

Educational software in the one-to-one computing programs

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Presentation outline

■ 1. Opportunities

- IT changes everything
- Changes in learning
- Tools in education
- Models and tools in education
- Collaborative learning
- Guided inquiry
- Educational research

■ 2. Proposed strategy

- International collaboration for good open solutions
- Networking at different levels
- Making open solutions available for final users
- A network of networks
- Moving forward

IT Changes Everything

- Educational Methods
- Educational Goals and Content
- Materials Development
- Materials Distribution
- Professional Development
- Research in Education




Changes in learning

- Active Learning
 - Tools (Ex.: Probes)
 - Models (Ex.: Molecular Dynamics)
- Collaborative Learning
 - Online Problems Solving
 - Online Courses
 - Shared Problem Solving
- Global Sharing



Tools in education

- Tools extend our capacity
- They allow us to do new things, but do not tell us what to do
- Interactive tools allow to build and test mental models
- Probeware is one IT tool, but there are many others
 - Productivity tools
 - Specialized tools



The Problem:
Make 2020

Broken Keys:
0, 1, 2, 5

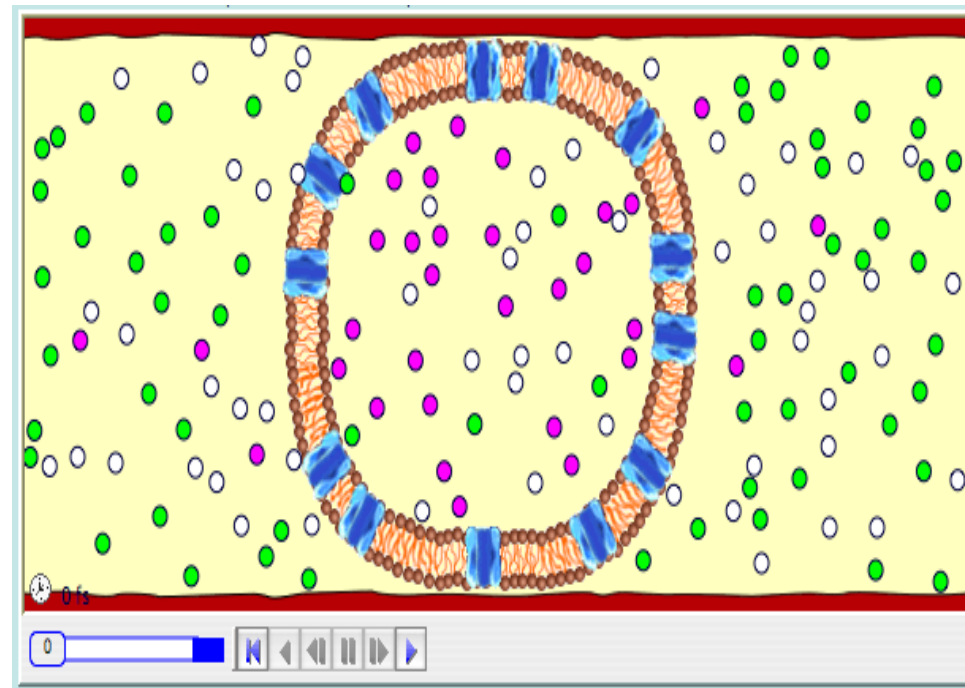
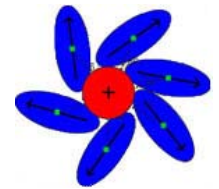
The Student's Solutions:

8484	6363
<u>- 6464</u>	<u>- 4343</u>
2020	2020

2 ways!
Both in 1 step!

Models and Tools in Education

- Tools expand our capacity to create and explore
- Models allow us to explore new realms.
- Tools and models are among the greatest gifts of technology to education.
- Tools and models have very wide application in education



Collaboration

- Collaboration is how most problems are solved
- Learning to collaborate is an essential skill
- Technology facilitates collaboration
- Key: thoughtful collaborations
 - Reason for collaboration
 - Clear method and goal
 - Skilled facilitation



Guiding student inquiry

- Tools and models are not enough.
- Need curriculum materials integrated with tools and models.
- Examples
 - Probe Activities
 - Molecular Workbench Activities
 - BioLogical Activities
 - WISE Activities



Educational research

- Online materials can provide detailed data on student actions and thinking.
- Thousands of students worldwide participate in our research projects.
- This can revolutionize educational research.





