

ALWAYS  
LEARNING

# Framework for PISA 2015

## What 15-year-olds should be able to do

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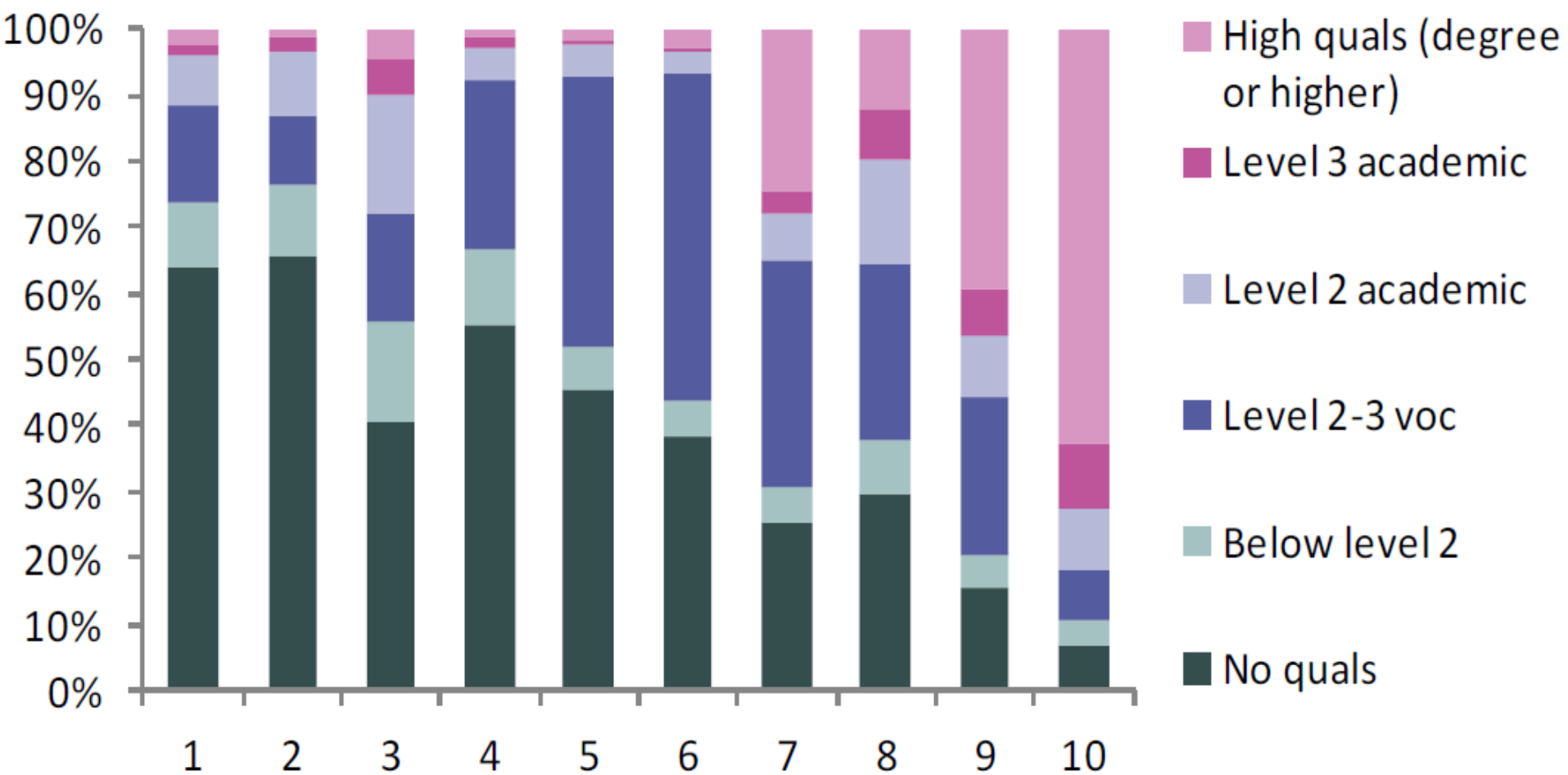
4<sup>th</sup> Annual Conference of Educational Research Center

