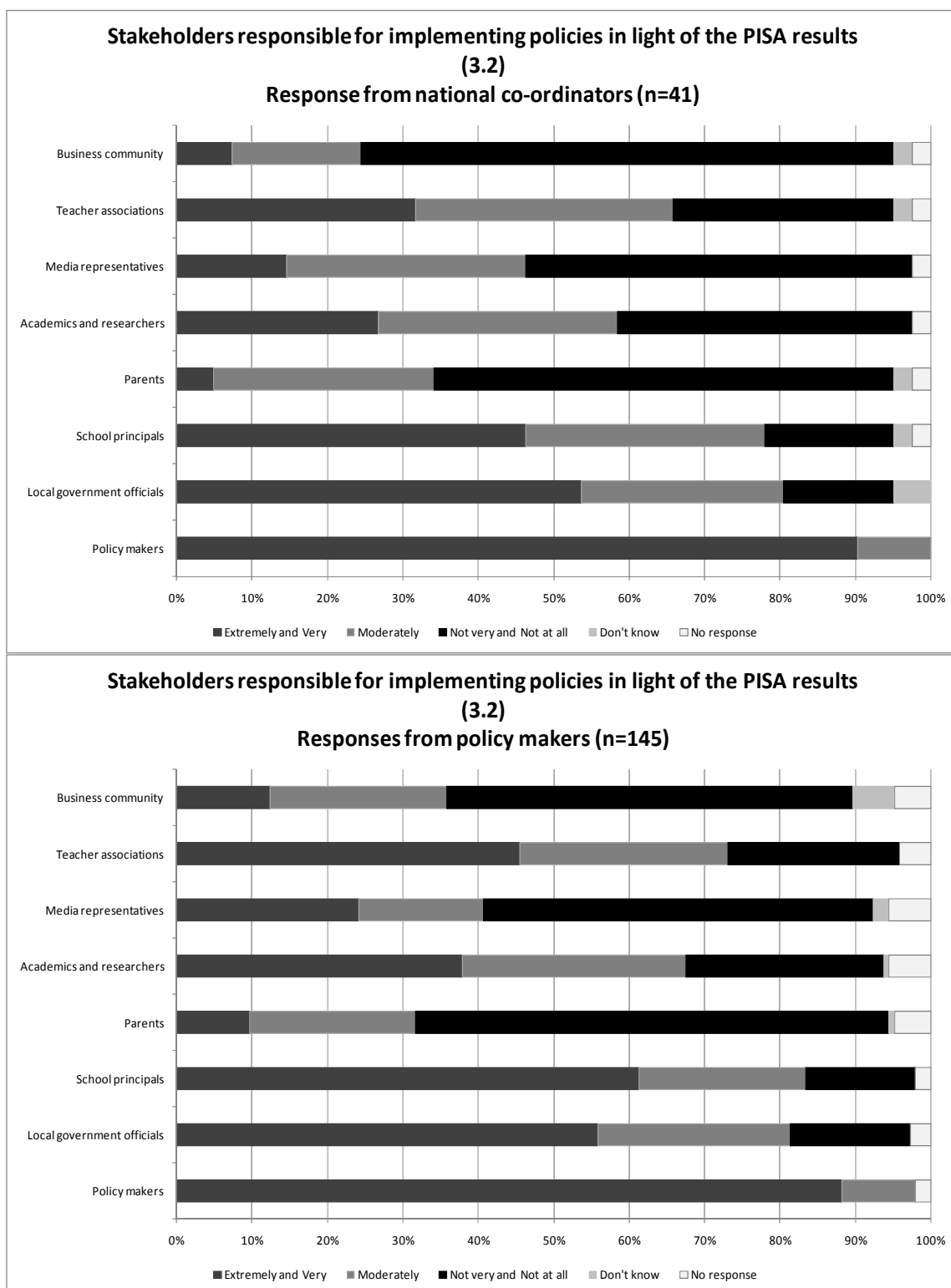


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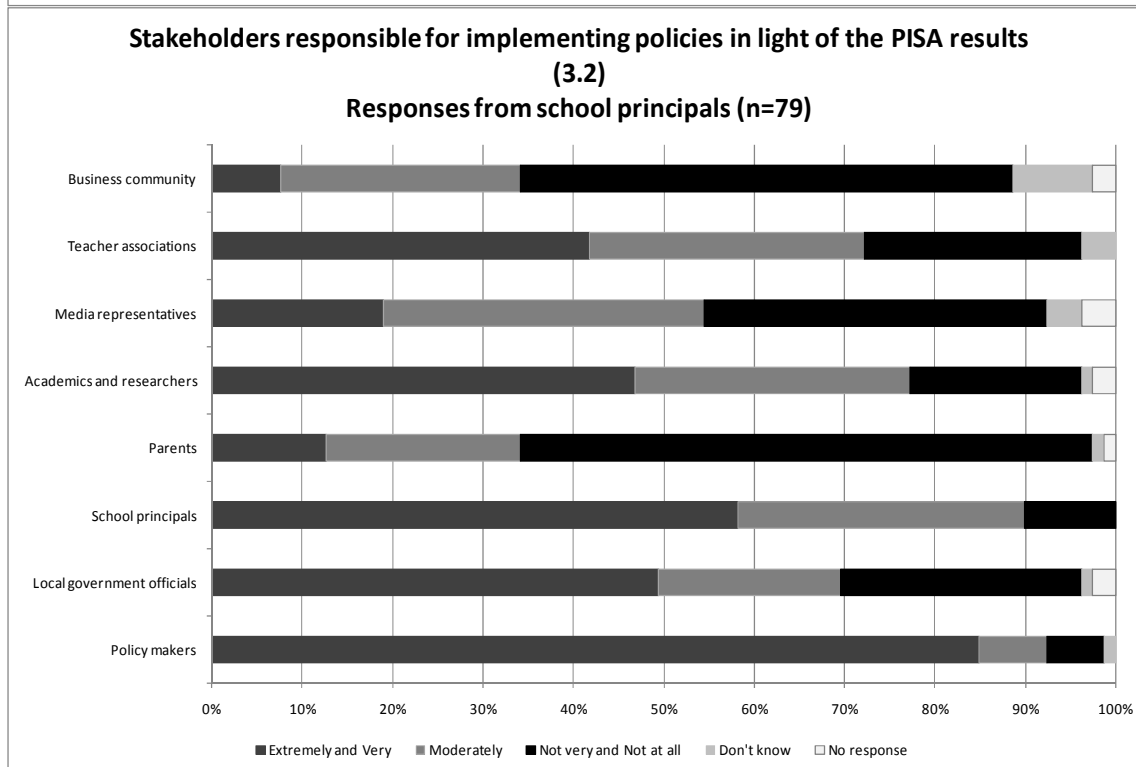
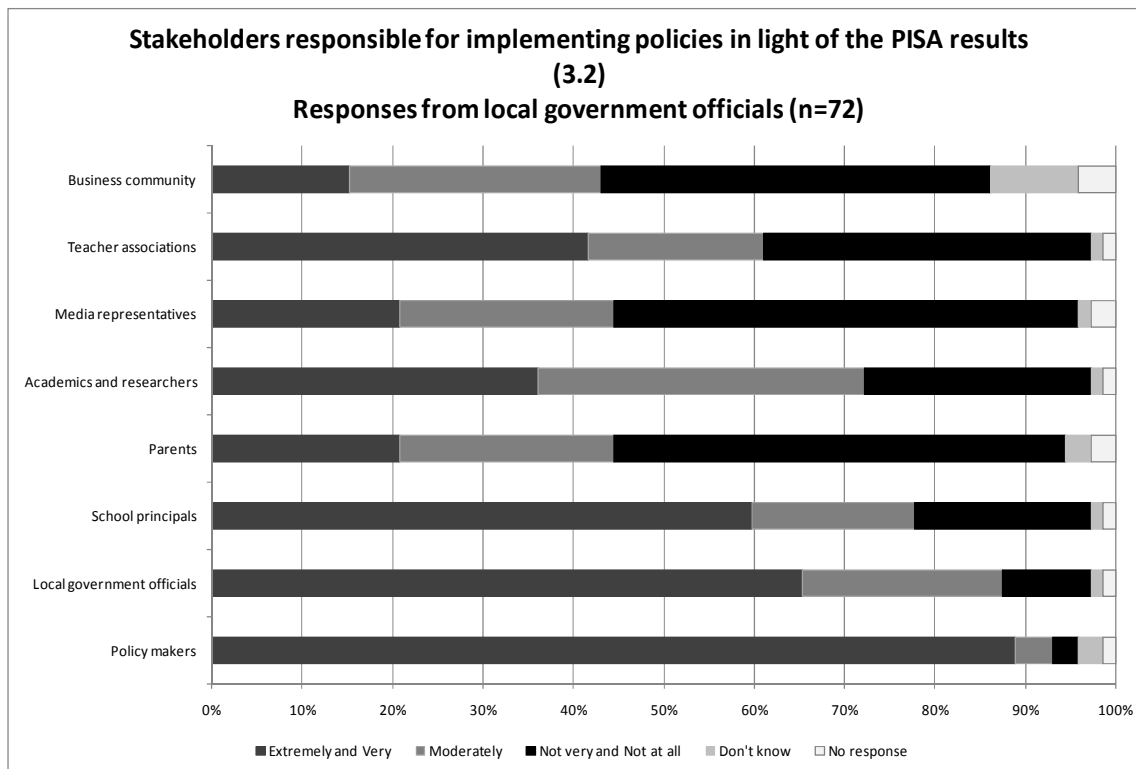


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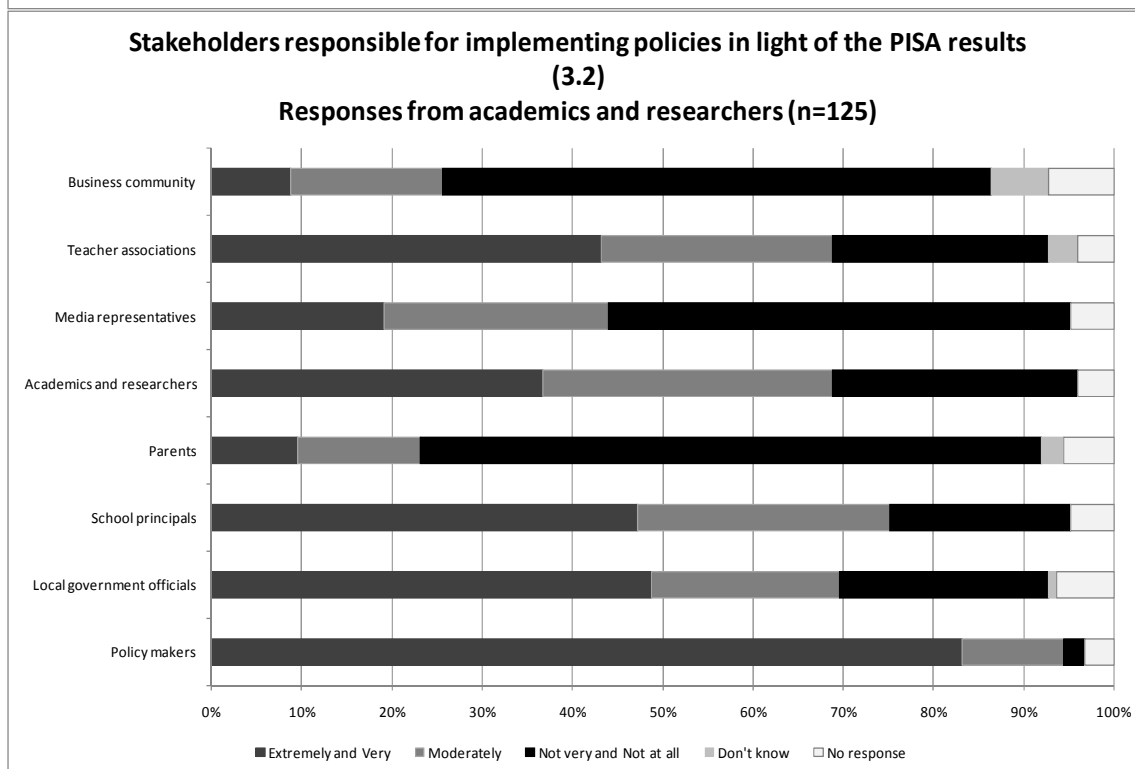
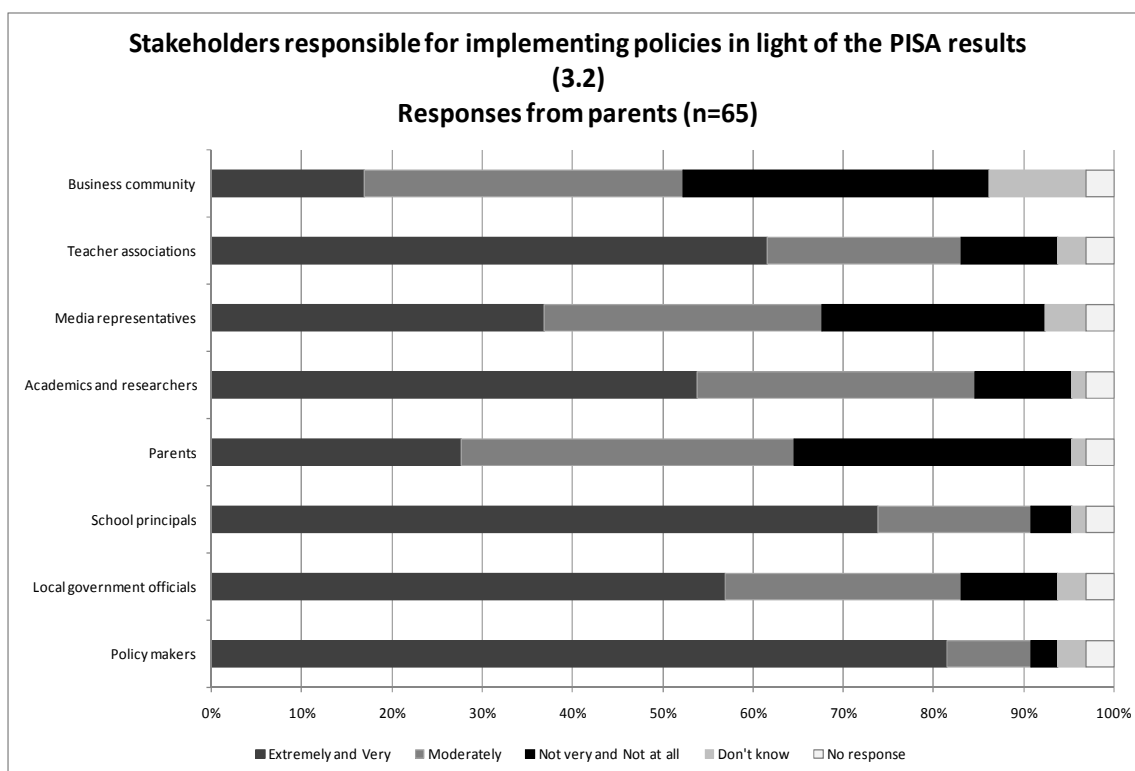
