PISA 2025

NEQMAP Annual Meeting, 15-16 December 2022

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What is PISA?

- PISA is the world's premier yardstick for **comparing quality, equity and efficiency** in learning outcomes across countries. It responds to a growing demand from countries to look beyond their own borders for evidence of the most successful and efficient education policies.

- PISA is a **primary source of data** for monitoring global progress towards the achievement of the Education Sustainable Development Goal (**SDG4**).

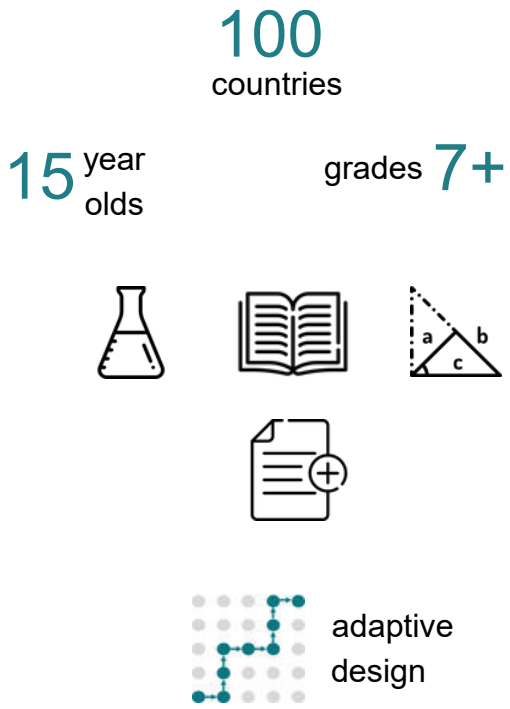
- Through participation in PISA, countries become part of **a global community** of education systems with benchmarking and peer-learning opportunities.

- Since PISA began in 2000, nearly 100 countries and economies have participated in the programme (PISA and PISA for Development), including NEQMAP members: **Australia, Bhutan, Cambodia, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Mongolia, Philippines, Singapore, Thailand, Uzbekistan and Vietnam**.

- Delighted to have this opportunity to interact with NEQMAP **and** to encourage other NEQMAP members, **Bangladesh, Fiji, Laos, Myanmar, Nepal, Pakistan, Papua New Guinea and Sri Lanka** to join this global community **and** to help existing participants from NEQMAP to make the most of their PISA participation.

- Every country is bringing **new ideas and experiences** to PISA and thus helping to make PISA richer, stronger and more relevant.

Key features of PISA 2025



- PISA 2025 has been conducted every three years since 2000.
- An expected 100 countries from across all continents will take part.
- Tests 15-year-old students in grades 7 and above.
- Students are assessed in science, reading and mathematics.
- Includes an innovative domain that targets interdisciplinary skills (Learning in the digital world)
- Tests are adaptive and appropriate for both low- and high-performing students.

Benefits of participation in PISA

PISA provides:

- An international benchmark of learning outcomes and trend measures that enable countries to follow progress over time.
- Insights into the most efficient policies and practices from across the world.
- Insights on how to help students learn better, teachers to teach better and school systems to operate more effectively.
- In particular, the PISA data collected have a lot to say about the allocation of resources and its implications for equity.

Policy lessons from PISA

PISA triggers structural reforms

- In Germany, PISA triggered large-scale public debate on education and policy changes leading to improvements in quality and equity.

PISA guides curriculum reform and strengthens national assessment and monitoring systems

- Kazakhstan's results were followed-up by a 5-year plan to develop less traditional approaches in curriculums, stimulating creative-thinking and problem-solving.
- Korea strengthened the importance of student well-being, to balance high academic performance and the healthy development of young people.

PISA facilitates peer-learning

- Policy dialogues among countries with common challenges: regional dialogues in Europe, South-East Asia, Latin America, MENA.

School and student participation in PISA

- PISA is a **sample-based** assessment.

- The sampling approach ensures that results are **representative** for each participating country/region.

- A total of **6,300 students** per country/entity participate in PISA: 150 schools x 42 students per school.
- The students participating in PISA are **15-years old** and attend grade 7 or above.

- Schools and students are selected **randomly** to represent the school system in its entirety.
- **All education institutions** with students in the target group of 15-year-old students **can** be selected.

