



# *A View Inside Primary Schools:* *A World Education Indicators (WEI) cross-national survey*

**Yanhong Zhang**  
**UNESCO Institute for Statistics**

**04 June 2008**

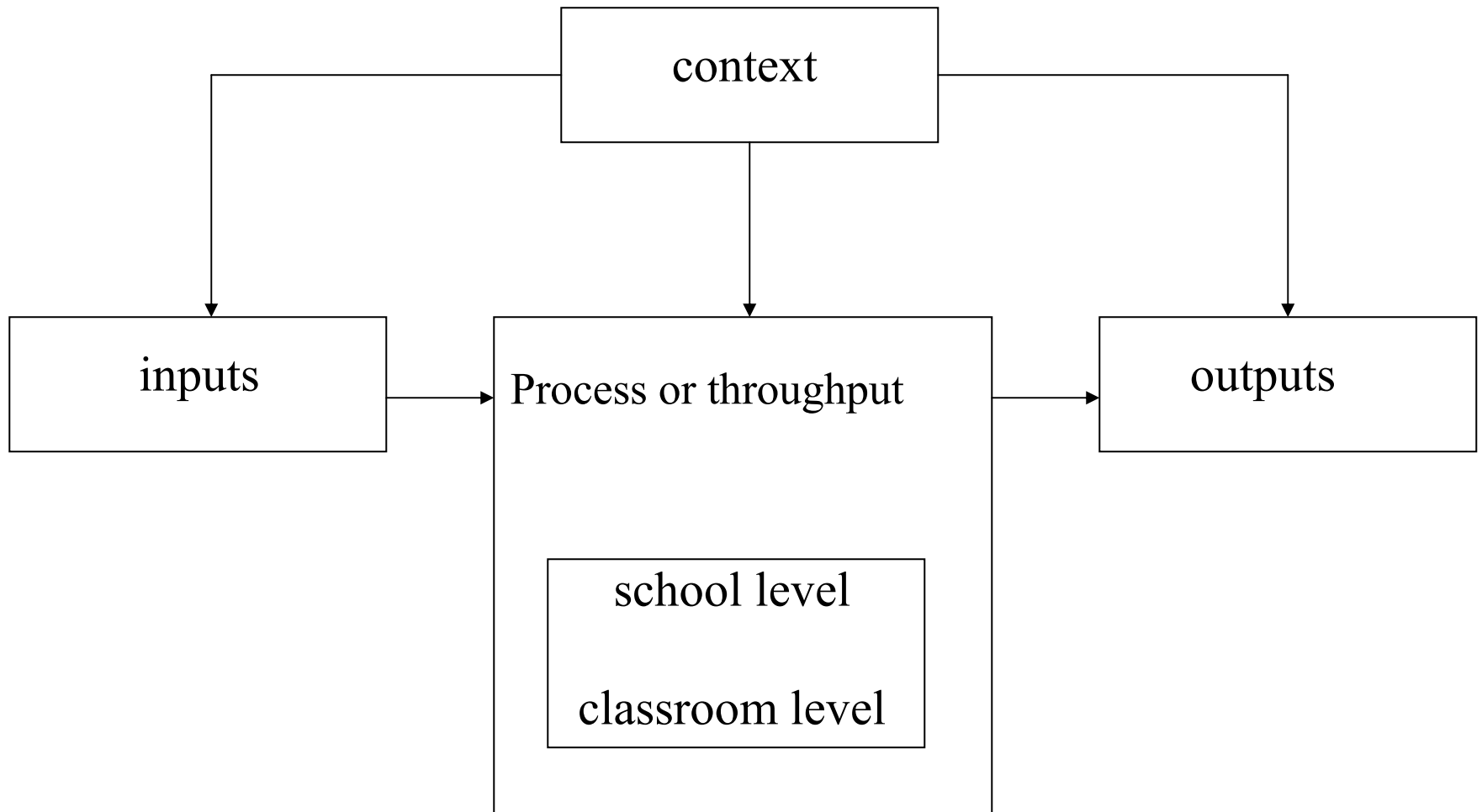
# Today

- Survey of Primary Schools
  - World Education Indicators programme
  - Framework
  - Sample
  - Questionnaires
  - Participating countries
- Main findings
  - School physical conditions
  - Instructional time
  - School processes: perceived pupil motivation, teacher professional satisfaction, pupil-centred teaching practices
  - Opportunity to learn in reading

# World Education Indicators programme

- Began as a pilot project in 1997 with 2 countries, expanding to 19, covering every region of the world and coordinated by a joint UNESCO/OECD secretariat;
- Primary aim of the project is to develop a small but critical mass of policy-relevant education indicators in an internationally comparable, timely and efficient manner;
- Special projects to improve the comparability or broaden the scope, e.g. levels of decision-making in education, mapping financial flows to educational institutions;
- Funding from the World Bank for its organisation and administration, but participating countries provided their own resources for assembling and reporting the data.
- Argentina, Brazil, Chile, China, Egypt, India, Indonesia, Jamaica, Jordan, Malaysia, Paraguay, Peru, the Philippines, the Russian Federation, Sri Lanka, Thailand, Tunisia, Uruguay and Zimbabwe; together comprise more than 70 per cent of the World's population.

# Survey of Primary Schools: A basic systems model of school functioning



# Sample design

- International target population:
  - ➔ “All schools with students enrolled in the fourth grade, as well as all teachers within these schools that are teaching language arts/reading and/or mathematics/arithmetic to grade 4 students.”
  - ➔ Intended to provide full coverage of all eligible schools, i.e., schools with grade 4 students, in a country's education system.
- Stratified, systematic sampling: First selecting schools, then all teachers of Grade 4 reading/language and mathematics/arithmetic
- Final sample included over 7,600 schools and almost 16,800 teachers

# School questionnaire

- community profile, type of school administration, funding sources, enrolment size, grades and classes offered, and school hours;
- school resources, the school head's perception of the adequacy of resources and staff, and maintenance of school buildings;
- composition of pupil intake, admission policies, pupil attitudes and behaviours;
- profiles of the school head and staff, e.g. age, sex, level of education, pre- and in-service training, stability of staff, school job vacancies and time to fill them, daily activities and tasks, and teaching hours;
- school management, e.g. visits by school inspectors and advisors for various reasons, decision-making procedures, parental involvement in schools and use of pupil assessments.

# Teacher questionnaire

- background characteristics, such as sex, age, experience as a teacher, level of education and inservice training;
- working conditions, such as self-perceived status, satisfaction with salary, class size and number of work shifts;
- professional satisfaction;
- instructional conditions, such as classroom resources, instruction time, classroom management and organization, classroom climate, student assessment at classroom level, teaching styles, school goals and achievement expectations.

# Questionnaires for Opportunity to learn (reading)

- Based on a benchmark text borrowed from the IEA/PIRLS study.
- Administered to
  - ➔ Grade 4 teachers in all sampled schools (implemented)
  - ➔ Experts from the National Curriculum Centre (intended)
- Difficulty of the reading materials typically used by grade 4 teachers compared to the benchmark text;
- Variety of texts used by Grade 4 teachers;
- Types of reading questions usually asked of Grade 4 pupils (preferred types of reading activities).



# Which countries participated?

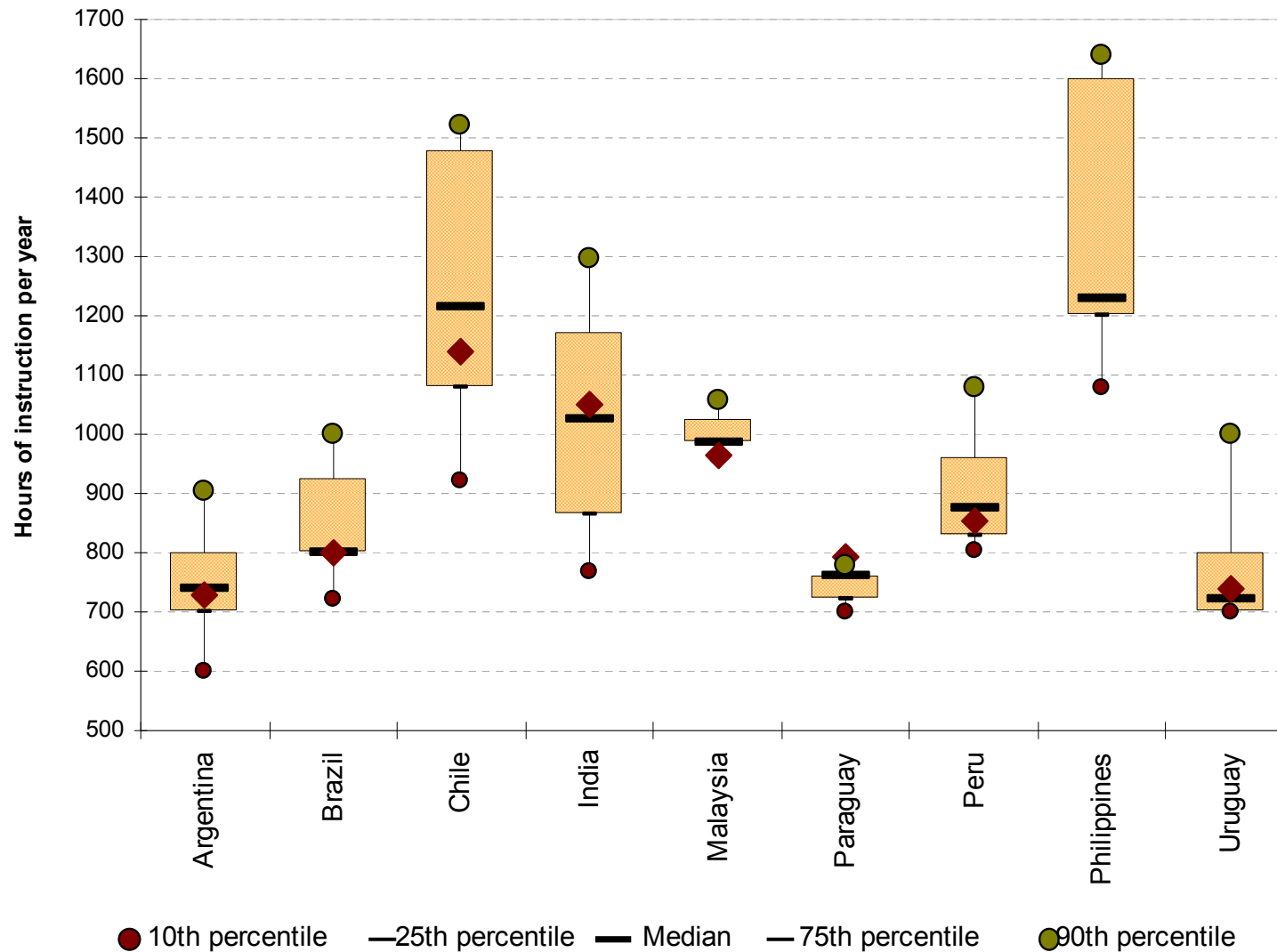
- Total of 12 countries implemented the survey but
- 11 of these known to have met technical standards:
  - 6 in Latin America: Argentina, Brazil, Chile, Paraguay, Peru and Uruguay
  - 4 in Asia: India, Malaysia, Philippines and Sri Lanka
  - ... and Tunisia