Figure 3b



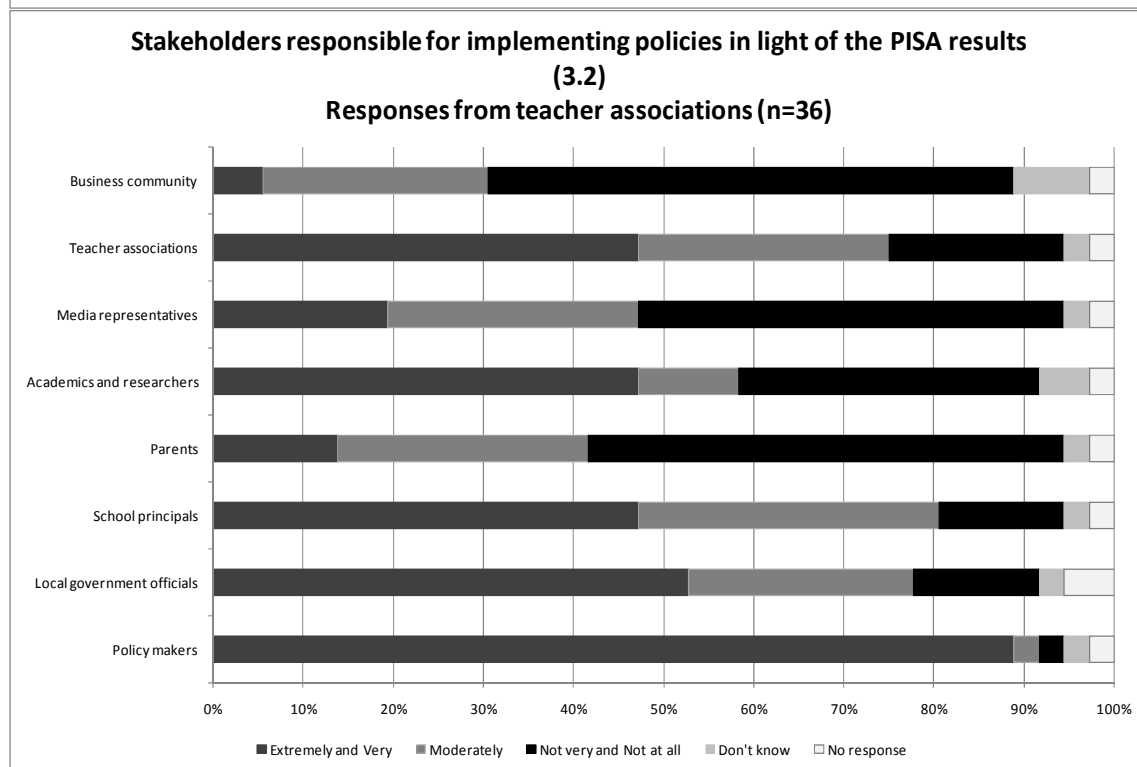
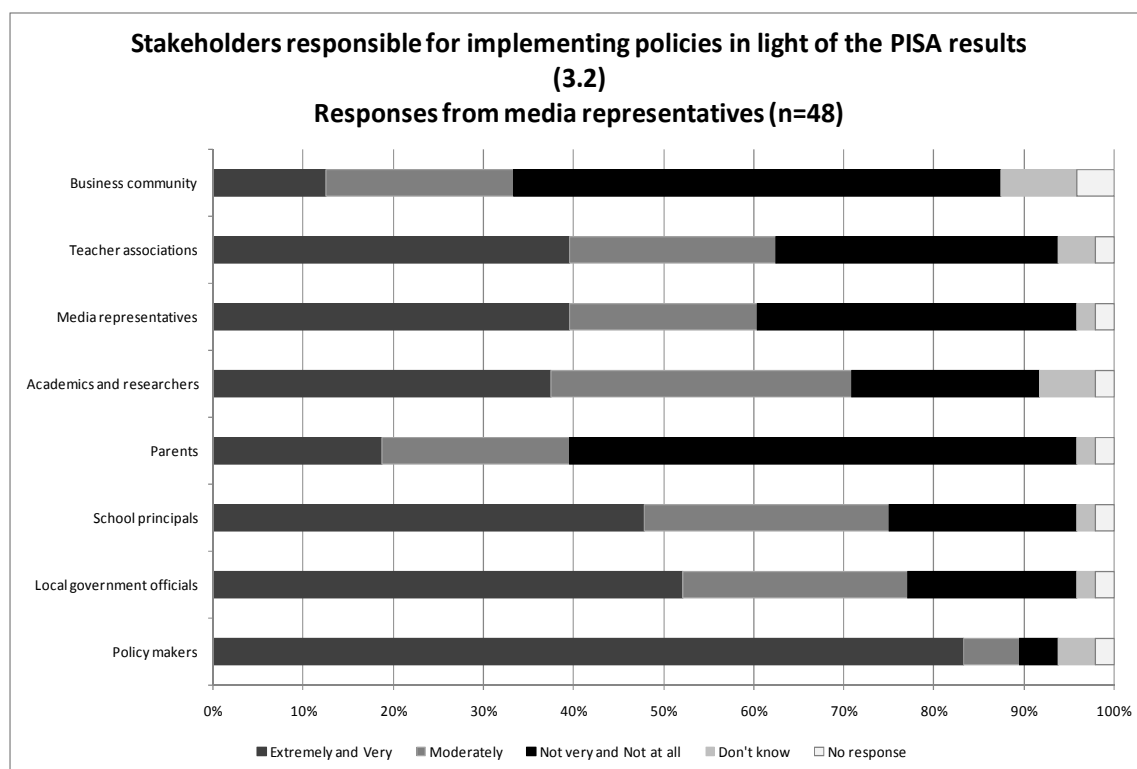
Question 3.2. Who would you identify as being responsible for implementing policies in light of the PISA results in your country? Please indicate the degree of responsibility for each stakeholder and specify to which PISA assessment you refer.



