

Tertiary Education in the 21st Century: Opportunities and Challenges

Jamil Salmi

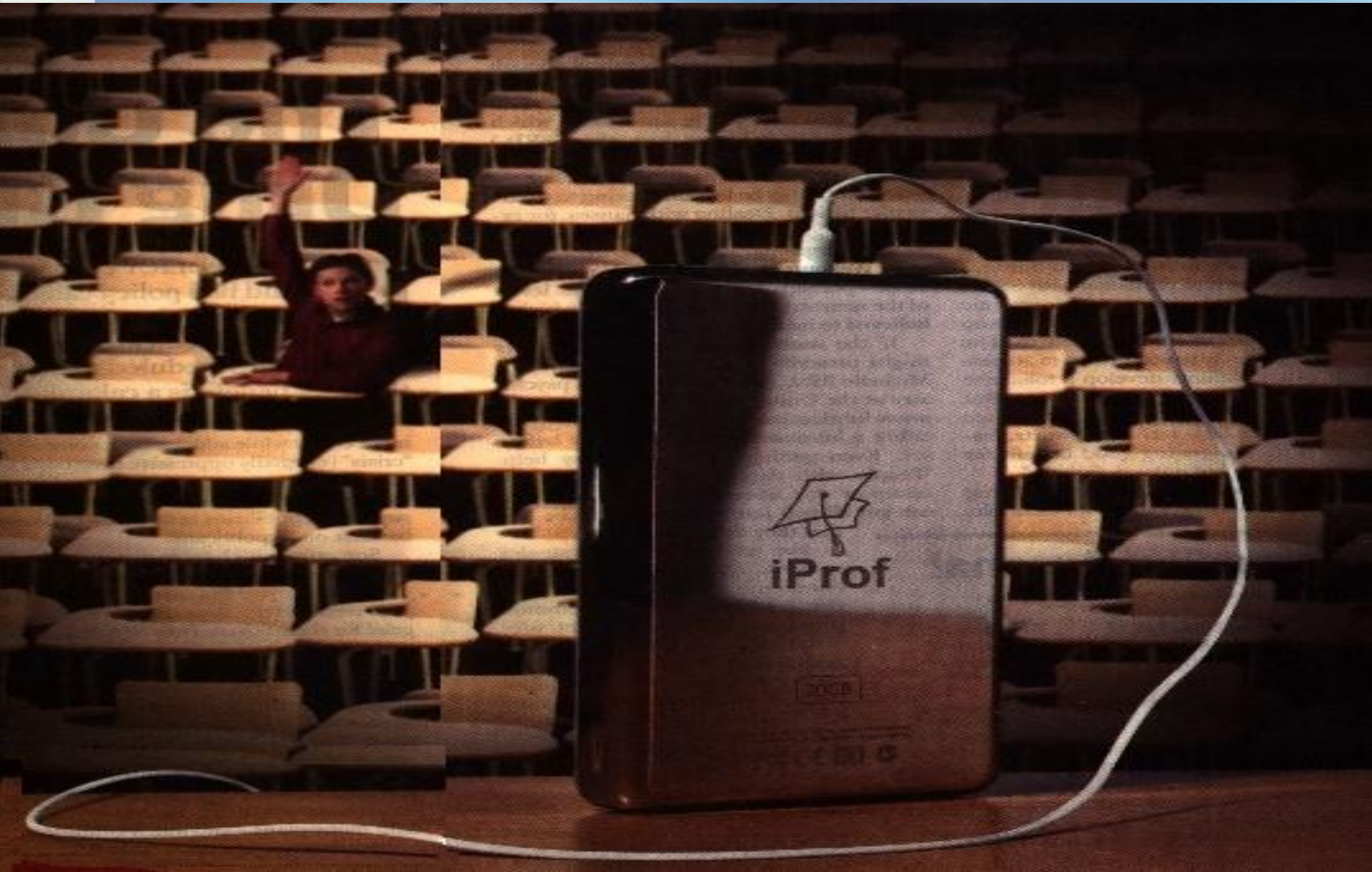
Oxford, 13 January 2012



the future of tertiary education?



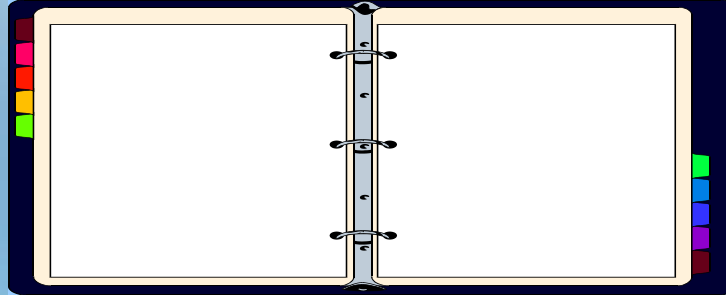
a world of science fiction?



**is your
tertiary education system ready?**



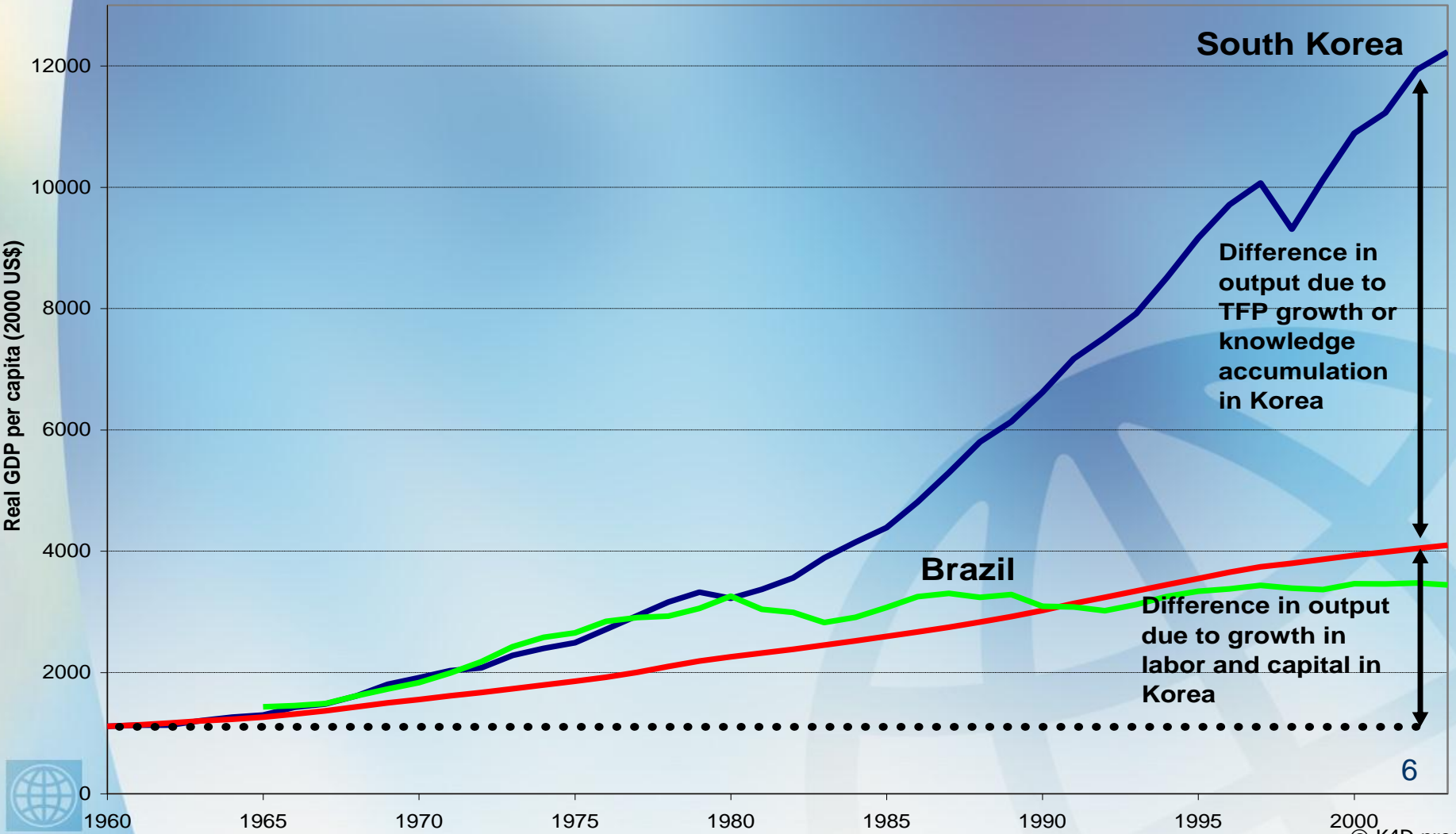
outline of the presentation...



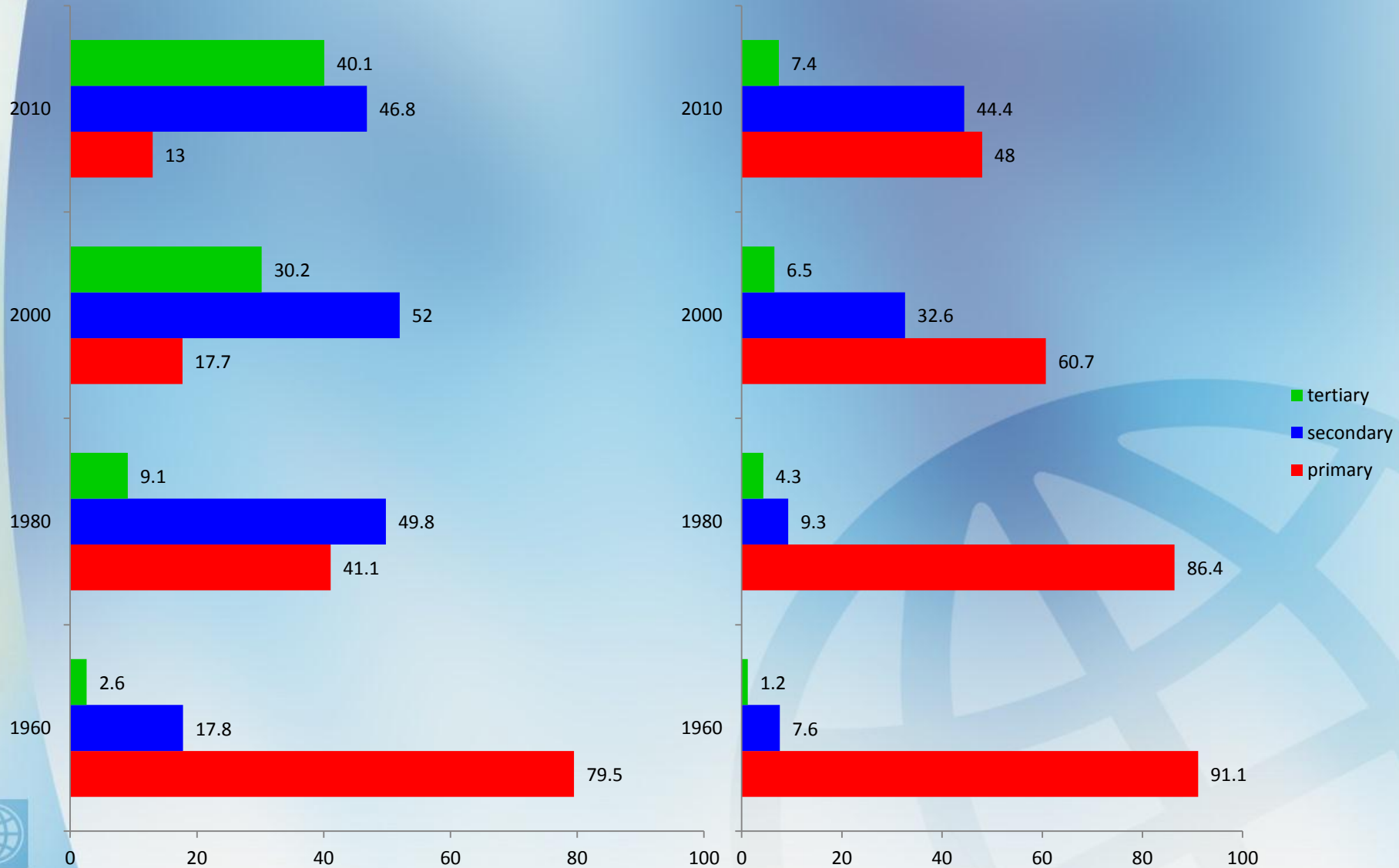
- importance of knowledge
- changing education needs & practices
- implications for emerging markets



explaining the difference between poverty and wealth



South Korea and Brazil



creative work in the economy

IN THE UNITED STATES

Creative
Work

- Research
- Development
- Design
- Marketing and Sales
- Global Supply Chain Management