PISA 2025 cognitive domains

- core school subjects: reading, mathematics and science
- Learning in Digital World (LDW) innovative domain
- students' knowledge and how well students can extrapolate from what they have learned and can apply that knowledge in unfamiliar settings, both in and outside of school, are assessed in each domain

PISA 2025 cognitive domains rotation

- in each round, one of the core domains takes the focus and roughly one-half of the total testing time
- Assessment frameworks' updates follow the same rotation
- Science is the major domain in 2025, and thus science assessment framework was just updated
- Mathematics was the major domain in 2022, and reading in 2018

PISA 2025 science assessment framework

Explain phenomena scientifically

- recognise, construct, apply and evaluate explanations for a range of natural and technological phenomena

Construct and evaluate designs for scientific enquiry

recognise, construct, apply and evaluate explanations for a range of natural and technological phenomena

and interpret scientific data and evidence critically

Competency 1: scientific phenomena

- recall and apply appropriate scientific knowledge
- use different forms of representations and use multiple forms together where appropriate
- make and justify appropriate scientific predictions and solutions
- identify, construct, and evaluate models
- recognise and develop explanatory hypotheses of phenomena in the material world
- explain the potential implications of scientific knowledge for society

Competency 2: scientific enquiry

- identify the question in a given scientific study
- propose an appropriate experimental design
- evaluate whether an experimental design is best suited to answer the question
- interpret data presented in different representations, draw appropriate conclusions from data and evaluate their relative merits

Competency 3: scientific information in action

- search, evaluate and communicate the relative merits of different sources of information
- distinguish among claims based on scientific evidence and those based on opinions
- construct an argument to support an appropriate scientific conclusion from a set of data
- critique standard flaws in science-related arguments
- justify decisions using scientific arguments, either individual or communal, that contribute to solving contemporary issues or sustainable development

PISA 2025 science knowledge requirements

Knowledge of the content of science

- physical systems
- living systems
- earth and space systems

Procedural knowledge

Epistemic knowledge

- the nature of scientific reasoning
- data and evidence in scientific claims
- the collaborative and communal nature of the sciences
- modelling

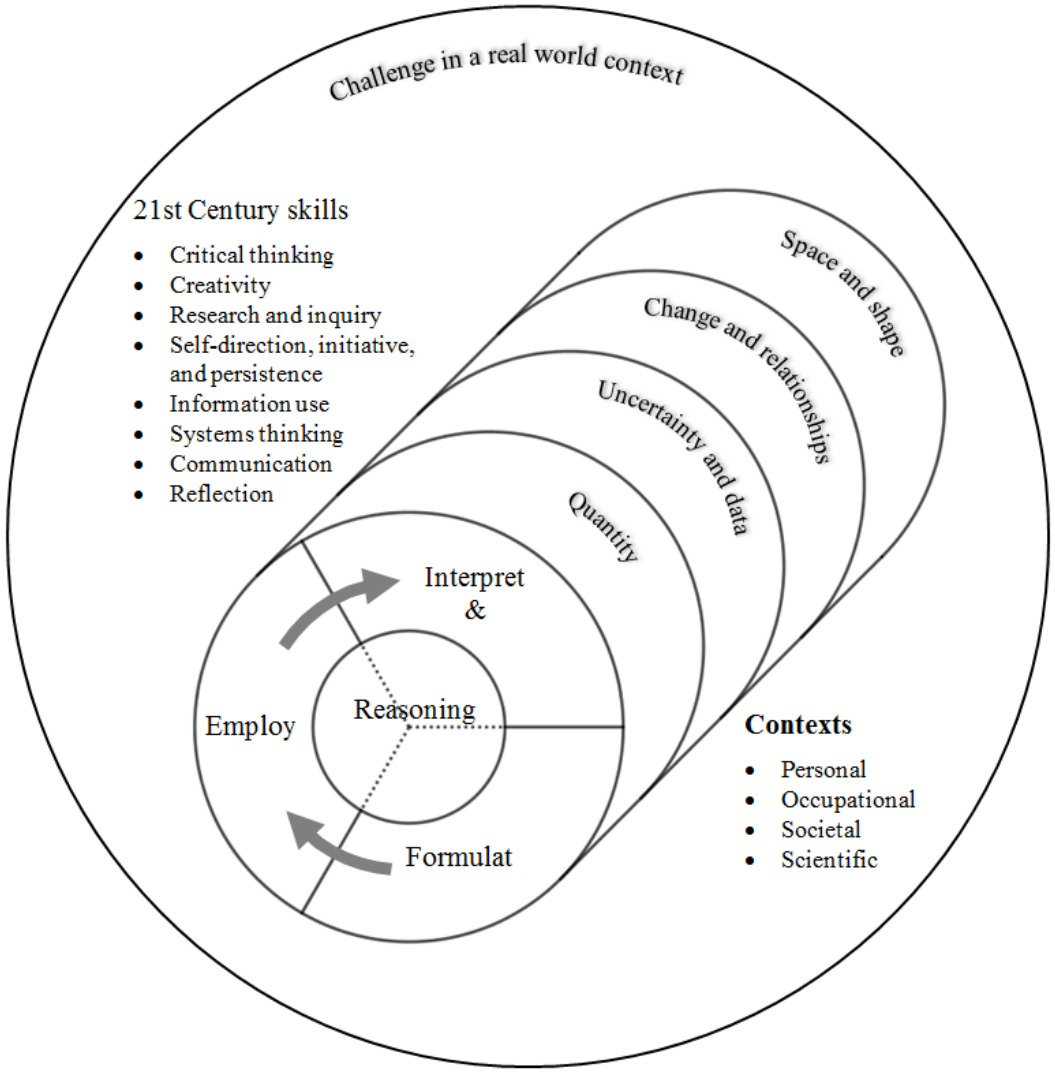
Collaborative and communal nature of the sciences