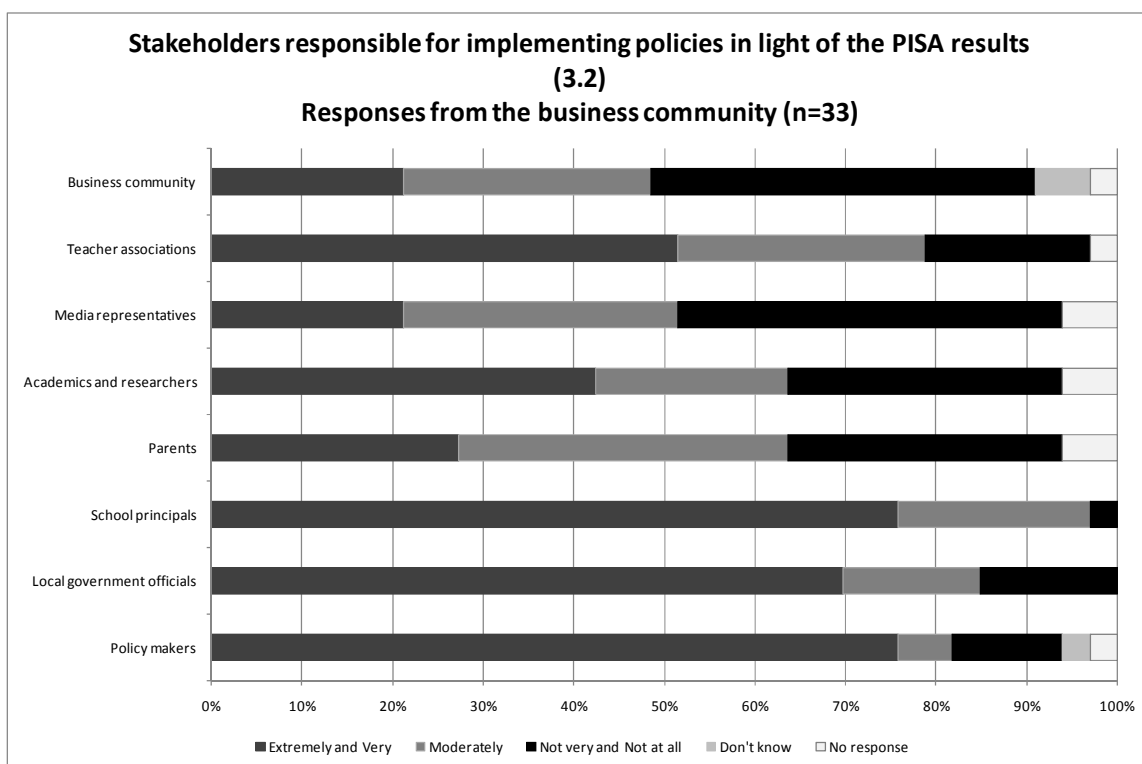
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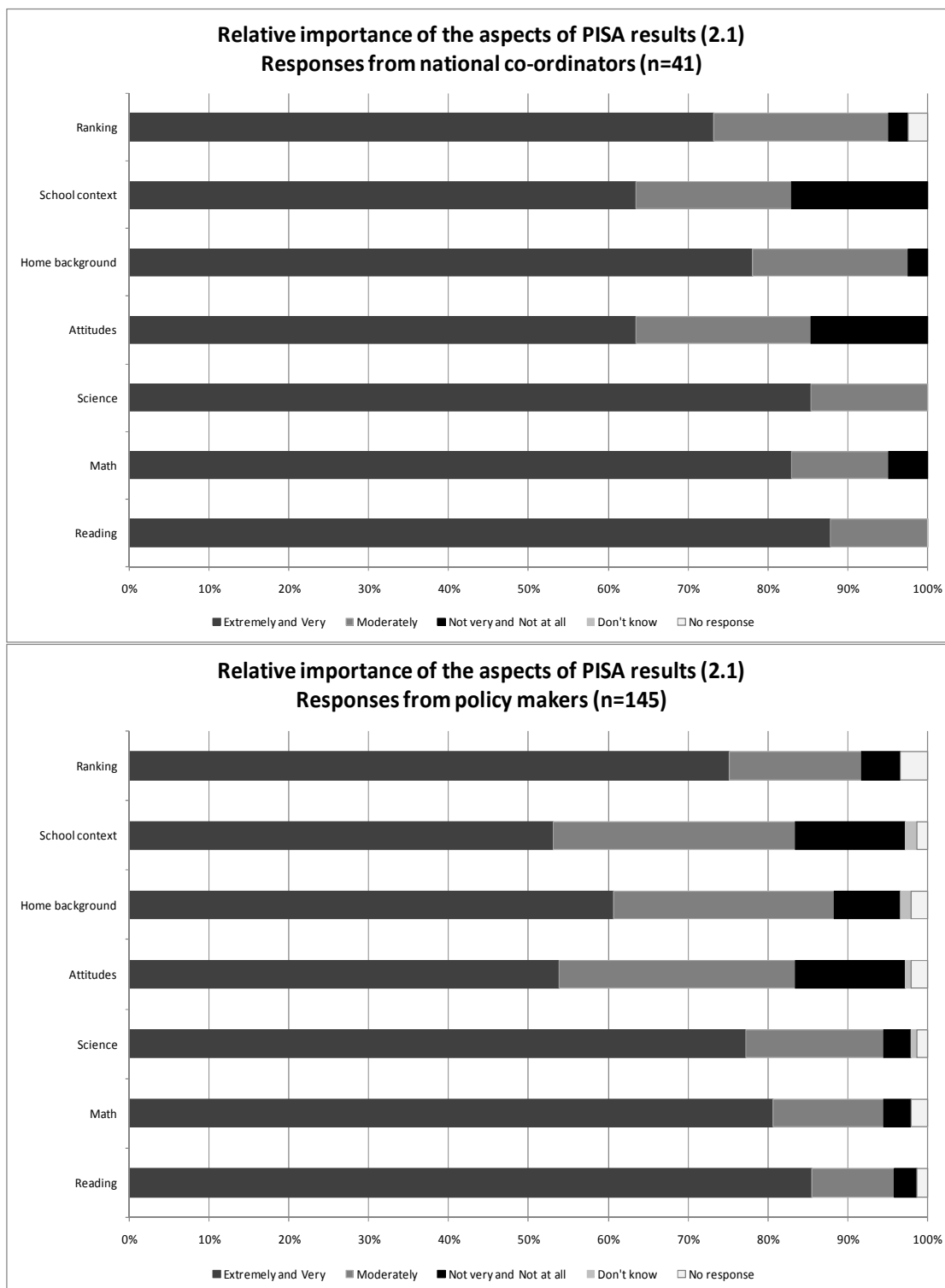


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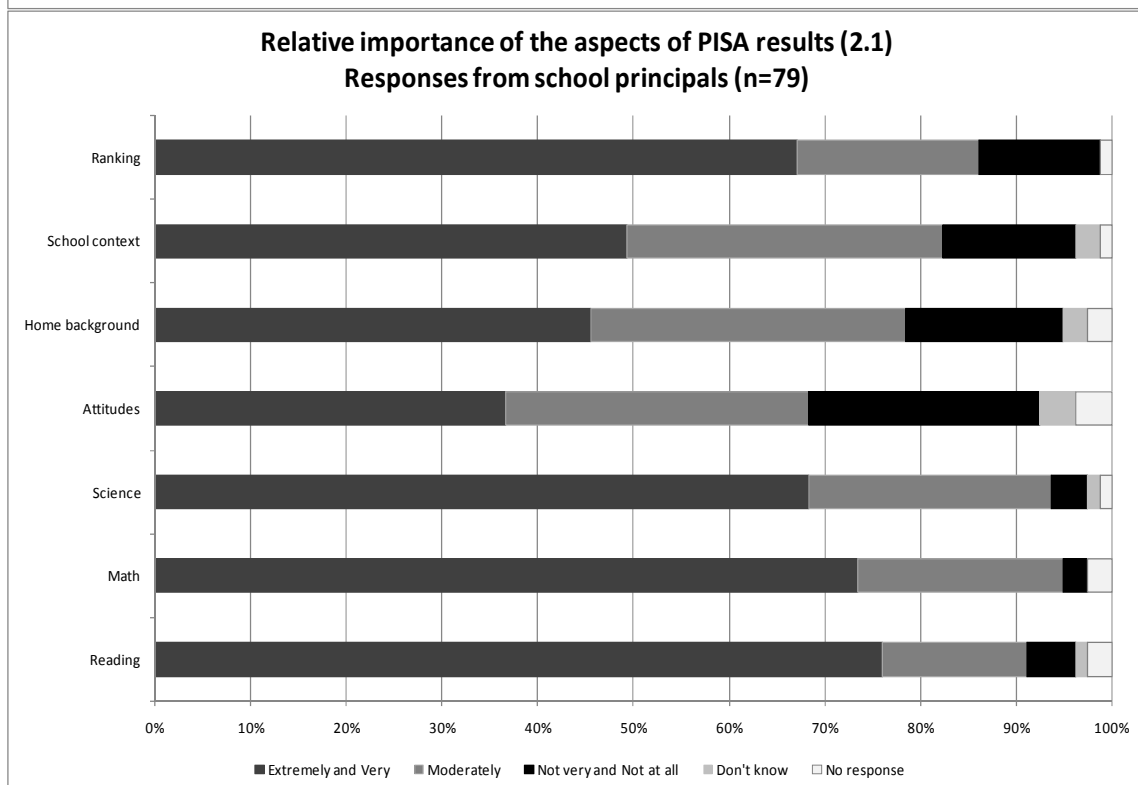
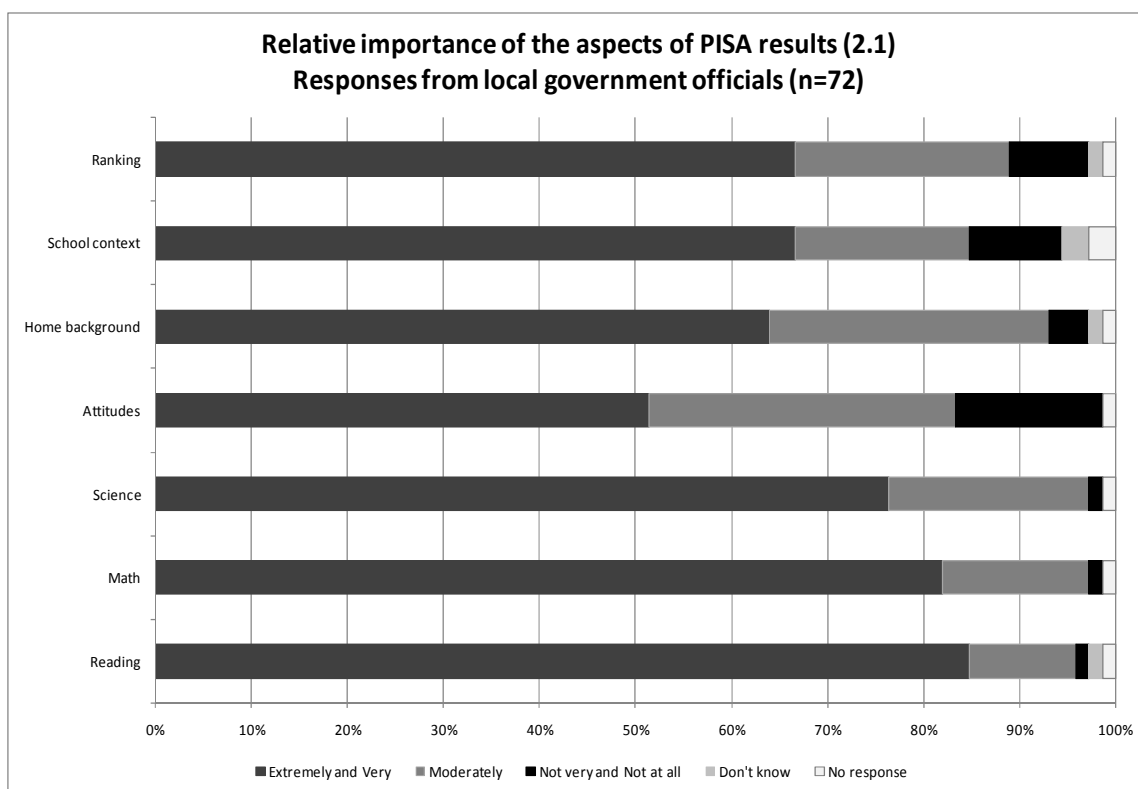