# Instructional time



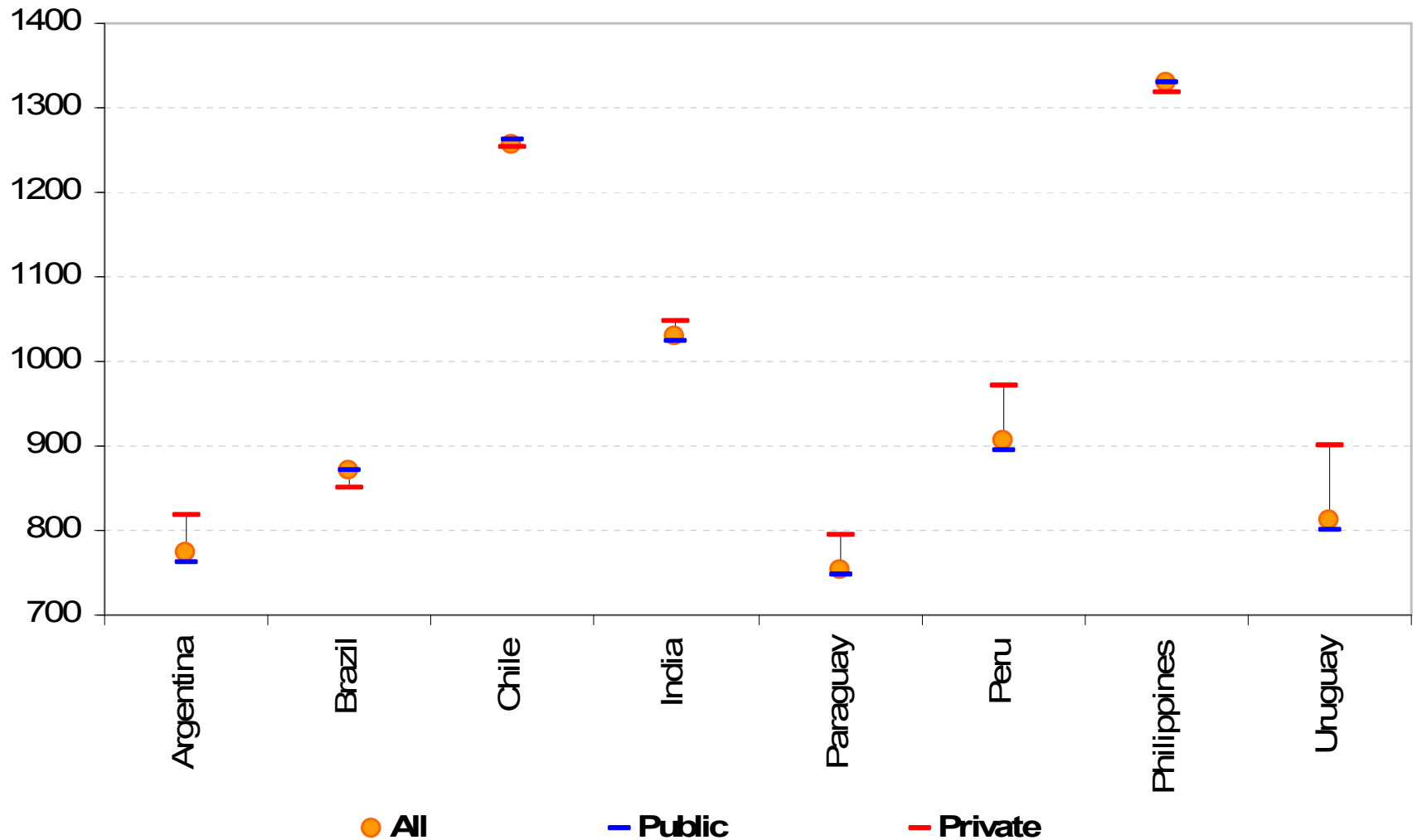
# Some pupils received more instruction time than others

*Number of school hours per year by distribution of Grade 4 pupils*



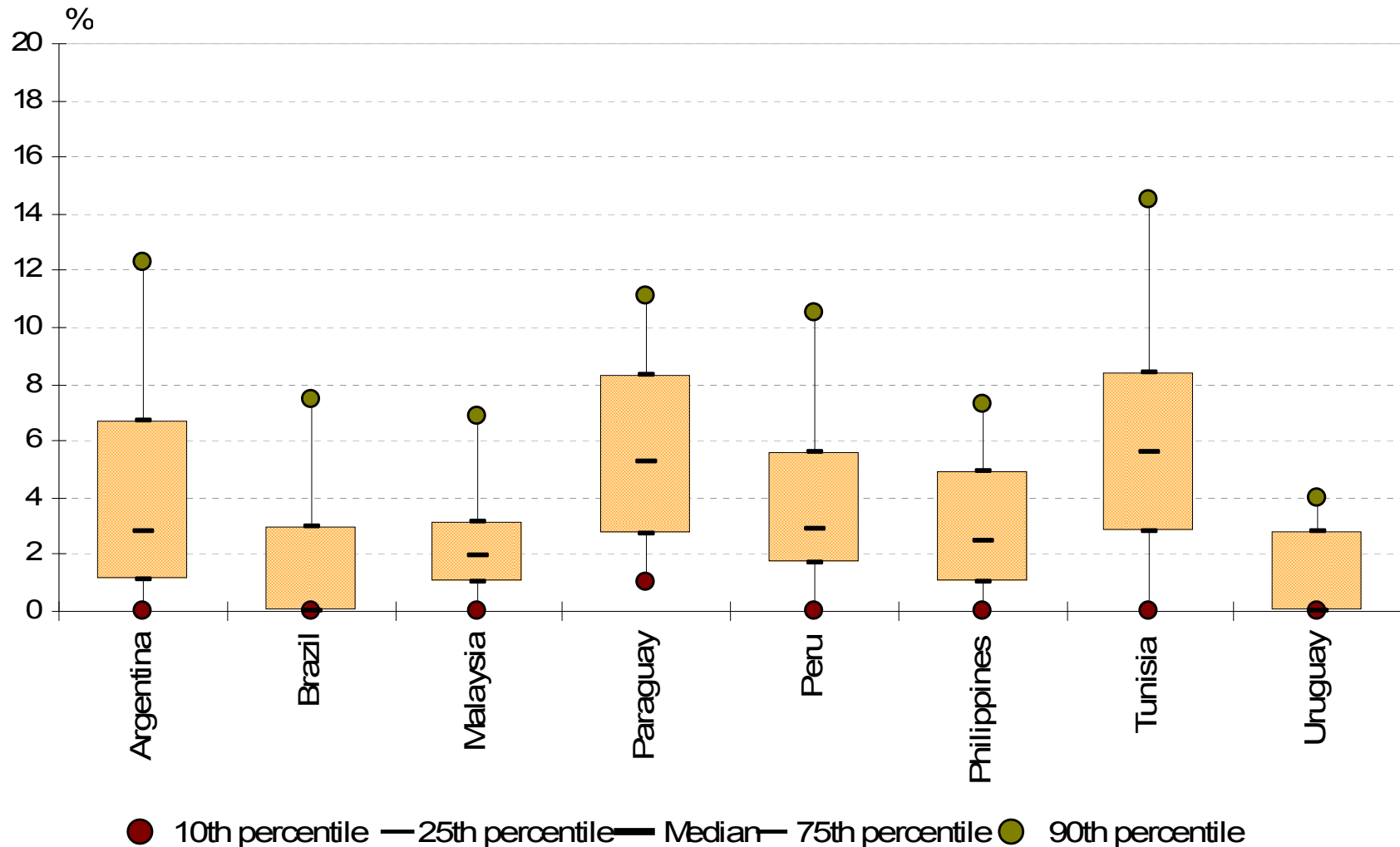
... and some of that difference was due to the type of school that a pupil attended