International collaboration: the key for good open educational solutions

■ A need

- Highly interactive software development is time and cost consuming
- Universal curriculum materials need global collaboration for high quality local solutions

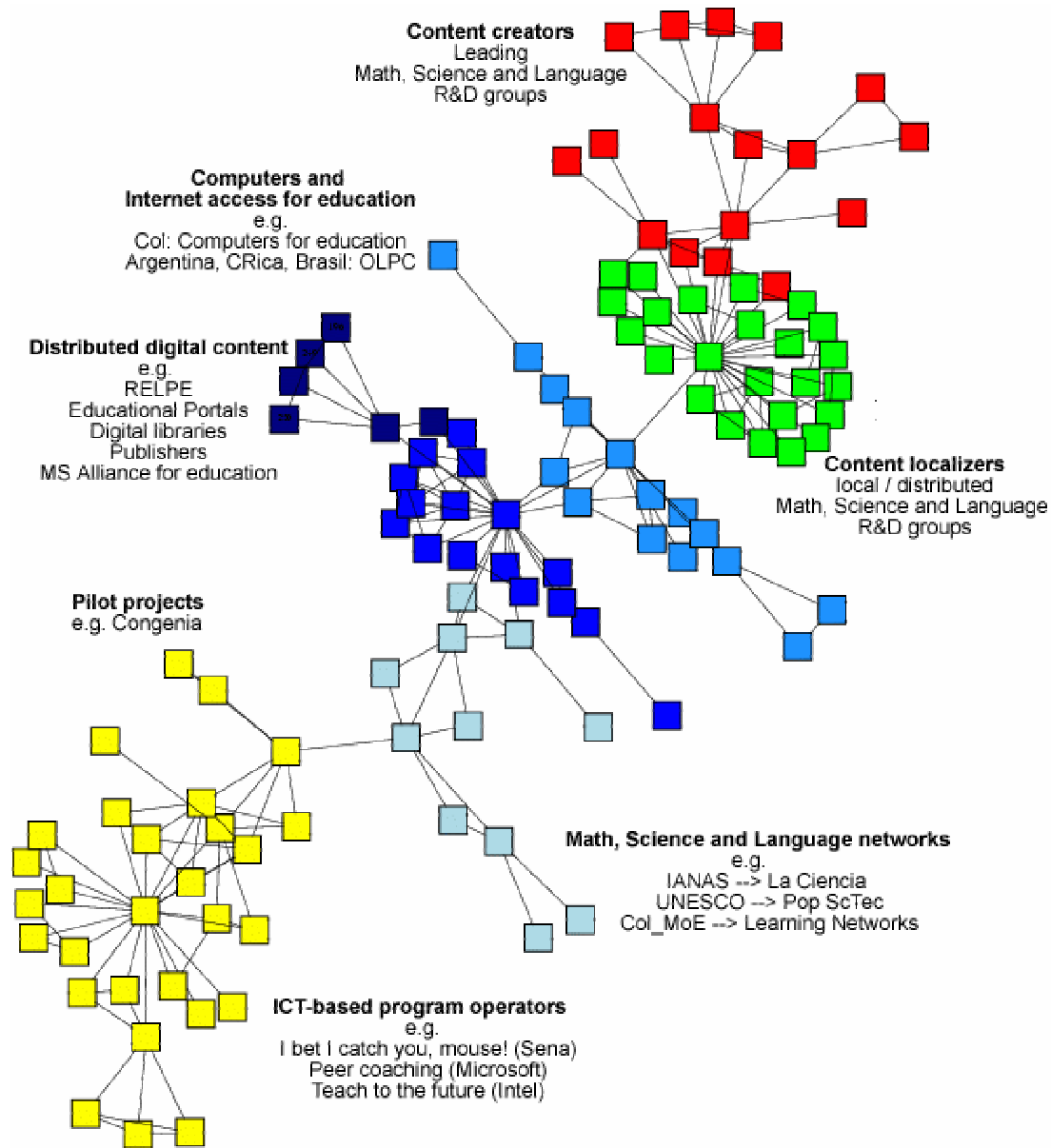
■ A unique opportunity

- Low cost 1-1 computing
- Research-based open source software and open access curriculum materials
- Distributed R+D groups across the Americas