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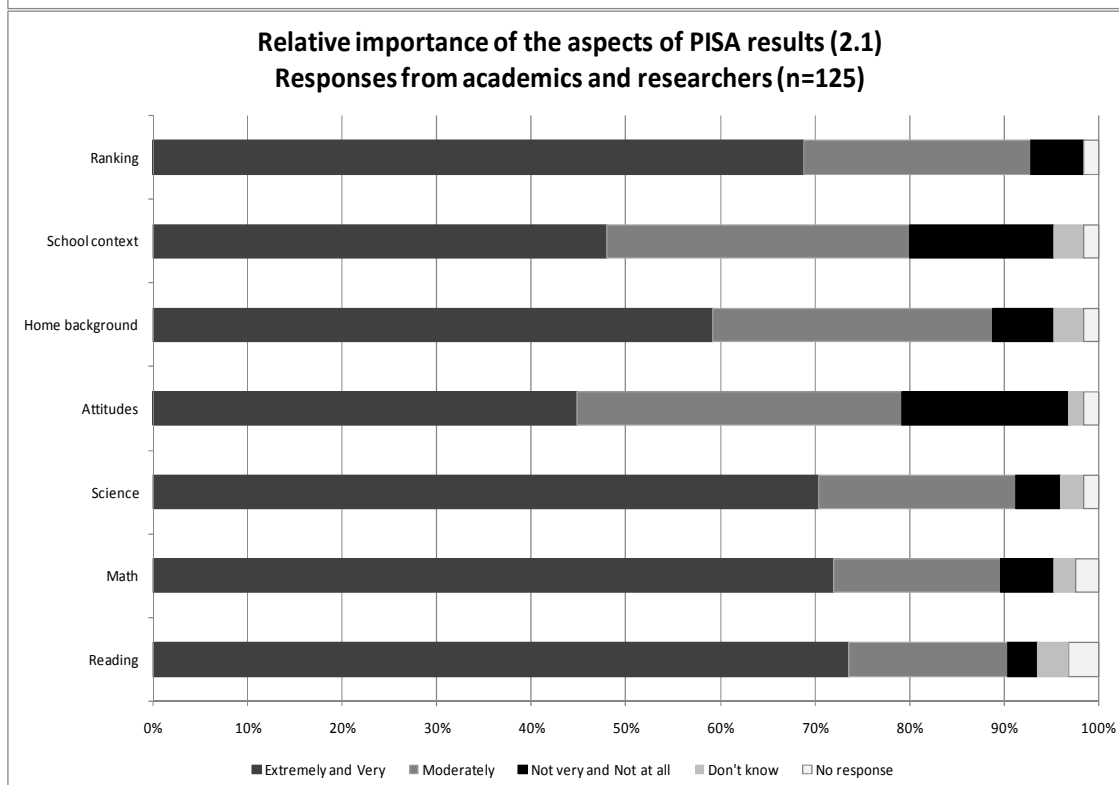
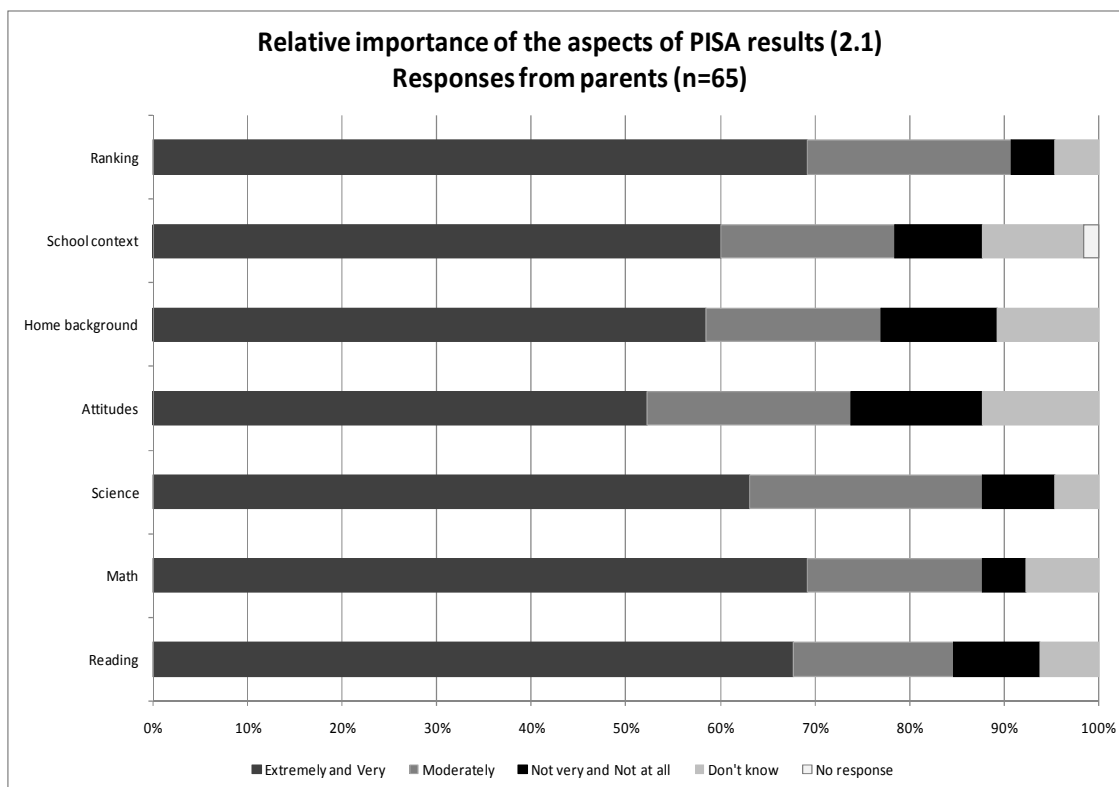
Figure 5b



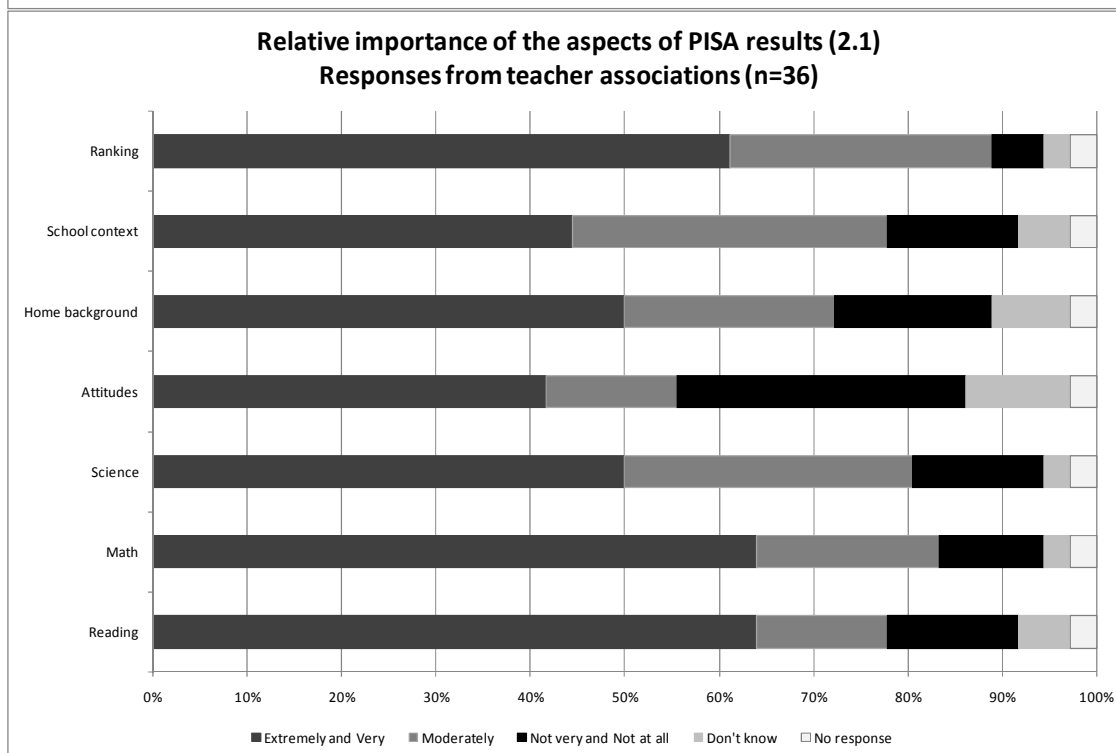
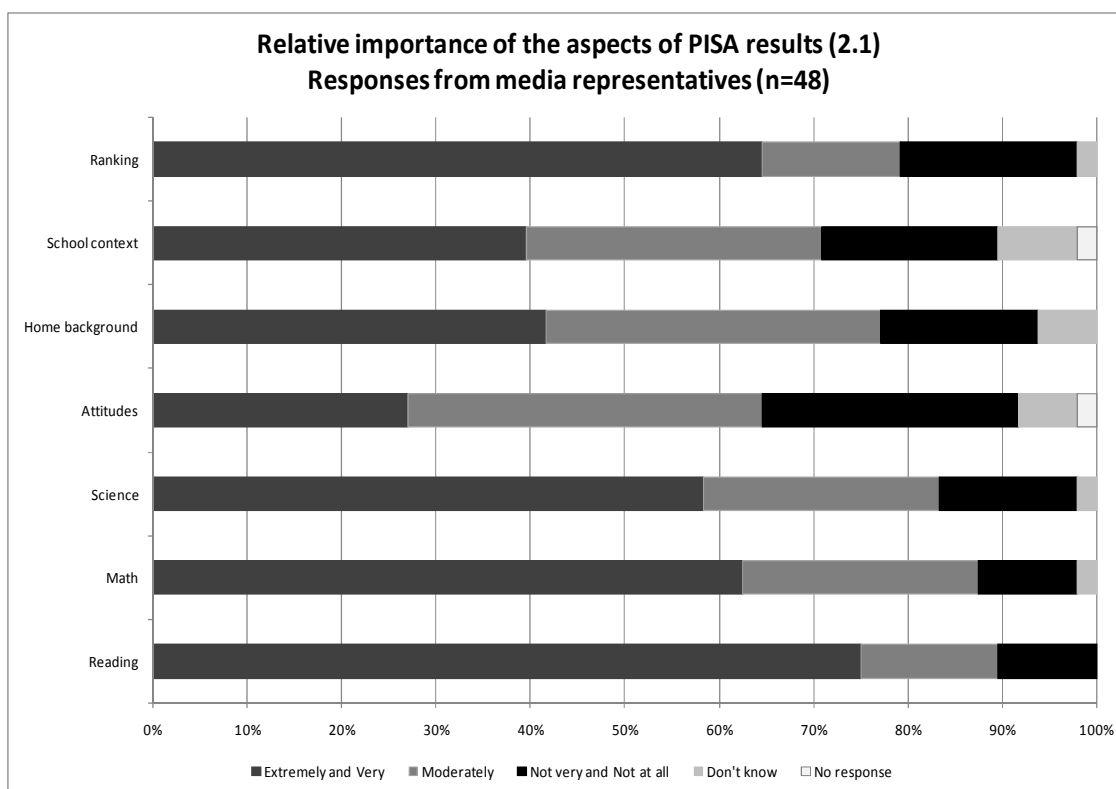
Question 2.1. Which aspects of the PISA results are important in your country? Please