

POLICY AND PRACTICE IMPLICATIONS OF PISA 2000: The Program for International Student Assessment

REPORT OF THE PISA TASK FORCE TO THE INTERNATIONAL READING ASSOCIATION BOARD OF DIRECTORS

Task Force Members:

Keith Topping (University of Dundee, Scotland)
Renate Valtin (Humboldt University of Berlin, Germany)
Cathy Roller (International Reading Association, USA)
William Brozo (University of Tennessee, USA)
M. Lourdes Dionisio (University of Minho, Portugal)

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INTRODUCTION

"Comparisons are odious" - Sir Francis Richard Burton

*"Compare her face with some that I shall show,
And it will make thee think thy swan a crow"*

- Shakespeare

The challenges and pitfalls of comparing individuals, groups, and nations are legion. Yet, compulsively, social scientists and psychometricians measure, gauge, and scale the abilities, talents, and performances of peoples from diverse walks of life and disparate regions of the globe all in an effort to *compare*. What is learned by these comparisons depends in no small way on the thoroughness of understanding, by those taking measurements, of what makes each individual or group being measured unique, and what makes each cultural context within which schools operate different from others. Without these understandings, data are easily misinterpreted, and generalizations too easily oversimplified.

For example, plans for reforming education by policy makers in the United States nearly always entail additional resources. Many assert that eroding school infrastructure and classroom overcrowding have a direct negative influence on student achievement. This argument may be intuitively appealing, but fails to explain why students in countries where there is vast overcrowding, crumbling school buildings, scant books for students and professional materials for teachers, and miniscule teacher salaries have higher literacy rates and achievement levels than students in the U.S. To adequately explain these differences, then, we need to think discursively about the socio-cultural context of literacy in each nation; about the values each nation places on the literate health of its youth and the ways those values are enacted daily by adults influencing children's lives.

The Program for International Student Assessment (PISA), like its predecessors, the IEA Reading Literacy initiatives, is a study of comparisons. Fifteen-year-old students from 32 participating countries are compared in their abilities to use literacy knowledge and skills to "meet real-life challenges" (p.16, OECD 2001) as assessed on a two-hour, paper-and-pencil test. In addition, students responded to a background questionnaire related to a range of individual, home, and school factors. Principals of participating schools were also asked to complete a relevant survey. Data from these surveys were analyzed relative to reading literacy test performance in order to find possible explanations for cross-national patterns of strengths and weaknesses.

This report begins with current conceptions of literacy and the extent to which PISA's guiding notions of reading literacy are aligned with these definitions. This is followed by a critique of certain measurement practices undertaken in the PISA initiative. Next, we summarize key findings from PISA and offer potential policy

guidelines based on the findings. Recommendations for policy that account for all 32 participating countries is fraught with danger, for all of the reasons we have just raised. Nonetheless, with caveats and cautions, we attempt to satisfy the charge given us on the PISA Task Force by making necessarily global yet legitimate policy recommendations for the International Reading Association Board's consideration.

RELEVANT FINDINGS AND IMPLICATIONS

This summary analyzes, interprets and draws the implications for action affecting policy and practice from the three PISA reports published at the time of writing (see References). In what follows, statements are referenced to the page in the main PISA report "Knowledge & Skills for Life" which substantiates them. Those substantiated in the subsequent "Education & Policy Analysis" report are flagged EPA. Those substantiated in the subsequent "Reading for Change" report are flagged RFC. Implications for Action are in italics.

A CONCEPTUAL & METHODOLOGICAL ISSUES

1 Definition of Literacy / Literacies

Performance in literacy is as strong a predictor of employment prospects as is level of overall educational qualifications (21) - literacy is important. But what do we mean by literacy? Is there a difference between schooled literacy and literacy for later life and work? The PISA study set out to assess literacy in a multi-dimensional way, which tapped multiple literacies - "the ability to understand, reflect on and use written texts in order to achieve one's goals and participate effectively in society". This broad definition of literacy encompassed the ability of students to deal with a wide range of written materials, in the context of different reading events in which they are likely to encounter such materials at and beyond school. The emphasis was on measuring "reading for learning", not "learning to read". The focus was on higher order reading comprehension, and the application of reading skills in problem solving. The assessments allowed for open and divergent as well as closed responses.

2 Critique of PISA Research Methodology

The PISA reports evidence painstaking consideration for the methodological problems of large-scale international comparisons. There are considerable differences between countries in the amount of pre-school education, in the age of entry to formal schooling, in the structure of the school systems, the resources given to schools, community resources such as libraries, the training of teachers and the general learning culture. Strenuous efforts were made to ensure the

cultural appropriateness of items. However, the PISA reports readily acknowledge many remaining limitations in methodology and data, and frequently caution that association or correlation does not imply causation.