*Mean number of school hours per year for Grade 4 pupils by school type*



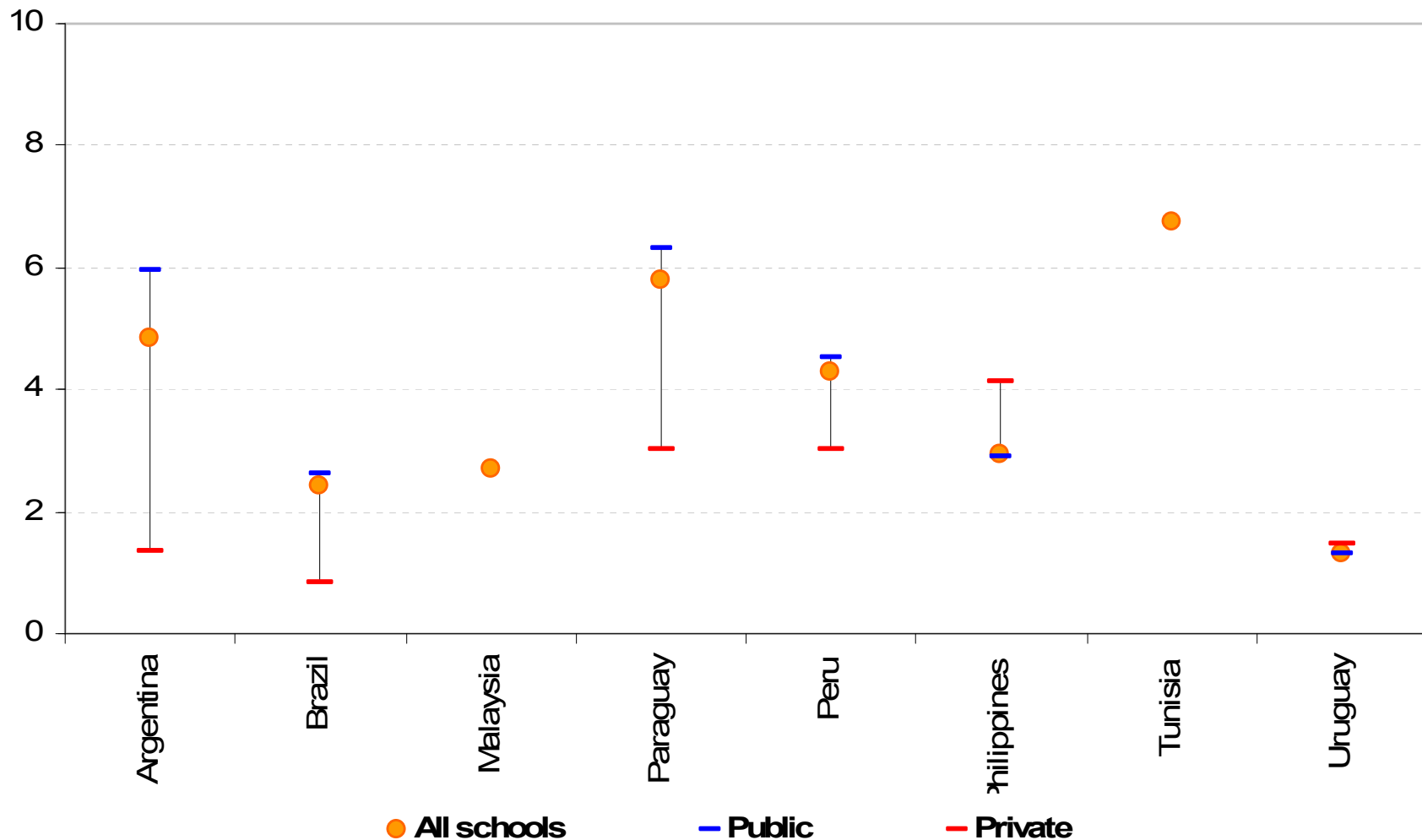
# Schools enrolling ten percent of the pupils in some countries lost over 10% of the school days

*Number of school days lost as a percentage of official schools days*



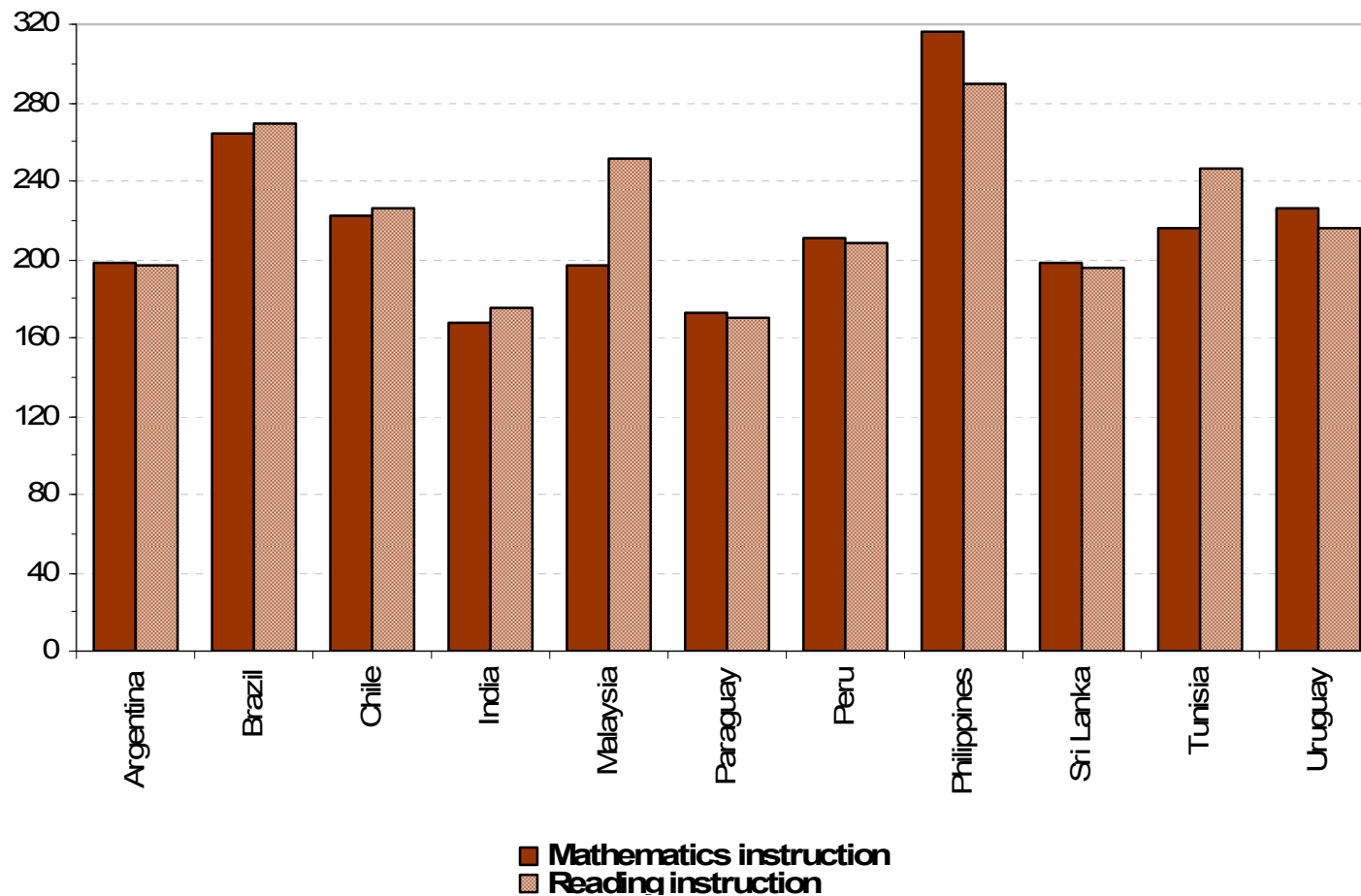
# In most cases, loss of school days was more serious a problem in public schools

*Lost school days as a percentage of total number of school days by school type*



Grade 4 pupils in the Philippines received about 1/3 more instruction time in reading/mathematics than those in India and Paraguay

*Annual number of hours for reading and mathematics instruction*



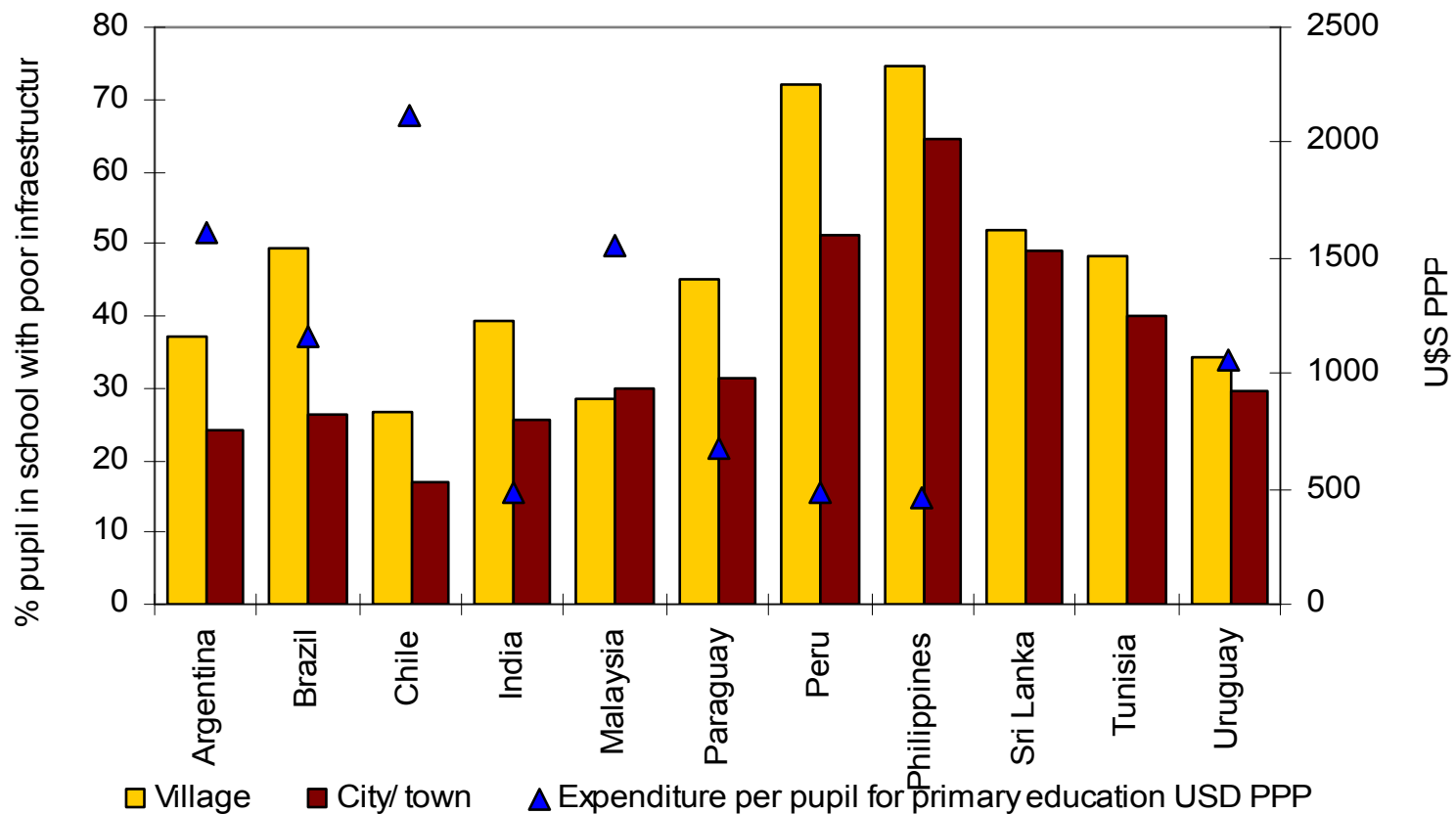
# Physical conditions of schools





# Schools serving large numbers of primary pupils in many WEI-SPS countries were reported to be in need of major improvements ...

