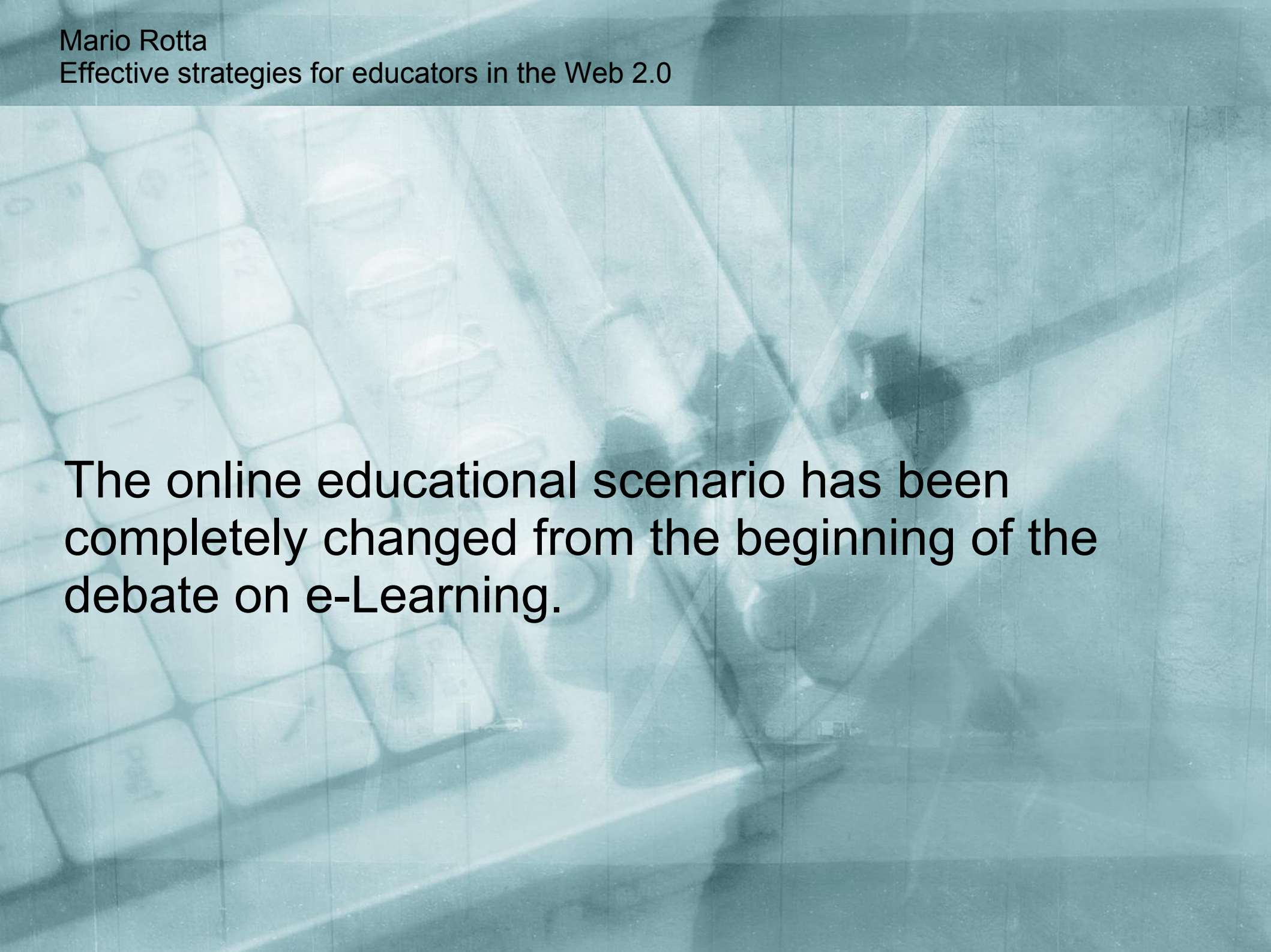
Mario Rotta

Learning in a “next generation” educational environment: some effective strategies for educators in the Web 2.0

Workshop planning:

1. [presentation]
Background: learning and knowing online in a "next generation" framework
2. [speech]
Is really the Web 2.0 a "revolutionary road"? Elements and contradictions of the Social Internet
3. [activity]
Learning and sharing knowledge online with social or informal tools and engaging environments