However, concerns remain. Some composite variables were constructed, of uncertain validity. Translation into sundry languages might have introduced error. The self-report data is of especially uncertain reliability and validity. Some questions might have been difficult to understand or interpret in some cultures. There might have been cultural differences in respondent motivation and fatigue. Respondents might have had difficulty in benchmarking their response against local or culturally specific conceptions of "normality". There might have been cultural differences in social desirability bias, or the likelihood of "yea-saying". The constraints of response options might raise questions about the scalar and psychometric properties of the ensuing data, and their amenability to statistical analysis.

Data dependent upon the responses of school principals is of particular concern, since these respondents were few in number (as few as $n=150$ in some countries) and their reports were not triangulated against any other comparable source, such as teachers of school administrators or inspectors. Furthermore, the principals' responses were weighted by school enrolment, so the conclusions might be biased by the views of principals of larger schools. Additionally, the focus on within-school factors for 15-year-old students in high schools disregards the impact of previous schooling at elementary level. Beyond this, in some cases data were missing or numbers in cells were too few to permit interpretation. Sometimes data were censored at the request of a particular country. Consequently, in what follows, only the stronger associations are discussed.

Additionally, PISA does not provide answers about which policies cause success in any given country. Each country has to look for its own answer. PISA can however provide pointers for policy, especially regarding factors which appear consistently across a great many countries (EPA). PISA does not give any evidence about reading instruction, national curricula or preferred teaching strategies. Because the target population are the 15 year olds who go to quite different classes due to differences in school promotion policies and entrance age in the various countries, it is not possible to get information about the classroom they go to at the time of the PISA assessment, the curriculum, the classroom factors, instruction methods nor specific teachers. So any specific recommendations about reading instruction in particular countries given here would not be directly substantiated. Additional surveys in other age groups and levels of the educational system are necessary for wider interpretation of the results. Cross-reference to the PIRLS study (Campbell et al. 2001; Bos et al. 2003) with the 4th grade population could enrich the interpretation of national results, for instance by providing information at what time in the educational system social disparities (the performance gap between students from different social background) appear.

However, on the basis of such comparative international analyses countries can learn more about their areas of strength and weakness, and identify characteristics relevant for educational policy. With regard to quality and equality the PISA results are useful:

- to assess the relative standing of the country with regard to the overall level of performance as well as the variance.
- to identify groups of at-risk students with literacy skills at or below competence level I
- to identify the characteristics of the students who perform poorly, which may vary from country to country.

IRA applauds the PISA work, and in particular the broad definition of literacy and the strenuous efforts made to countervail cultural differences. However, there are clear limitations to the data, and this should be borne in mind in the event of continuing analysis of smaller differences. Alignment with other international studies and further work is necessary.

B KEY FINDINGS

3 Differences between Participating Nations

It should be noted that more variation was evident within countries than between countries (51).

Large differences were evident between countries in the proportion of variance that was within-school rather than between-school. For example, Hungary showed high between-school variation and low within-school variation (possibly owing to different school types), while Norway had very low between-school variation and very high within-school variation (61). This might reflect the relative effect of national or school system factors versus within-school factors (63), including: school type; state/territory/province; urban/rural; ethnic/linguistic minorities; public/private school balance). Students might differentially be selected or self-select for less demanding schools or programs (64).

National and local government and research agencies should constantly monitor the relative contributions to variance in student achievement attributable to within-school and between-school variance, since they have very different implications for policy and practice.

Also, 15-year-old students might be found in different school years or grade levels in different countries (56-7). Such students might also attend very different types of school in different countries. The school dropout rate prior to 16 might also be very different in different countries, as might grade repetition where the grade system exists.

Cross-sectional studies at a given age should seek to take into account differences in student placement in different school systems at this age, and the biasing effects of attrition through differential dropout and grade retention rates.

The assessment sampled different aspects of literacy, and some countries did differentially well on different aspects (45). Thus, for example, Finland performed extremely well on reading for information retrieval but much less well on reflection and evaluation, while in other countries showed more balance (e.g. Canada and the United Kingdom) (45). Some of the countries with the lowest overall performance score better on the reflection and evaluation subscale than on the retrieving information subscale (RFC).

Assessment of reading skills which explores differences between information retrieval and reflection/evaluation is extremely helpful. Such assessments could usefully be made available to all countries in multiple languages, to enable ongoing formative and summative assessment at the student, class, school or school system level.

Future literacy demands are likely to include more fluent information retrieval and processing and also reflection/evaluation, so literacy instruction that is balanced in these respects is desirable.

There are implications here for the provision of an adequate quantity of good quality pre-service and in service training for teachers, to develop a thorough-going conceptual and practical understanding of the multiple aspects of the literacy process, to make balanced literacy instruction possible.

