

European Science Education Academy



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Ellinogermaniki Agogi
European Physical Society*

ESEA WORKSHOP EUROPEAN SCIENCE EDUCATION ACADEMY

Towards a common European
framework for science education

Crete, Greece | 01-03/07 2013



PATHWAY
site
acce
cont

Organised during the

PATHWAY Summer School

Best Practices in Inquiry-Based Science Education

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European science education academy rationale

by [Jorge Rivero](#) — last modified 2013-05-28 15:28

In recent times, Europe faces both a remarkable decrease in the interest of young people in Science, Technology, Engineering and Mathematics [STEM] subjects and a decline in the uptake of STEM careers. This general disinterest amongst young Europeans, is more evident in the natural sciences. These shortages could not only affect the future of tertiary education systems but also jeopardize the pillars for a knowledge based society and economy in Europe.

During the past decade, this issue has been the focus of considerable attention and several documents have been published on this matter. For instance, the first of these reports - Europe needs more scientists (European Commission [EC], 2004) - stated that the spotlight should not be only focused on promoting more students to STEM careers but on improving the educational system itself. Another of these reports - Science Education in Europe: Critical Reflections (Osborne and Dillon, 2008) - states that even though there are several known shortcomings (curriculum, pedagogic, assessment), the real challenge is to re-imagine science education and try to both make it appealing and fit the needs of all students, whether they will go on to work in scientific and technical subjects, and those who will not. Following this work, the EC commissioned a report - Science Education NOW: A Renewed Pedagogy for the Future of Europe (EC, 2007) - that focused at successful projects that worked with the way science is

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PATHWAY

The Pathway to Inquiry Based Science Teaching

HOME ABOUT PARTNERS RESOURCES ACTIVITIES NEWS & ON GOING ACTIVITIES QUIZ CONTACT

CONNECTING Schools & Science Centers



Search...

TRAINING ACTIVITIES



[Click here](#) for each partner's activities

RESOURCES

- PATHWAY Repository
- PATHWAY Best Practices
- PATHWAY Booklet - "The PATHWAY to Inquiry based science education"
- PATHWAY Poster
- PATHWAY Brochure
- PATHWAY Teachers Guidelines.