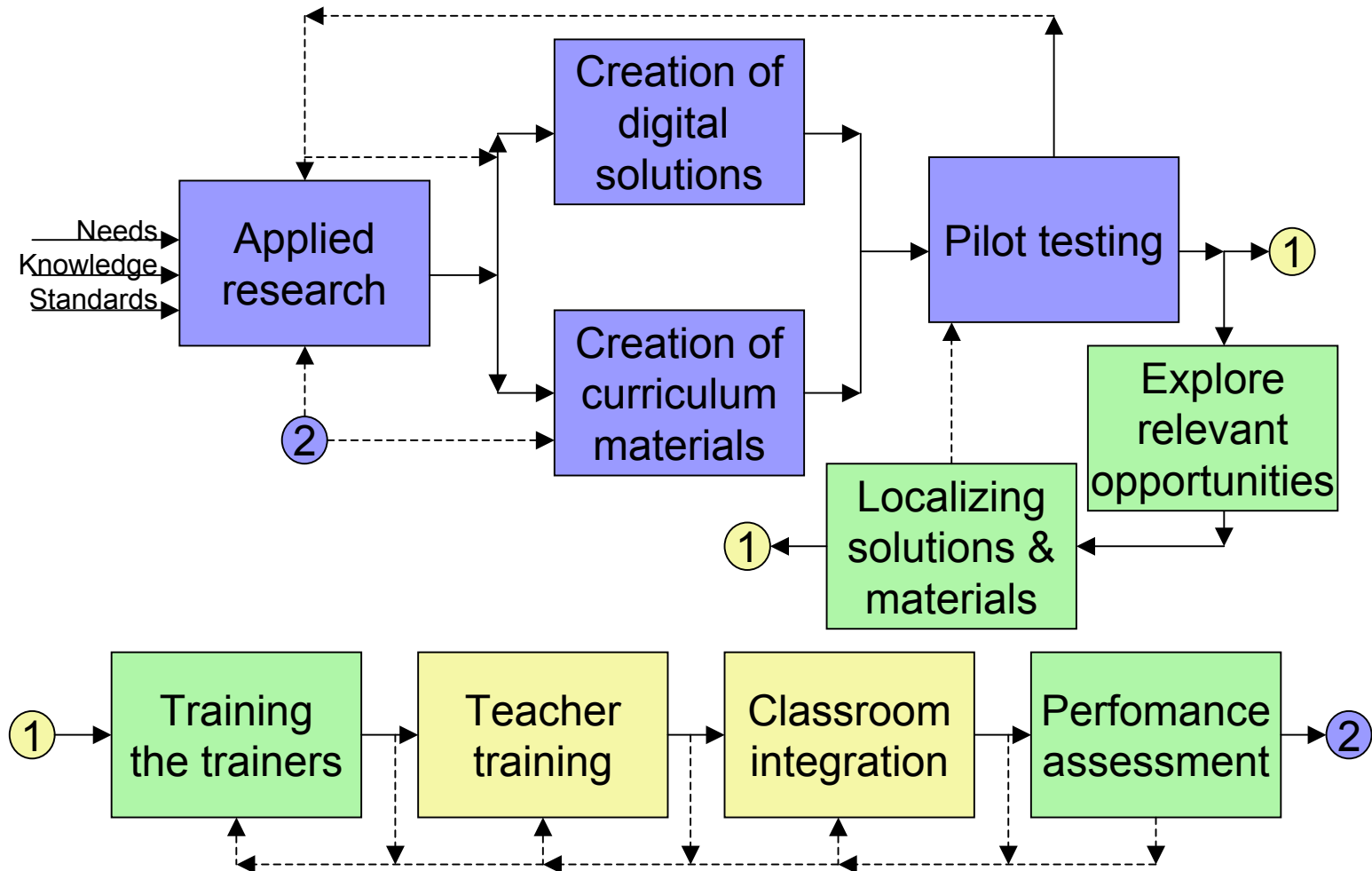




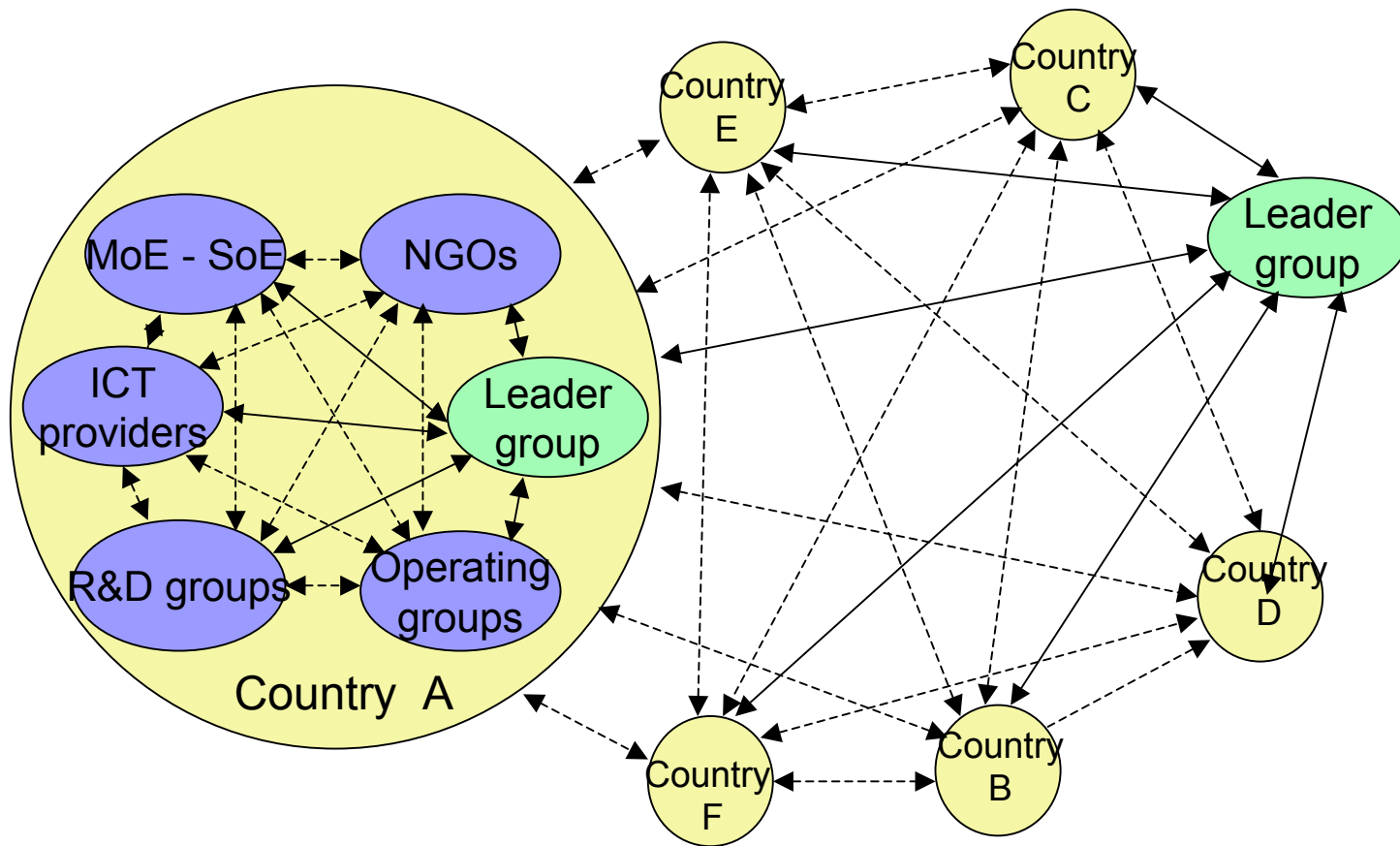
Networking at different levels



Making open educational solutions available for final users



A Network of networks



Moving forward

- Preliminary work
 - Exploration of interest
 - Potential sponsors
- Pilot testing the strategy
 - Two year project with the group of the Andean Community of Nations
- Expansion of the project
 - Three year project with interested Latin American nations

Wrapping up

- Comments
- Questions
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