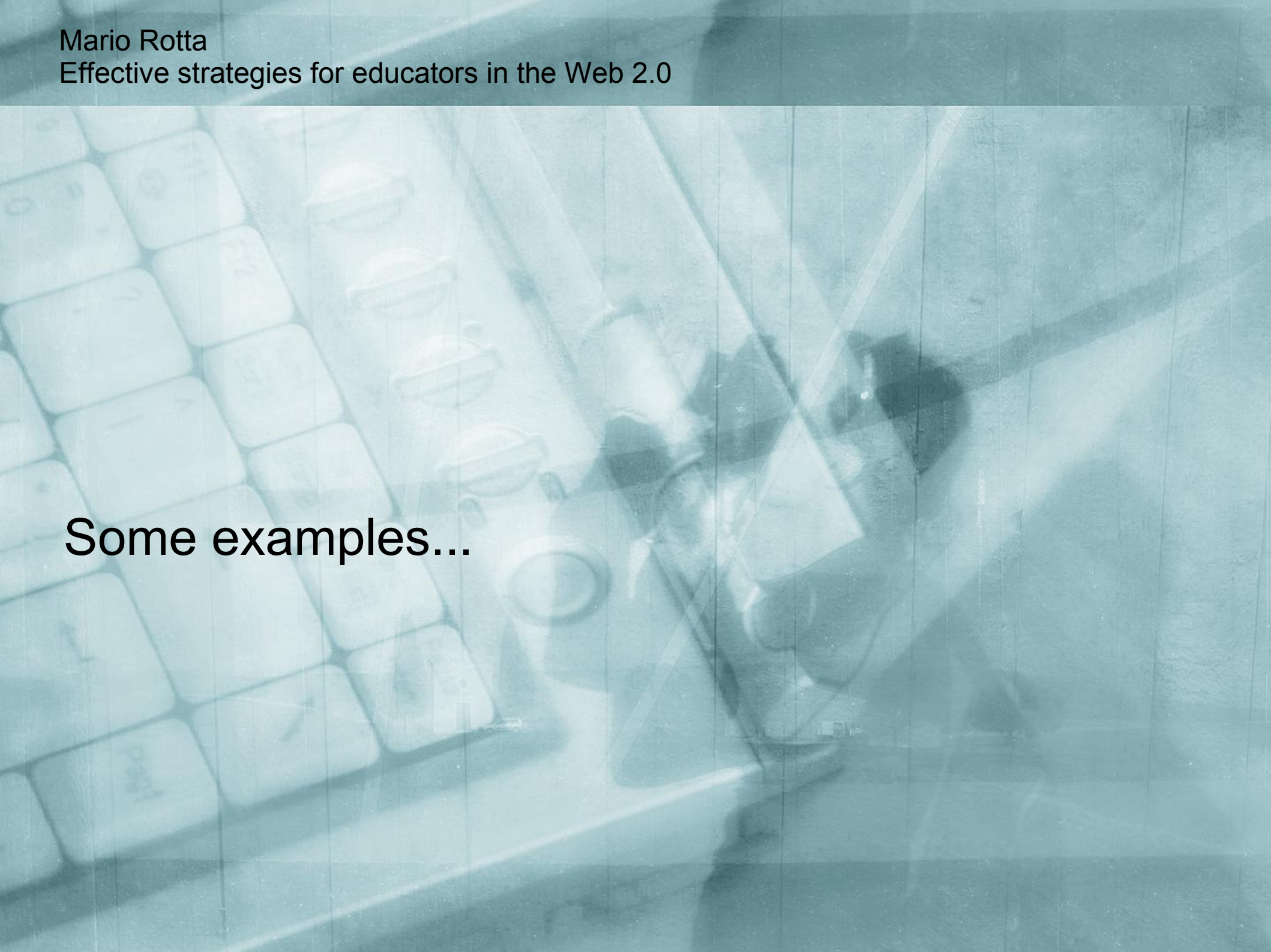
1. Background: learning and knowing online in a “next generation” framework



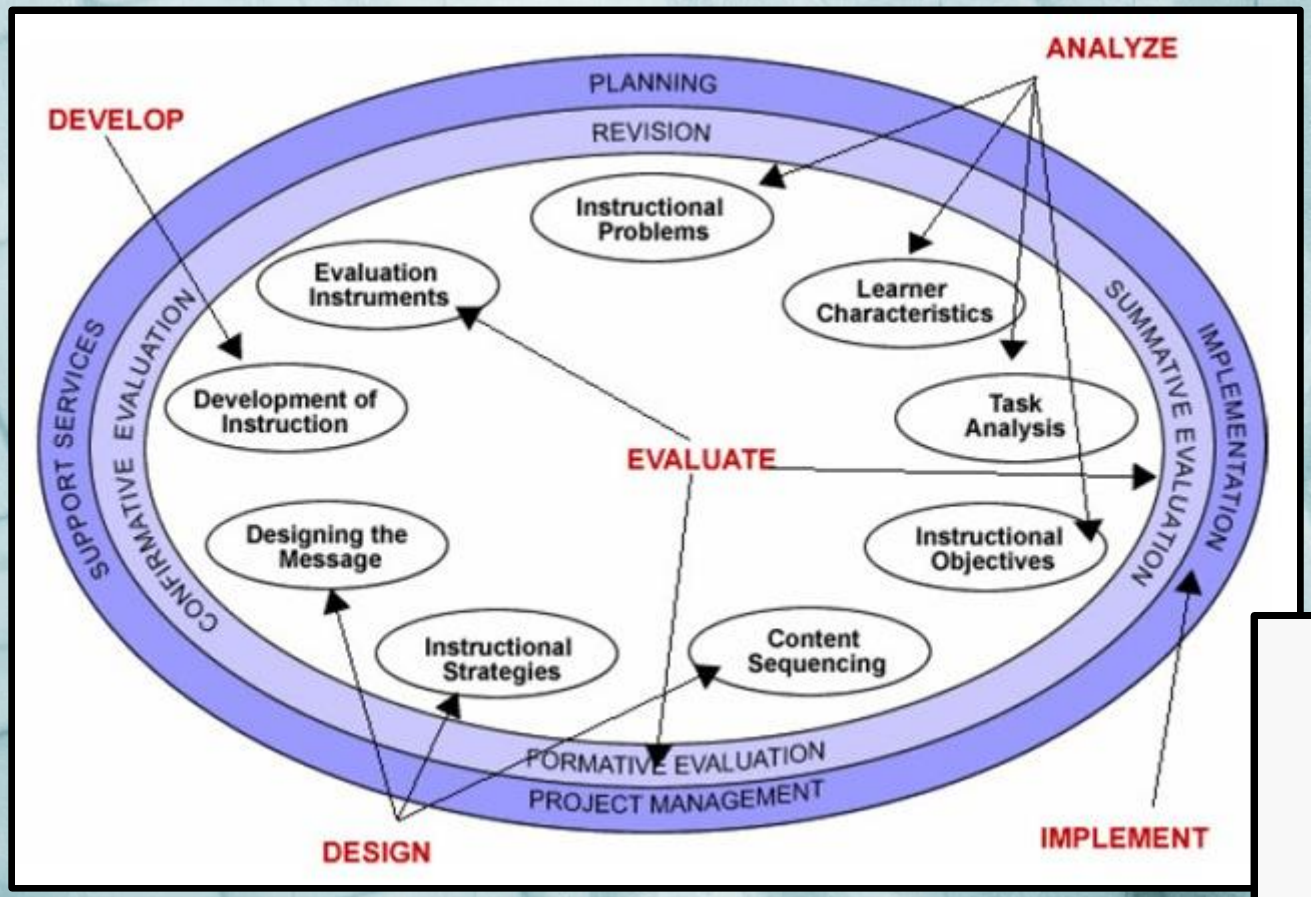
The online educational scenario has been completely changed from the beginning of the debate on e-Learning.