Routine
Work

DONE BY
PEOPLE

Routine
Work

DONE BY
MACHINES

IN LESS DEVELOPED COUNTRIES



Oulu



OULUN KAUPUNKI
City of Oulu

OULUN YLIOPISTO
University of Oulu



NOKIA

Nokia E7
Biểu tượng mới
của người thành đạt



NOKIA
Connecting People

NOKIA

Connecting People

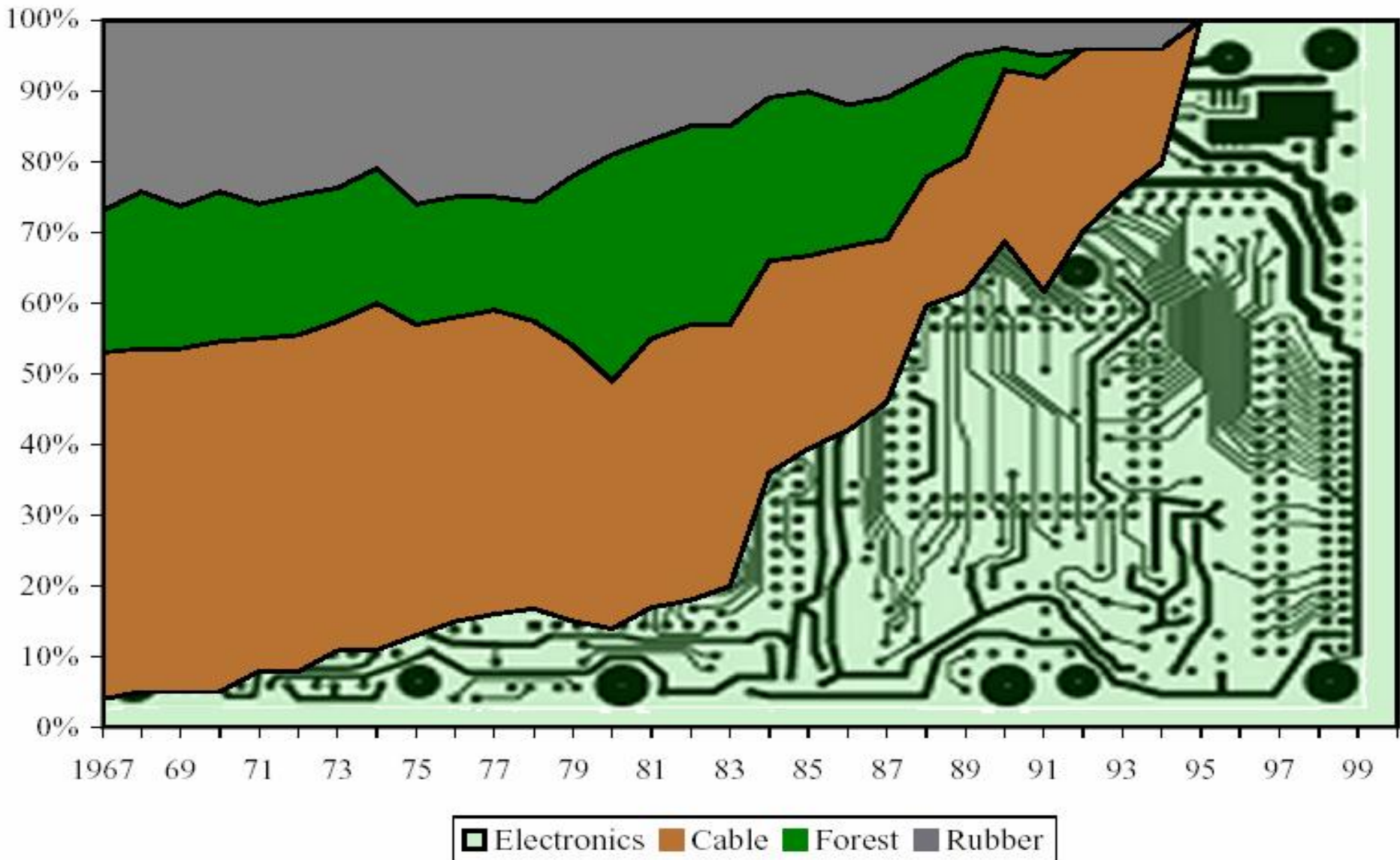
OPEN: 08h00

CLOSE: 21h00

Nokia E7
Biểu tượng
của người thành đạt



evolution of Nokia sales











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knowledge for safety

- seismology
- vulcanology
- climatology (floods, tsunamis, droughts, etc.)



tsunami

26 December 2004



Japan

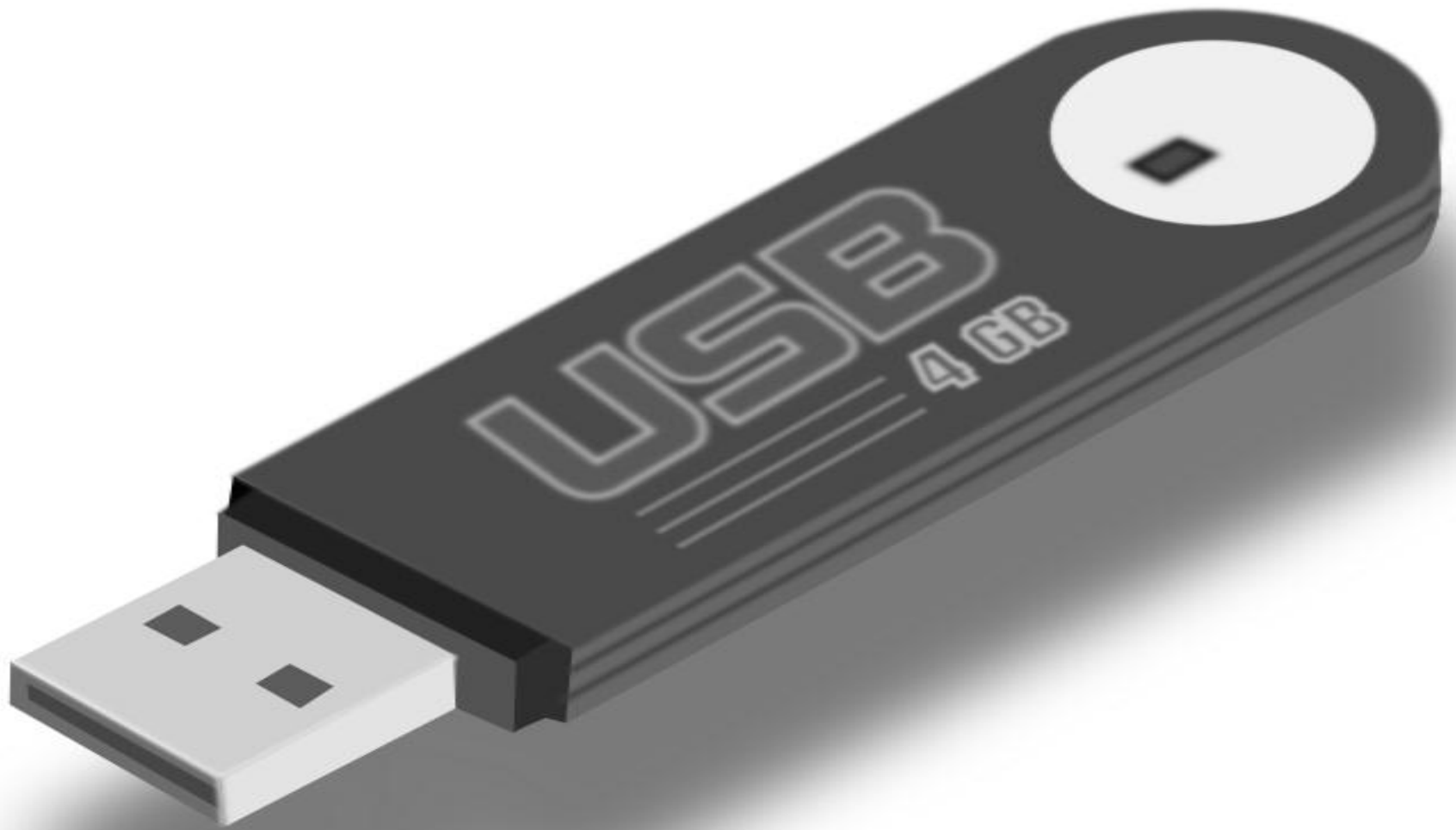
(11 March 2011)



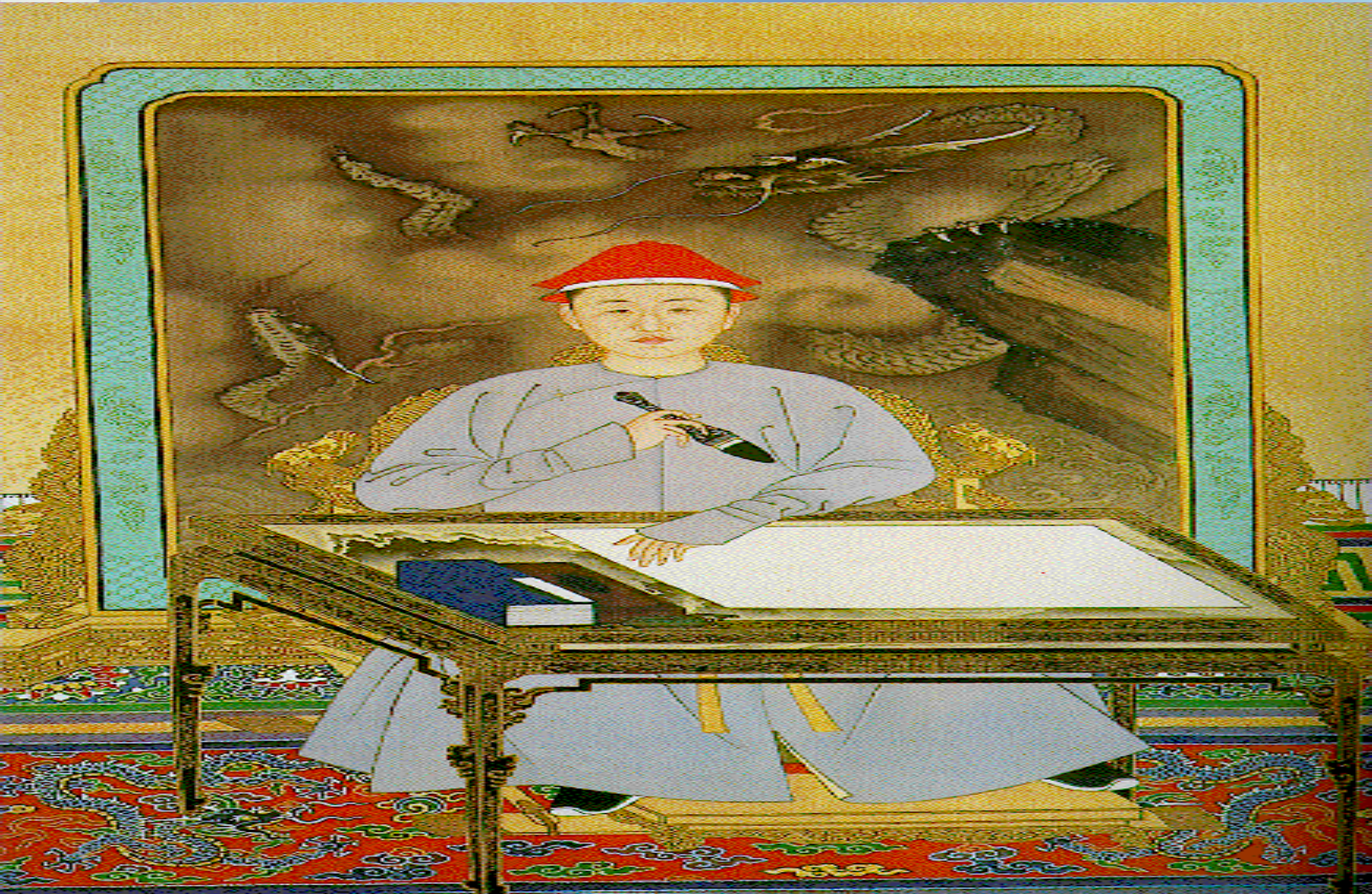
acceleration of speed of
creation of new knowledge



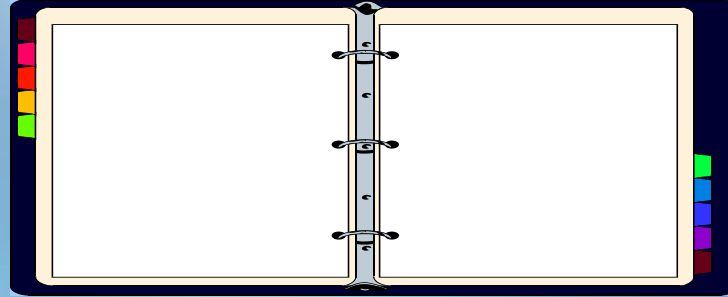




how can we update our knowledge?



outline of the presentation...