Inquiry Activities for Schools



Connecting Schools & Science Centers



Connecting Schools with Scientific Research



Teachers' Professional Development





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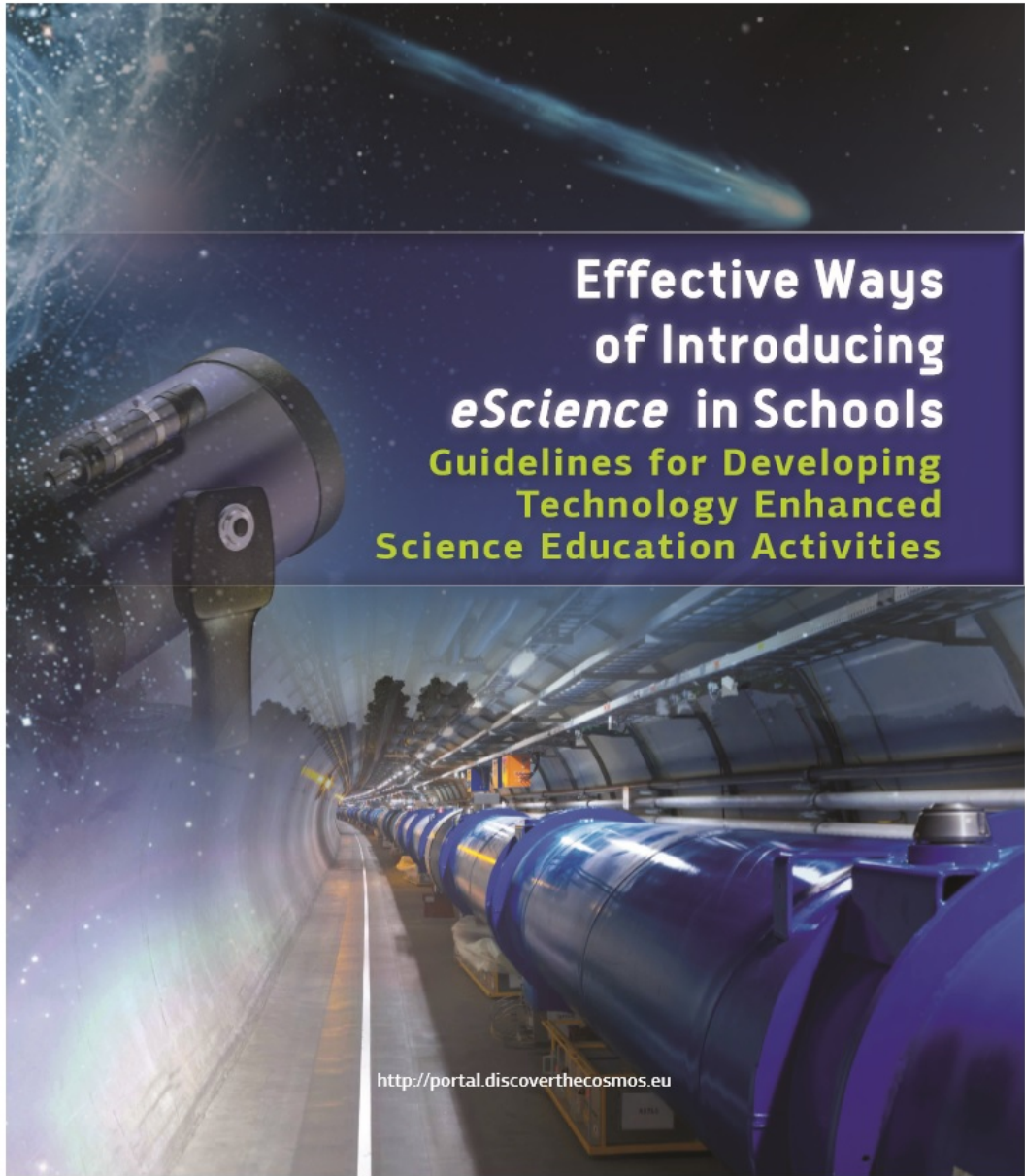
Presentations of relevant ma

The cover of the book "Science Education Next: A Renewed Pedagogy for the 21st Century" features a green background with a pink diagonal stripe. At the top left is the European Commission logo with the text "EUROPEAN COMMISSION" and "Community research". Below it is the handwritten equation $f(x) = \cos(x)$. The title "Science Education Next" is prominently displayed in large, bold letters. Below the title is the subtitle "A Renewed Pedagogy for the 21st Century". At the bottom, there is a cartoon illustration of a young girl with blonde pigtails, wearing a pink shirt, sitting and reading a book. The "Discover Group" logo is visible in the bottom left corner.

The logo for the Next Generation Science Standards (NGSS) features a stylized 'N' made of three overlapping shapes in blue, orange, and green. To the right of the logo, the text reads "NEXT GENERATION SCIENCE STANDARDS For States, By States". Below the logo is a navigation menu with the following items:

- HOME
- The Next Generation Science Standards
- The Next Generation Science Standards writing team and partners
- NGSS Front Matter
- NGSS Structure
- NGSS Appendices:
 - A. Conceptual Changes and Assessment Practices
 - B. Progression of Disciplinary Core Ideas

At the bottom right of the menu is the "7" logo for the European Union's Horizon 2020 research and innovation program.