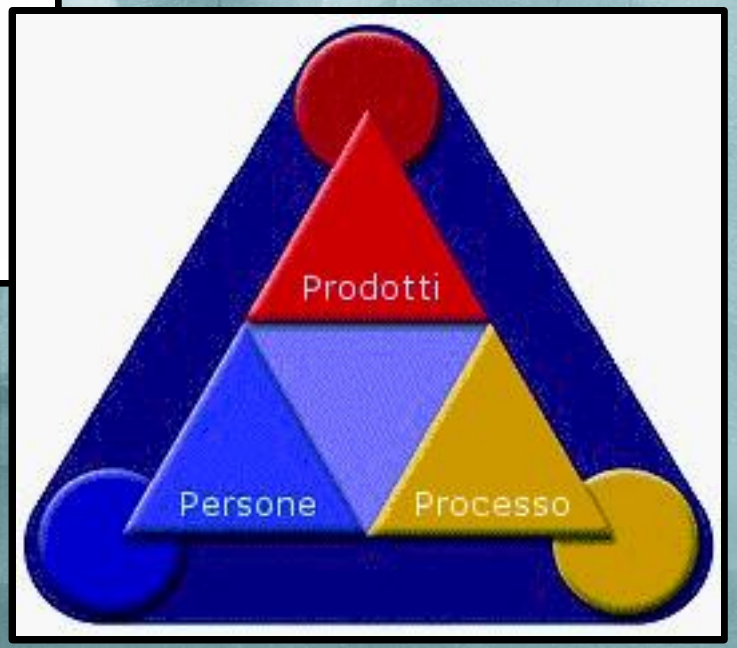
In the first period (1993-2000), according to fundamental contributes by authors as Mason (1992), Berge & Collins (1995) or Rowntree (1995) and many others, we linked the definition of “e-Learning” to two relevant related models.

The first model emphasized the e-Learning as a project management strategy in which the main focus is on the balance between a lot of elements or variables. This model is usually centered on content or technical solutions.



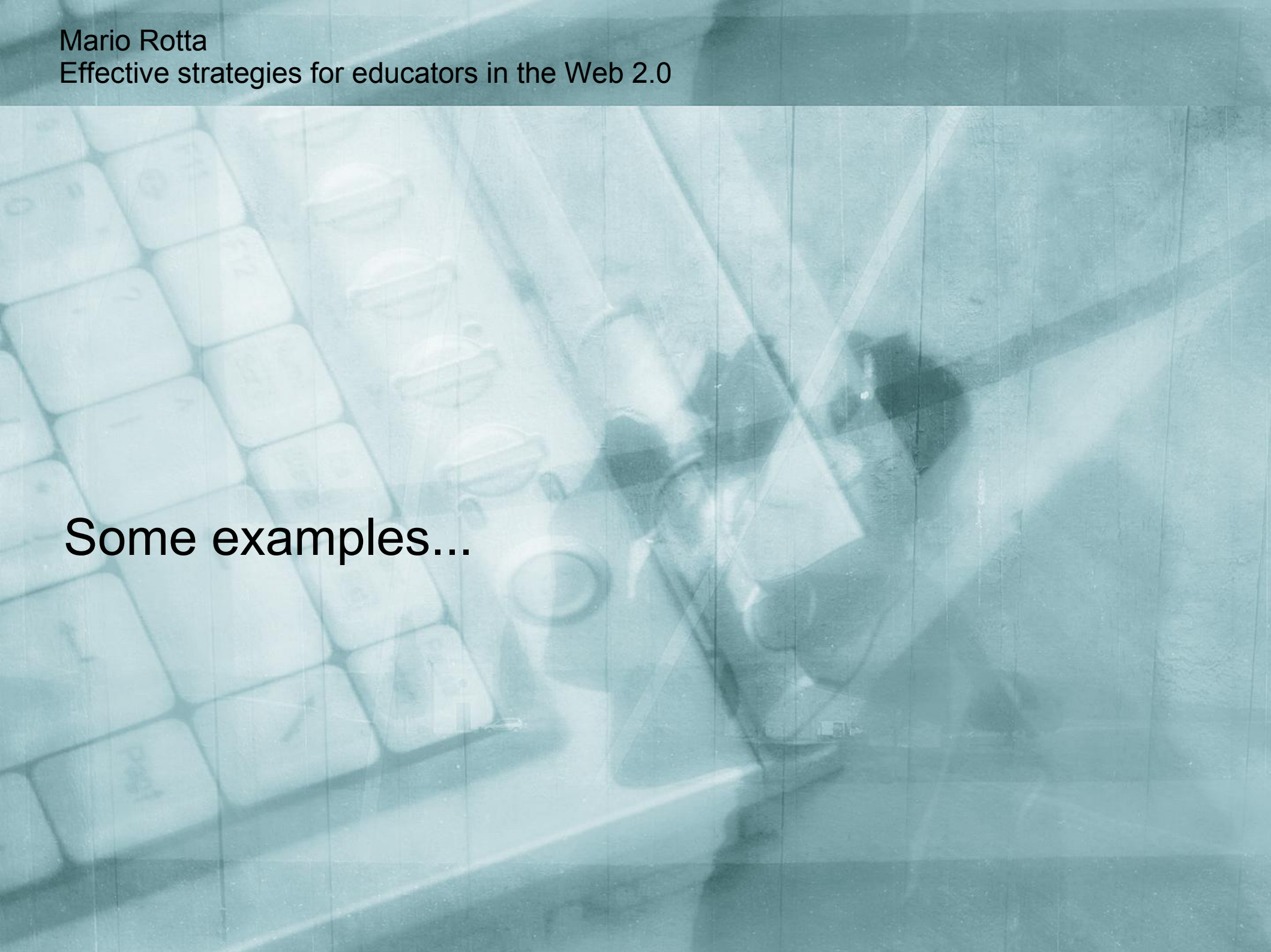
Some examples...