- importance of knowledge
- **changing education needs and practices**



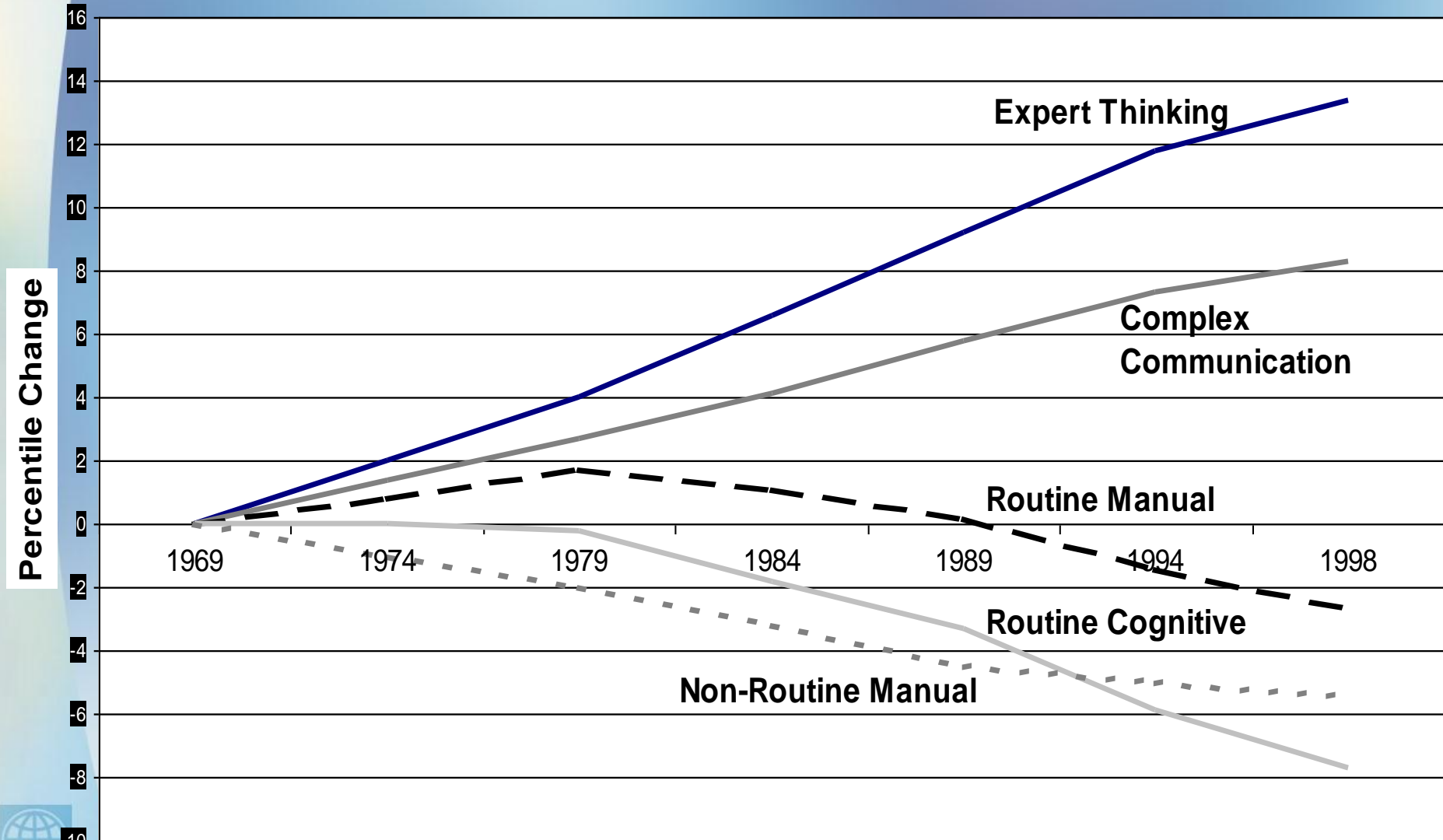
changing education needs and practices

- new skills





changes in job task-skill demands in the USA (1960 – 1998)





Robot Doctors Replacing Real Doctors



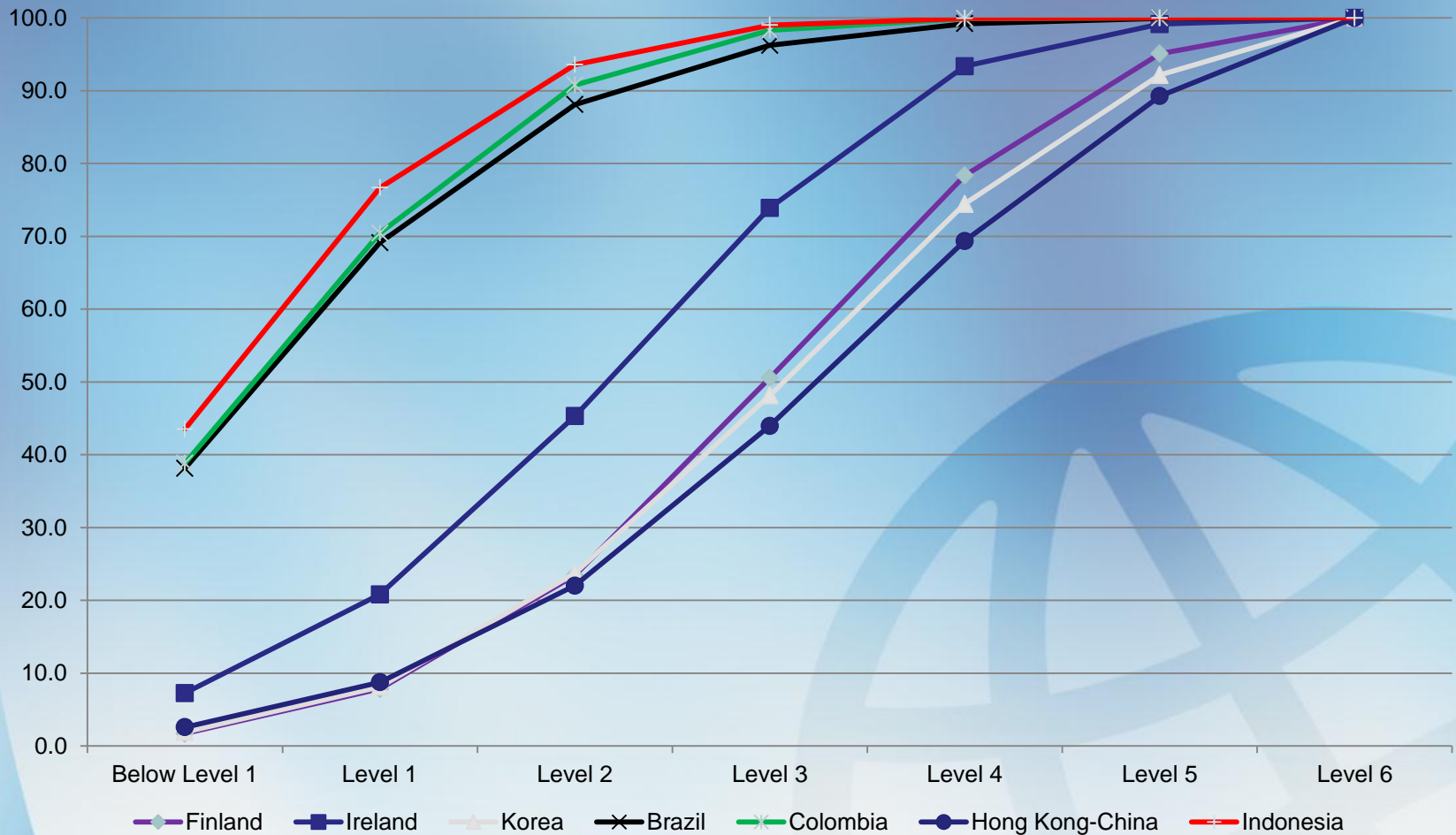
Judith May consults with Placitelli in person and Kavoussi via video. Technology assists in maintaining personalized doctor-patient relations.

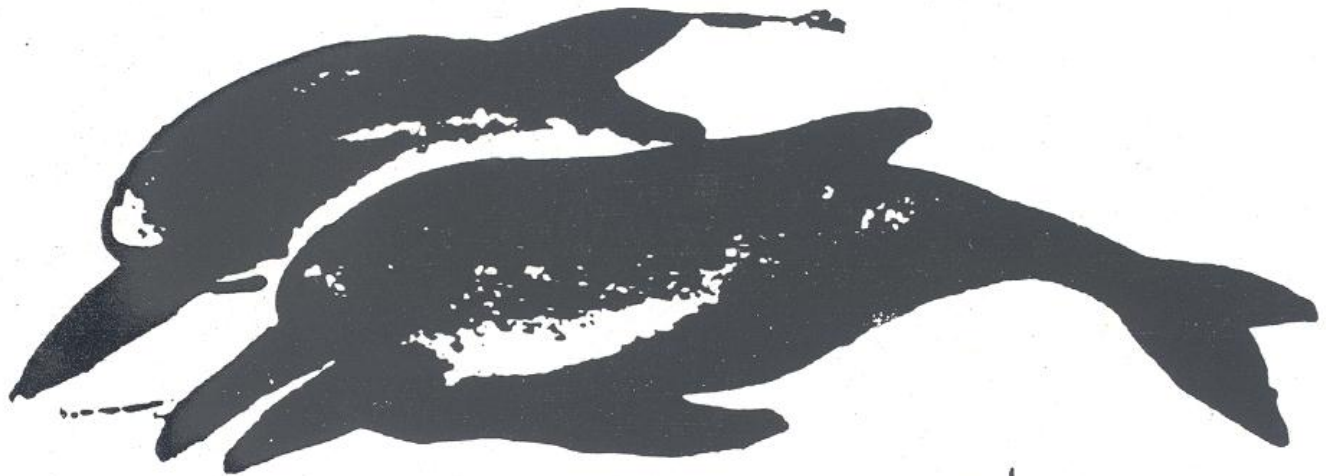
PISA



2009 PISA results

Percentage of students at (below) each proficiency level on the mathematics scale





J. Harris

“Although humans make sounds with their mouths and occasionally look at each other, there is no solid evidence that they actually communicate among themselves.”