Effective Ways of Introducing *eScience* in Schools Guidelines for Developing Technology Enhanced Science Education Activities

<http://portal.discoverthecosmos.eu>

UPDATES

NTATION

version

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Recommendations

Documentation Center for the Modernization of Science Education

Publications, Research Work, Conferences and Workshops

Developing Effective Training Programmes

- Guidelines, Resources, Best Practices

Supporting Communities of Practice

- Organising Resources, Motivating Practitioners

Dissemination and Networking

- Supporting National Physical Societies, Collaboration with EC, ESERA, GIREP



Development of the ESEA Repository

- For policy makers
- For science education experts
- For teachers
- For museum educators and outreach groups



Support of the development of a distributed repository for Science Education in Europe



A World just a click away

Search for educational resources...

Communities Users Academies

Home | Training Academies | Teachers Academies

Welcome to the Teachers Academies

Welcome to Teachers Academy! This training framework is targeted to both non-technically oriented teachers as well as to IT-coordinators.

The modules are self-contained for flexibility and offer individual learning paths, to take into account different levels of ICT competence and experience with metadata and repositories. Some modules assume little experience with ICT and provide a general practical introduction, others build on previous knowledge.

In response to needs for training on specific applications and tools, there are modules covering the most frequently mentioned products. One or two modules aim to showcase good examples of practice to ensure that the pedagogical value of the training is to the forefront and to motivate teachers to apply their training in sustained and effective day to day practice. The following table shows how the modules fit into the framework and the needs addressed. Different ways to interconnect these modules are possible.

ODS Toolbox!
Learn how to use Innovative ICT Applications

Select the Topic of your Interest

← Back to the Training Academies

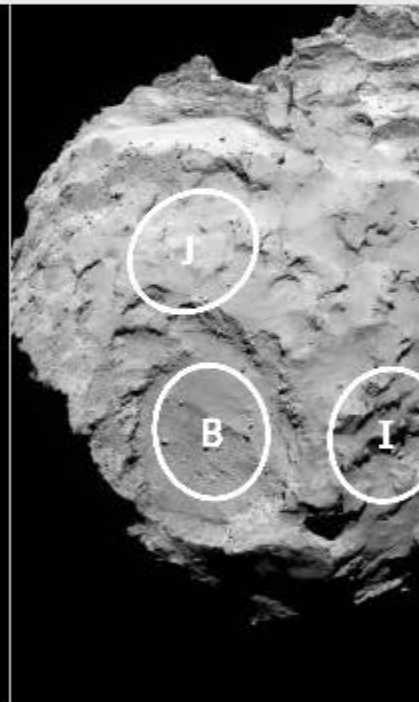
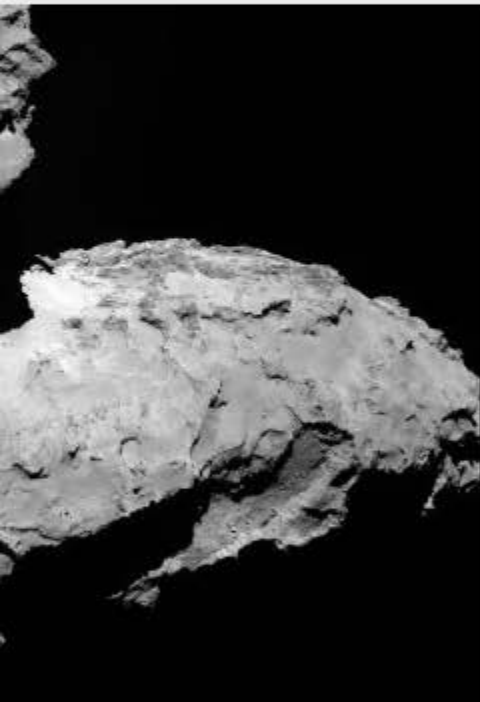


Inspiring Science Education Academy
[read more >](#)