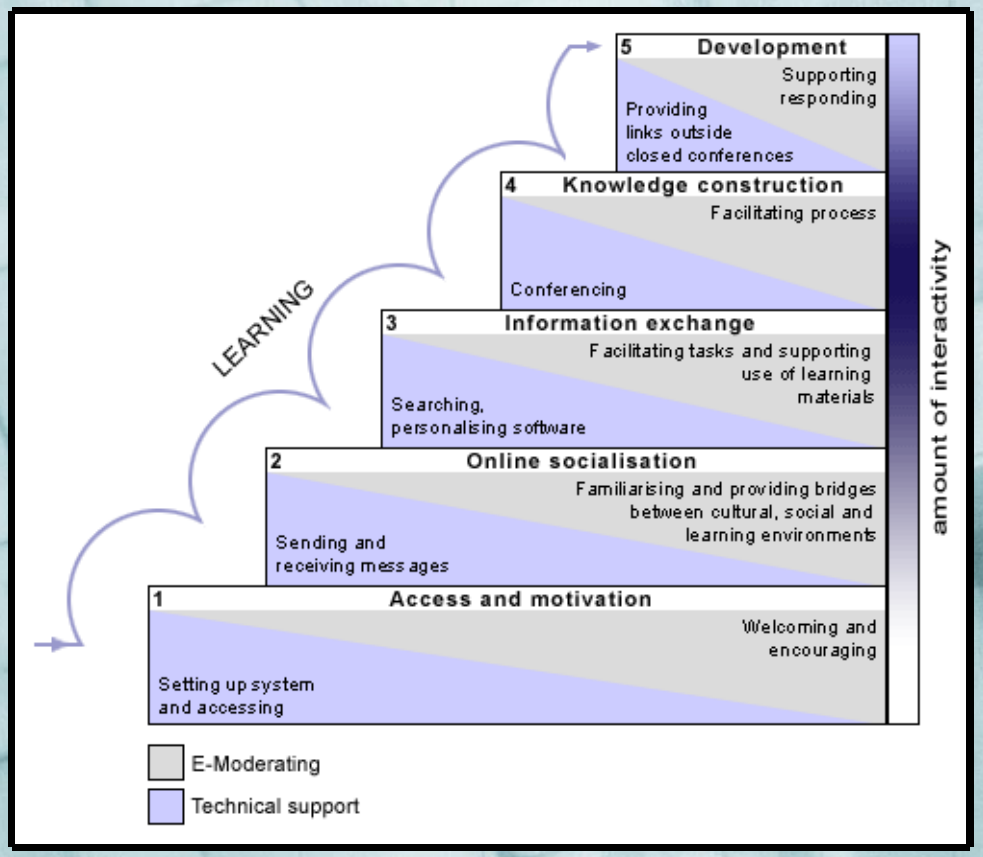


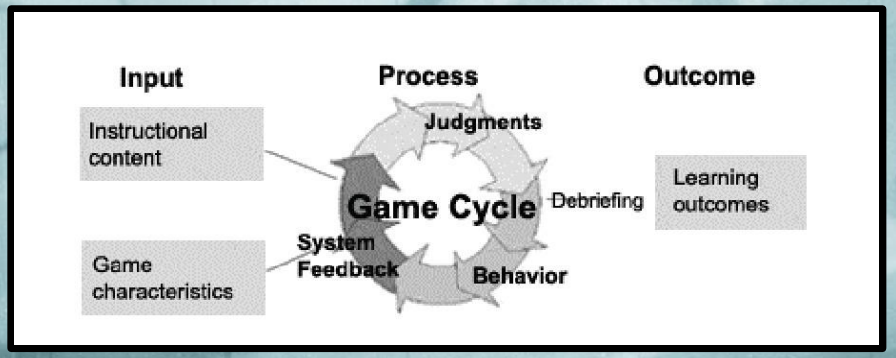
ADDIE ↑
3P Model →

The second consolidated model of e-Learning emphasized the relationships between learning goals and teaching/supporting actions. The focus is on educational strategy, so usually these models are centered on process and give relevance to the role of the e-Tutor.