new competencies



design



prada phone



luxury Razr with lizard skin



Giorgio Armani-Samsung mobile



fashion phones



3G.co.uk



















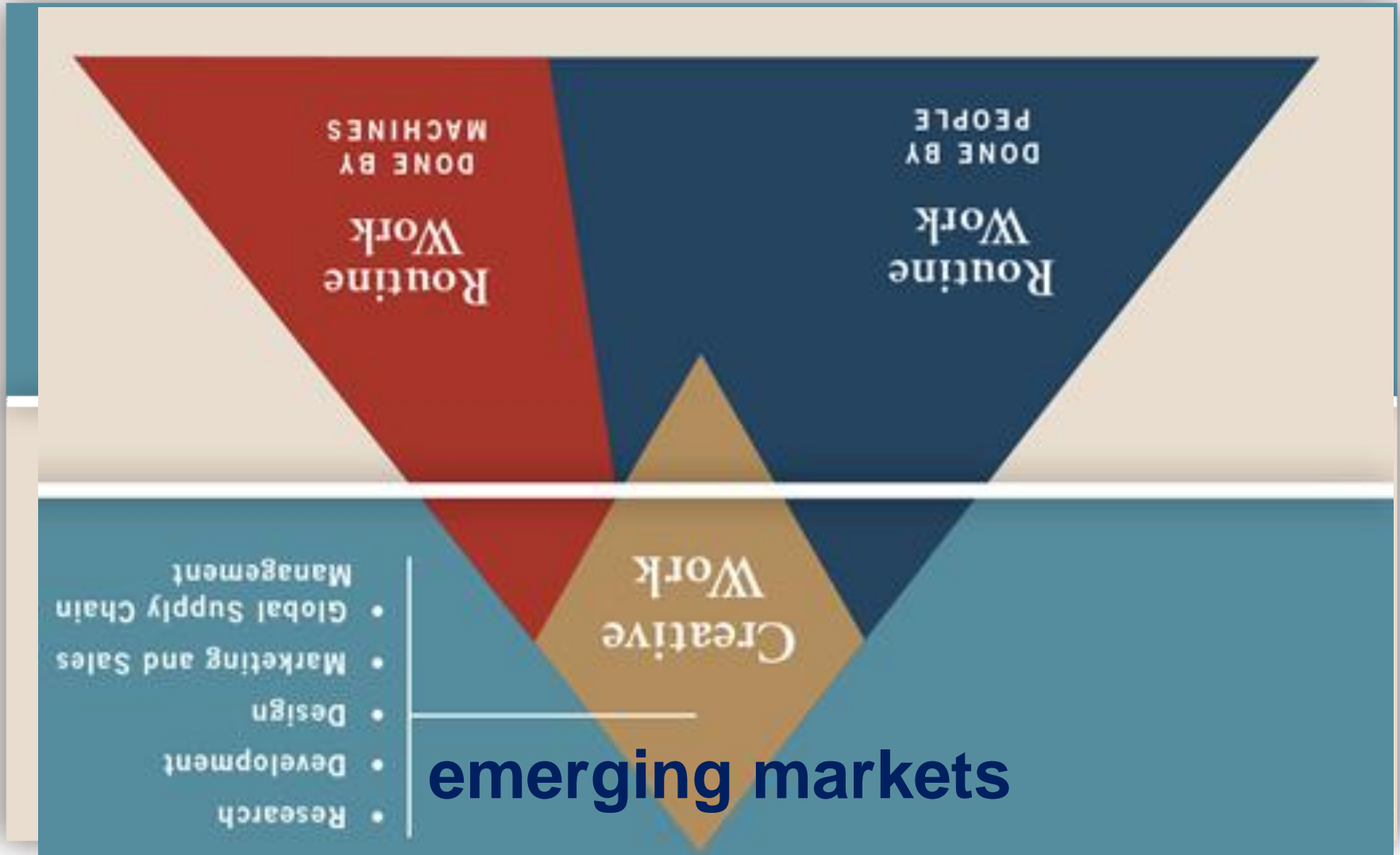


creativity

**“I didn't know
you could do that!”**



creative work in the economy





changing education needs and practices

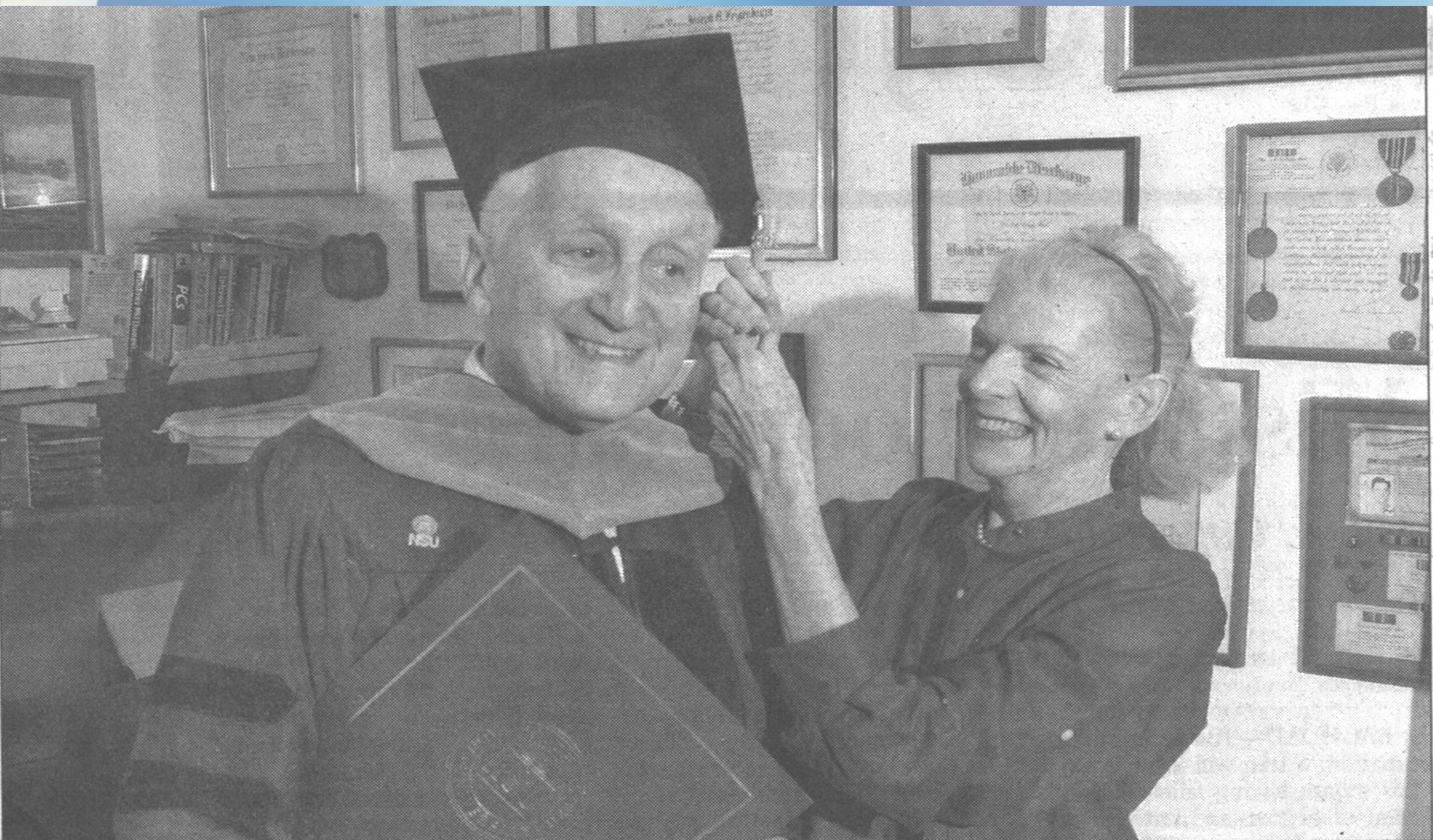
- **new skills**
- **lifelong learning**



from Innocence



... to wisdom



today

postgraduate
studies

first degree



university of the future?

Undergraduate studies

On-campus

Graduate studies

On-line

Continuing professional
development

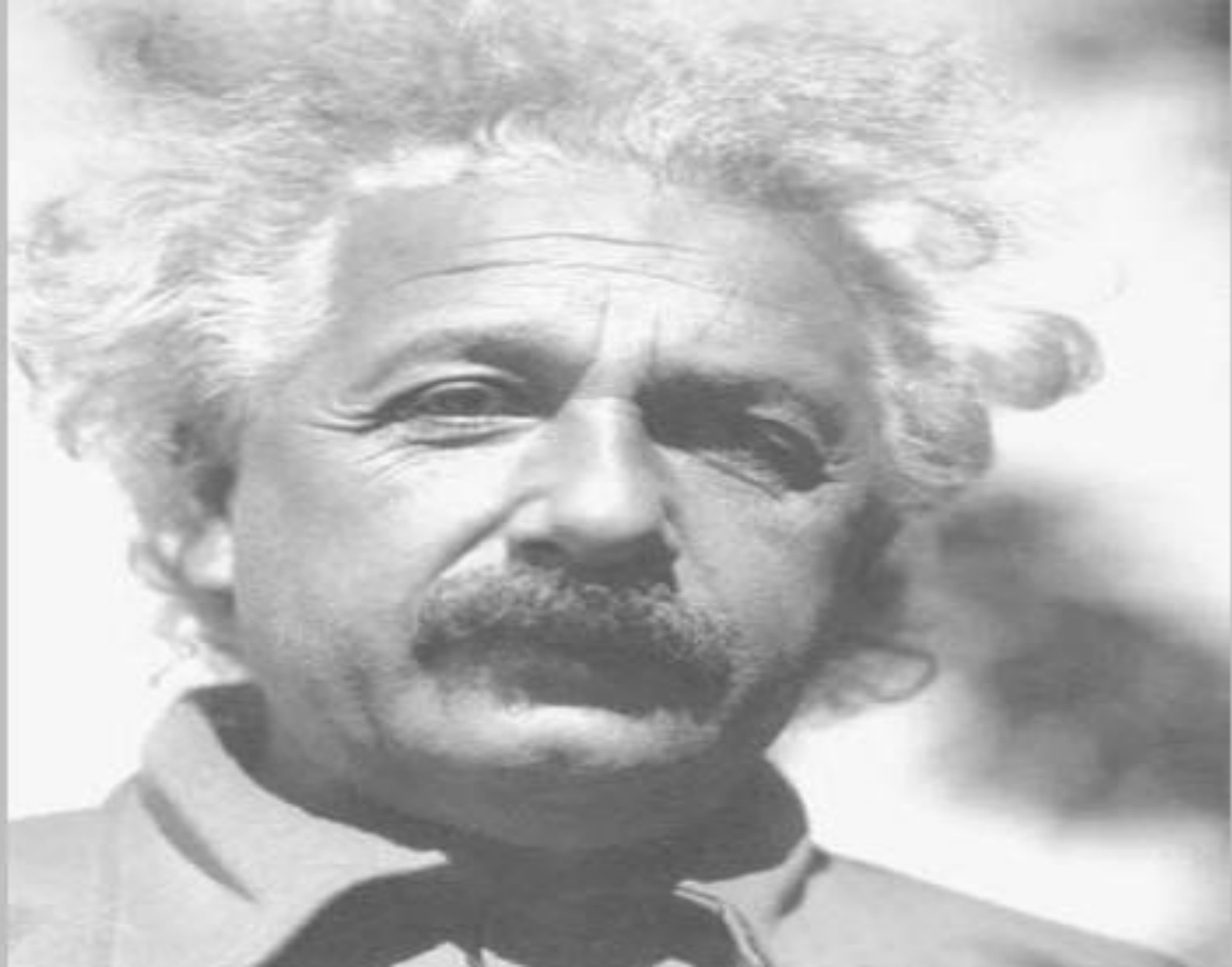
Career change studies



changing education needs and practices

- **new skills**
- **lifelong learning**
- **learning to learn and unlearn continuously**







new pedagogical approaches

- focus on learning tailored to needs of individuals rather than teaching
- new and varied modalities for learning: interactive & collaborative learning



when you want...