Key theme	Description
Funding	How specific scientific research is funded and supported e.g. government, private and the mechanisms for deciding
Consensus	The importance of consensus in warranting belief
Peer review	How peer review helps to establish confidence[57] in scientific claims and is dependent on a scientific community.
Collaboration	Key scientific practices undertaken by scientists to produce shared knowledge, their role and their collaborative[58] nature.
Limitations	The limits to certainty and confidence in scientific findings, how it is expressed, the evolution of certainty and the role of consensus.
Communication	How scientific findings are communicated within the community and to the public (e.g. pre-prints, peer reviewed journals, public communication).

Contexts for the PISA 2025 science assessment

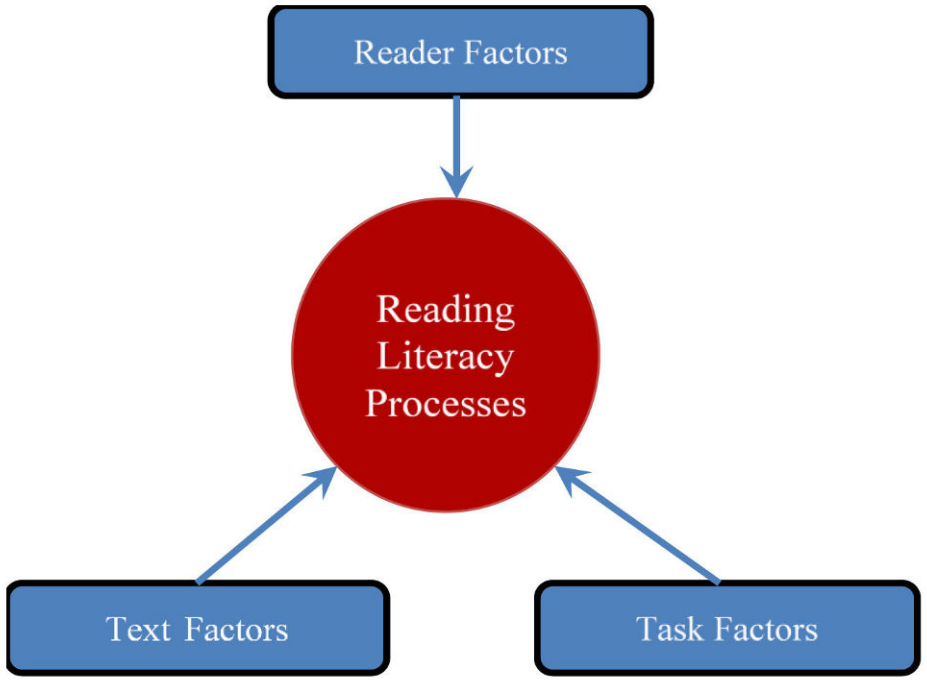
	Personal	Local/National	Global
Health & Disease	Maintenance of health, accidents, nutrition, vaccination	Control of disease, social transmission, food choices, obesity[59], community health	Pandemics, food security, healthy lifestyles
Natural Resources	Personal consumption of materials, types of food, and energy, consuming locally produced foods, choosing non-dairy and vegetarian diets[60]	Maintenance of human populations, quality of life, security, production and distribution of food, energy supply, environmental impact of mining and resource extraction, production of renewable energy[61]	Renewable and non-renewable sources of energy, natural systems, population growth, sustainable use of species and land, biodiversity and its value
Environmental Impacts & Climate Change	Sustainable practices of recycling and reduction of resource use	Population distribution, waste management, environmental impact, use of regenerative agriculture[62]	Environmental sustainability, management of pollution and air quality, loss of soil/biomass[63], mass extinction of species, ocean acidification
Hazards	Risk assessments of lifestyle choices	Rapid changes (e.g. earthquakes, severe weather), slow and progressive changes (e.g. coastal erosion, sedimentation[64]), risk assessment, face recognition	Threats posed by climate change, impact of modern communication, energy and its production (e.g. fracking[65], nuclear, gas)
Contemporary Scientific and Technological Advances and Challenges	Scientific aspects of the use of new technologies (e.g. gene editing, virtual reality)	New materials, devices and processes, genetic modifications, health technology, transport, use of artificial intelligence	Exploration of space, origin and structure of the universe

PISA 2022 mathematics assessment framework



PISA 2018 reading assessment framework

Reading literacy is understanding, using, evaluating, reflecting on and engaging with texts in order to achieve one's goals, to develop one's knowledge and potential and to participate in society.



Learning in the digital world: How is it **different**?