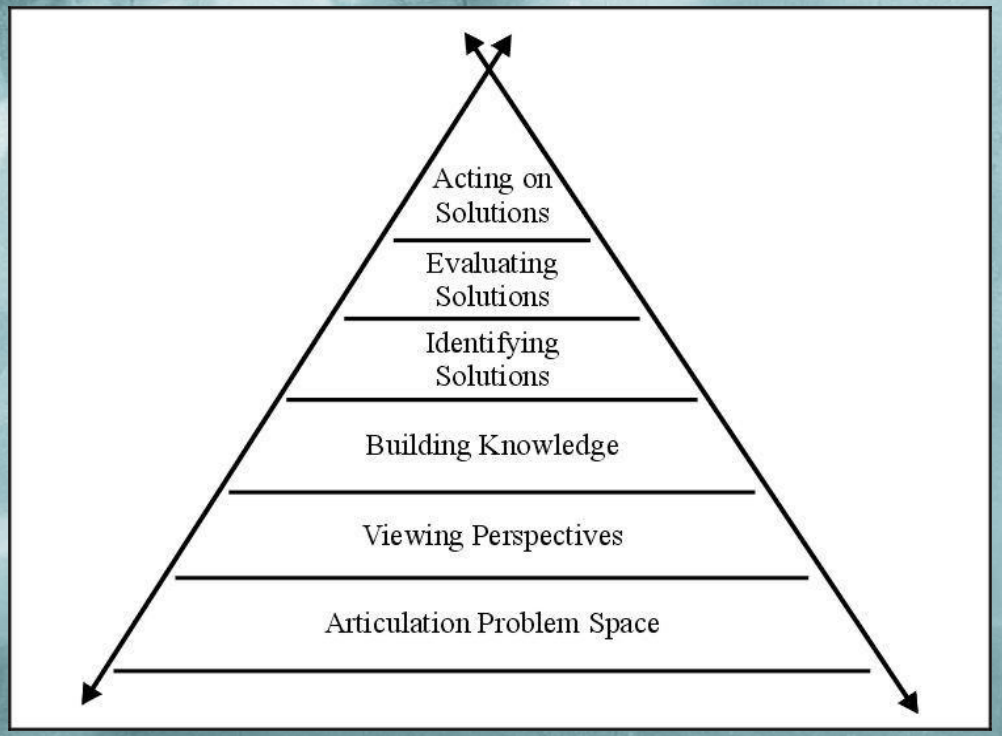


Some examples...





← Salmon 5 stages
↙ Garris Game Cycle
↓ Jonassen PBL



In both these frameworks, according to scenarios reinforced by Rowntree (1995) and revisited in Italy by Trentin (1999), Calvani and Rotta (2000), we can identify anyway 3 "*levels*" of e-tutoring strategies, matching different learning processes and the more referred models of online courses:

- The Instructor's strategy
- The Facilitator's strategy
- The Moderator's strategy

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Open and flexible learning goals				*Evolutions of the role of the e-tutor*
Beahaviour-oriented learning goals			e-tutor as "moderator"	
Skills-oriented learning goals		e-tutor as "facilitator"		
Content-oriented learning goals	e-tutor as "instructor"			
^ Learning goals ---------- Learning models and course's ------> approaches	Instructor-centred models Content & support approach	Learner-centred models Wrap around approach	Learning team-centred models Integrated or collaborative approach	*Network-oriented models*

But these scenarios are changing in last 4-5 years. The emerging of learning strategies based on informal or social approach (use of blogs and wikis in education; social tagging to share knowledge; social networking to improve skills) emphasized the need of a more articulated description of the e-Learning frameworks and consequently of e-tutoring as teaching and learning online.

Universities of the 21st century

The networked and digital 21st century has given us approaches to all aspects of university life and learning outside the confines of a physical place

Clubs
Online information and support

Bars and refectories
Well, yes, we do have to eat!

Dialogue
Blogs

Communities
Wikis

Scholarly pursuits
Online knowledge

Artifacts in museums
Virtual museums

Buildings
World Wide Web Active Worlds

Lecture theatres
Experts online

Books in libraries
Virtual libraries

Equipment and laboratories
Online demonstrations

Research
Repositories

At now, almost in European vision, the research (Denis & al., 2003; Rotta & Ranieri, 2005) describes e-tutoring as a wide set of "*functions*" in supporting or managing online courses, according to the peculiarity of the context and the complexity of instances of the more and more dynamic instructional strategies.

The original model by Denis identifies 11 main functions to be activated in an online learning environment:

1. Facilitating Content
2. Facilitating Metacognition
3. Facilitating Process
4. Counselling
5. Assessing
6. Supporting technical skills
7. Information brokering or resource providing
8. Managing/administrating the virtual environment
9. Designing effective content
10. Co-learning
11. Researching

Anyway, the same functional framework seems to be uncompleted and it cannot give a real answer to new instances coming from the field, as the growing up of informal approach to learning processes or the social networking as a way to improve the sharing of knowledge in complex organizations. We need more “functions”...

So, we can introduce in the functional framework
3 important upgraded functions...

The **community management**: it concerns advanced skills and capabilities in building working groups, activating and planning communities of learners (Rosenberg, 2001), facilitating the start up of communities of practice (Brown & Duguid, 2000), addressing all the participants as to their own as to shared goals and motivating learners in effective sharing knowledge and social interacting (Mason & Weller, 2000; Salmon, 2002).