1. Introduction to the course
2. The course objectives
3. The course materials
4. The course schedule
5. The course evaluation
6. The course contact information
7. The course website
8. The course syllabus
9. The course syllabus
10. The course syllabus

11. The course syllabus
12. The course syllabus
13. The course syllabus
14. The course syllabus
15. The course syllabus
16. The course syllabus
17. The course syllabus
18. The course syllabus
19. The course syllabus
20. The course syllabus

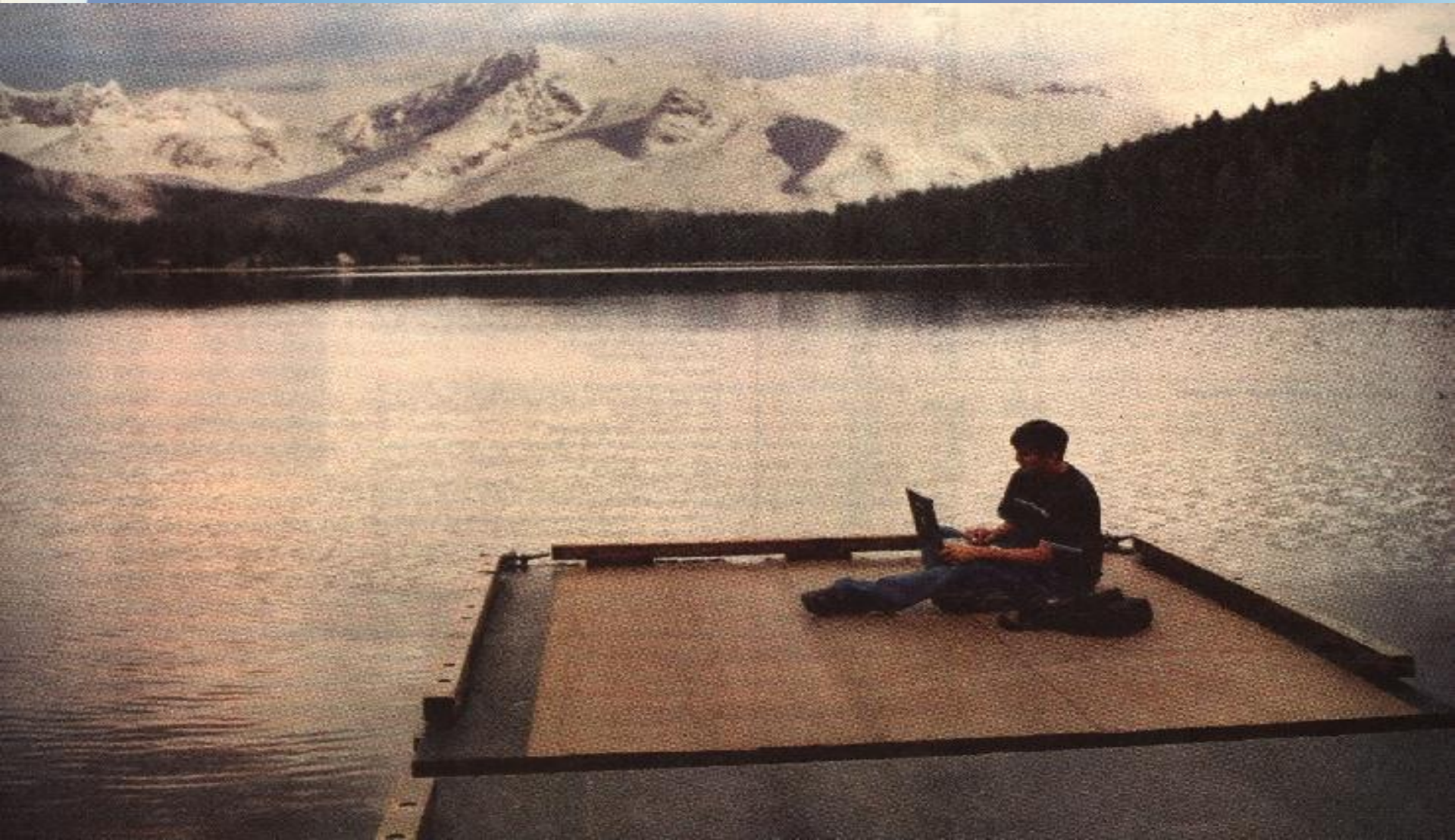
Spring semester classes start January 28, 2002

**WELCOME TO CLASS.
SIT ANYWHERE.**

University of Maryland University College
Get ahead and finish your degree sooner. Complete online



where you want...





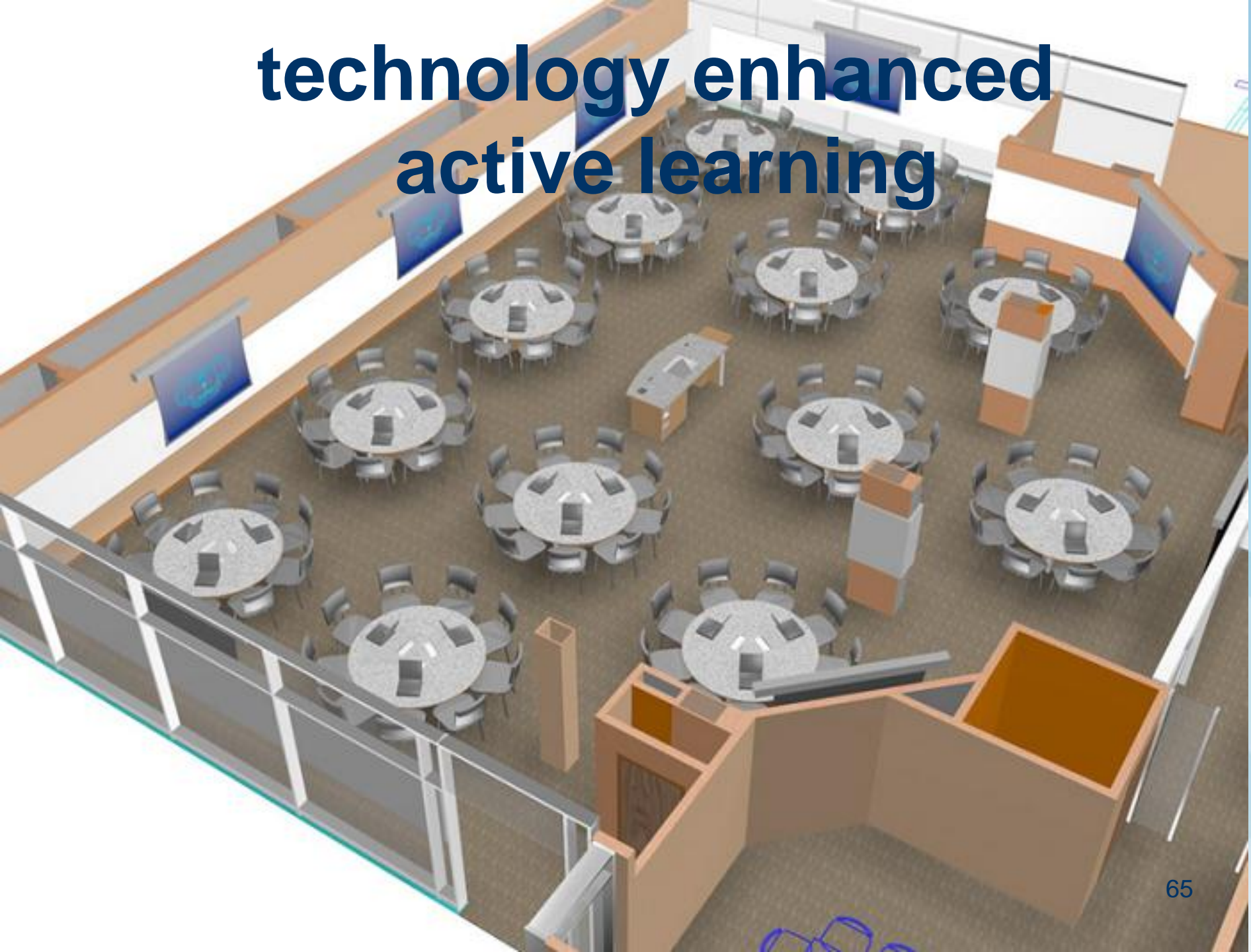


Water Based Activities
The Water Based Activities Program is designed to provide a safe and fun environment for children and adults alike. The program includes a variety of activities such as water aerobics, water polo, and water volleyball. The program is open to all ages and is a great way to stay active and cool during the summer months.

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Please Read!
Please follow the water safety rules to ensure a fun and safe experience.
1. Please do NOT run or play while another person is using the water.
2. If you would like to participate, please sign up at the front desk.
3. Please do not drink alcohol while participating in any water activities.
4. Please do not use any weapons or sharp objects while participating in any water activities.

technology enhanced active learning









WESCRIBE

Wescribe

Wescribe



record pause stop

jump

bookmark

0%

Gather clues - Interview suspects - Analyze evidence Solve a mysterious death

This activity is set in a research group that is developing an antivenom for spider bites. In the opening scene, Nelson Pogline, a talented graduate student, dies unexpectedly at a university reception. As a detective, you must use chemistry concepts to determine if this was murder and if so, solve the case. You can interview suspects using Quicktime movies, investigate the crime scene for clues with Quicktime Virtual Reality images, and analyze the evidence from the crime lab.



This activity requires basic knowledge of formula weight, stoichiometry and the scientific method to solve the mystery.

Additional concepts that are discussed include: molecular recognition, limiting reagents, and mass spectrometry.

Note to instructors: The Windows-based software is suitable for high school and college introductory chemistry students. Mixed Reception can be used as a homework assignment for individual students, or as an in-class group activity. Solving the case takes between 40 and 50 minutes.

Activity and Materials:

Activity:

[Mixed Reception Activity](#) [260 MB Zip file]
[Installation instructions](#)

Classroom Materials:

[User Walkthrough](#) [.pdf]
[Activity Worksheet](#) [.doc]
[Periodic Table](#) [.pdf]
[Final Report](#) [.doc]

Classroom CD's:

(CD includes activity and classroom materials)

Fill out a form to [request free CD's](#)
[Email us](#) for teacher solutions and hints
[Download .iso file](#) to make your own CD's



Please [email us](#) for additional information, or just to tell us what you think.



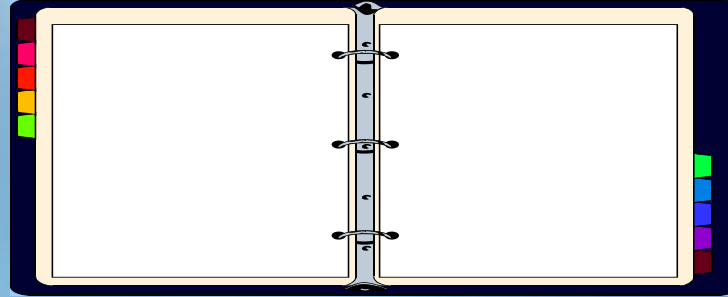


“In the early twenty-first century, people will be able to study what they want, when they want, where they want, and in the language they prefer, electronically.”

Peter Knight, July 1994



outline of the presentation...



- importance of knowledge
- changing education needs & practices
- **implications for emerging markets**



opportunity or challenge?



challenges for emerging markets

- quality and relevance
- equity
- ethics and values
- sustainable funding
- governance and flexibility



“For sale: charming and peaceful residence away from neighbors, with a wonderful view of the sea, a grand period staircase, and lots and lots of light...”