PISA

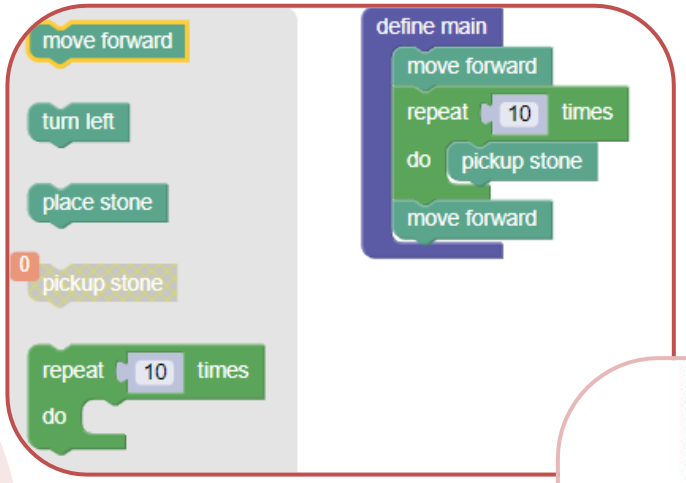
2025 Learning in the Digital World

- Assess **how** students learn - not just **what** they know
- Use **technology** to create **authentic learning experiences** (purposeful, iterative, driven by feedback)
- Collect data on every action a student makes in the system, and use **learning analytics** and **machine-learning** models to make sense of the data

What will students do in this new assessment?

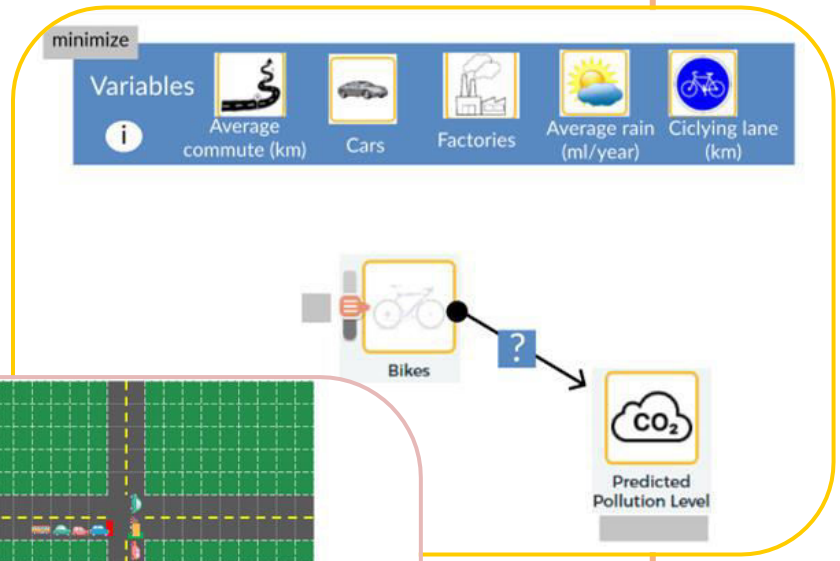
In the test, students learn to use **digital tools** to…

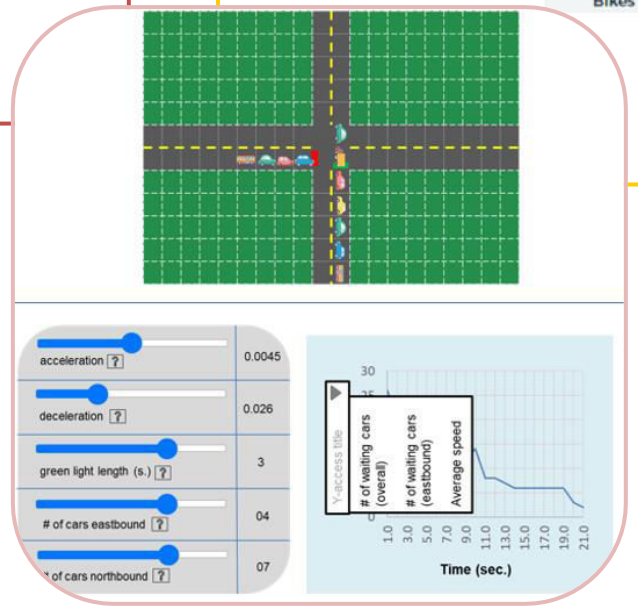
- Make sense of complex systems and solve open problems
- Turn their ideas into unique digital creations