March 24 -25 2012, Broumana, Lebanon

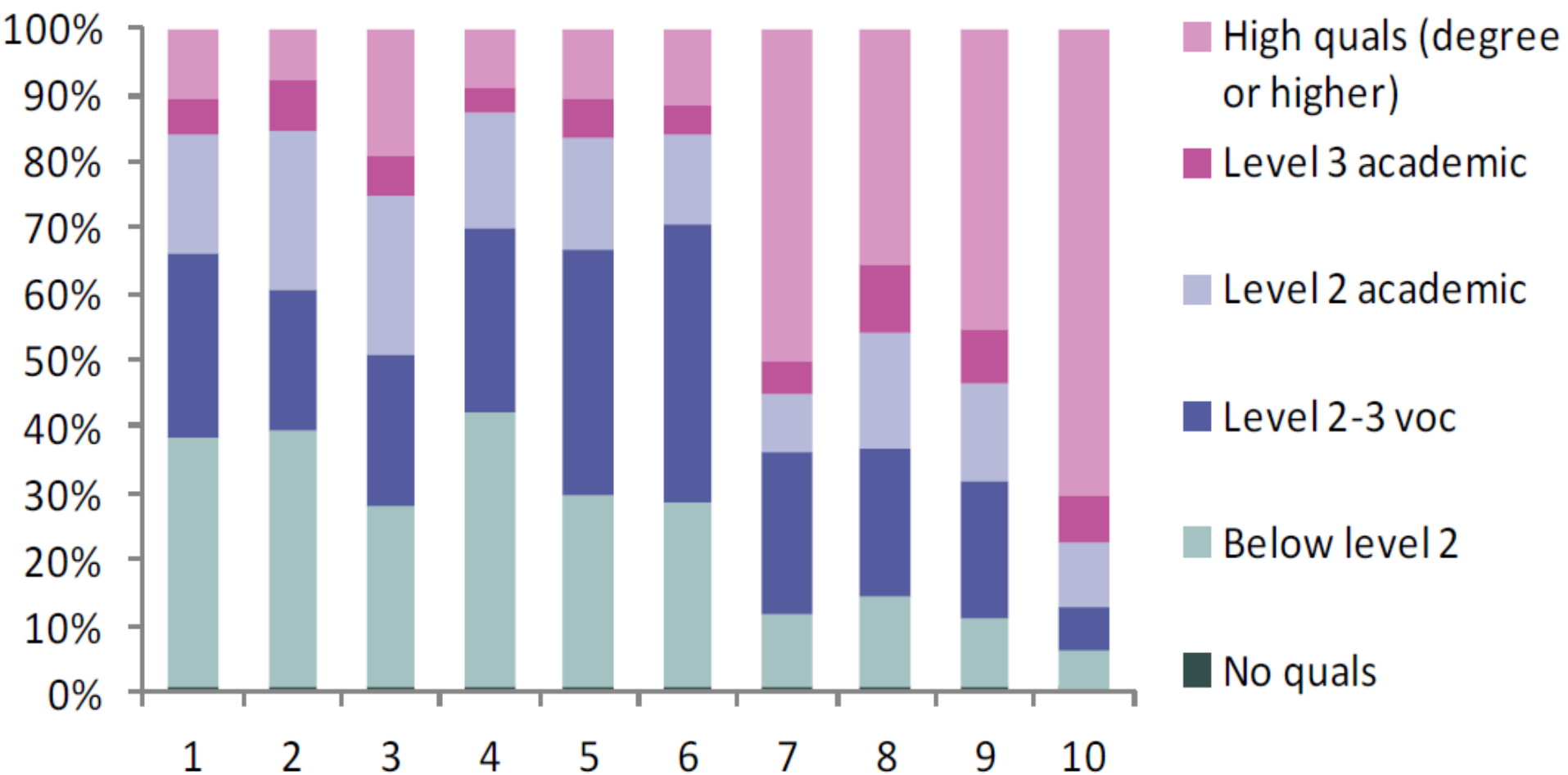
# Categories of occupations according to average salaries