Percentage of primary pupils in schools with poor infrastructure and expenditure per pupil in primary education



# School resources

School heads were presented a list of 31 items:

- Electricity
- Water
- Blackboard
- Writing places
- Sitting places
- Toilets for girls
- Toilets for boys
- Safety equipment
- Library
- Staff room
- Cafeteria
- Sports field
- First-aid kit
- Audio-visual room
- Science laboratory
- Microscope
- Telephone
- Fax machine
- Photocopier
- TV set
- Radio
- Tape recorder
- Overhead projector
- VCR
- Maps
- Computers for administrative use
- Computer-based management system
- Computers for pupils to use with access to Internet
- Computers for pupils without Internet
- Website of the school
- Intranet within the school

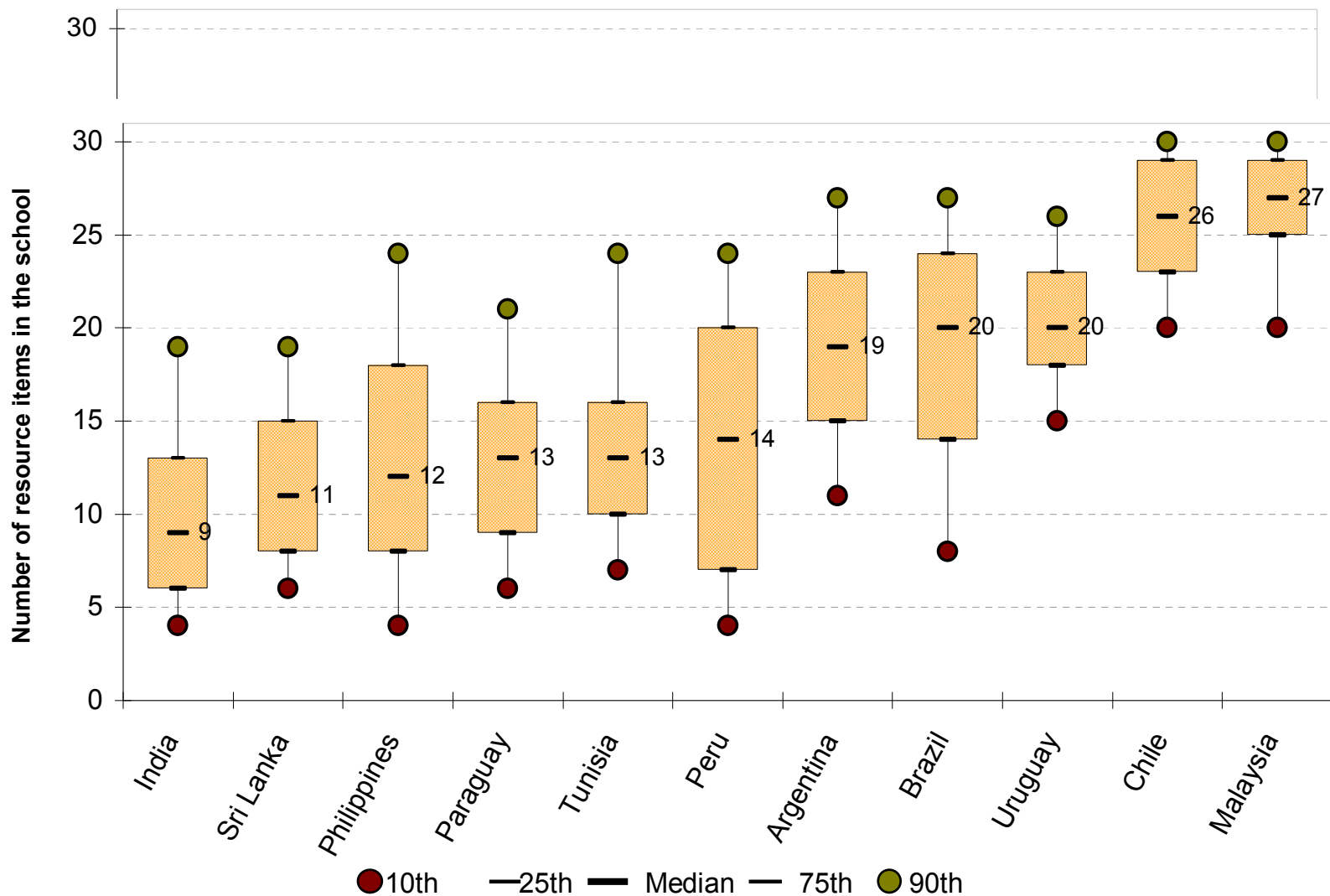
## Some countries still do not have sufficient basic resources...

Percentage of pupils in schools that were reported to have selected resource items

Country	Electricity	Running water	Blackboard in each classroom	Sufficient writing places	Sufficient girls toilets	School library	Students without computers
Argentina	98.7	86.8	98.9	88.9	79.5	79.7	48.0
Brazil	94.5	87.2	99.4	92.7	82.2	62.0	63.5
Chile	99.4	98.5	99.5	99.0	92.4	85.6	2.7
India	47.6	86.4	95.2	40.6	60.4	64.5	85.3
Malaysia	98.4	96.5	100.0	95.4	88.8	96.6	21.1
Paraguay	96.6	81.3	99.0	84.7	69.5	53.3	86.2
Peru	76.4	83.8	98.0	70.3	52.7	63.9	54.5
Philippines	89.0	70.1	98.9	72.7	53.0	53.1	76.0
Sri Lanka	79.1	76.8	91.1	57.5	32.8	47.6	79.5
Tunisia	98.3	90.2	98.7	84.9	61.7	54.6	56.8
Uruguay	100.0	99.1	99.7	87.8	83.8	93.4	38.5
WEI-SPS Median	96.6	86.8	98.9	84.9	69.5	63.9	56.8

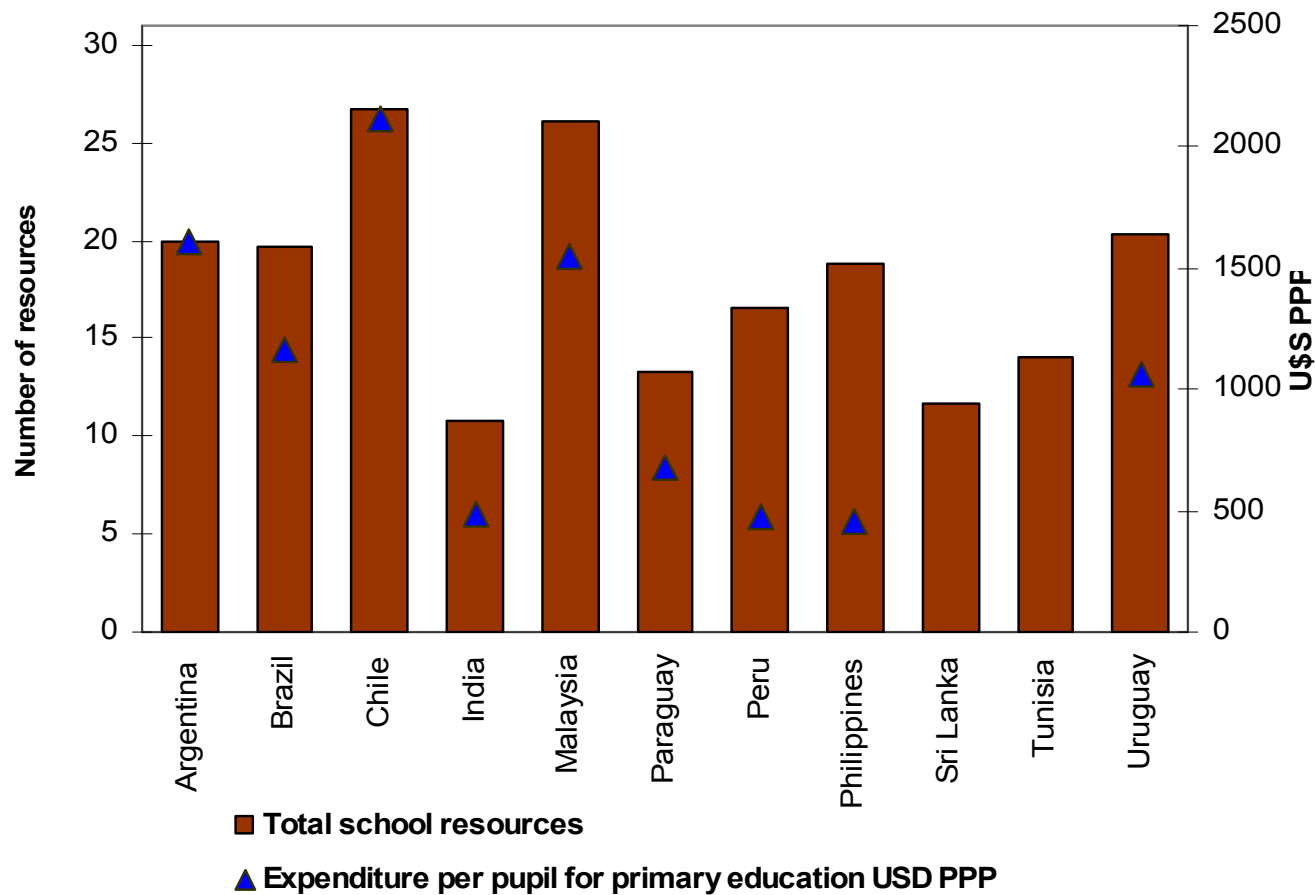
# Within most countries, some schools had three or four times as many of the resource times as others