Block-based programming

Concept-mapping tools

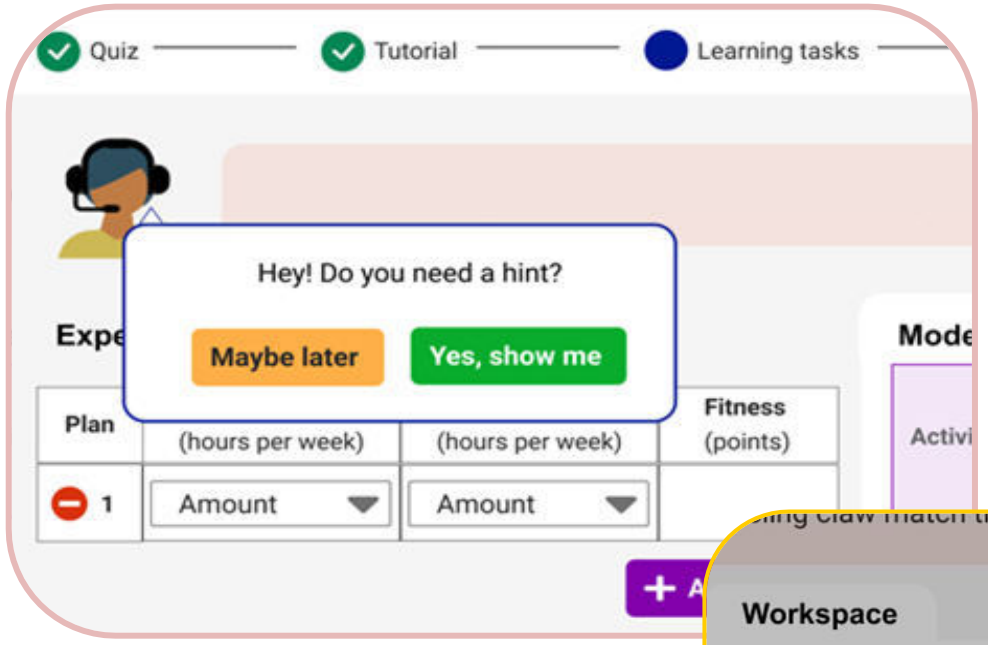




Agent-based simulations

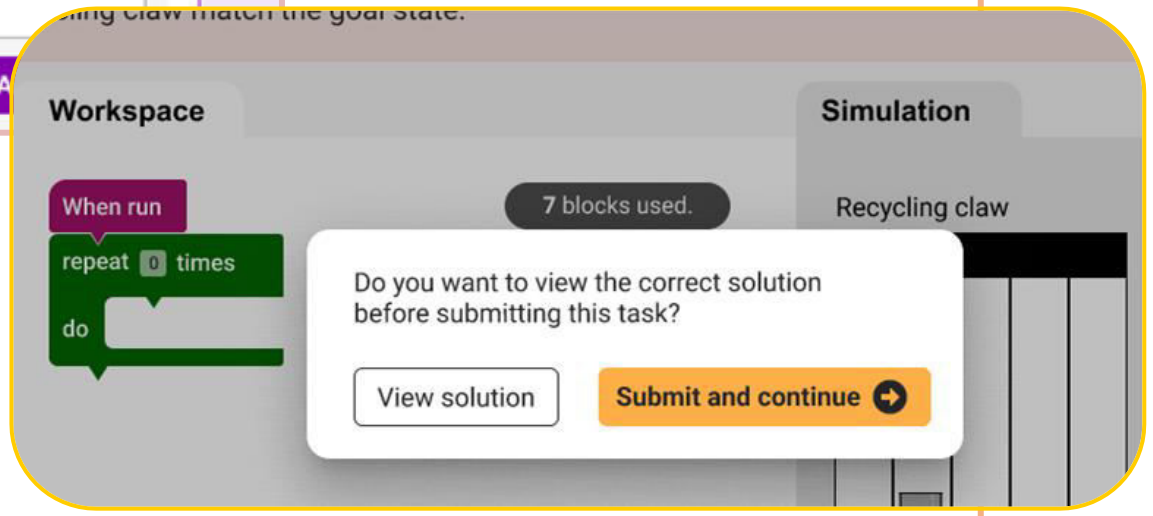
How will students **demonstrate their learning skills?**

Students will also…



- **Interact with an intelligent tutor** to get help when they are stuck

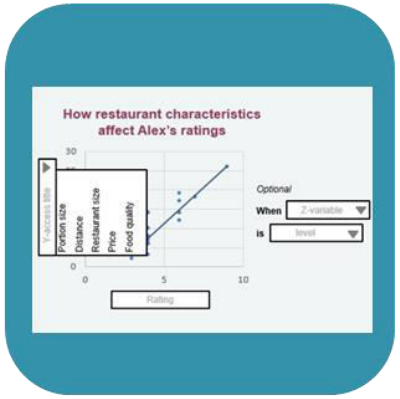
- **Reflect on their achievements** during the assessment



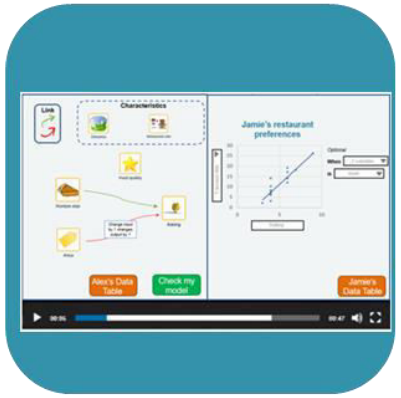
What can we learn from these assessments about education systems?