Inspiring Science Education	Live Music Education	Digital Competence	Teaching & Classroom Management Skills	Funding for my School <small>(Opens on September, 18th, 2014)</small>
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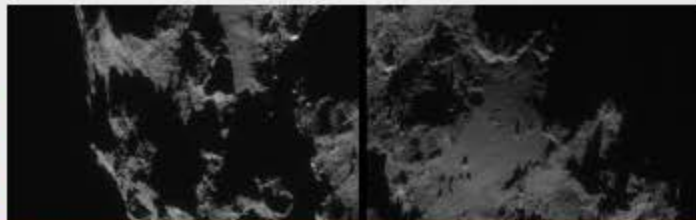
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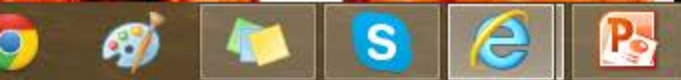
→ LANDING SITE SEARCH NARROWS

Using detailed information collected by Rosetta during its first two weeks at Comet 67P/Churyumov-Gerasimenko, five locations have been identified as candidate sites to set down the Philae lander in November. The Landing Site Selecti...



Search

REPLAY ESAHANGOUT: 2 SEP



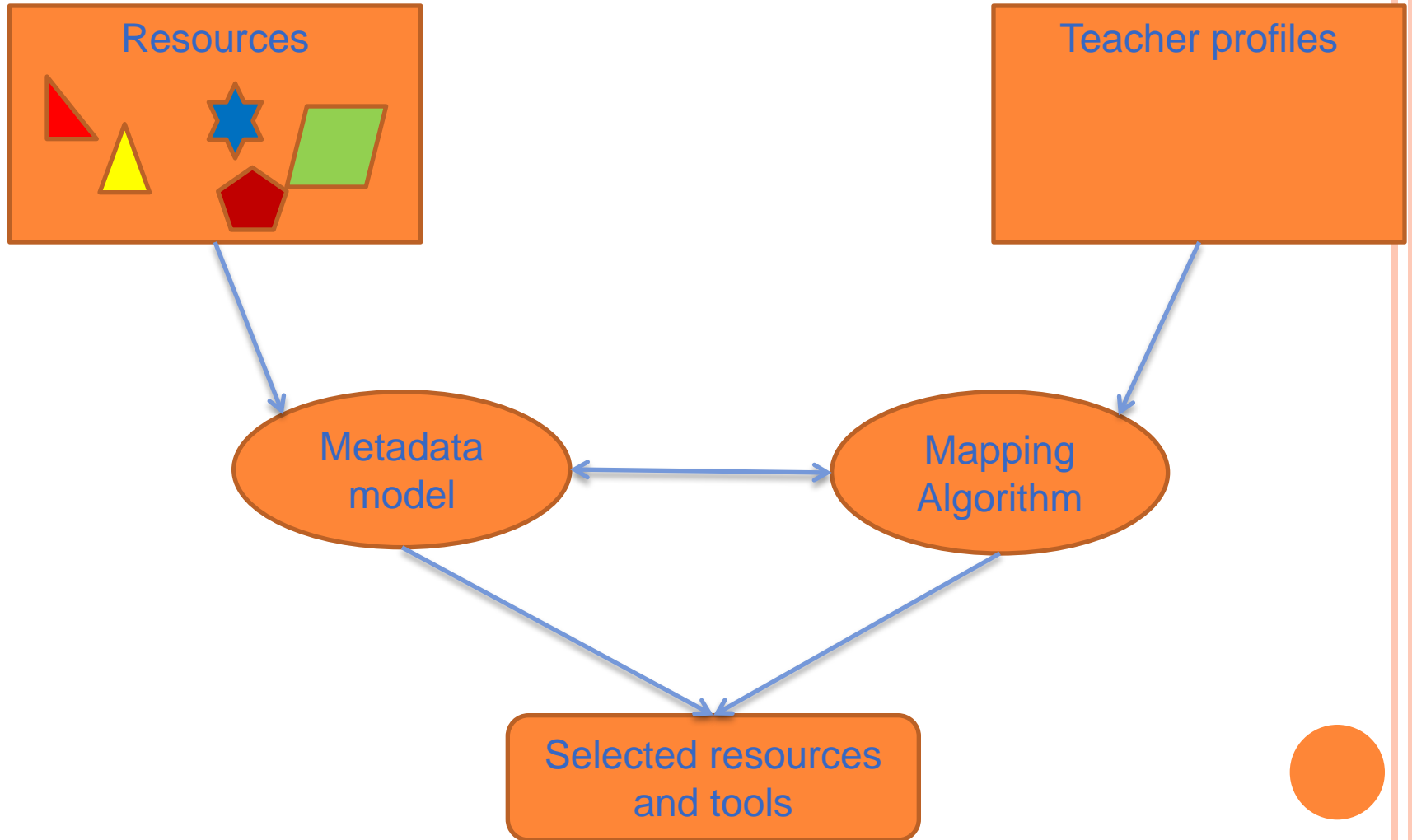
2013-2015

- 8,000 schools
- 20,000 teachers
- 1,000,000 science education resources



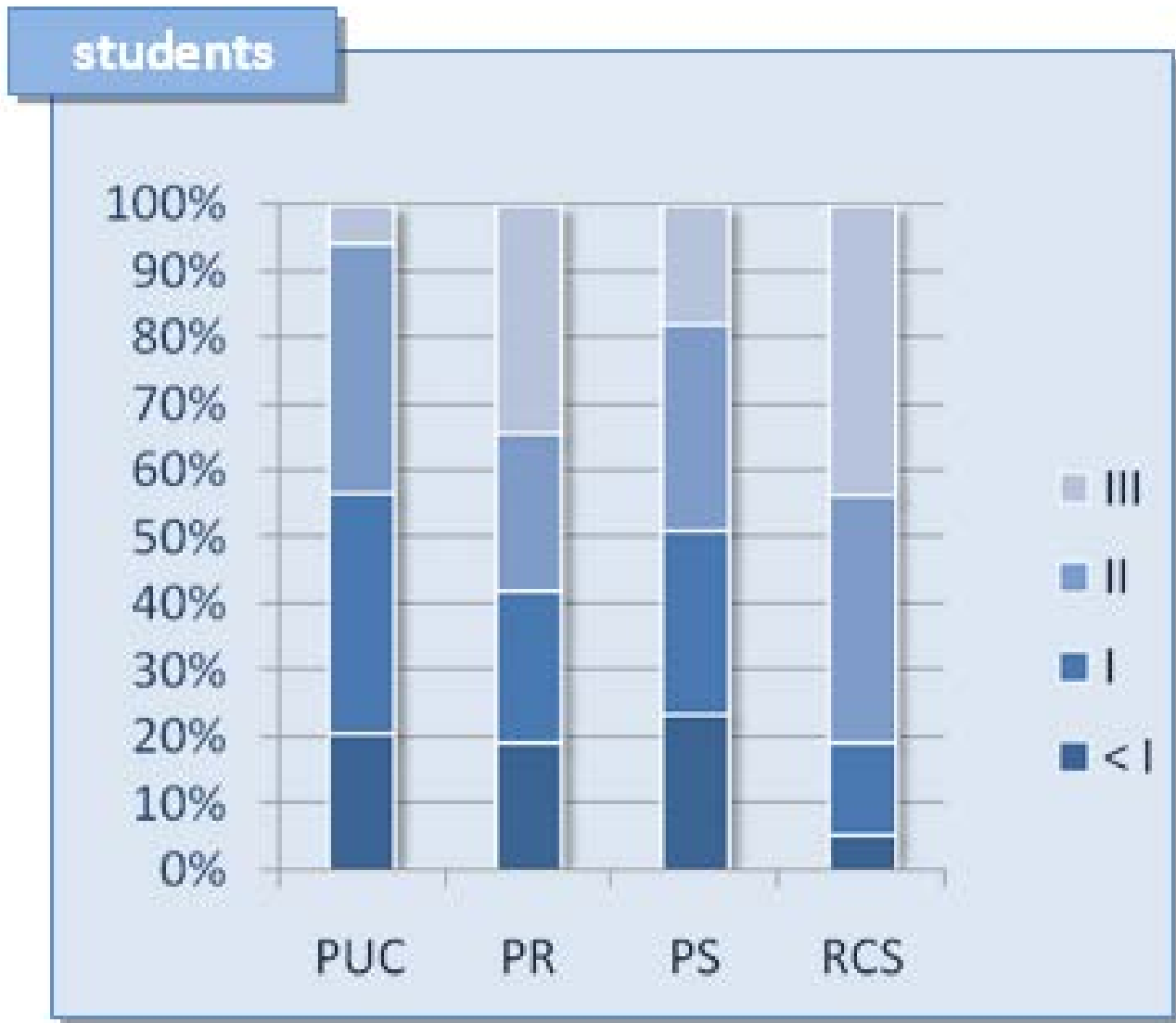
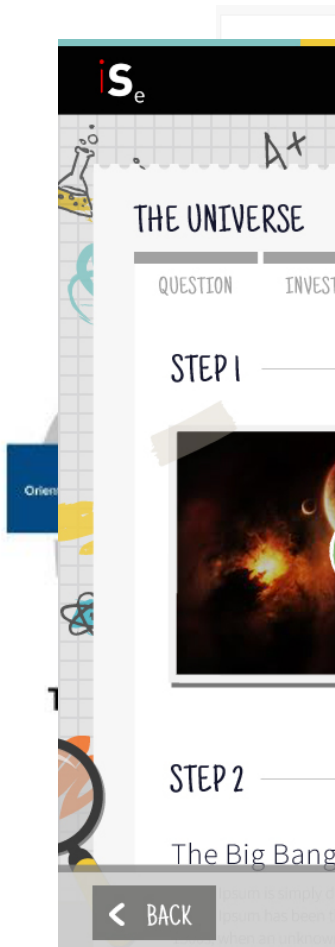