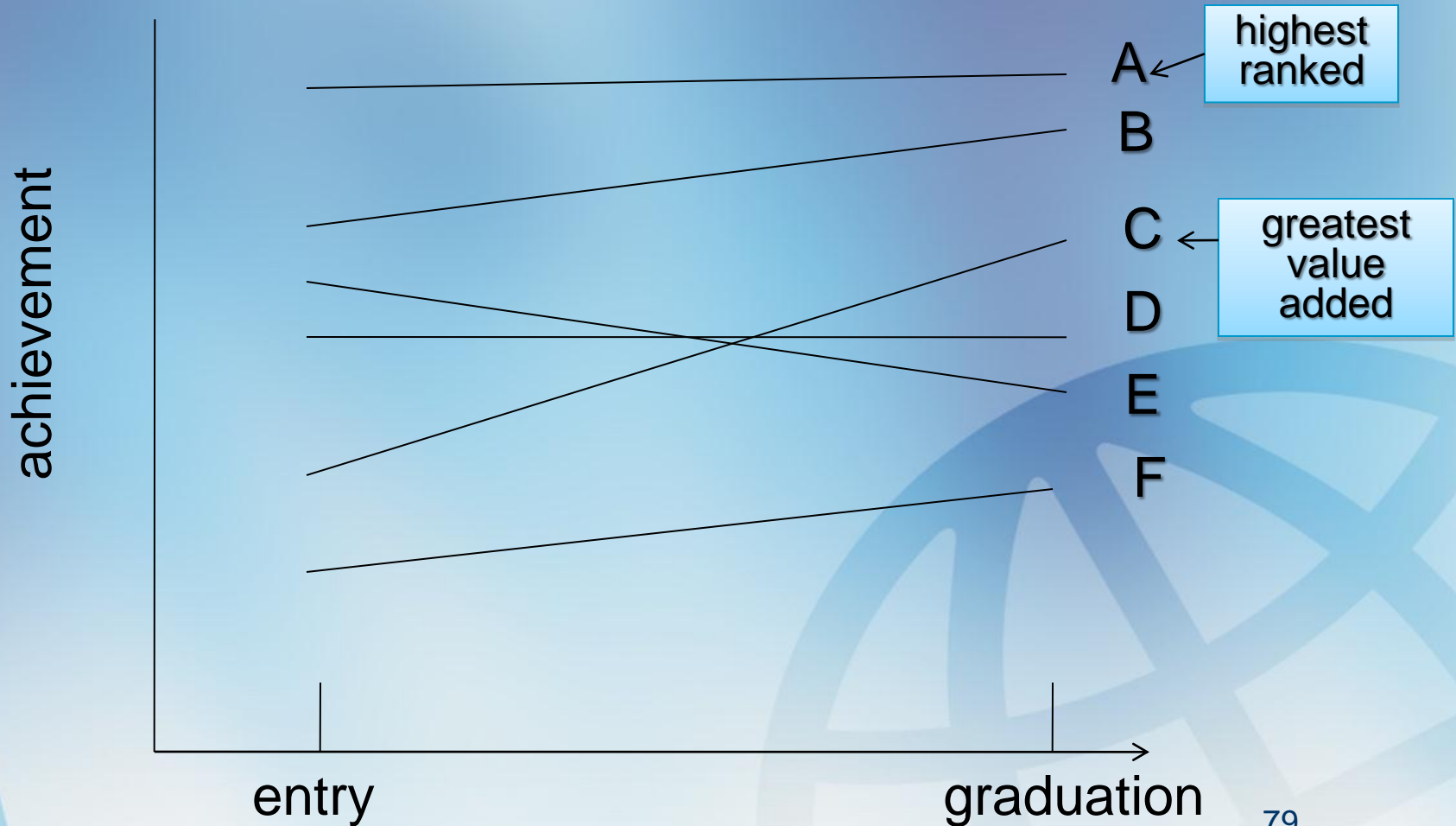
"What does he know, and how long will he know it?"

quality & relevance

- **programs**
 - **professional skills**
 - **soft competencies** (communication, problem solving, critical thinking)
- **measurement of student learning outcomes**



absolute achievement vs. value added



quality & relevance

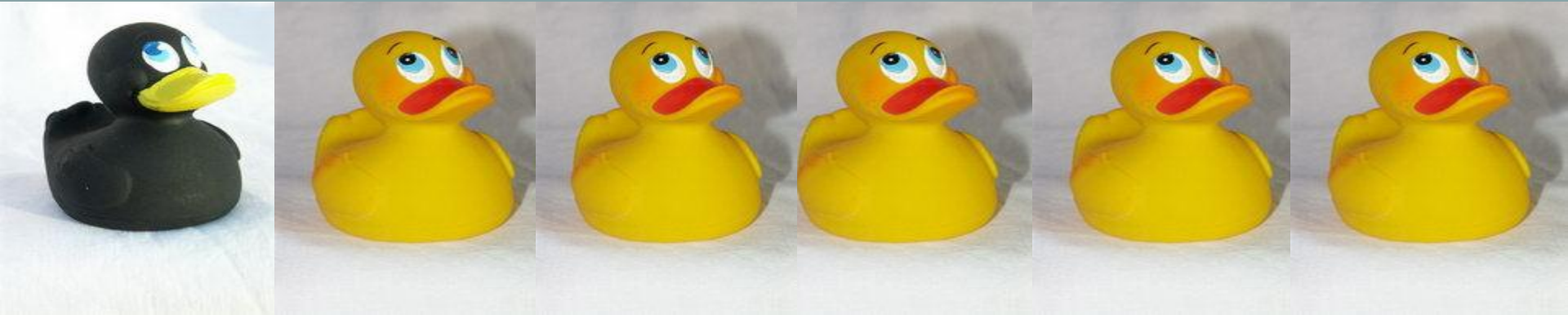
- **programs**
 - **professional skills**
 - **soft competencies** (communication, problem solving, critical thinking)
- **measurement of student learning outcomes**
- **effectiveness of e-learning**



e-learning



It is not wrong to be different.



*It is wrong to be treated differently
if you are.*

equity

- outcomes of primary and secondary education
- financial barriers
- non-financial factors
 - information
 - motivation
 - academic preparation



a genius in all of us?



a tale of two chemistry Nobel prize winners (almost...)



Lord Rutherford



Sir Chris Langan



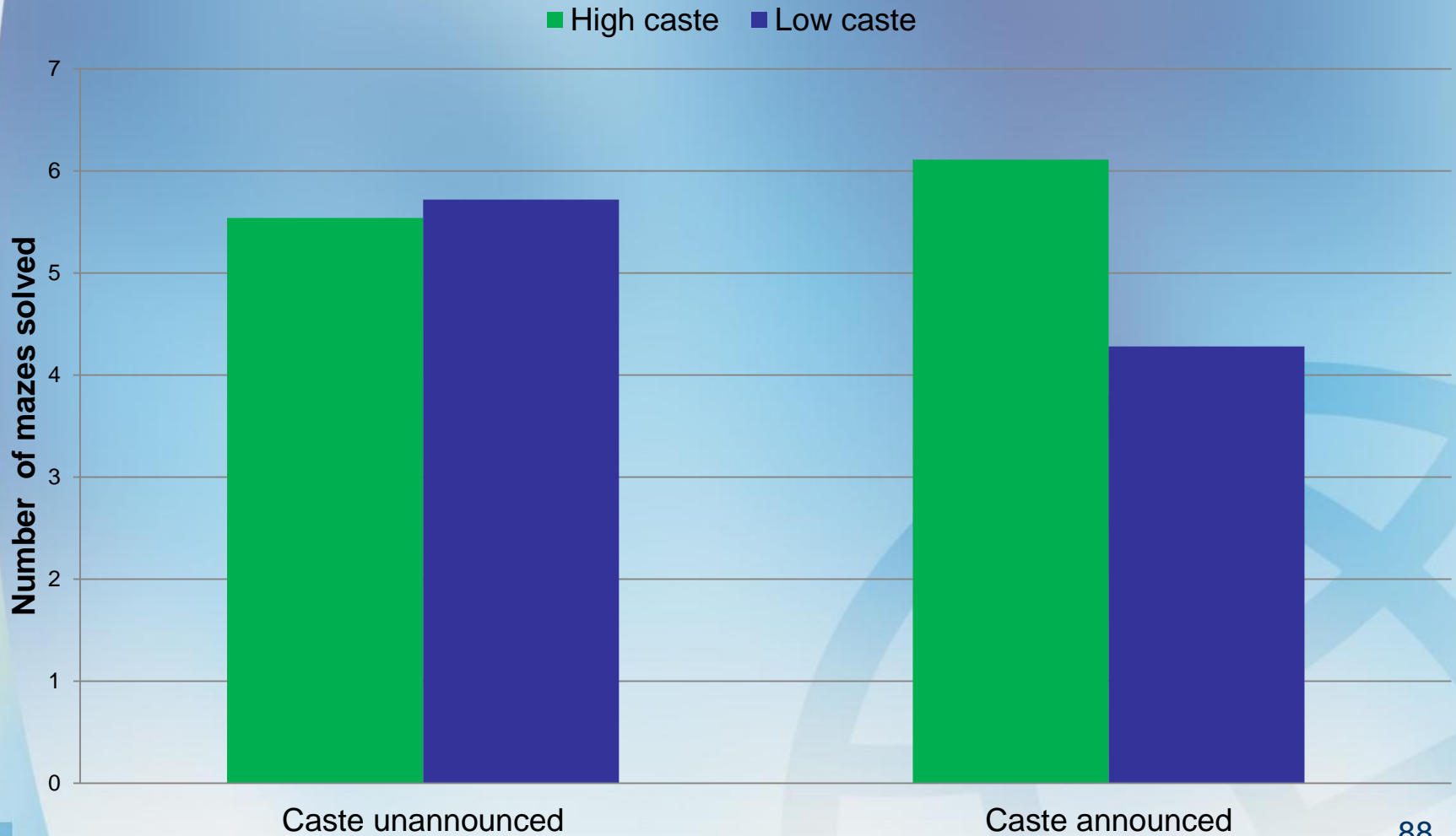
Lord Rutherford



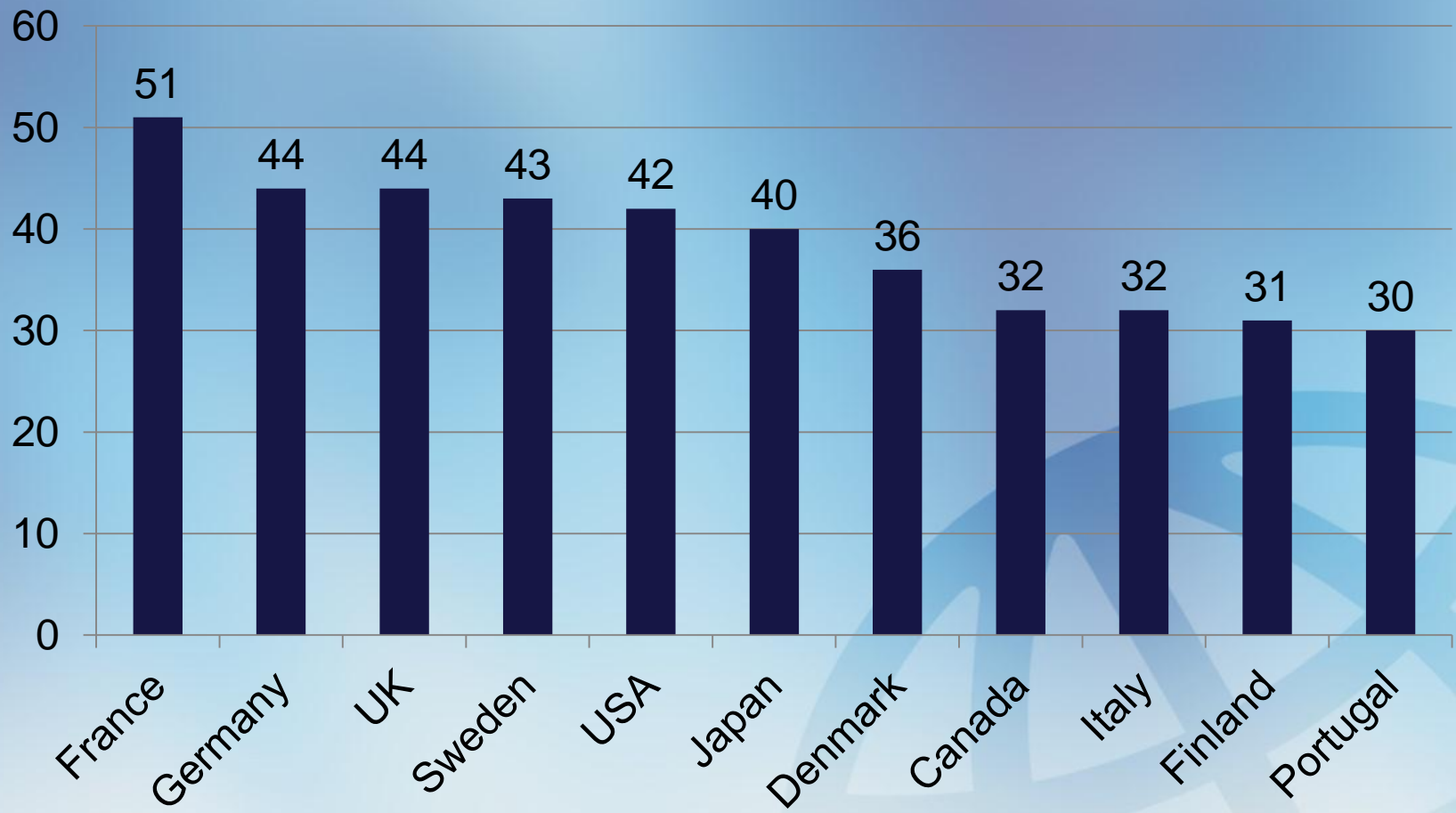
Chris Langan, the most intelligent man on Planet Earth