Occupational group	1984	2004	Change
<b>10</b> Managers and Senior Officials	12.1%	15.3%	+3.2%
<b>9</b> Professional Occupations	8.4%	11.8%	+3.4%
<b>8</b> Associate Professional and Technician	10.1%	14.3%	+4.2%
<b>7</b> Administrative and Secretarial	15.0%	12.6%	-2.4%
<b>6</b> Skilled Trades Occupations	16.4%	11.4%	-5.0%
<b>5</b> Personal Service Occupations	4.1%	7.5%	+3.4%
<b>4</b> Sales and Customer Service	6.1%	8.0%	+2.1%
<b>3</b> Process, Plant and Machine Operatives	11.8%	7.9%	-3.9%
<b>2</b> Non-routine elementary occupations	9.1%	6.2%	-2.9%
<b>1</b> Routine Elementary occupations	7.0%	5.1%	-1.9%

**Figure 5.1: Relative share of qualified workers in occupational deciles, 1981**

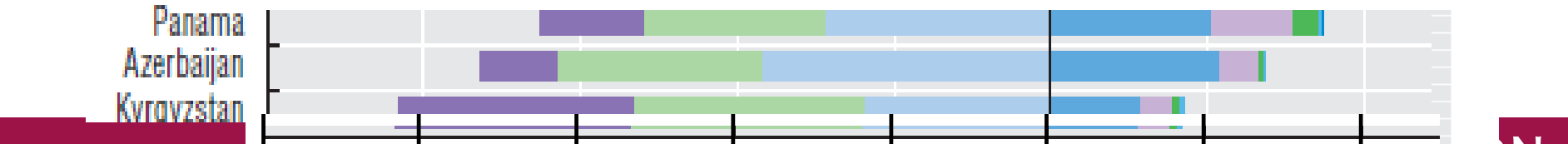
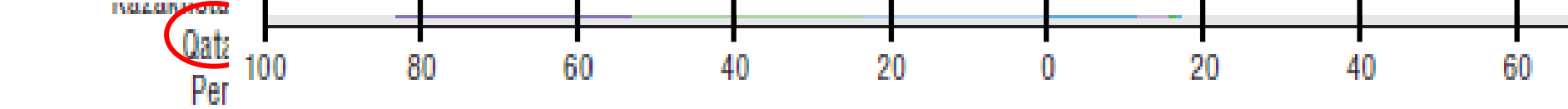
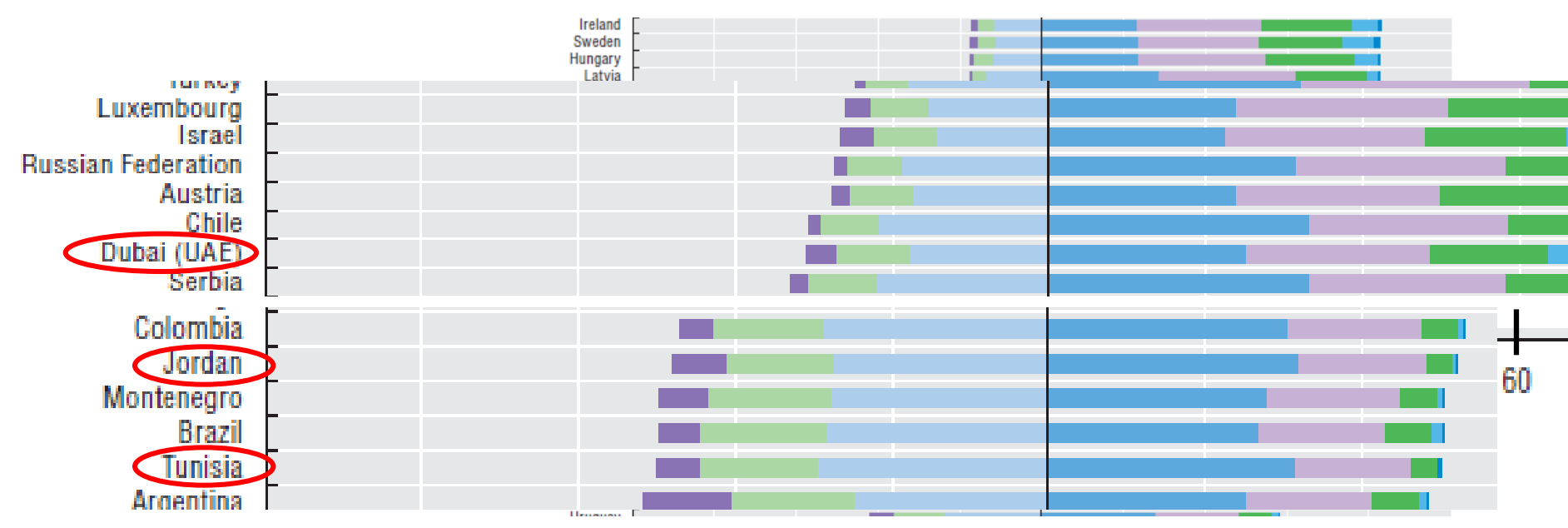
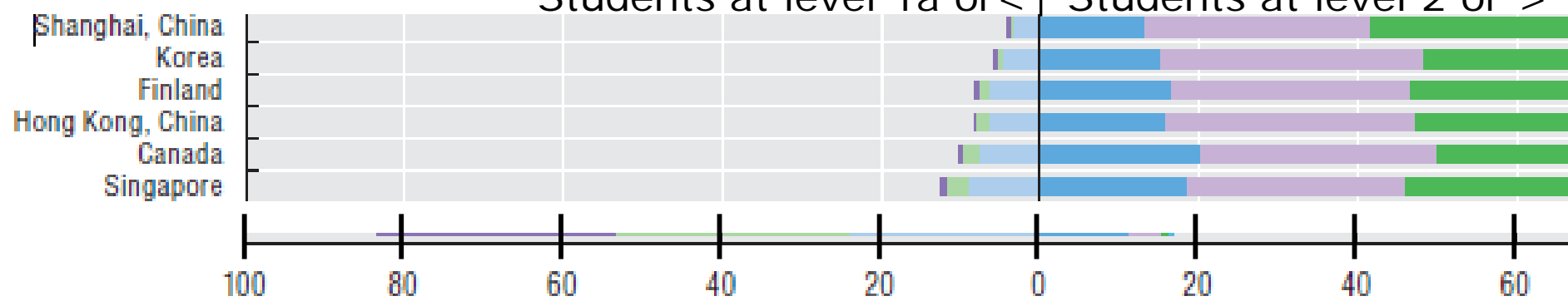