*Number of school resource items by the distribution of the primary pupil population*



# India and Sri Lanka on average had the fewer number of school resource items

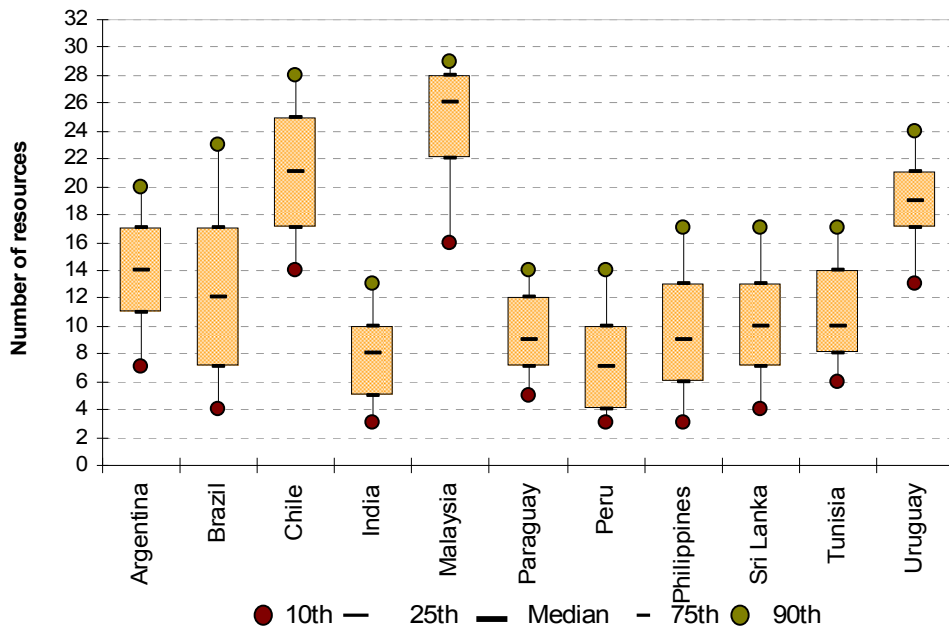
*Expenditure per primary pupil and total number of school resource items (31 max)*



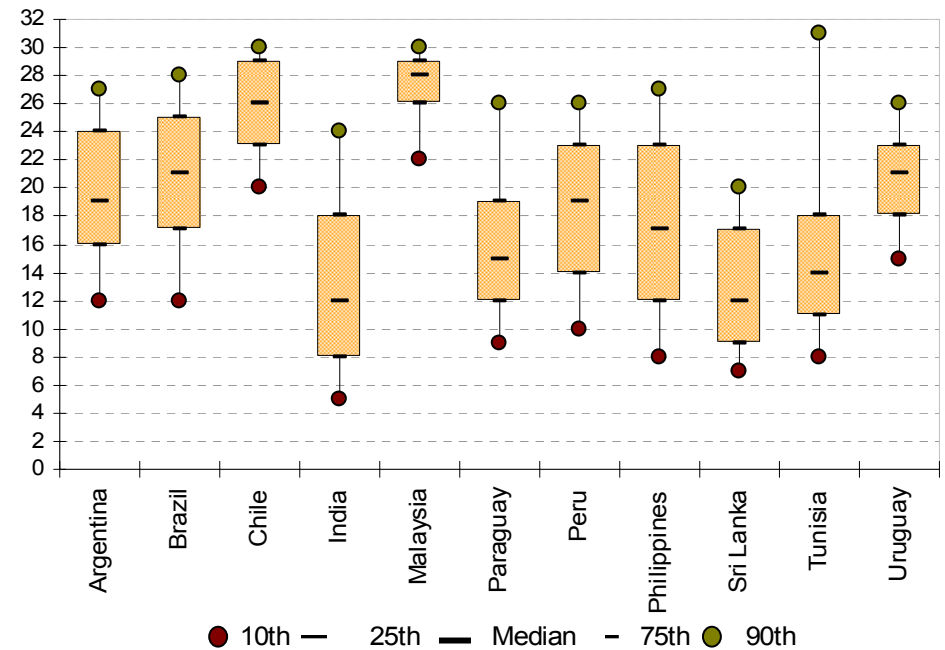
# Big disparities within and between countries...

*Number of school resources by distribution of the primary pupil population*

## Village



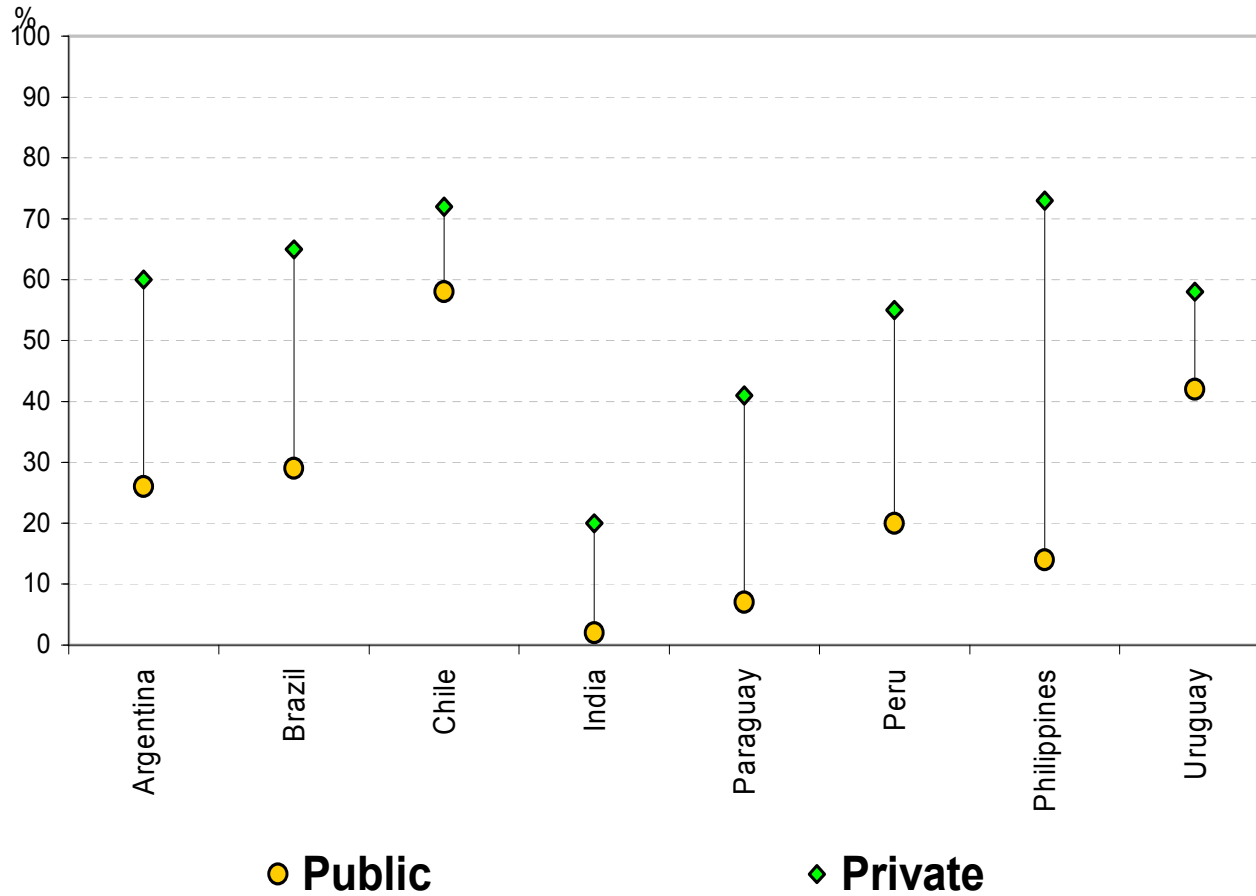
## City/Town



# Electricity / water by school location



# Computers by type of school





# Strong relationship between differences in school resource items and the pupil backgrounds

*Correlation between school resources and Social advantage of school intake*

	Correlation coefficient	SE	Percent of variation in one variable related to that in the other
Argentina	0.62	0.025	38.9
Brazil	0.39	0.040	15.4
Chile	0.42	0.034	17.9
India	0.51	0.037	25.7
Malaysia	0.38	0.053	14.7
Paraguay	0.49	0.030	24.5
Peru	0.63	0.030	39.1
Philippines	0.44	0.034	19.6
Sri Lanka	0.28	0.046	7.8
Tunisia	0.34	0.040	11.8
Uruguay	0.44	0.035	19.4
WEI median	0.44		19.4

# School processes



# Pupil motivation (teacher reports)

*Approximately how many of your Grade 4 students would you ESTIMATE to have the following attitudes?*