Information on student learning

Pre-test

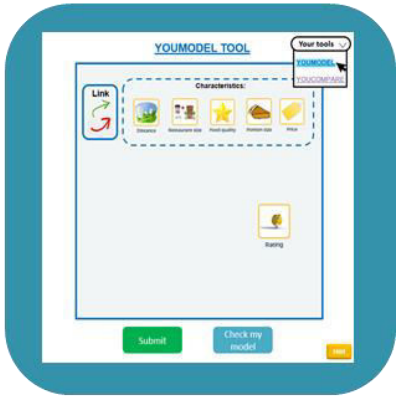


Tutorial



Learning Activities

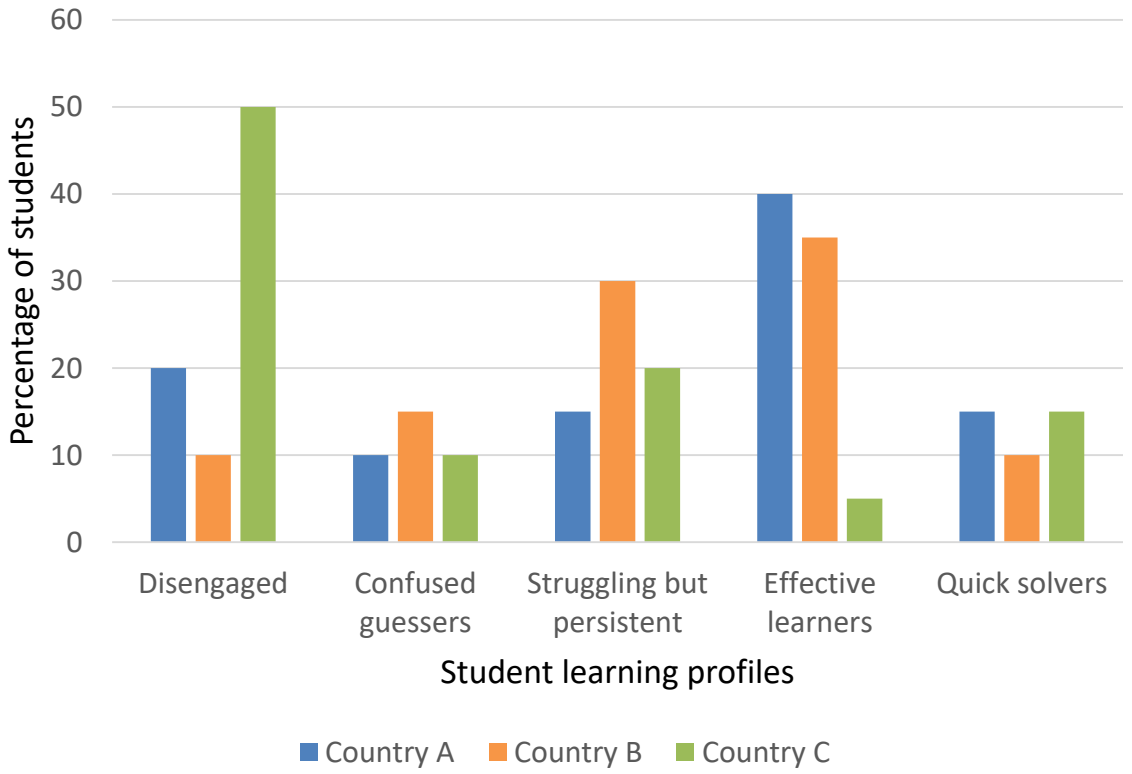
Challenge

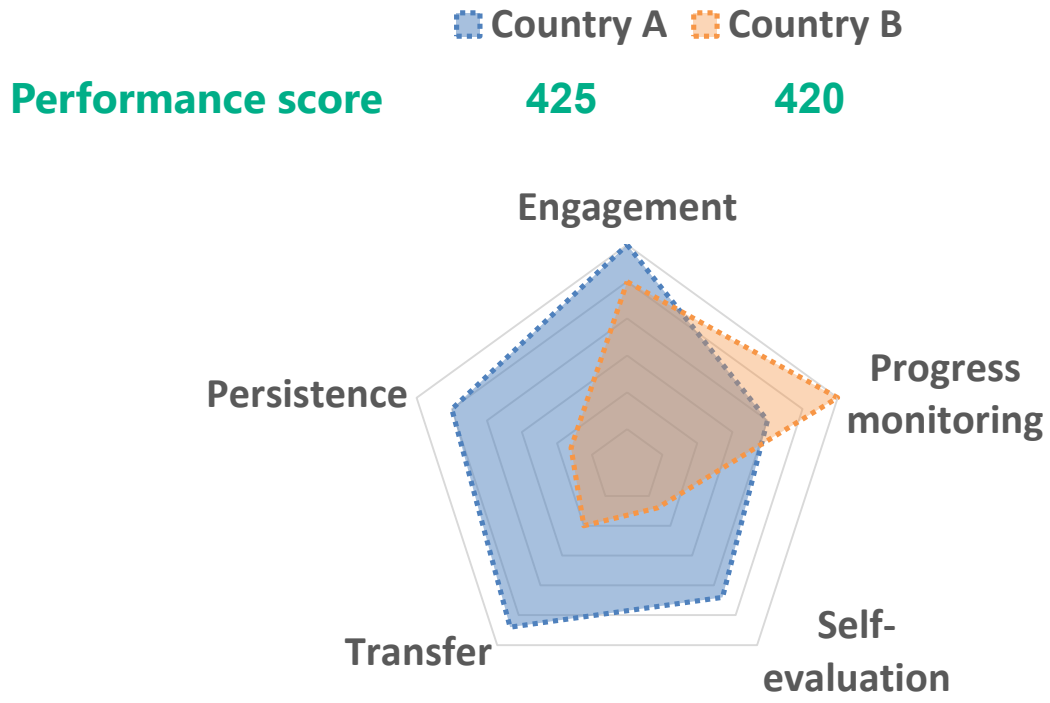


Baseline measure of students' prior knowledge

Measure of **learning gain** =
Score on LDW test after accounting for pre-test score

What can we learn from these assessments about education systems?