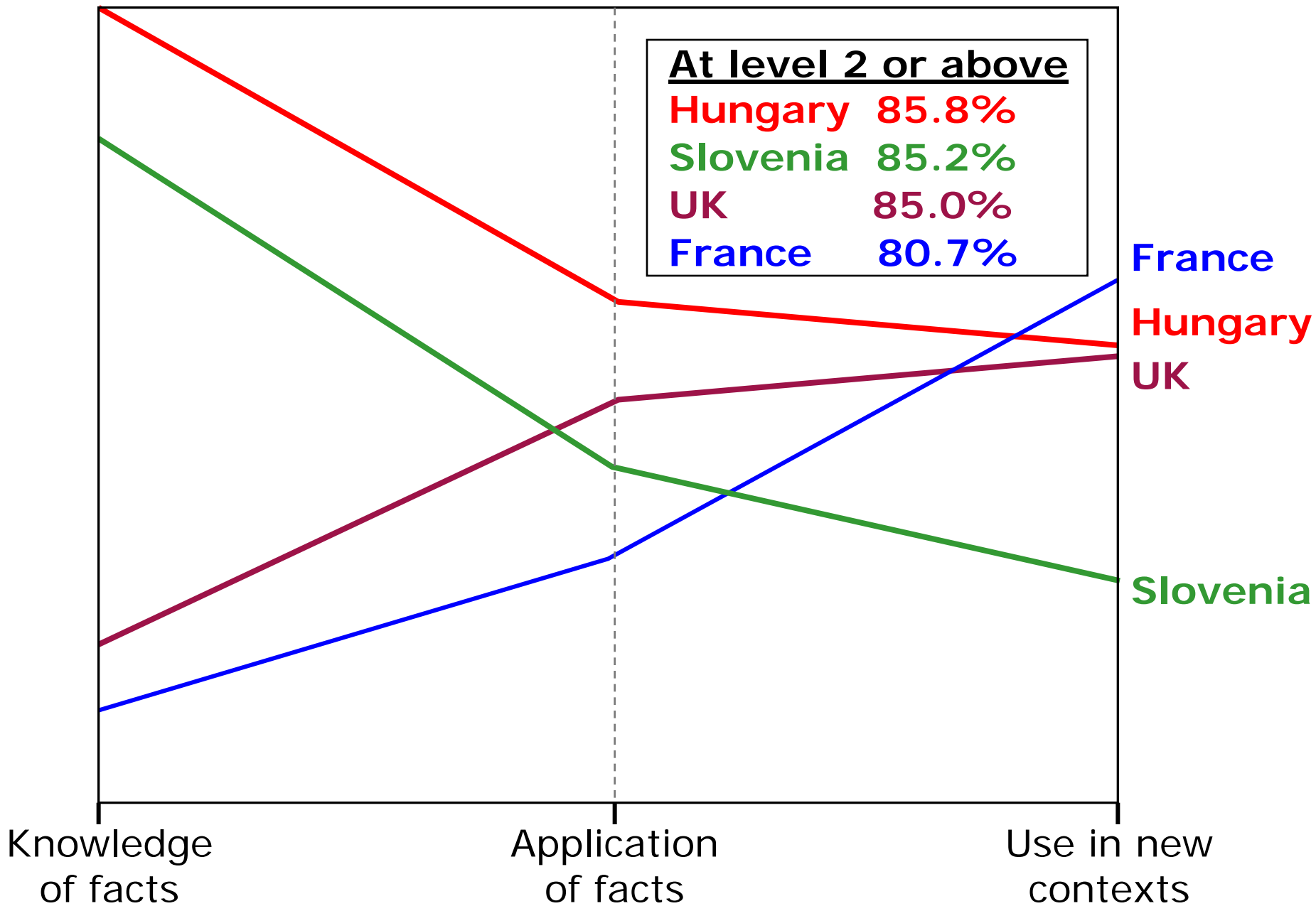
**Figure 5.2: Relative share of qualified workers in occupational deciles, 2008**