The characteristics of the distribution of reading capability varied. Some countries had a high proportion of very capable readers but also a high proportion of very incapable readers (e.g. New Zealand), while other had a high proportion of capable readers with relatively few of very low or high capability (e.g. Korea, Japan) (46-7).

Correspondingly, the difference between the 25th and 75th percentile was much greater in some countries (e.g. the USA) than others (e.g. Korea) (57-8). The three countries with the smallest difference were also among the best performing (Korea, Japan, Finland). Thus quality and equity do not have to be competing (EPA).

National and local government should continue to monitor the distribution and relative equality of reading achievement in the light of these international comparisons. Indeed, the need for continual monitoring permeates many of these recommendations.

National and local government should develop and evaluate pilot implementations of policies and practices relevant to their cultural context that are designed to reduce inequality of reading achievement. Such inequality is far from inevitable. IRA could list such evidence-based practices, but could not guarantee the success of individual practices in different cultural contexts.

The grading system used within countries might not relate to international benchmarks. Thus, in a country with overall poor performance, students might still be performing at the level expected by their teachers and the school system (e.g. Mexico) (50).

National and local government should explore teacher expectations of students and ensure that they are informed by international comparisons as well as local history and tradition.

The content of the curriculum and methods for its delivery should also be scrutinized. In some of those countries where performance does not associate with the grading system, the literacy contents might focus more on products/facts than on thinking processes.

4 Impact of Student Characteristics

The impact of the overall socio-economic status of the overall school enrolment was greater than the socio-economic status of the individual student (64).

National and local government should ensure that schools and teachers are aware of the impact of the socio-economic ethos and culture of a school upon individual students, and seek to manage the social psychology of the learning environment.

Most of the students least capable of reading were male and of low socio-economic status (48-9).

Males of low socio-economic status should be targeted at an early age with preventive measures intended to reduce the risk of later failure, particularly to raise their engagement with reading.

Interest in reading showed a positive correlation with achievement overall, but with great variation between countries. Thus Korea showed a low interest in reading but high achievement, whereas for Mexico the reverse was true (100). However, within countries high interest was more consistently correlated with high achievement.

Engagement with reading was more highly correlated with achievement, although many students reported low levels of engagement in reading (104). Student engagement in reading had a greater influence on achievement than socio-

economic status of parental occupation (EPA) (see Figure in Appendix 1). "Motivation to read and amount of time spent reading are important contributors to the gap between good and poor readers" (RFC).

Schools should of course seek to foster high interest in a wide range of reading activity, while being aware that sustaining high engagement with reading is more important, and that the one does not lead automatically to the other.

Schools should be aware of the dangers of conditioning their expectations of pupils by socio-economic status, while ignoring the reading engagement factor, over which they have more potential control.

Many students showed high interest in learning using computers, but this was truer for males than females. This interest was correlated with higher reading performance (116).

Schools should seek to make available many rich opportunities for accessing and evaluating reading through computers and the Internet. This might be a particularly valuable with boys of low socio-economic status with low engagement in reading.

Schools should also consider their methods of reading instruction, to ensure that implicit cultural or gender bias is not present.

Females outperformed males on the combined reading literacy scale in all 32 participating countries (122). Females were more reflective and evaluative in their approach to reading (125). Males spent much less time reading for enjoyment than did females (131). "The large performance difference that exists between boys and girls in reading literacy can partly be explained by other differences such as engagement in reading" (RFC). However, "males in some countries are more engaged in reading than females in other countries. For instance, males in Denmark, Finland, Iceland, Japan and Korea report being either as engaged or more engaged in reading than females in Belgium, France and Spain" (RFC).

Females read more fiction than males, who read more newspapers, comics, emails and web pages (132). However, "the gap in reading proficiency between those reading comics and those reading fiction is not huge. Daily engagement in reading magazines, newspapers and comics – a kind of reading that is perhaps less valued by school than fiction books – seems, at least in some cultural contexts, to be a fruitful way of becoming a proficient reader" (RFC). "Reading practices can play an important role in reducing the gap between the reading proficiency scores of students from different socio-economic backgrounds and in reducing the gap seen between males and females" (RFC).

Schools should consider the definitions, models and expectancies of literacy embedded in school and teacher culture and seek to broaden these to afford equal opportunities to wider forms of reading engagement.

Schools should pay special attention to female teachers, who might tend to reproduce their own values, attitudes, as well as their reading preferences.

In this report, the task force has confined its deliberations to the PISA data and recommendations stemming directly from those. However, it can be argued that deeper analysis is needed of intermediate variables underpinning the PISA findings. As an example, the issue of male underachievement is the subject of such an exploration in Appendix 2.