specify. [Performance of secondary students in reading; Performance of secondary students in mathematics; Performance of secondary students in science; Student interest, engagement, motivation and attitudes; Relationship between home background and student performance; Relationship between school context and student performance; International comparisons and country ranking; Others]



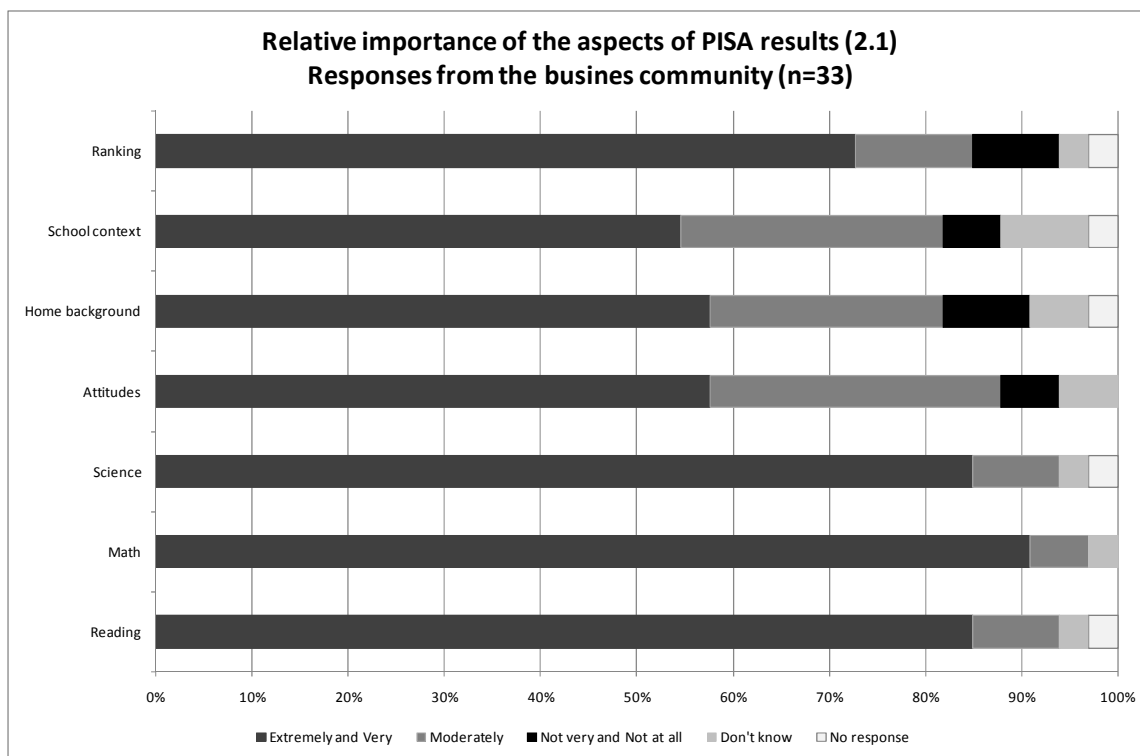
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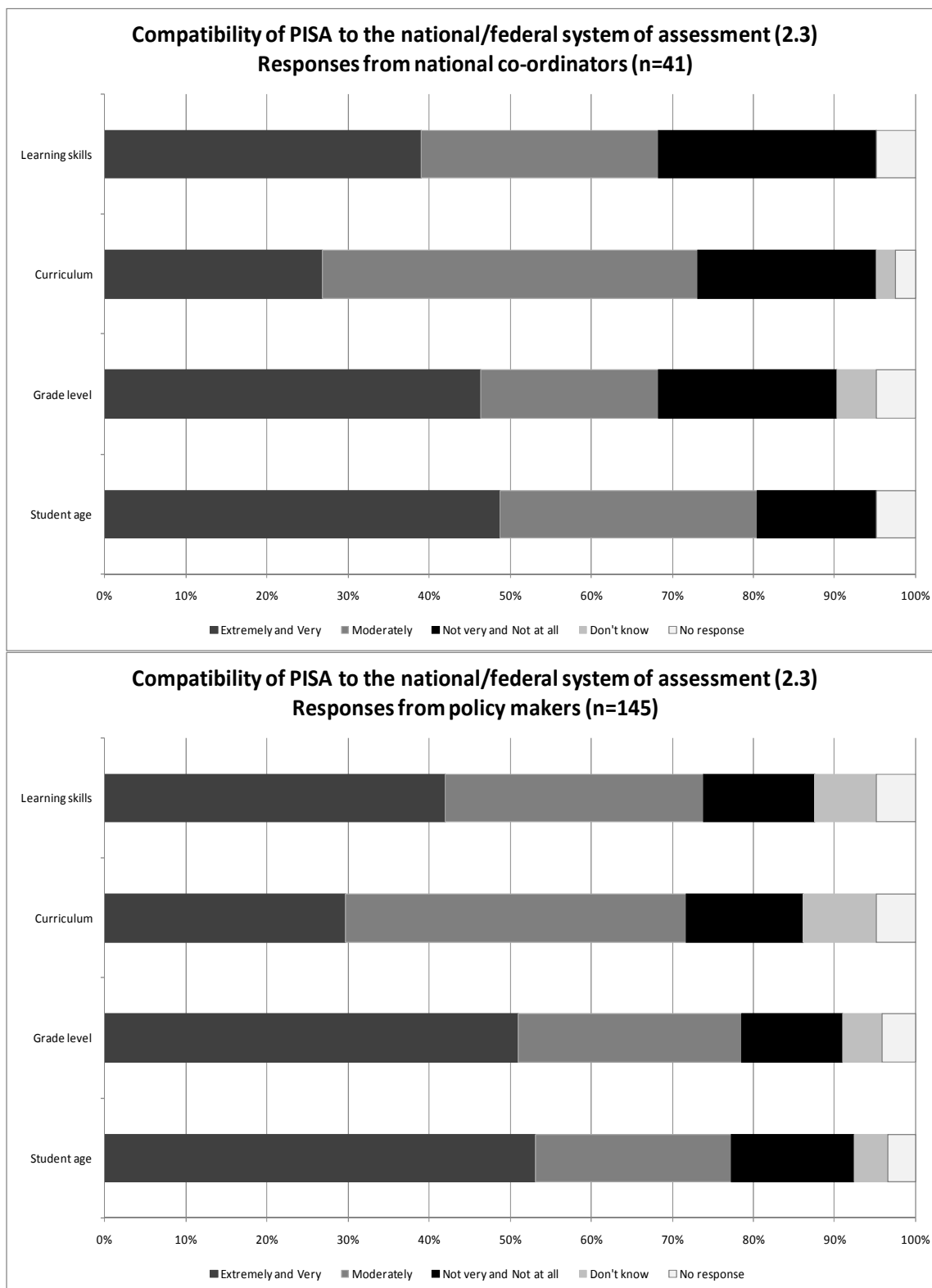


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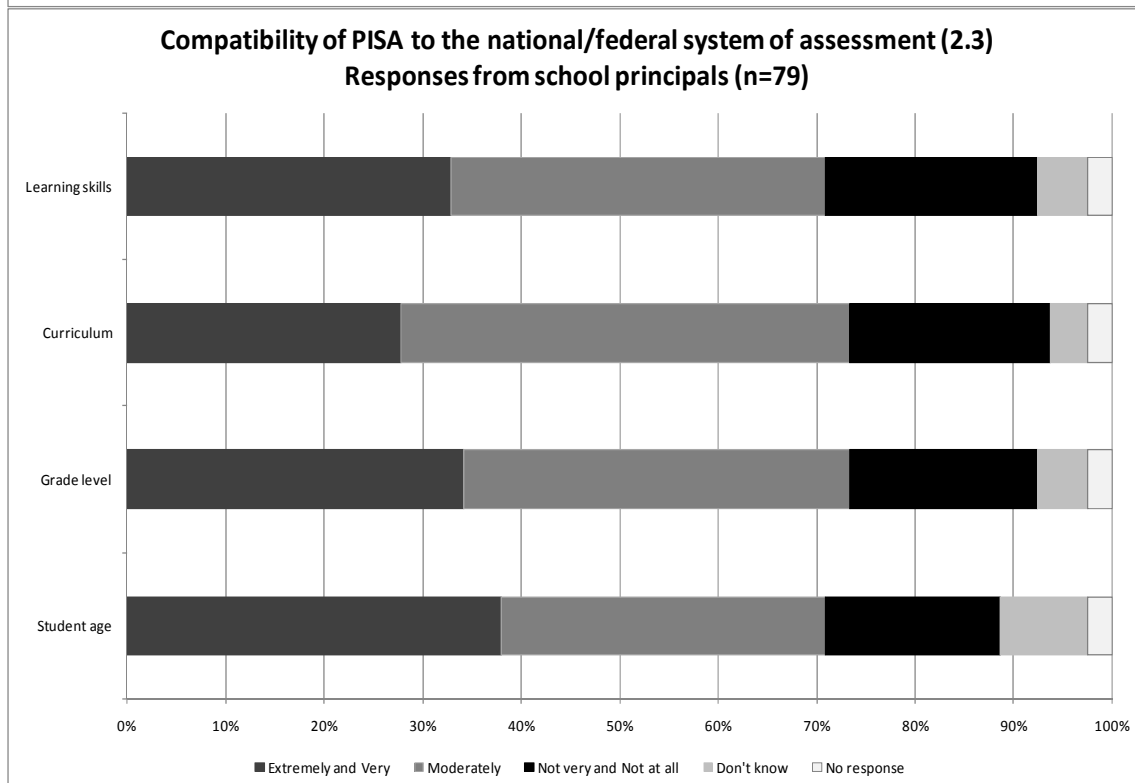