Students at level 1a or <

Students at level 2 or >



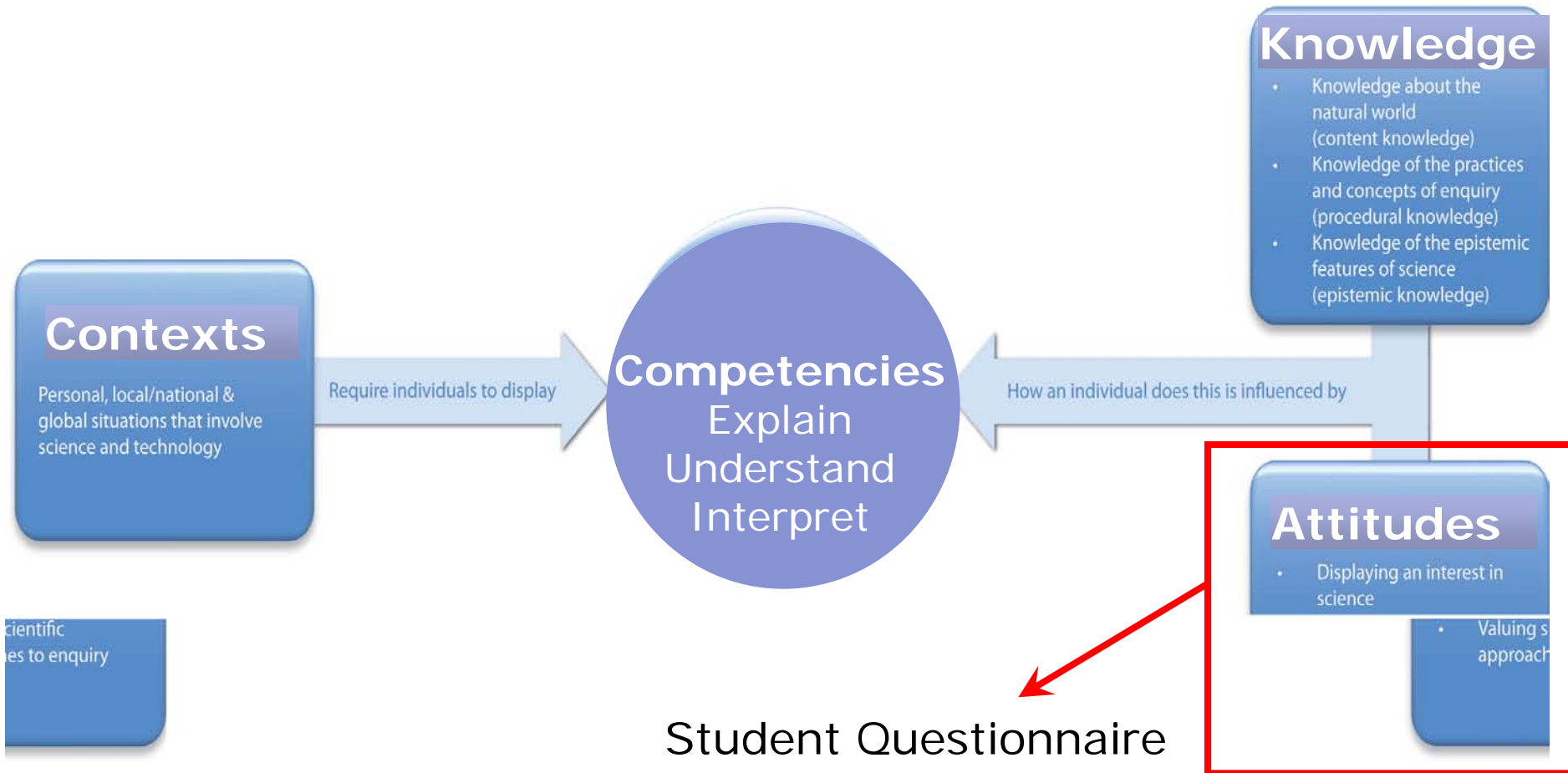


# Definition of Scientific Literacy

Scientific Literacy is the ability to engage with science-related issues, and with the ideas of science, as a reflective citizen.