5 Impact of Family Characteristics

A socio-economic index of parental occupational status correlated strongly with achievement, accounting for 11% of the variance in literacy achievement (139). However, the performance gap between high and low S.E.S. students was much greater in some countries (e.g. Germany, Belgium, Switzerland) than others (e.g. Korea, Finland, Iceland). Wealth was less strongly associated with achievement, the US showing the largest variation on this factor. Possession of cultural items in the home was strongly related to achievement (144). It is evident that high average quality and equality of outcomes among students from various backgrounds can be achieved. While social background has a strong association with student performance, in some countries this influence is less powerful than in others.

"Fifteen-year-olds whose parents have the lowest occupational status but who are highly engaged in reading achieve better reading scores than students whose parents have high or medium occupational status but who are poorly engaged in reading" (RFC).

National and local government should continue to monitor the distribution and relative equality of reading achievement in the light of socio-economic status.

National and local government should develop and evaluate pilot implementations of policies and practices relevant to their cultural context that are designed to reduce inequality of reading achievement according to socio-economic status. Such inequality is far from inevitable. IRA could list such evidence-based practices, but could not guarantee the success of individual practices in different cultural contexts.

Schools should be aware of the dangers of conditioning their expectations of pupils by parental wealth, while ignoring parental occupation and the possession

of cultural items, over the latter of which they might have more potential control through library and loan schemes.

Schools should work to ensure that all students are surrounded in their classrooms, school libraries, and elsewhere by new, interesting and diverse reading materials, and teachers should work to facilitate the access to those materials. Schools together with local authorities and institutions should develop culturally relevant programs to reduce inequality of opportunity and cultural bias. IRA National Affiliates might have here a good opportunity for their work.

An index of parental involvement, support and communication with the student's learning was positively correlated with achievement (147). Single parent family status was negatively correlated with achievement, but much of this variance was attributable to poverty (132).

As stated above, national and local government, schools and teachers should develop, implement and evaluate evidence-based practices to enhance parental engagement with their child's education. It is acknowledged that this might be more difficult with older pupils than with younger pupils, but nonetheless essential. Where parental capability to support is limited, mentoring schemes might be developed, implemented and evaluated.

Students who spoke the language of assessment or another national language at home most of the time ("majority-language students") performed better than students who routinely conversed with their parents and siblings in another language ("minority-language students") (155-6). Immigration status was likewise correlated with achievement. Students born abroad or who had foreign-born parents showed lower achievement than other students even after accounting for their other characteristics (EPA).

Current schemes to afford additional support to students learning the native language as an additional language are clearly not as effective as is desirable, although the many difficulties here are acknowledged. Further development and dissemination of effective evidence-based practices is needed, together with rigorous quality control.

6 Impact of School and Teaching & Learning Characteristics

As many of these findings were based mostly on student self-report, they must be treated with caution.

The impact of the overall socio-economic status of the overall school enrolment was greater than that of the individual student (64).

Student strategic self-management of learning was associated with higher achievement (110). Females reported using strategic self-management more than males (133).

Where the prevailing culture does not currently emphasize student strategic self-management of learning, this needs to be introduced to give some balance to learning opportunities and prepare the student for an unpredictable but undoubtedly rapid-paced future. The difficulty of this for teachers unused to such approaches is acknowledged.

Elaboration strategies were more positively related to achievement than memorization strategies, for which the outcomes were mixed (112).

Where the prevailing culture does not currently emphasize elaboration strategies, this needs to be introduced to give some balance to learning opportunities and prepare the student for an unpredictable but undoubtedly rapid-paced future.

The difficulty of this for teachers unused to such approaches is acknowledged, and both pre-service and in-service training for teachers should be provided which enhances understanding of deeper learning processes and to promote richer process approaches to teaching and learning.

Males reported using more elaboration than females. Females reported using more memorization than males (133). However, this does not align with the gender differential in tested reading style reported above.

School principals complain of student absenteeism and disruption, while students complain of time wastage at the beginning of lessons (164) - both concern time on task at learning.

Teachers, schools and students should work together to establish a consensus on local barriers to effective learning, identify and implement revised policies and practices, and evaluate the outcomes.

Language and literacy teachers' showing interest in students, facilitating student responding, supporting students, and ensuring student mastery had a weak and mixed association with achievement, perhaps because less able pupils need more, (although in addition the comparability of student expectations and perceptions between countries is particularly questionable here) (161).

"In 19 of the 28 OECD countries and in two of the four non-OECD countries, the correlation of achievement pressure with reading achievement is negative" (RFC). The association between such pressure and reading engagement was also largely negative.

Schools and teachers should be aware that pressurizing students to read is counter-productive, and consult with students to identify alternative practices that might be more successful, subsequently evaluating such practices.

7 School Resourcing, Management & Leadership

A modest correlation was evident between level of school resourcing and student achievement, and some countries with a relatively low spend per student showed good outcomes. Countries that appeared to spend relatively ineffectively included Denmark, Greece, Italy, Mexico, Portugal and the United States (91). Thus "spending alone does not guarantee better outcomes" - some countries achieve high performance with relatively limited resources, and vice versa (EPA).