Applying a perspective coming from andragogy as from metacognition studies, we can also argue that the community management function consists in driving a group of learners toward a more independent level of social interaction.

The **e-coaching** (in Italian it could sound like “allenare”, referring to sport activities, or being a “master”, referring to a games rule’s expert): it concerns the evolution of community management capabilities, more focused on supporting individuals in improving their performances in a collaborative group, in a virtual community or in a more complex social network.

The e-coaching must also consistes in supporting learners in educational role-games or in a lot of other active and collaborative learning strategies - such Problem-Based Learning or Project-Based Learning - in which factors like time management, team working, problem solving and rules knowledge are absolutely important (Rotta, 2007). In an extended interpretation of the meaning, this function can be associated also to coordinating a team of colleagues with less experience.

The **e-mentoring** (otherwise called “strictly supporting”, as in Thorpe, 2002; but see also: Milne, 2005). This function concerns various kinds of complex social interactions (i.e. social tagging and social bookmarking, as knowledge sharing strategies in communities of practices) and the planning of sustainable support services for life long learners.

But the core of this function is in the mentoring paradigm itself: in actual learning strategies we need a set of “bridging” actions between the end of a formal learning experience and all the outcomes the learner could reach empowering his own knowledge in a continuous or ubiquitous education perspective.

New researches have a double aim: exploring possible new “features” to set up a “next generation” of e-tutoring or e-teaching, and at the same time focusing on a more simple framework to describe the e-learning process.

Then, we may focus on the conceptual definition of “e-knowledge” (wider than the e-Learning) and more in detail on the profile of the “e-knower”, as an evolution of the profile of the “e-learner”, or “virtual student” (Palloff & Pratt, 2003).

By this way, we must ask us what really means to be a really e-knower today, even not “born digital”. Comparing literature and reflecting on these assets, we can identify a set of emerging issues.

Table 1. Activities and Hours Spent

Activities	Mean*
Classroom activities and studying using an electronic device	4.01
Writing documents (word processing)	3.76
Surfing the Internet for pleasure	3.47
Creating, reading, sending e-mail	3.47
Chatting with friends or acquaintances using instant messaging	3.45
Using an electronic device (computer, Palm device) at your place of employment	3.31
Downloading or listening to music or videos/DVDs	3.15
Completing a learning activity or accessing information for a course using course management systems	2.48
Using a university library resource to complete a class assignment	2.46
Playing computer games	2.39
Creating spreadsheets or charts (Excel)	2.07
Online shopping	2.06
Creating presentations (PowerPoint)	1.82
Creating graphics (Photoshop, Flash)	1.79
Creating Web pages (Dreamweaver, FrontPage)	1.39
Creating and editing video/audio (Director, iMovie)	1.34

Scale: 1 = do not use, 2 = less than an hour, 3 = 1–2 hours, 4 = 3–5 hours, 5 = 6–10 hours, 6 = 11 or more hours

Source: Oblinger & Oblinger

Table 2. Aligning Net Gen Characteristics, Learning Principles, Learning Space, and IT Applications

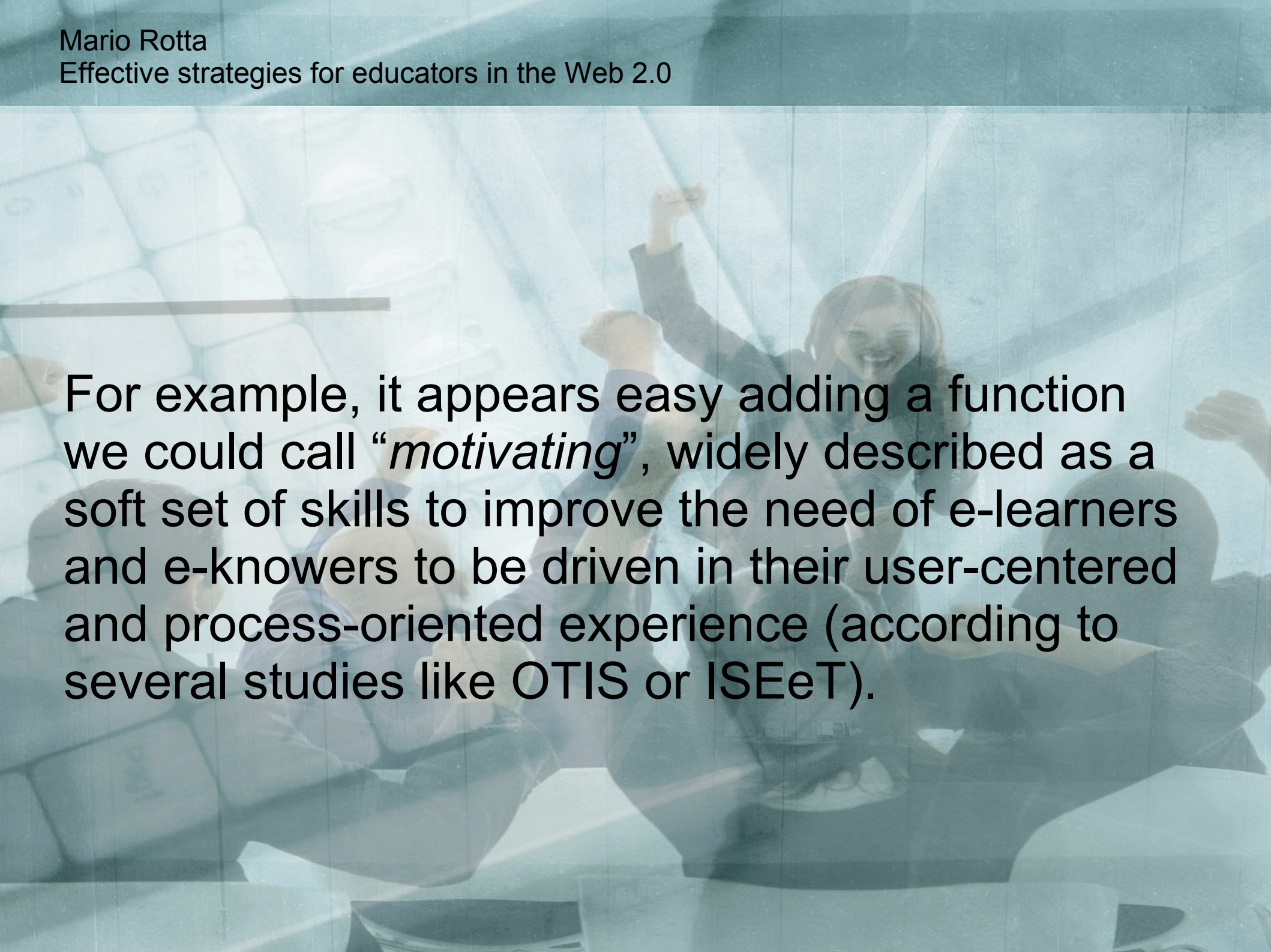
Net Gen Trait	Learning Theory Principles	Learning Space Application	IT Application
Group activity	Collaborative, cooperative, supportive	Small group work spaces	IM chat; virtual whiteboards; screen sharing
Goal and achievement orientation	Metacognition; formative assessment	Access to tutors, consultants, and faculty in the learning space	Online formative quizzes; e-portfolios
Multitasking	Active	Table space for a variety of tools	Wireless
Experimental; trial and error	Multiple learning paths	Integrated lab facilities	Applications for analysis and research
Heavy reliance on network access	Multiple learning resources	IT highly integrated into all aspects of learning spaces	IT infrastructure that fully supports learning space functions
Pragmatic and inductive	Encourage discovery	Availability of labs, equipment, and access to primary resources	Availability of analysis and presentation applications
Ethnically diverse	Engagement of preconceptions	Accessible facilities	Accessible online resources
Visual	Environmental factors; importance of culture and group aspects of learners	Shared screens (either projector or LCD); availability of printing	Image databases; media editing programs
Interactive	Compelling and challenging material	Workgroup facilitation; access to experts	Variety of resources; no "one size fits all"