# Scientific Literacy Framework



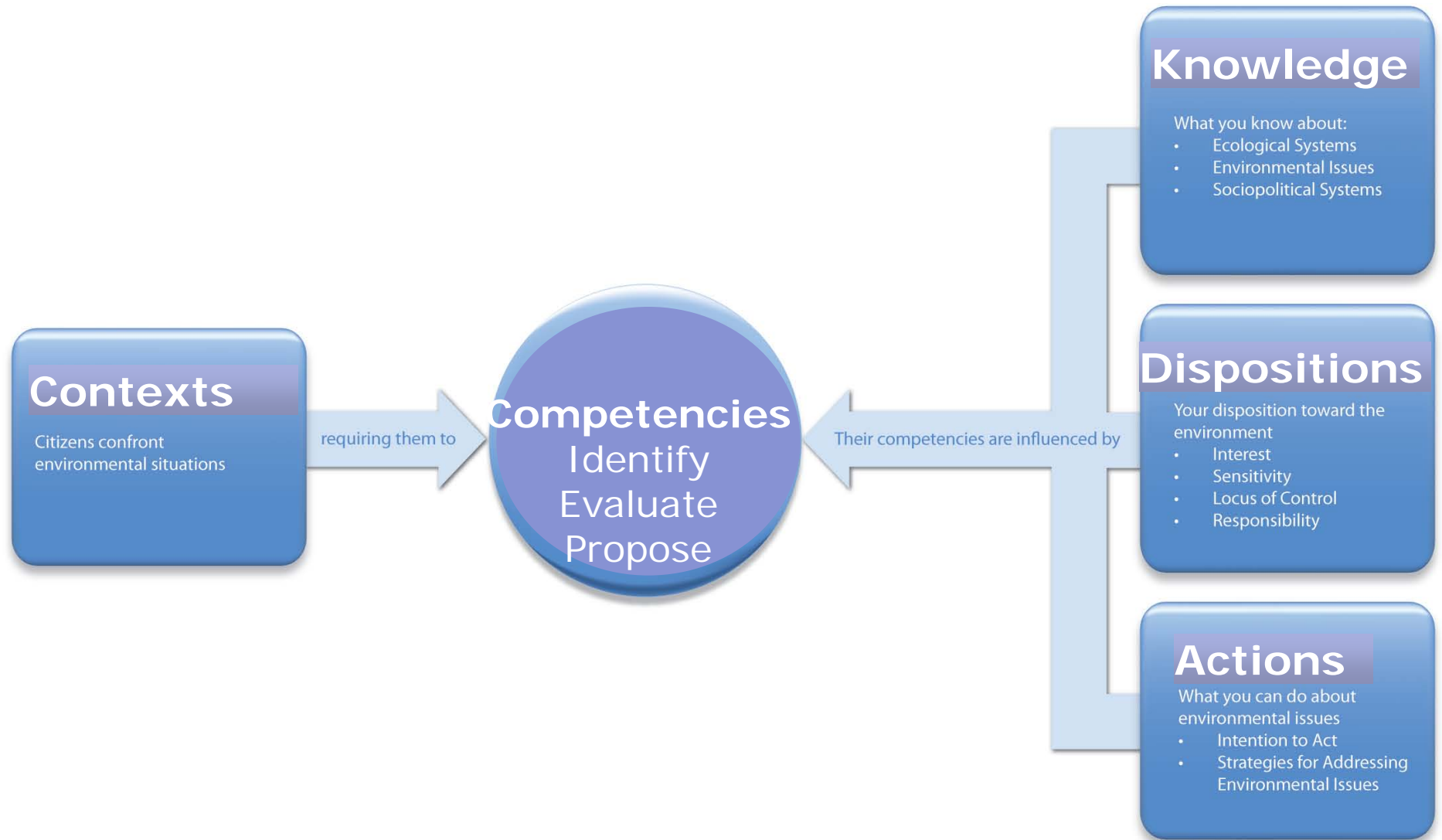
# Categorization of Scientific Literacy Tasks

	<b>Personal</b>	<b>Local/National</b>	<b>Global</b>
<b>Health</b>			
<b>Natural Resources</b>			
<b>Environmental Quality</b>			
<b>Hazards</b>			
<b>Frontiers of Science and Technology</b>			

# Definition of Environmental Literacy

Environmental literacy is the knowledge necessary to understand the environment as an ecological system, the insight in the impact of human behaviour on the natural world and the disposition and motivation to apply ones knowledge, skills and insight in order to make environmentally beneficial decisions about ones own behaviour and to evaluate environmentally critical developments as rational citizen.