EDUCATIONAL DESIGN



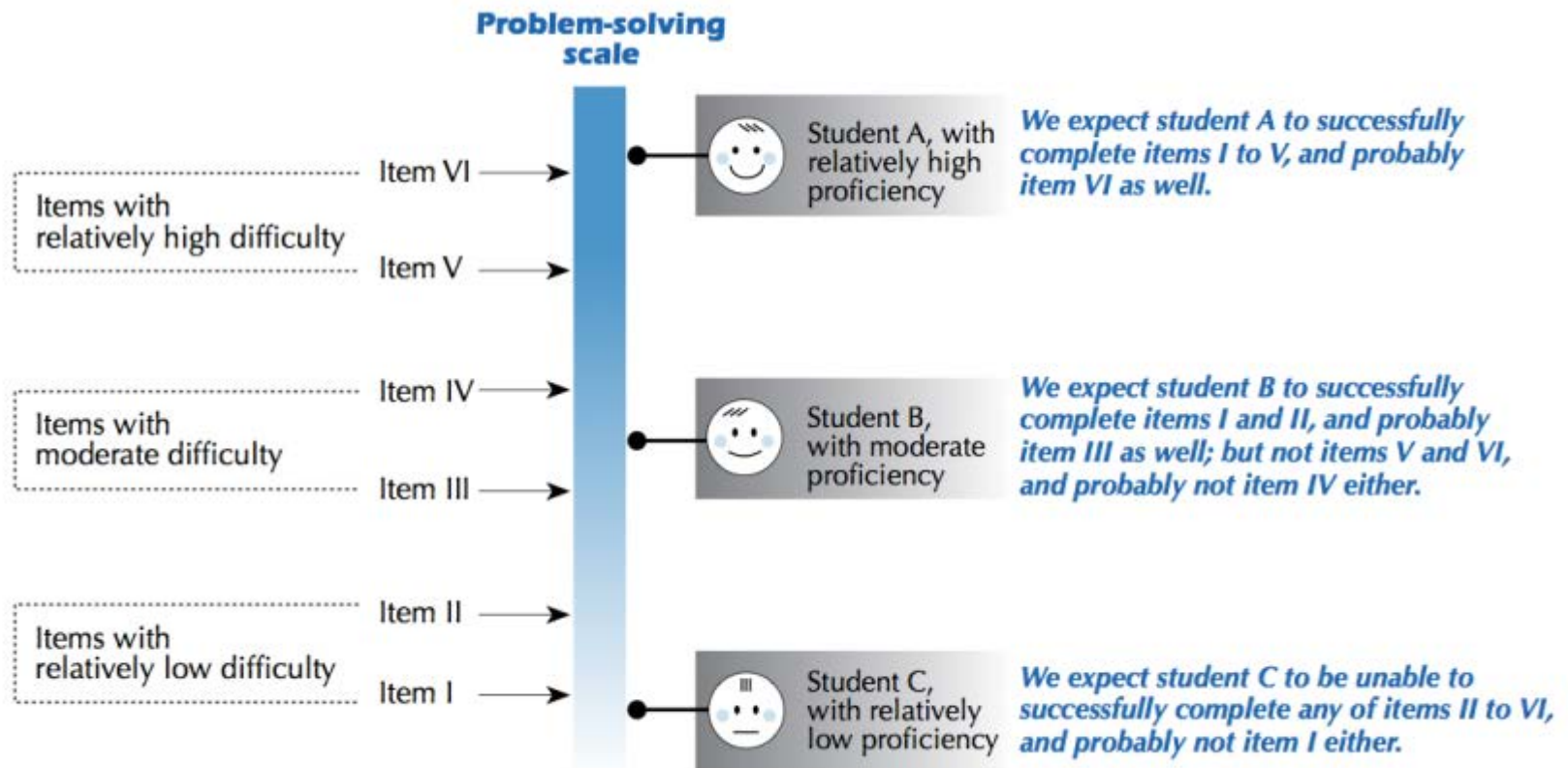
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PISA 2012: PROBLEM-SOLVING

Relationship between questions and student performance:

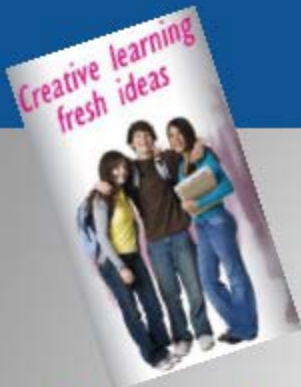


(OECD 2014, p. 49)

Financial Support

- Conceptual Framework (Funded by PATHWAY)
- Initial Selection of Best Practices (Funded by PATHWAY)
- Initial Version of the Repository (Funded by PATHWAY)
- Development of advanced users interface (To be supported by INSPIRING SCIENCE EDUCATION – 2013-2016)
- Continuous support of teachers communities (To be supported by Open Discovery Space – 2012-2015)
- Coordination and support actions (meetings workshops) (To be supported by INSPIRING SCIENCE EDUCATION – 2013-2016)





'Education' in Horizon 2020

➤ Formal and informal education to science

SWAFS: "Encourage citizens to engage in science through formal and informal science education, and promote the diffusion of science-based activities, namely in science centres and through other appropriate channels;"

WP14-15:

Innovative ways to make science education and scientific careers attractive to young people

Responsible Research and Innovation in Higher Education Curricula

[INSO-6-201436: Platform for ICT for Learning and Inclusion]

To promote the IY of Light to the educational communities across Europe



ACTION PLAN

- **Setting up the ESEA working group**
 - Actions in 2014-2015 (Website, Communication Strategy, Portal population, workshops, hangouts, virtual visits, contests)
 - To coordinate the implementation of the Action Plan
 - To safeguard funding for the realization of the Action Plan
 - To organise three ESEA workshops (2014, 2015, 2016)

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