*(‘None or a few students’, ‘Most students’ and ‘All students’)*

- *Students enjoy being at school;*
- *Students work with enthusiasm;*
- *Students take pride in this school;*
- *Students value academic achievement;*
- *Students are cooperative;*
- *Students value the education they can receive in this school;*
- *Students do their best to learn as much as possible;*
- *Students show a sense of belonging to the class;*
- *Students are respectful.*

# Overall, pupils were perceived to be highly motivated

Percentage of Grade 4 pupils with teachers stating 'most' or 'all' of their pupils had the following attitudes



# Within countries, level of perceived motivation higher in more advantaged classroom

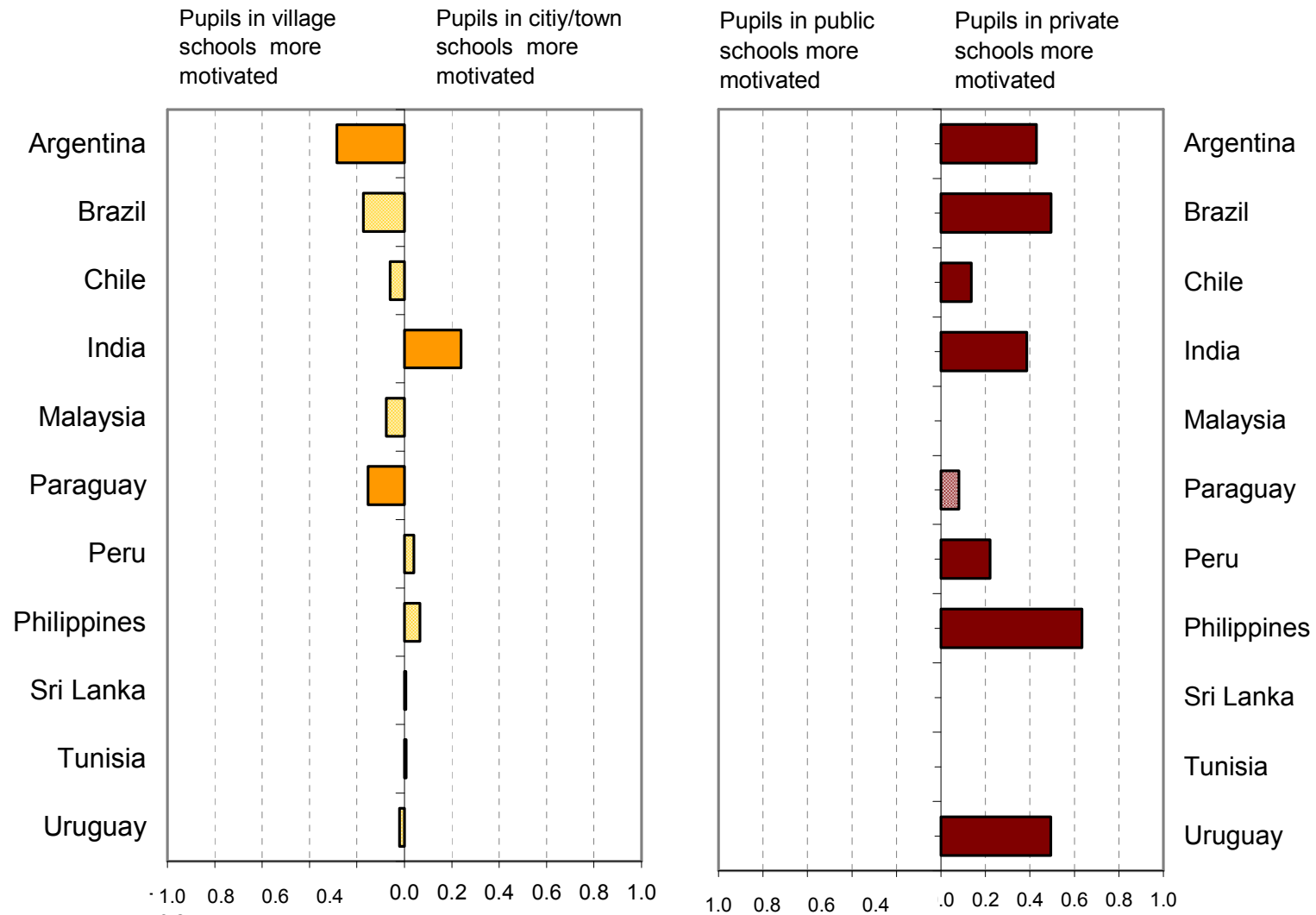
*Correlation coefficients between index of Teacher-perceived pupil motivation and selected classroom characteristics*

Country	Social advantage of classroom intake	Number of classroom resources	Percent having repeated a grade	Distance to amenities
Argentina	<b>0.295</b>	<b>0.119</b>	<b>-0.229</b>	<b>0.064</b>
Brazil	<b>0.280</b>	<b>0.159</b>	<b>-0.247</b>	<b>0.111</b>
Chile	<b>0.159</b>	<b>0.142</b>	<b>-0.122</b>	0.030
India	<b>0.268</b>	0.035	0.005	-0.040
Malaysia	<b>0.188</b>	0.051	m	-0.027
Paraguay	<b>0.126</b>	0.042	-0.059	<b>0.073</b>
Peru	<b>0.121</b>	<b>0.071</b>	-0.045	-0.026
Philippines	<b>0.255</b>	0.070	-0.062	<b>-0.075</b>
Sri Lanka	<b>0.221</b>	0.058	-0.081	-0.053
Tunisia	<b>0.219</b>	<b>0.171</b>	-0.068	0.077
Uruguay	<b>0.453</b>	<b>0.190</b>	<b>-0.385</b>	-0.012

\*Correlations significant at p.0.5 appear in bold.

# In addition, pupils in private school tended to be perceived as more motivated

*Differences in index of Teacher-perceived pupil motivation*



\* Differences that are significant at  $p < 0.5$  appear in bold.

# Teacher professional satisfaction (teacher report)

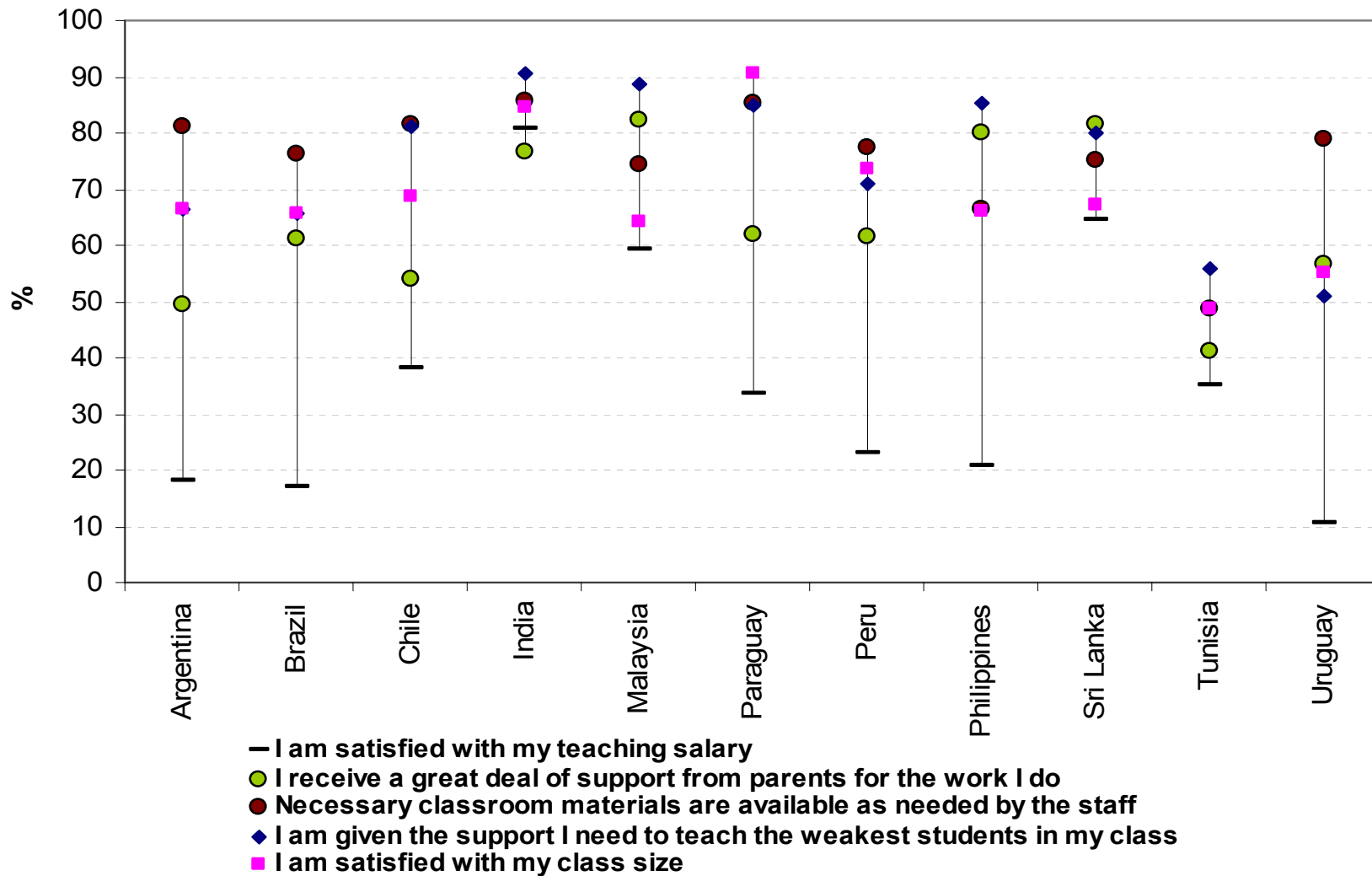
*How strongly do you agree or disagree with the following statements?*

*(‘Strongly disagree’, ‘Disagree’, ‘Agree’, ‘Strongly agree’)*

- *I am satisfied with my teaching salary;*
- *I receive a great deal of support from parents for the work I do;*
- *Necessary classroom materials are available as needed by the staff;*
- *I am given the support I need to teach the weakest students in my class;*
- *I am satisfied with my class size.*