Where additional resourcing is made available to schools, the effectiveness of its subsequent deployment should be evaluated, with a feedback effect on any subsequent resourcing.

However, in countries currently in general spending relatively ineffectively, that ineffectiveness should not be used to rationalize a refusal to devote additional resources to high quality literacy programs, where the effectiveness of the deployment of those resources can be evaluated. Nor should this general finding be used to reduce the funding for programs which have been evaluated and found to be effective, or indeed those which have yet to be evaluated (provided that a plan for the evaluation of the latter is developed).

The quality of buildings and other physical resources was only weakly associated with achievement, but the quality of educational resources was more strongly associated (174).

Faced with budgetary choices, schools should be aware that expenditure learning resources is likely to be more effective in raising achievement than expenditure on buildings, provided those resources are used appropriately and effectively.

Teachers with better qualifications were associated with higher student achievement (204), although of course these qualifications might have incorporated very various content concerned with literacy instruction.

Teachers should be encouraged and supported to improve their qualifications, provided the learning experiences involved are relevant to the demands of their post and delivered to good quality standards.

School autonomy and teacher autonomy were both positively associated with higher achievement (177), although it is possible that public/private schooling was a confounding variable here.

National and local governments, schools and teachers should note that central prescription of teaching practices does not appear to raise standards - in fact, the converse - and act accordingly.

Systems with fewer types of school and less selection of pupils were associated with higher performance and fewer differences in student outcomes.

National and local governments, schools and teachers should note that multiple school types and consequent student selection does not appear to raise standards - in fact, the converse - and act accordingly.

Staff-student ratio showed a curvilinear relationship with student achievement. Although SSR is not the same as class size, this curvilinear relationship is similar to that generally reported in the literature for class size. At ratios less than 1:10, student performance was worse (possibly because the most problematic students tended to be taught in the smallest classes). Between 1:10 and 1:25, the relationship with achievement showed little variation. Above 1:25, student achievement began to decline with increasing SSR, accelerating above 1:40 (202). This finding was consistent across many countries.

National and local governments, schools and teachers, and other vested interests, should note that reducing the staff:student ratio has no measurable effect on achievement within the band 1:10 through 1:25, and might have deleterious effects at lower SSRs - and act accordingly.

C RECOMMENDATIONS

In the analysis of key findings each finding is followed by a recommendation or recommendations. In this section of the report we bring the recommendations together to focus on three major areas—achieving high performance and equity, fostering boys reading performance, and implications of the report for instruction. Those recommendations falling outside these three categories are not repeated in this section but remain in section B. Key Findings.

IRA applauds the PISA work, and in particular the broad definition of literacy and the strenuous efforts made to countervail cultural differences. However, there are clear limitations to the data, and this should be borne in mind in the event of continuing analysis of smaller differences. Alignment with other international studies and further work is necessary. Cross-sectional studies at a given age should seek to take into account differences in student placement in different school systems at this age, and the biasing effects of attrition through differential dropout and grade retention rates.

8 Achieving high performance and equity

Among the most striking findings of PISA is the finding that the relationship between level of reading performance and the distribution of reading capability was highly variable. Some countries had a high proportion of very capable readers but also a high proportion of very incapable readers while others had a high proportion of capable readers with relatively few with very low or very high capability.

Correspondingly, the difference between the 25th and 75th percentile reading performance was much higher in some countries than in others. The three countries with the smallest difference were also among the best performing. Thus quality and equity do not have to be competing.

National and local government should continue to monitor the distribution and relative equality of reading achievement in the light of these international comparisons. Indeed, the need for continual monitoring permeates many of these recommendations. These governments should develop and evaluate pilot implementations of policies and practices relevant to their cultural context that are designed to reduce inequality of reading achievement. Such inequality is far from inevitable. IRA could list such evidence-based practices, but could not guarantee the success of individual practices in different cultural contexts.

Frequently these disparities in performance are related to socio-economic factors. However, in some countries socio-economic factors have much less influence on reading performance. National and local government should continue to monitor the distribution and relative equality of reading achievement in the light of socio-economic status. These governments should develop and evaluate pilot implementations of policies and practices relevant to their cultural context that are designed to reduce inequality of reading achievement according to socio-economic status. Such inequality is far from inevitable. IRA could list such evidence-based practices, but could not guarantee the success of individual practices in different cultural contexts.

Schools also should be aware of the dangers of conditioning expectations of pupils by parental wealth, while ignoring parental occupation and the possession of cultural items, over the latter of which they might have more potential influence through library and loan schemes.