This is the Net Gen

These are the emerging issues:

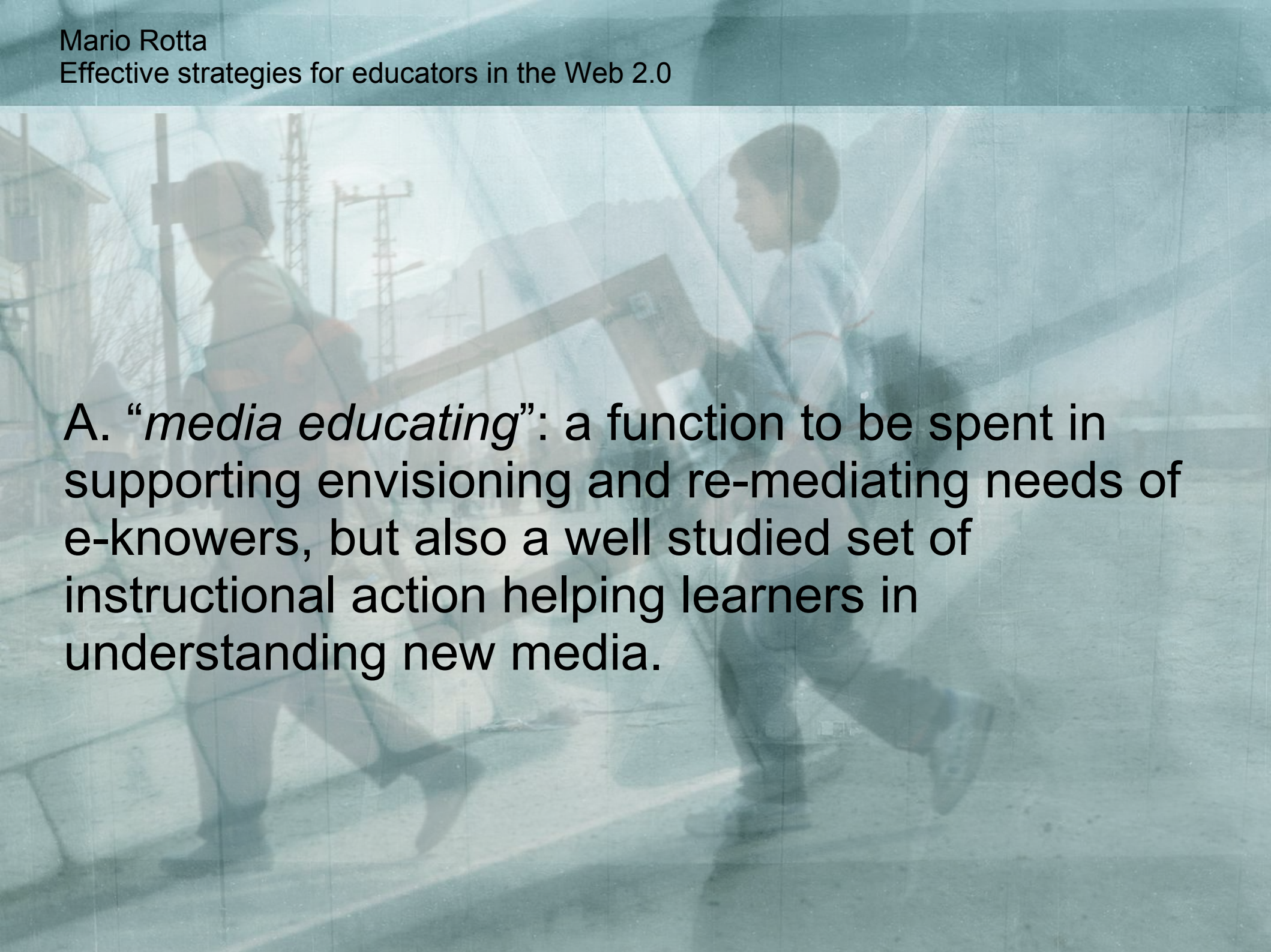
- *Searching*
- *Knowledge hunting*
- *Critical Thinking*
- *Self-mentoring*
- *Self-evaluating*
- *Managing knowledge*
- *Interacting effectively*
- *Connecting and Networking*
- *Re-mediating*
- *Envisioning*