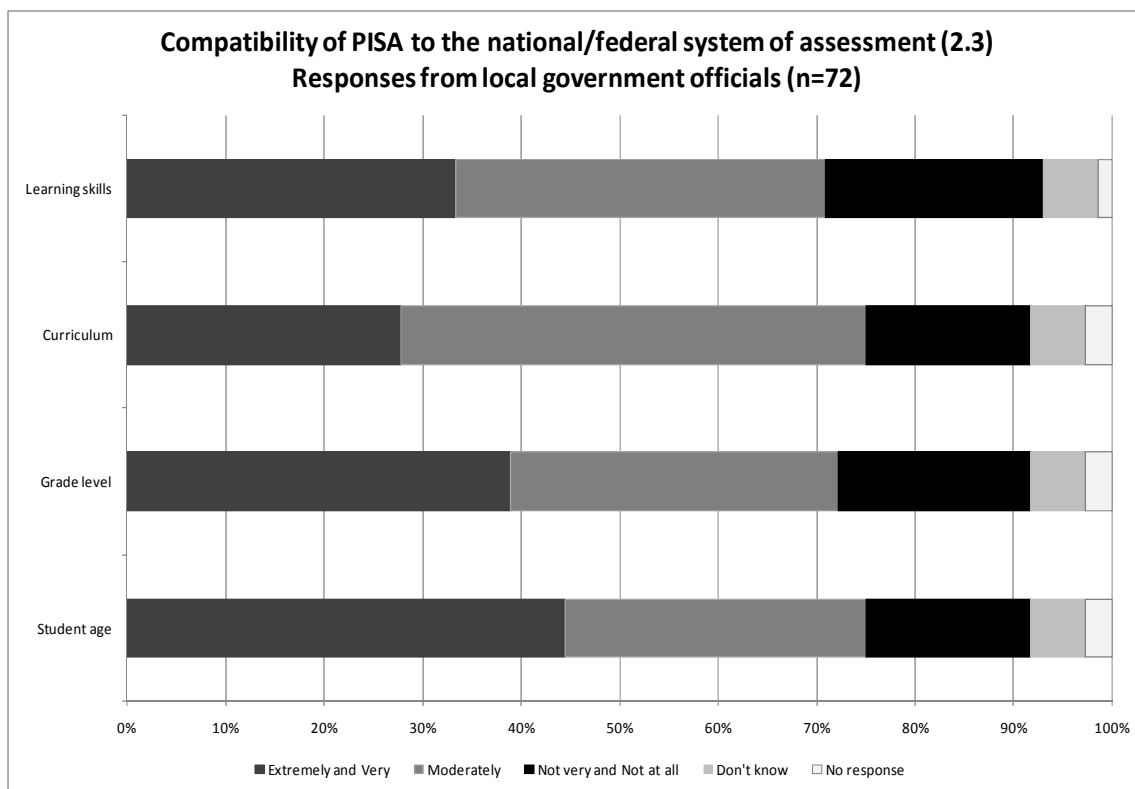


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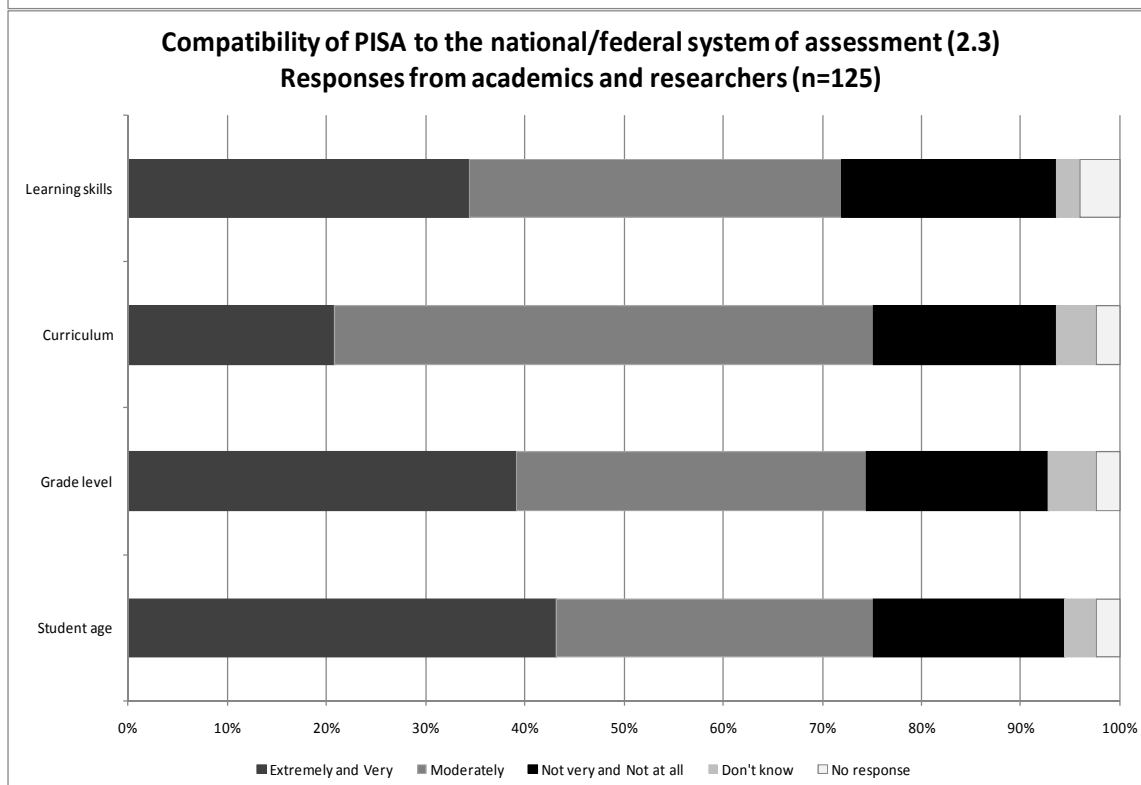
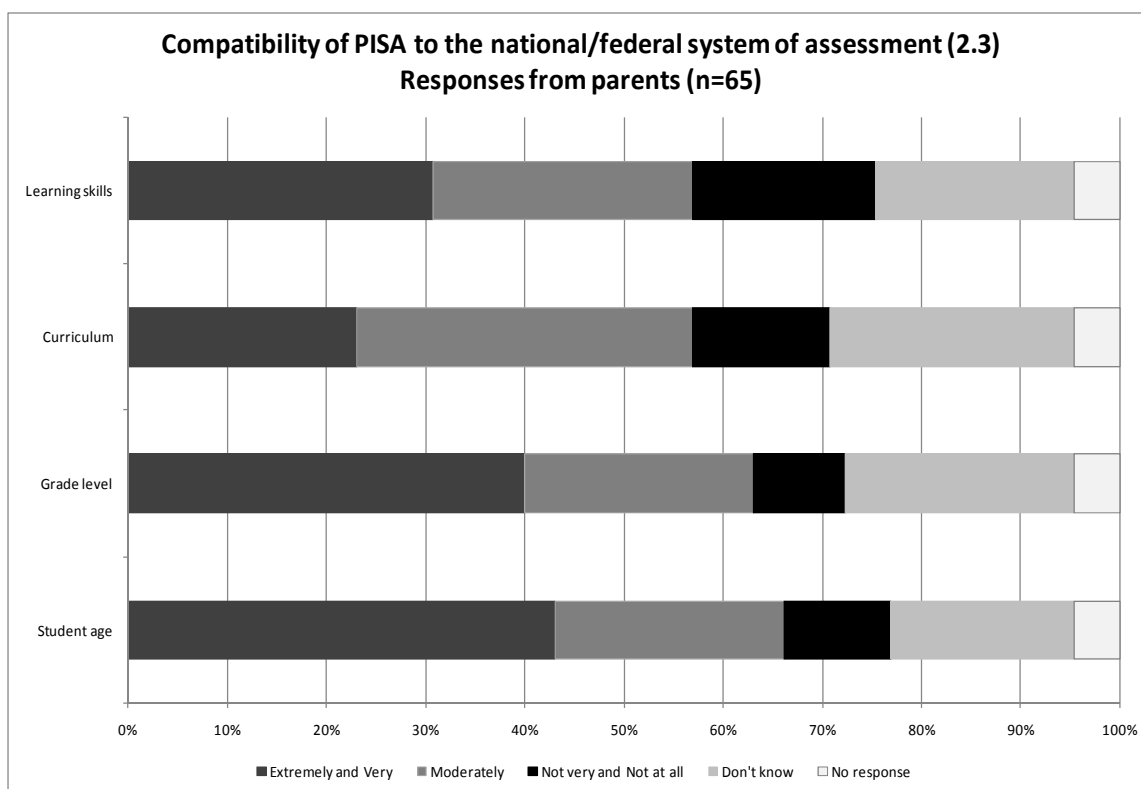
Figure 6b



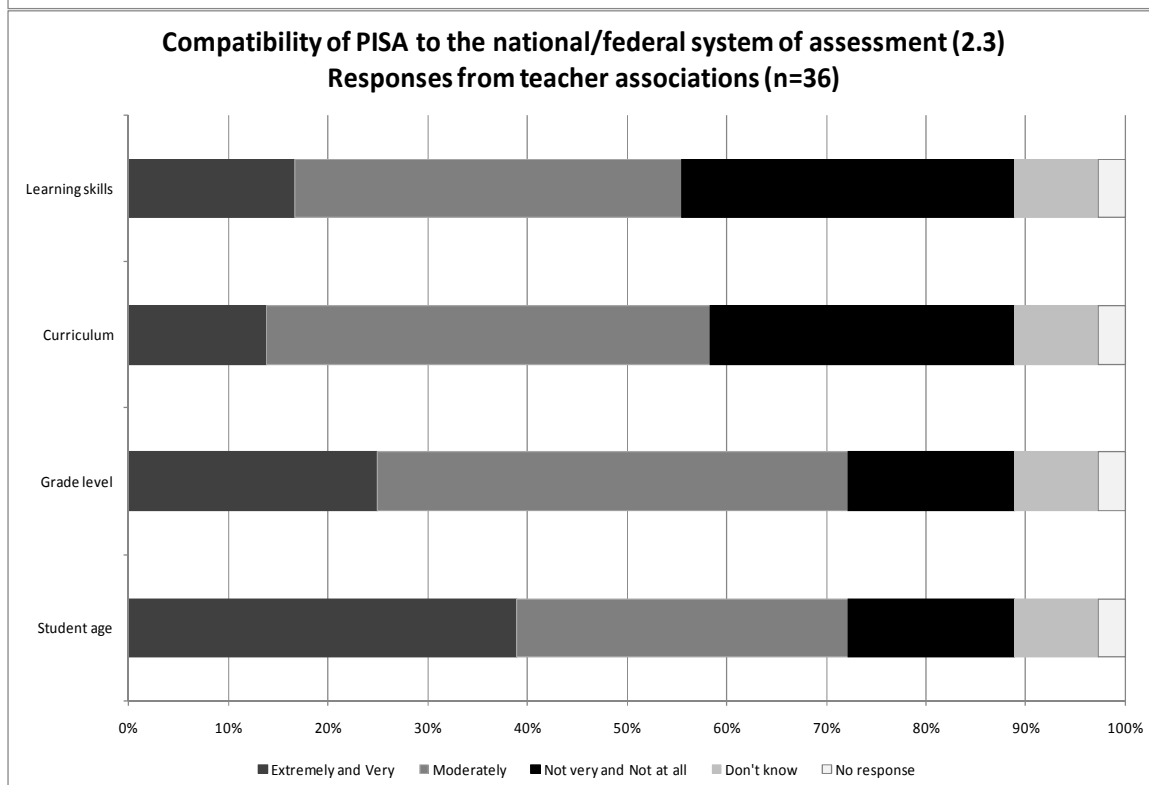
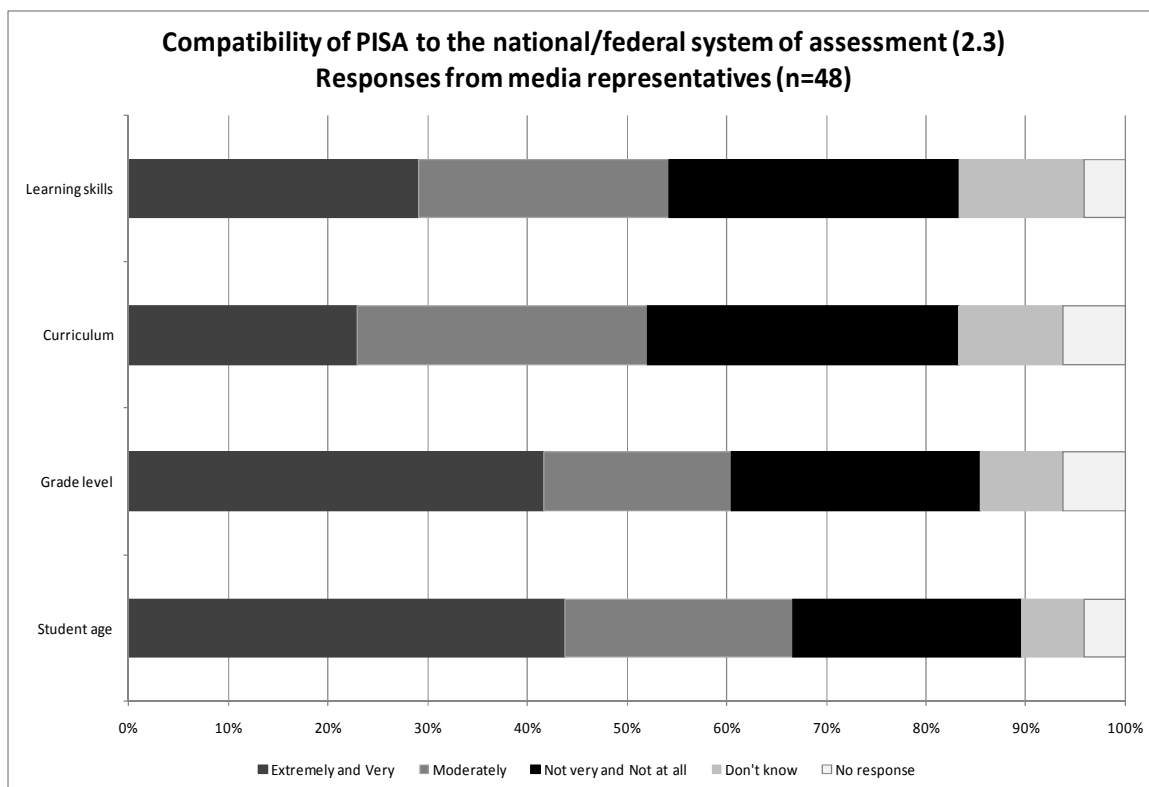