Another factor contributing to inequality is between school differences in reading performance. National and local government and research agencies should constantly monitor the relative contributions to variance in student achievement attributable to within-school and between-school variance, since they have very different implications for policy and practice. National and local governments, schools and teachers should note that multiple school types and consequent

student selection does not appear to raise standards - in fact, the converse - and act accordingly.

Another factor that may contribute to inequality is teacher expectations. National and local governments should explore teacher expectations of students and ensure that they are informed by international comparisons as well as local history and tradition. For example, in countries where there are big disparities in performance, teachers should be informed that in many countries large disparities do not exist and that such disparities are not inevitable. In addition these governments should ensure that schools and teachers are aware of the impact of the socio-economic ethos and culture of a school upon individual students, and seek to manage the social psychology of the learning environment.

Another issue is availability of resources. The PISA study indicates that more resources do not necessarily result in better reading performance. Where additional resources are made available to schools, the effectiveness of their subsequent deployment should be evaluated, with a feedback effect on any subsequent resources.

However, in countries currently in general spending relatively ineffectively, that ineffectiveness should not be used to rationalize a refusal to devote additional resources to high quality literacy programs, where the effectiveness of the deployment of those resources can be evaluated. Nor should this general finding be used to reduce the funding for programs which have been evaluated and found to be effective, or indeed those which have yet to be evaluated (provided that a plan for the evaluation of the latter is developed). Faced with budgetary choices, schools should be aware that expenditures on learning resources is likely to be more effective in raising achievement than expenditure on buildings, provided those resources are used appropriately and effectively.

9 Fostering boys reading performance

Another very striking finding of the PISA study is that females outperform males in reading in every country tested. Special intervention targeted to males is indicated. The data suggest that males of low socio-economic status should be targeted at an early age with preventive measures intended to reduce the risk of later failure, particularly to raise their engagement with reading.

Schools should seek to make available many rich opportunities for accessing and evaluating reading through computers and the Internet. This might be a particularly valuable with boys of low socio-economic status with low engagement in reading.

Schools should also consider their methods of reading instruction, to ensure that implicit cultural or gender bias is not present. They should consider the

definitions, models and expectancies of literacy embedded in school and teacher culture and seek to broaden these to afford equal opportunities to wider forms of reading engagement. Schools also should pay special attention to female teachers, who might tend to reproduce their own values, attitudes, as well as their reading preferences.

10 Implications for instruction

In instruction PISA indicates that there are large and significant differences among different types of reading. Assessment of reading skills which explores differences between information retrieval and reflection/evaluation is extremely helpful. Such assessments could usefully be made available to all countries in multiple languages, to enable ongoing formative and summative assessment at the student, class, school or school system level. Future literacy demands are likely to include more fluent information retrieval and processing and also reflection/evaluation, so literacy instruction that is balanced in these respects is desirable. There are implications here for the provision of an adequate quantity of good quality pre-service and in service training for teachers, to develop a thorough-going conceptual and practical understanding of the multiple aspects of the literacy process, to make balanced literacy instruction possible.

In some countries there are weak relationships between the PISA performance data and the grading system. That is, in some countries grading system has either larger or smaller proportions of students performing in the upper and lower ranges of the distribution. In these situations, the content of the curriculum and methods for its delivery should also be scrutinized. In some of those countries where performance does not associate with the grading system, a possible explanation is that the literacy contents might focus more on products/facts than on thinking processes.

Another powerful finding of the PISA report is the relationships between engagement and performance. In Appendix 1, the graph indicates that the effect of high engagement can mitigate the effect of socioeconomic status. Schools should be aware of the dangers of conditioning their expectations of pupils by socio-economic status, while ignoring the reading engagement factor, over which they have more potential influence. In addition, schools should of course seek to foster high interest in a wide range of reading activity, while being aware that sustaining high engagement with reading is more important, and that the one does not lead automatically to the other.

Since performance was associated with access to reading materials and cultural artifacts, schools should work to ensure that all students are surrounded in their classrooms, school libraries, and elsewhere by new, interesting and diverse reading materials, and teachers should work to facilitate the access to those materials. Schools together with local authorities and institutions should develop

culturally relevant programs to reduce inequality of opportunity and cultural bias. IRA National Affiliates might have here a good opportunity for their work.

Strategic self-management and elaboration strategies were consistently related to reading performance. Where the prevailing culture does not currently emphasize student strategic self-management of learning, this needs to be introduced to give some balance to learning opportunities and prepare the student for an unpredictable but undoubtedly rapid-paced future. The difficulty of this for teachers unused to such approaches is acknowledged.

Where the prevailing culture does not currently emphasize elaboration strategies, this needs to be introduced to give some balance to learning opportunities and prepare the student for an unpredictable but undoubtedly rapid-paced future. The difficulty of this for teachers unused to such approaches is acknowledged, and both pre-service and in-service training for teachers should be provided which enhances understanding of deeper learning processes and to promote richer process approaches to teaching and learning.