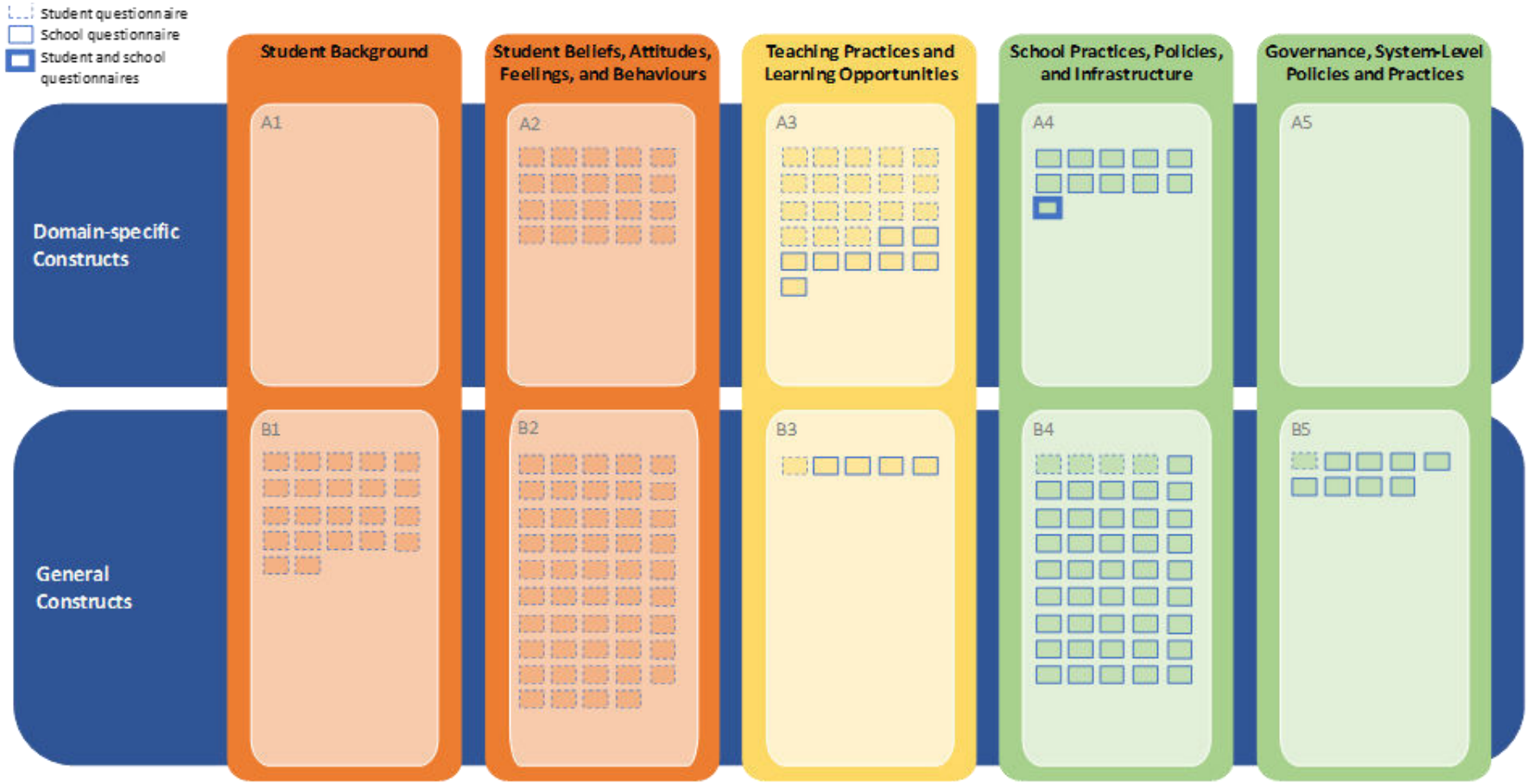




Profiles of self-regulated learners

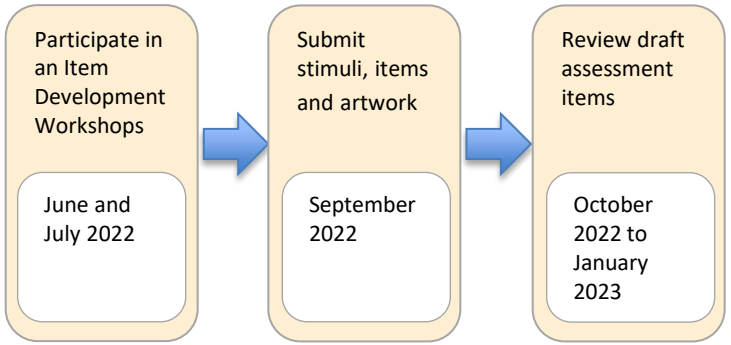
PISA 2025 questionnaires framework

Two-dimensional context questionnaire framework taxonomy

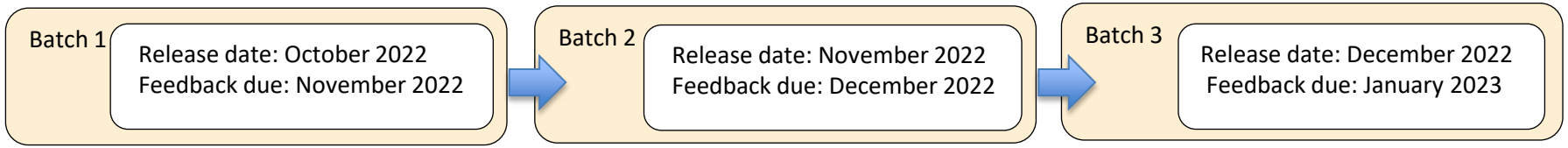


Participate in the development of science items

National Centres contribution to new science items

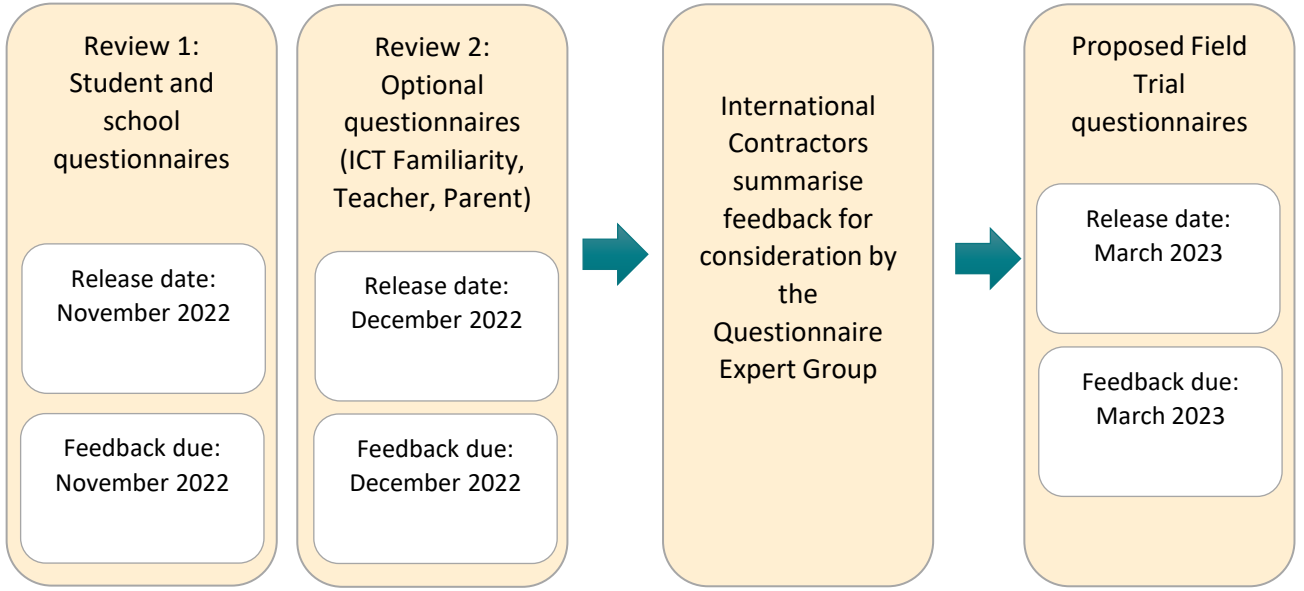


Review of new science items



Participate in the development of 2025 questionnaires

Review of new questionnaire items



PISA 2025 timeline

2022 Establish national PISA team

2023 Translation and adaptation of instruments into national version

2024 Field Trial in all participating countries

2025 Main Survey in all participating countries

2026 Data analysis, report production, dissemination and publication of results

Thank you