# Environmental Literacy Framework

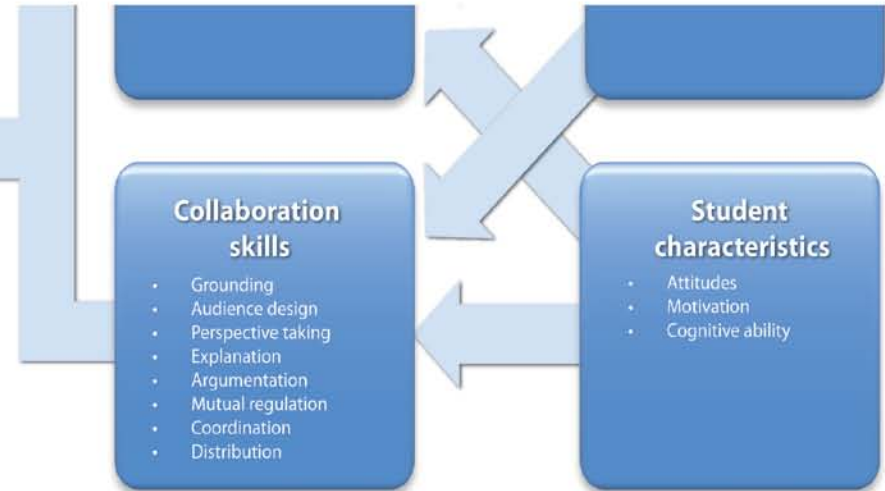
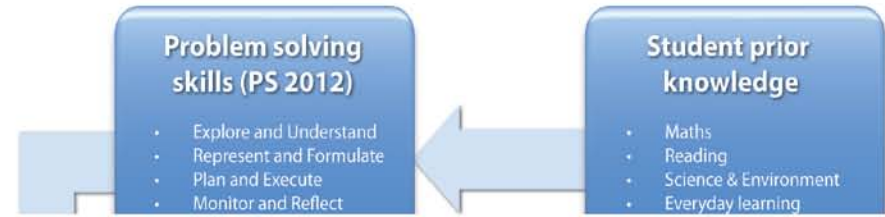


# Categorization of Environmental Literacy Tasks

	<b>Personal</b>	<b>Local/National</b>	<b>Global</b>
<b>Biodiversity</b>			
<b>Population Growth</b>			
<b>Natural Resources</b>			
<b>Environmental Quality and Health</b>			
<b>Natural Hazards and Extreme Weather</b>			
<b>Land Use</b>			

# Definition of Collaborative Problem Solving

Collaborative problem solving competency is the capacity of an individual to effectively engage in a process whereby two or more agents attempt to solve a problem by sharing the understanding and effort required to come to a solution.



# Categorization of Collaborative Problem Solving Tasks

	<b>Establishing Understanding</b>	<b>Taking action</b>	<b>Establishing organisation</b>
<b>Exploring and Understanding</b>			
<b>Representing and Formulating</b>			
<b>Planning and Executing</b>			
<b>Monitoring and Reflecting</b>			



# Framework for PISA 2015: What 15-year-olds should be able to do

PISA aims to inform countries how successful their educational systems are in preparing young people to start participating in the society they live in. Traditionally two main areas of education are distinguished. I will discuss the 21st century requirements as they develop in both these areas and how we aim to represent them in the PISA Framework.

## **Vocational Education**

Manufacturing and maintenance of appliances and equipment, laying out transportation and communication networks, exploring and mining natural resources, producing and transporting food remain important activities in the 21st century. After a period wherein many of these activities have moved to the so-called developing countries, we know that participating in a large core of these activities will remain necessary in developed countries too as GDP levels increase in the developing world we will see that manufacturing and maintenance will flow back to the developed world. Manufacturing and maintenance in the 21st century however require high level knowledge and skills and flexibility from the operators to keep abreast of the continuous technological development where manufacturing and maintenance require process management and collaborative problem solving rather than muscle.

## **Academic Education**

Participation in academic (tertiary) education worldwide is about 12% of the eligible population (15- to 24-year-olds), but the variance among countries is extremely large going from a low of less than a half percent for Mozambique and Malawi to over 40% for Korea, USA and Finland. Degree of participation in tertiary education is a significant parameter for economic and social well-being of a state and its citizens.