effects of caste identity on academic results



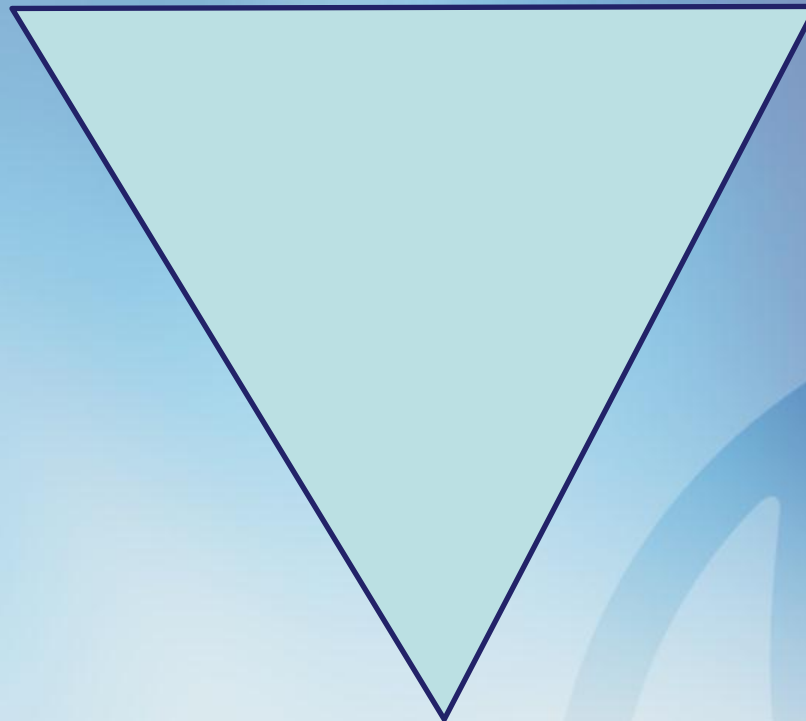
impact of social background on PISA reading score (2009)



sustainable funding: principal challenge

quantitative
expansion

quality &
relevance



financial sustainability

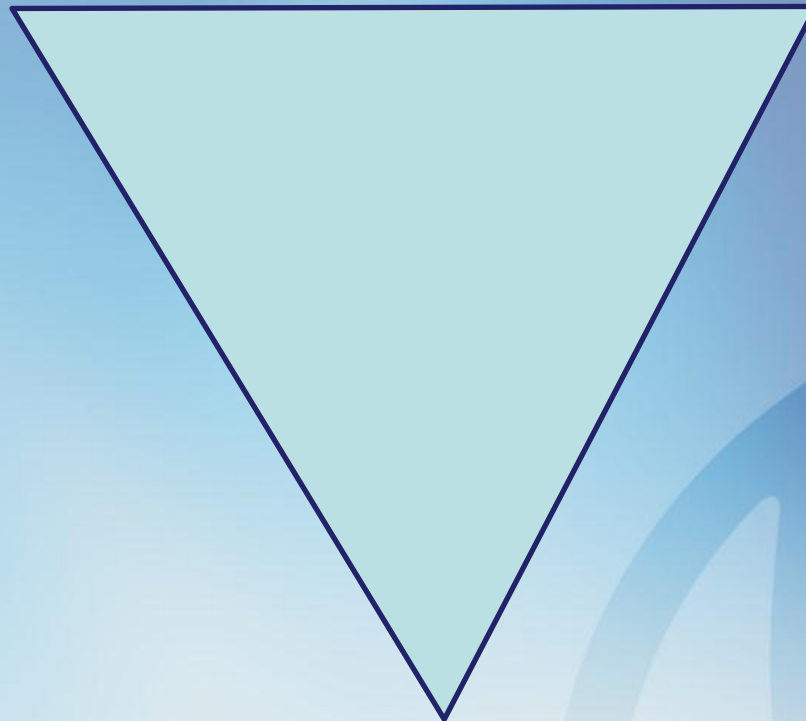




tensions

public / private

direct / indirect



efficiency / equity



ethical dimensions

- humanistic values



北京师范大学校训



学为人师
行为世范

一九九七年夏日 启功敬书



ethical dimensions

- humanistic values
- academic fraud
- conflict of interest in research
- rules for fund raising
- environmental and social responsibility

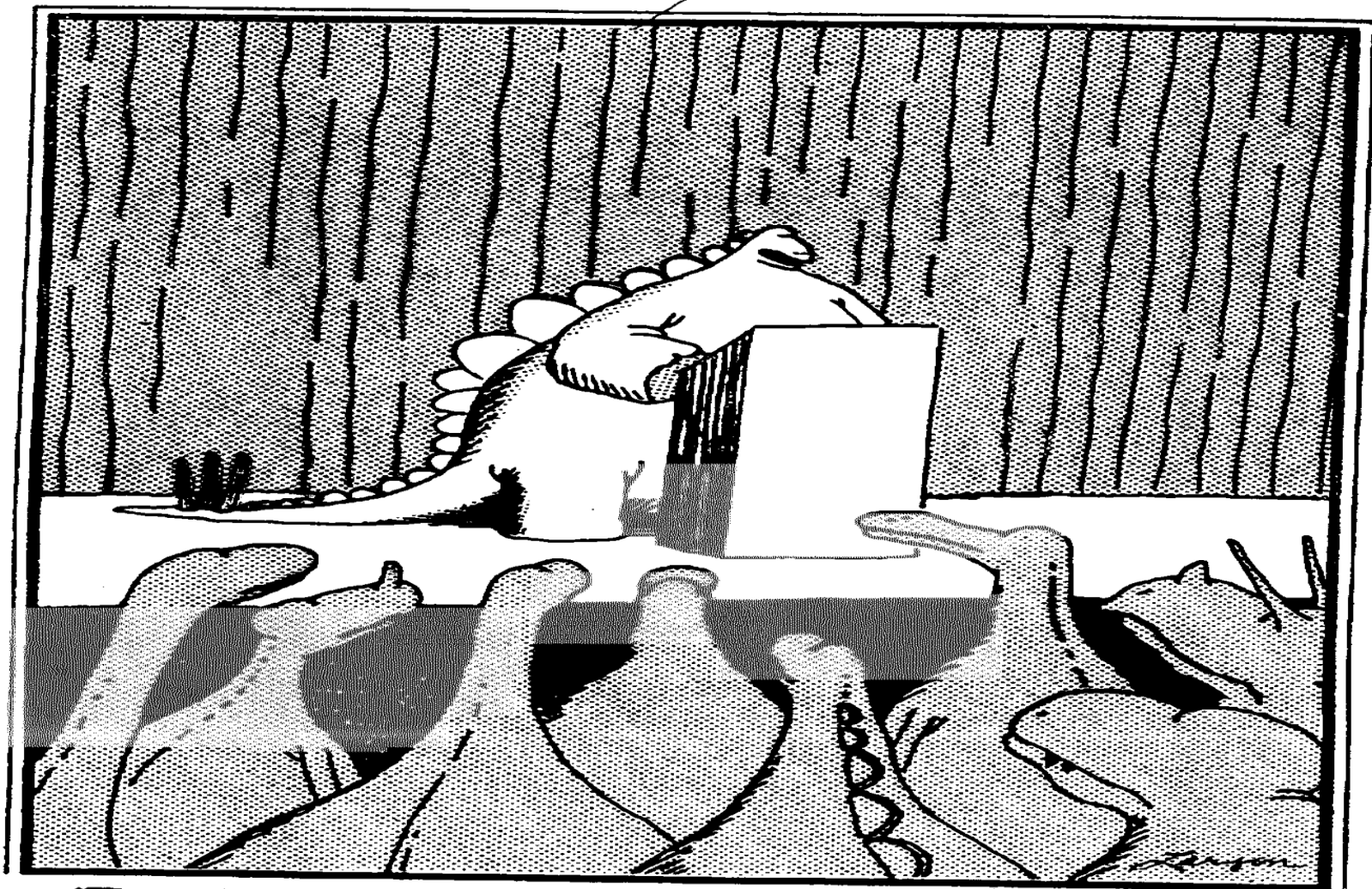


flexibility









"The picture's pretty bleak, gentlemen. ... The world's climates are changing, the mammals are taking over, and we all have a brain about the size of a walnut."

flexibility

- good feedback mechanisms
- strategic planning to orient change
- ability to react and adapt rapidly





"Whew! That was close! We almost decided something!"

conclusion



Un vieillard qui meurt
est une bibliothèque qui... brule...

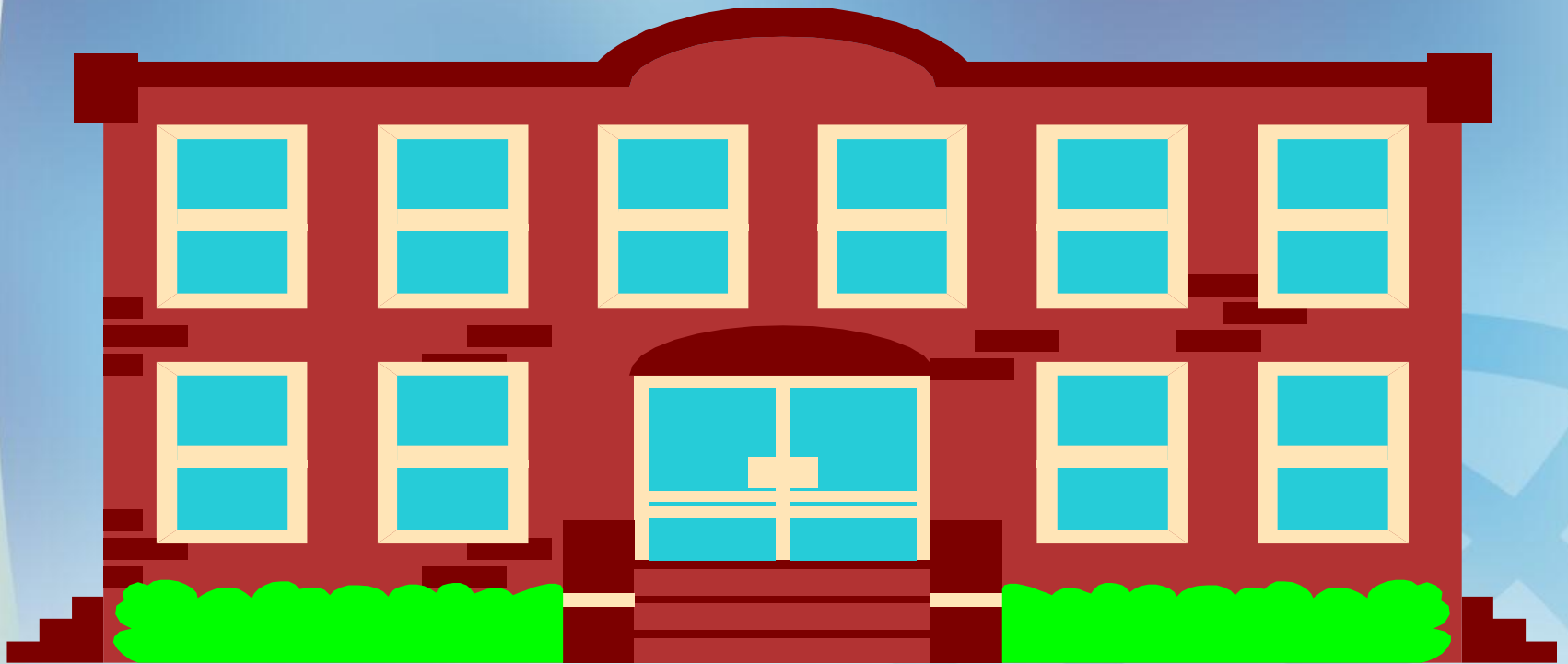


a brave new world?