# Self-reported teacher professional satisfaction differed by country and issue

Percentage of Grade 4 pupils with teachers reporting to 'agree' or 'strongly agree' to the following statements





## However, self-reported professional satisfaction was higher in more advantaged schools and more motivated pupils

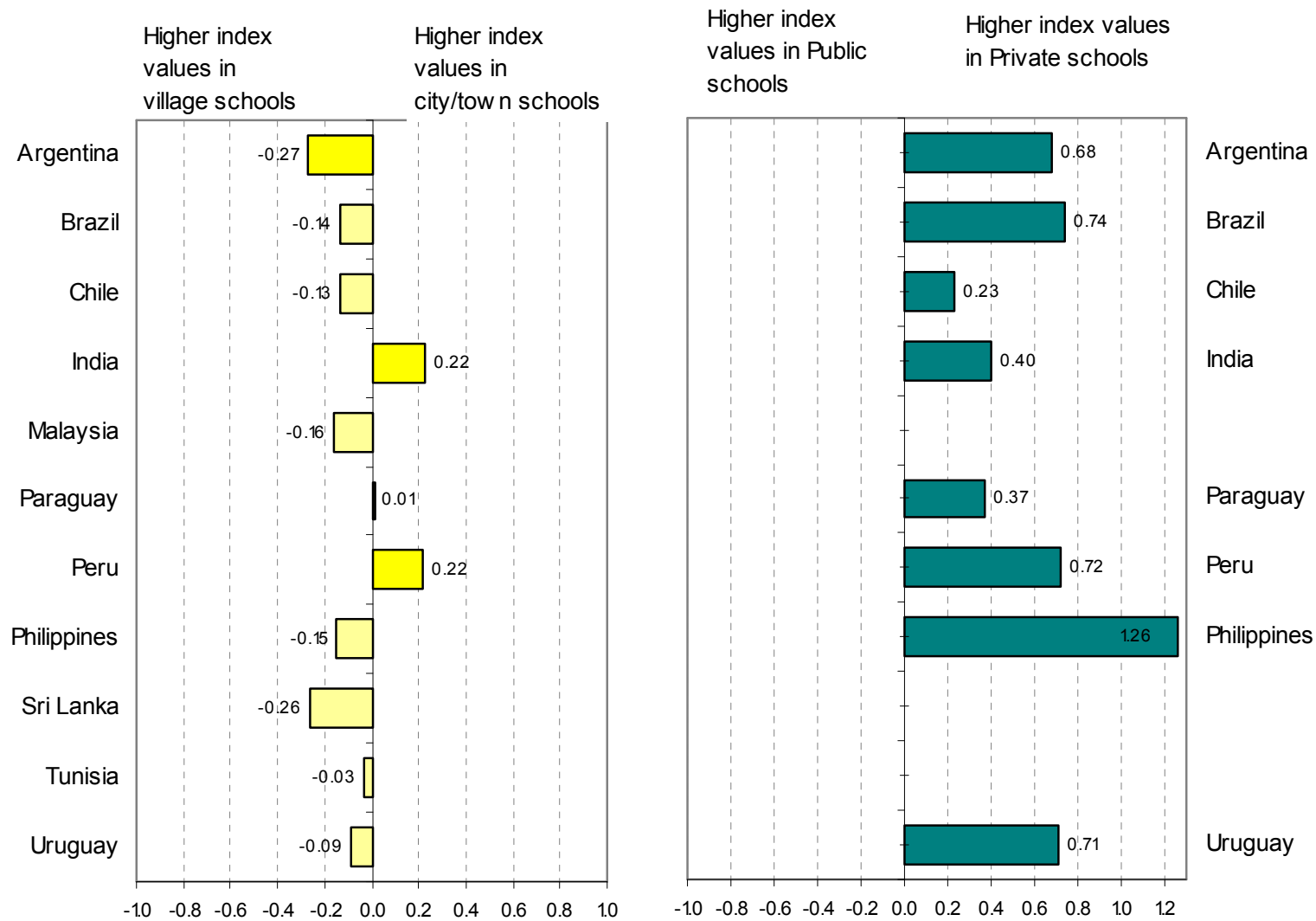
*Correlation coefficients between index of Teacher-perceived professional satisfaction and selected classroom characteristics*

Country	Index of social advantage of classroom intake	Number of classroom resources	Percentage of pupils repeating a grade	Perceived pupils motivation
Argentina	<b>0.32</b>	<b>0.16</b>	<b>-0.12</b>	<b>0.31</b>
Brazil	<b>0.32</b>	<b>0.27</b>	-0.10	<b>0.35</b>
Chile	<b>0.22</b>	<b>0.15</b>	<b>-0.11</b>	<b>0.41</b>
India	<b>0.36</b>	<b>0.13</b>	-0.02	<b>0.48</b>
Malaysia	0.06	-0.02	a	<b>0.25</b>
Paraguay	<b>0.15</b>	<b>0.23</b>	-0.06	<b>0.26</b>
Peru	<b>0.27</b>	<b>0.13</b>	<b>-0.11</b>	<b>0.30</b>
Philippines	<b>0.21</b>	0.08	0.00	<b>0.26</b>
Sri Lanka	0.10	0.03	0.09	<b>0.27</b>
Tunisia	<b>0.22</b>	<b>0.18</b>	-0.02	<b>0.33</b>
Uruguay	<b>0.38</b>	<b>0.19</b>	<b>-0.36</b>	<b>0.47</b>

\*Correlations significant at p.0.5 appear in bold.

# In addition, teachers in private school tended to report higher levels of professional satisfaction

*Differences in index of Teacher-perceived professional satisfaction, expressed as effect sizes*



\* Differences that are significant at  $p < 0.5$  appear in bold.

# Pupil-centred teaching practices (teacher report)

*How often do you perform each of the following activities in your lessons?*

*‘Never or almost never’, ‘In some lessons’ and ‘In most lessons’*

*I ask pupils to summarise out loud what I have explained*

- *When working with the pupils when they are doing assignments, I ask them first how they think dealing with the assignment*
- *When discussing assignments, after they have been carried out, I ask first about the way the pupil has tackled the assignment before providing feedback*
- *I offer pupils the opportunity to compare different strategies to solve problems*

# Teachers of more advantaged pupils tended to practise pupil-centred methods more

*Correlation between the Index of Pupil-centred teacher practices and selected teacher and classroom variables*

Country	Social advantage of classroom intake	Number of classroom resource items	Percentage of pupils in the class who have repeated a grade	Number of years as a classroom teacher	Years of teacher's education
Argentina	<b>0.10</b>	<b>0.08</b>	-0.01	<b>0.08</b>	-0.02
Brazil	<b>0.13</b>	<b>0.12</b>	<b>-0.14</b>	<b>0.12</b>	-0.02
Chile	0.03	<b>0.10</b>	-0.05	<b>0.19</b>	0.00
India	<b>0.14</b>	<b>0.10</b>	-0.01	-0.04	<b>0.11</b>
Malaysia	0.00	<b>0.12</b>	a	<b>0.09</b>	-0.04
Paraguay	0.05	<b>0.11</b>	-0.02	0.06	0.03
Peru	<b>0.11</b>	0.04	-0.03	0.07	-0.03
Philippines	<b>0.12</b>	<b>0.10</b>	-0.05	0.05	0.00
Sri Lanka	0.09	<b>0.13</b>	0.04	-0.02	-0.04
Tunisia	0.05	<b>0.17</b>	-0.04	0.03	0.03
Uruguay	<b>0.14</b>	<b>0.11</b>	<b>-0.09</b>	<b>0.13</b>	a

# Opportunity to Learn: an important malleable variable for policy-makers



## National experts in Latin America reported high prevalence of continuous texts and authentic documents

*National experts' description of the intended curriculum: Types of reading materials to be used in Grade 4 classes*

Country	Fables	Real life	Information	Documents	Basic
Argentina	Very often	Very often	Often	Often	Sometimes
Brazil	Often	Often	Often	Often	Never
Chile	Often	Often	Often	Often	Never
India (Raj.)	Sometimes	Sometimes	Sometimes	Sometimes	Very often
India (Ass.)	Sometimes	Sometimes	Sometimes	Never	Never
India (M.P.)	Sometimes	Sometimes	Sometimes	Often	Often
India (Fed.)	Sometimes	Sometimes	Sometimes	Sometimes	Often
Malaysia	Sometimes	Sometimes	Sometimes	Often	Often
Paraguay	Often	Often	Often	Sometimes	Sometimes
Peru	Very often	Very often	Very often	Very often	Never
Philippines	Sometimes	Sometimes	Sometimes	Sometimes	Sometimes
Sri Lanka	Often	Very often	Often	Very often	Often
Tunisia	Sometimes	Sometimes	Sometimes	Sometimes	Often
Uruguay	Often	Very often	Often	Often	Sometimes

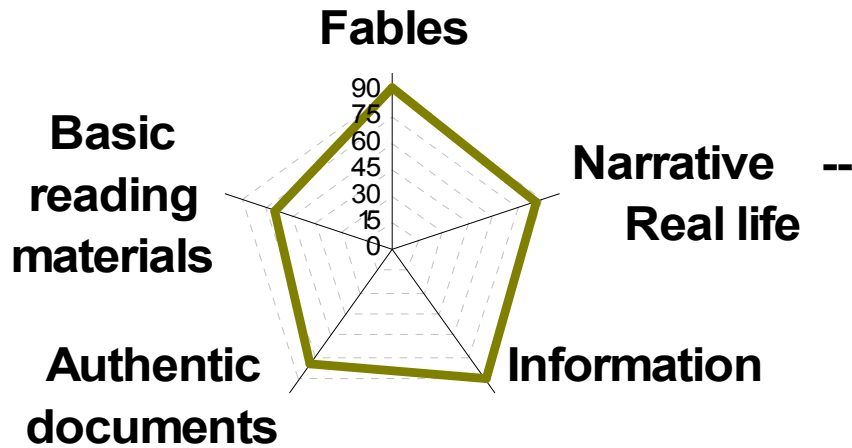
# Teachers reported wide use of basic materials, and other types of texts, except authentic documents