Because pressure to perform was negatively associated with reading performance, schools and teachers should be aware that pressuring students to read is counter-productive, and consult with students to identify alternative practices that might be more successful, subsequently evaluating such practices.

Because teacher qualifications are associated positively with reading performance teachers should be encouraged and supported to improve their qualifications, provided the learning experiences involved are relevant to the demands of their post and delivered to good quality standards. National and local governments, schools and teachers should note that central prescription of teaching practices does not appear to raise standards - in fact, the converse - and act accordingly.

National and local governments, schools and teachers, and other vested interests, should note that reducing the staff:student ratio has no measurable effect on achievement within the band 1:10 through 1:25, and might have deleterious effects at lower SSRs - and act accordingly.

Current schemes to afford additional support to students learning the native language as an additional language are clearly not as effective as is desirable, although the many difficulties here are acknowledged. Further development and dissemination of effective evidence-based practices is needed, together with rigorous quality control.

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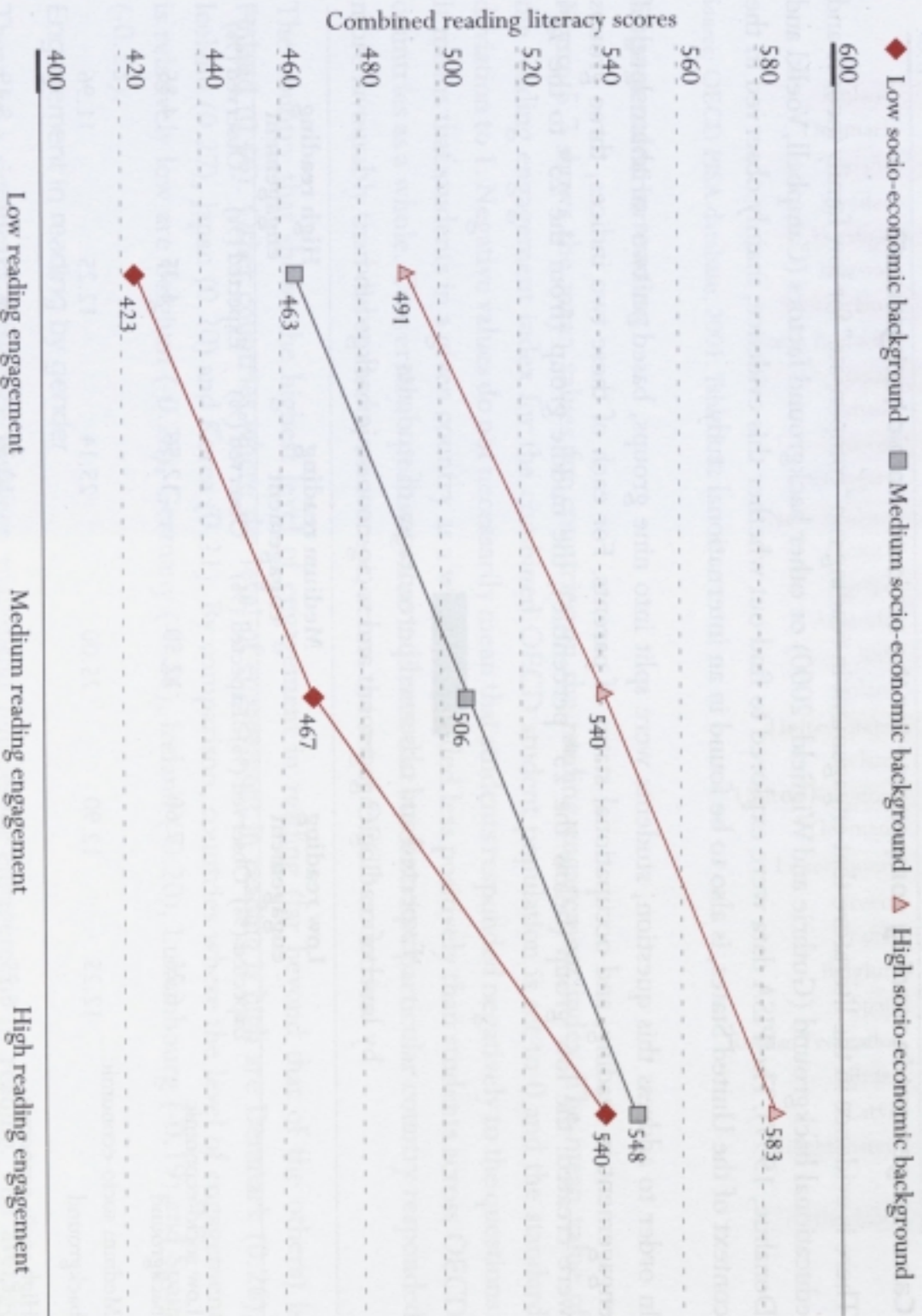
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Reading literacy performance and socio-economic background by level of reading engagement



Source: OECD PISA database, 2001, Table 5.9.