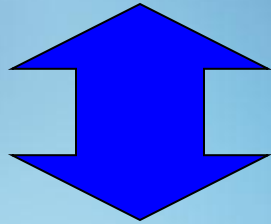
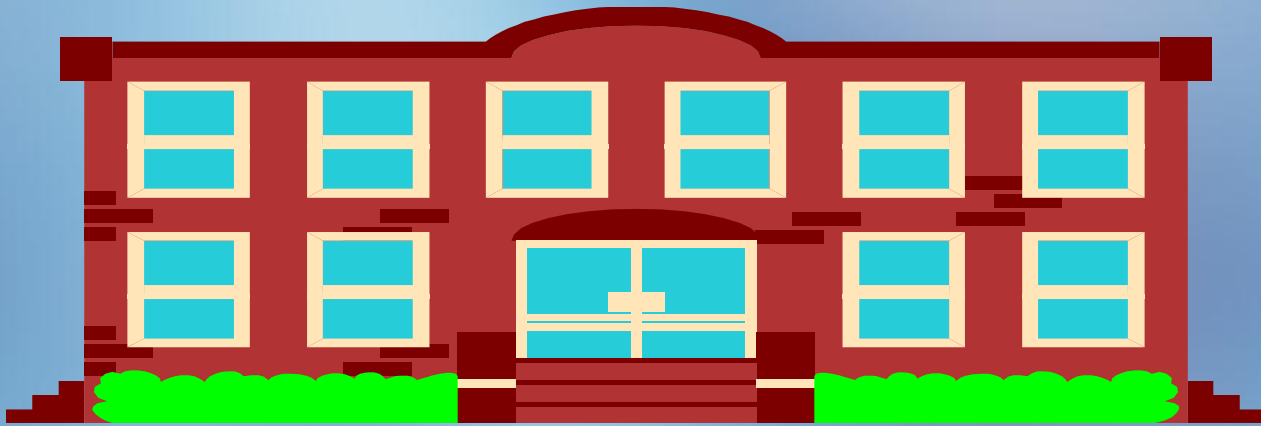


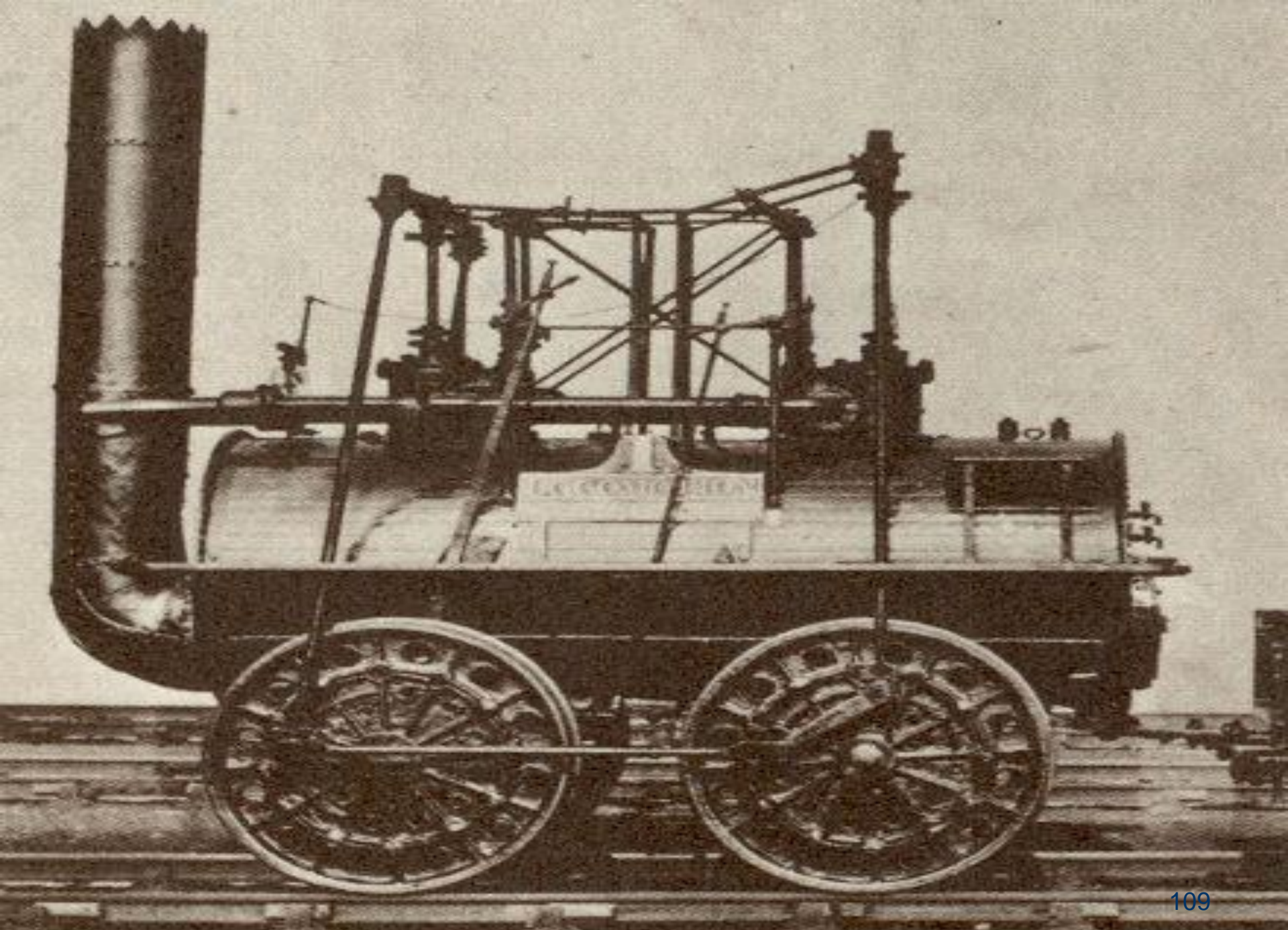
the brick university

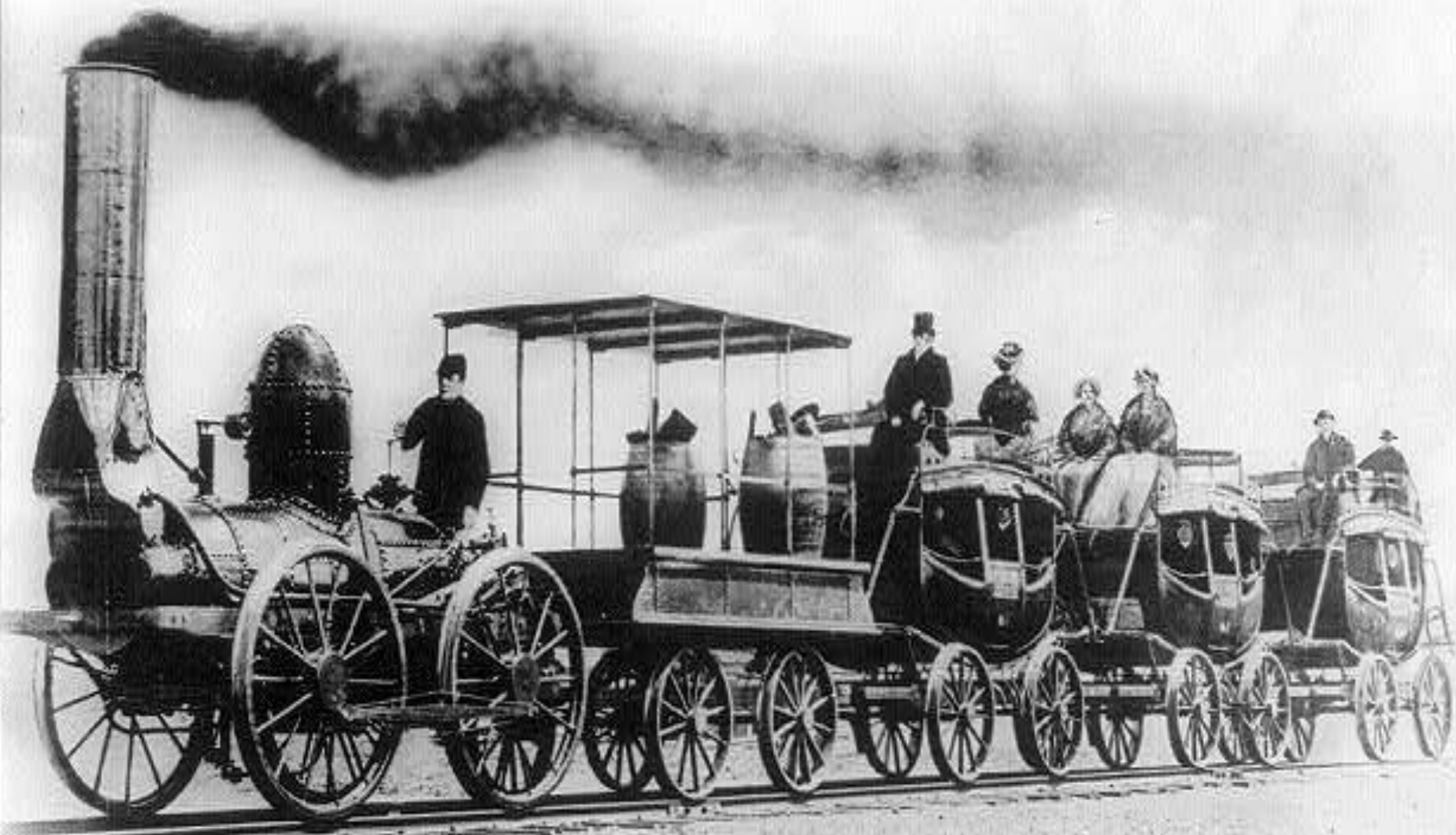


the click university











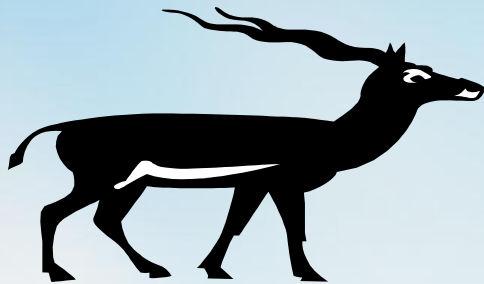
the digital gap



the digital gap



competing in the learning society...



competing in the learning society...



competing in the learning
society...



competing in the learning
society...



rule of the strongest





ernalisation



He who waits with mouth open, hoping for roast duck to fly in, will have a very long wait.
(Chinese proverb)



what is your vision?