*Percentages of pupils with teachers reported to use 'often' or 'very often' each type of texts*

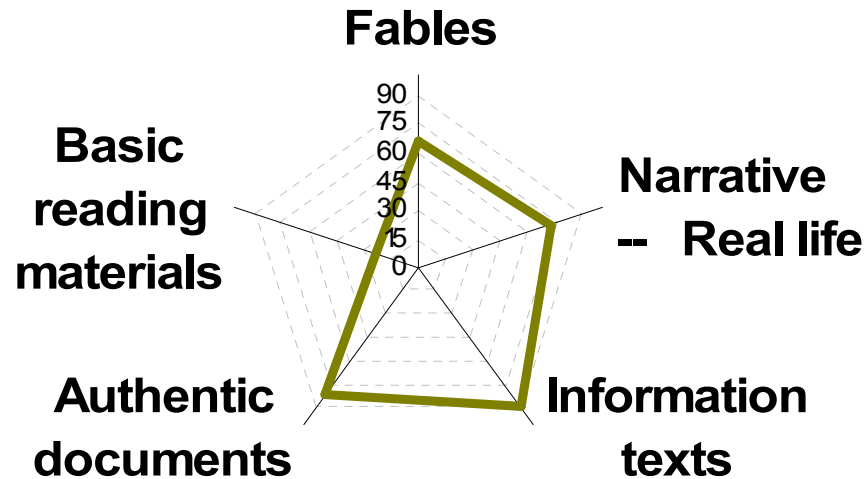
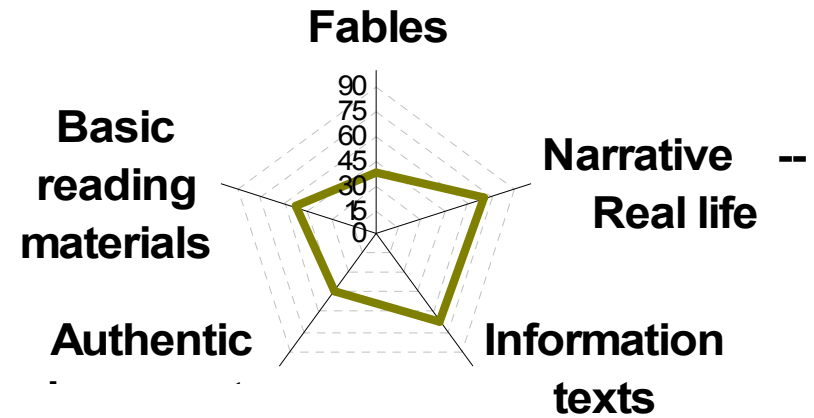
Country	Fables	Real life	Information	Documents	Basic
Argentina	81	66	78	50	44
Brazil	77	77	80	56	35
Chile	91	87	90	79	70
India	53	74	64	64	75
Malaysia	37	69	66	45	53
Paraguay	81	67	65	60	64
Peru	77	81	73	58	69
Philippines	59	78	69	59	79
Sri Lanka	55	74	64	79	82
Uruguay	66	72	90	81	24
Median	71	74	71	59	66

# Patterns of preference for types of reading texts

## Chile



## Malaysia

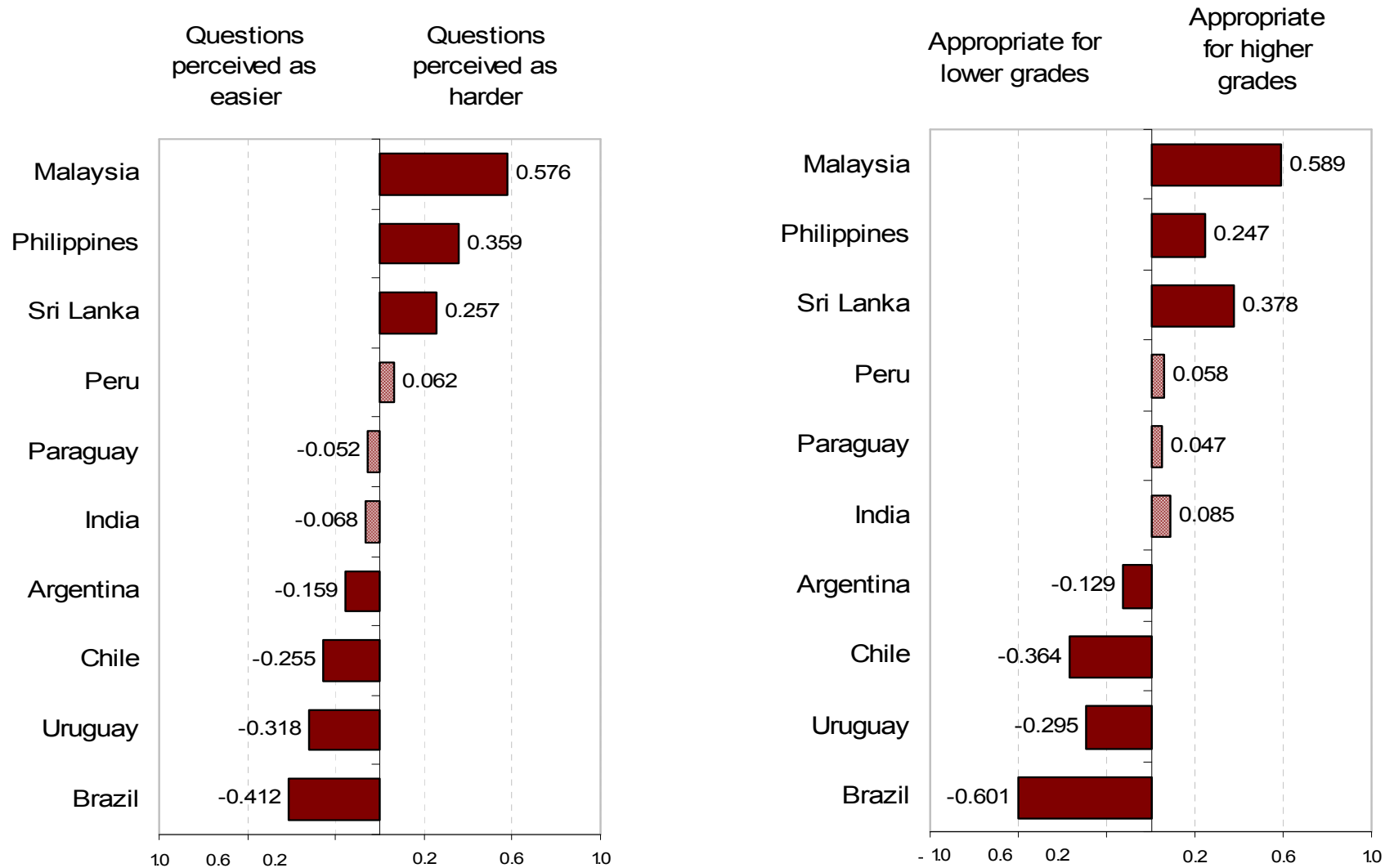


## Uruguay



# Teachers in Malaysia, the Philippines and Sri Lanka reported to use less difficult activities in reading classes

## Mean perceived difficulty of Reading activities



# Pupils in city/town schools and private schools were reported to use more difficult activities

*Effect size of Perceived difficulty of reading activities by school type and school location*

Country	Difficulty	
	Easier in city/town schools	Easier in private schools
Argentina	<b>-0.306</b>	<b>-0.263</b>
Brazil	<b>-0.194</b>	<b>-0.288</b>
Chile	0.079	-0.061
India	-0.010	-0.039
Malaysia	-0.017	m
Paraguay	<b>-0.299</b>	<b>-0.222</b>
Peru	<b>-0.417</b>	<b>-0.408</b>
Philippines	<b>-0.274</b>	<b>-0.673</b>
Sri Lanka	-0.073	m
Uruguay	-0.087	-0.033

Grade	
Lower in city/town schools	Lower in private schools
<b>-0.282</b>	<b>-0.266</b>
<b>-0.212</b>	<b>-0.299</b>
-0.065	<b>-0.261</b>
-0.046	<b>-0.077</b>
-0.055	m
<b>-0.252</b>	<b>-0.175</b>
<b>-0.354</b>	<b>-0.392</b>
<b>-0.291</b>	<b>-0.690</b>
<b>-0.114</b>	m
-0.102	-0.010

# Difficulty of reading activities was also related to pupils' family backgrounds

*Correlations between Perceived difficulty and selected classroom characteristics*

Country	Social advantage of classroom intake	Variety of reading materials	Creative activities	Learning style: active learning
Argentina	<b>-0.19</b>	<b>-0.13</b>	<b>-0.17</b>	<b>-0.14</b>
Brazil	<b>-0.09</b>	-0.06	0.03	<b>-0.14</b>
Chile	<b>-0.11</b>	-0.07	-0.04	-0.08
India	-0.09	-0.01	-0.05	<b>-0.15</b>
Malaysia	0.02	<b>-0.17</b>	-0.06	<b>-0.16</b>
Paraguay	-0.05	<b>-0.13</b>	<b>-0.22</b>	<b>-0.18</b>
Peru	<b>-0.19</b>	<b>-0.17</b>	<b>-0.18</b>	<b>-0.16</b>
Philippines	-0.12	<b>-0.06</b>	0.07	-0.09
Sri Lanka	-0.05	<b>-0.13</b>	<b>-0.16</b>	<b>-0.11</b>
Uruguay	<b>-0.08</b>	-0.07	<b>-0.16</b>	<b>-0.18</b>

# Thank you!

For more information:

<http://uis.unesco.org>



---

INSTITUTE *for* STATISTICS