Appendix 2

An Exploratory Analysis of Relationships between Gender And Achievement

In most countries the majority of the 18% of students unable to reach the first of five proficiency levels or who reached only Level I, which required the most basic type of thinking about text, were found to be male. In the United States, for instance, while the achievement gap between boys and girls in math and science has narrowed to near negligible differences, the disparity in reading has been increasing over the past decade. In 1992, the National Assessment of Educational Progress (NAEP) reading test results placed 12th grade boys on average 10 points lower than girls. By 1998, however, the difference had increased to 15 points.

This global pattern of female superiority in reading literacy deserves careful analysis. Three salient explanations have been offered as having a direct bearing on these findings. First, it has been argued that television and other popular electronic media have enjoyed an inordinate degree of cultural penetration around the world, promoting iconographic and stereotypic models of gendered behavior. Boys and men are cast as "action figures" while girls and women are more often displayed in passive, nurturing, and domestic roles. Stereotypic models of masculinity leave little room for contemplative or quiet moods necessary for traditional book reading. Impressionable youth who spend many hours with these media are indoctrinated into a kind of gender cult that polices how boys and girls act and with whom they interact. Furthermore, time spent with these media displaces time young people could be spending with traditional print sources.

For children of color, or for those in lower socioeconomic communities, gender policing could be said to reach totalitarian levels. For some, being branded a "schoolboy" might mean a life of verbal and physical abuse. Personal narratives of African-American and Latino-Americans who by dint of sheer perseverance and personal effort were able to rise above their economically and academically disadvantaged circumstances tell of harrowing experiences of hiding books as gang members close in, outwardly playing the fool while working diligently on schoolwork at home, and other such survival tactics.

Another interesting explanation has to do with what some have termed our "feminized" school environments. In the United States, for example, 75% of K-12 teachers are women. At the elementary level the percentage of female teachers is above 90%. While PISA reports do not include gender statistics for teachers globally, other PISA countries' (e.g., Canada, Australia, the United Kingdom) teaching forces have a similar gender make-up to the U.S. Precisely how this affects boys' literacy development and perceptions is not clear; however, some have speculated that female teachers have expectations for classroom decorum and sanction certain texts that may be in conflict with young men's sense of how males behave and what they read. When this phenomenon is considered in combination with the influence of popular media on boys' developing perceptions of masculinity, it becomes easier to understand why many male youth may be rejecting reading on the grounds that it's a "girl thing."

A third explanation is related to the matter of which texts are sanctioned in secondary school language curricula. The PISA reading literacy reports take great pains to emphasize the importance of reading engagement on achievement. Engagement is a multidimensional factor concerned with students' levels of interest in learning and their abilities to control the learning process. If boys are repeatedly asked to read books unrelated to their needs and interests, they may become disengaged learners. It is important to point out that the narrowest gap in performance between boys and girls was on tasks related to non-continuous text, (such as responding to questions about graphs and charts) suggesting that these types of reading tasks are more interesting to boys.

To propose broad gender-specific recommendations for reading literacy improvement is to risk another form of sexual stereotyping. With respect to adolescent males, thinking about them monolithically, as though there is only one way to be masculine, may lead to literacy schemes that fail to meet the unique needs certain boys. Nonetheless, adolescence is a period marked by enormous peer pressure, and there is plenty of evidence to suggest that many teenage boys are turning off to reading because of actual and likely recrimination and reprisals from male classmates who associate traditional book literacy with "schoolboys," "nerds," and "poofters".

Addressing the phenomenon that boys underachieve in reading literacy across the globe will require culturally-sensitive and multidimensional initiatives. One overarching guideline, however, must be the recognition that the reading material matters. Teachers everywhere in the world who are interested in providing a responsive literacy curriculum for boys must make an effort to discover what boys might already like to read and what they like to do in order to introduce them to reading material related to their outside-of-school interests. Language teachers who cling to their particular country's corpus of canonical texts will need to make room for new, alternative texts that have greater appeal to adolescent male readers.

Since reading engagement appears to compensate for risk-of-failure characteristics, such as low socio-economic status and male, every effort should be made to provide adolescent boys language schemes that enlist their active participation, capture their imaginations, and provide them tools for controlling their own academic destinies.

Finally, it is unrealistic to expect the gender make-up of our global teaching force will change on its own; therefore, greater effort should be made to recruit more male teachers, especially in countries where their numbers are limited. This recommendation presumes that boys are in need of many more interactions with adult literate models who are male to help reinforce a connection between active literacy and masculine identity.