Question 2.3. How compatible is PISA to the national / federal system of assessment in your country? [In terms of the age of students; In terms of the grade levels targeted; In terms of curriculum content; In terms of learning skills; Other areas]



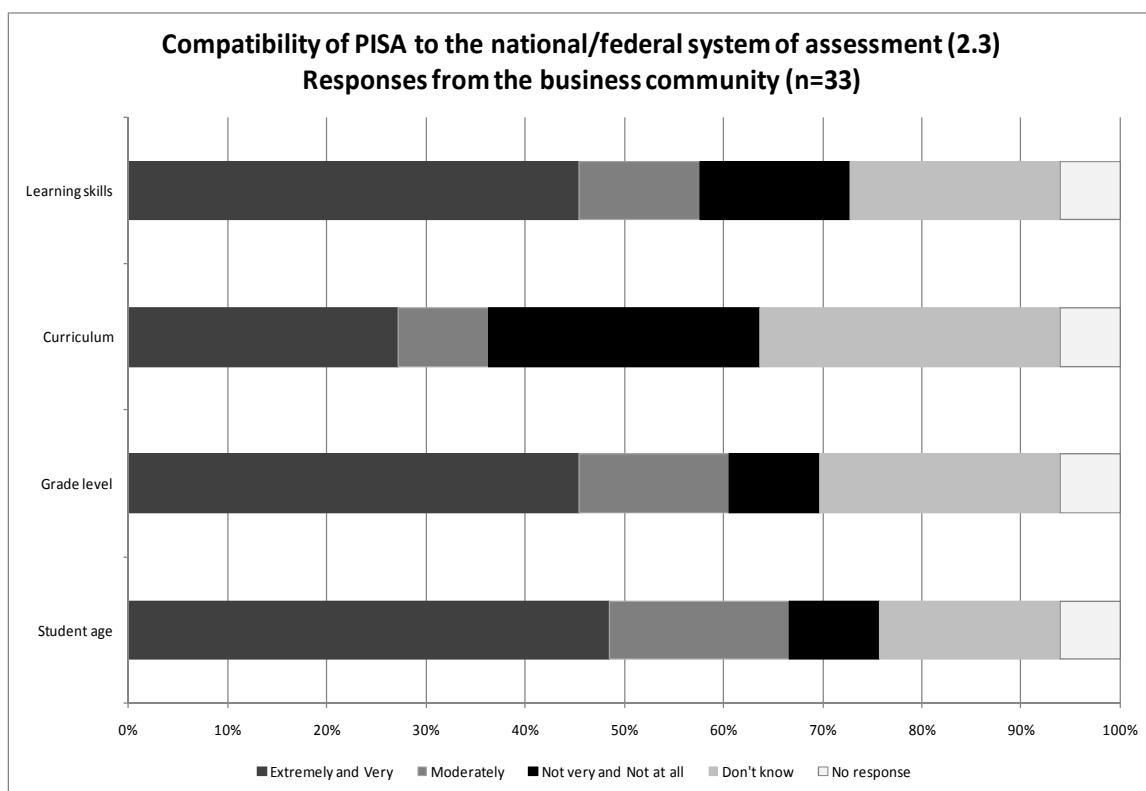
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