So, we could also re-think the functional e-tutoring framework, adjusting some definitions or adding new functions more oriented to these *scaffolding* needs.



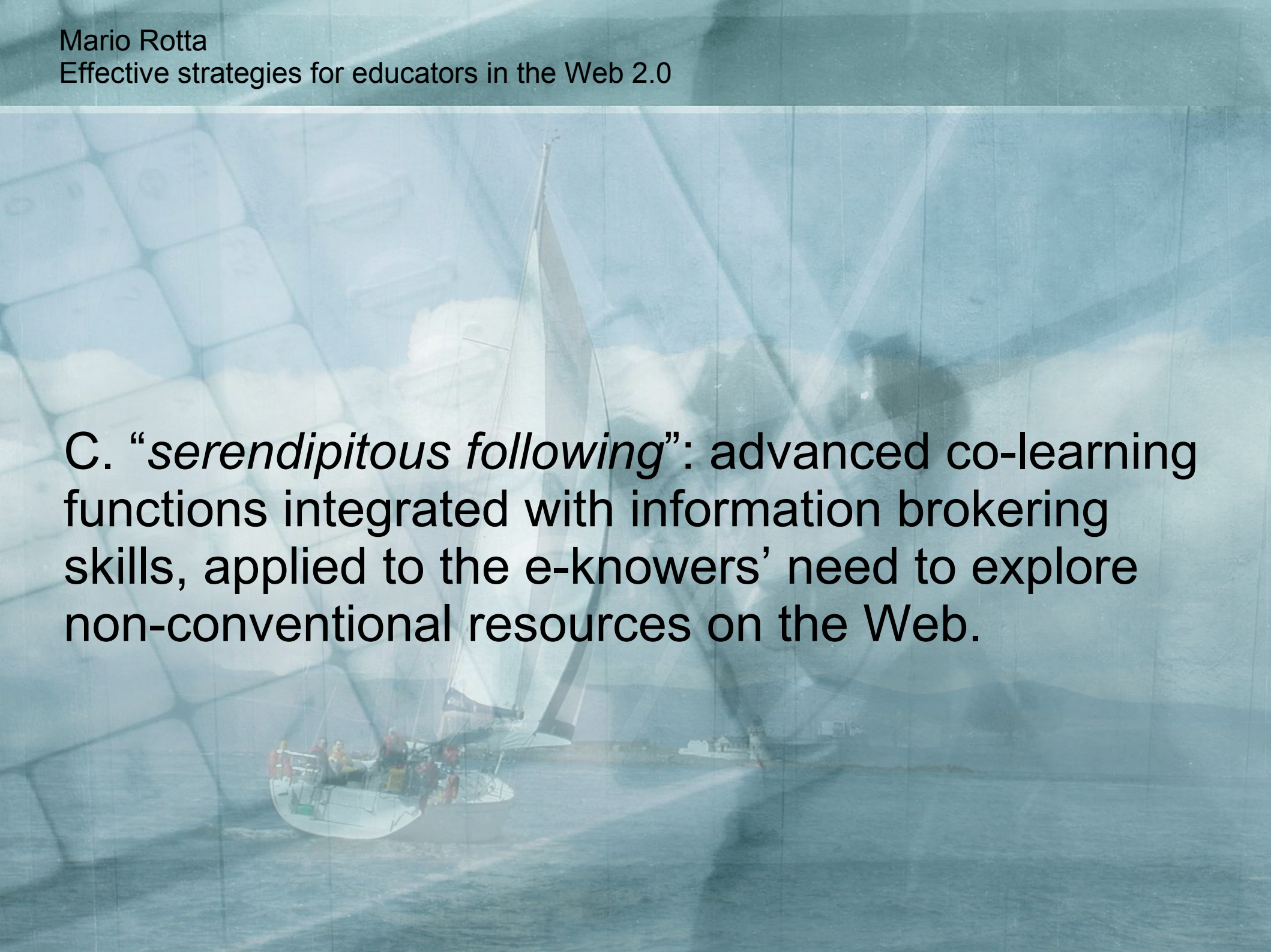
For example, it appears easy adding a function we could call "*motivating*", widely described as a soft set of skills to improve the need of e-learners and e-knowers to be driven in their user-centered and process-oriented experience (according to several studies like OTIS or ISEeT).

Then, we could imagine more sophisticated functions (not yet explored by the research).

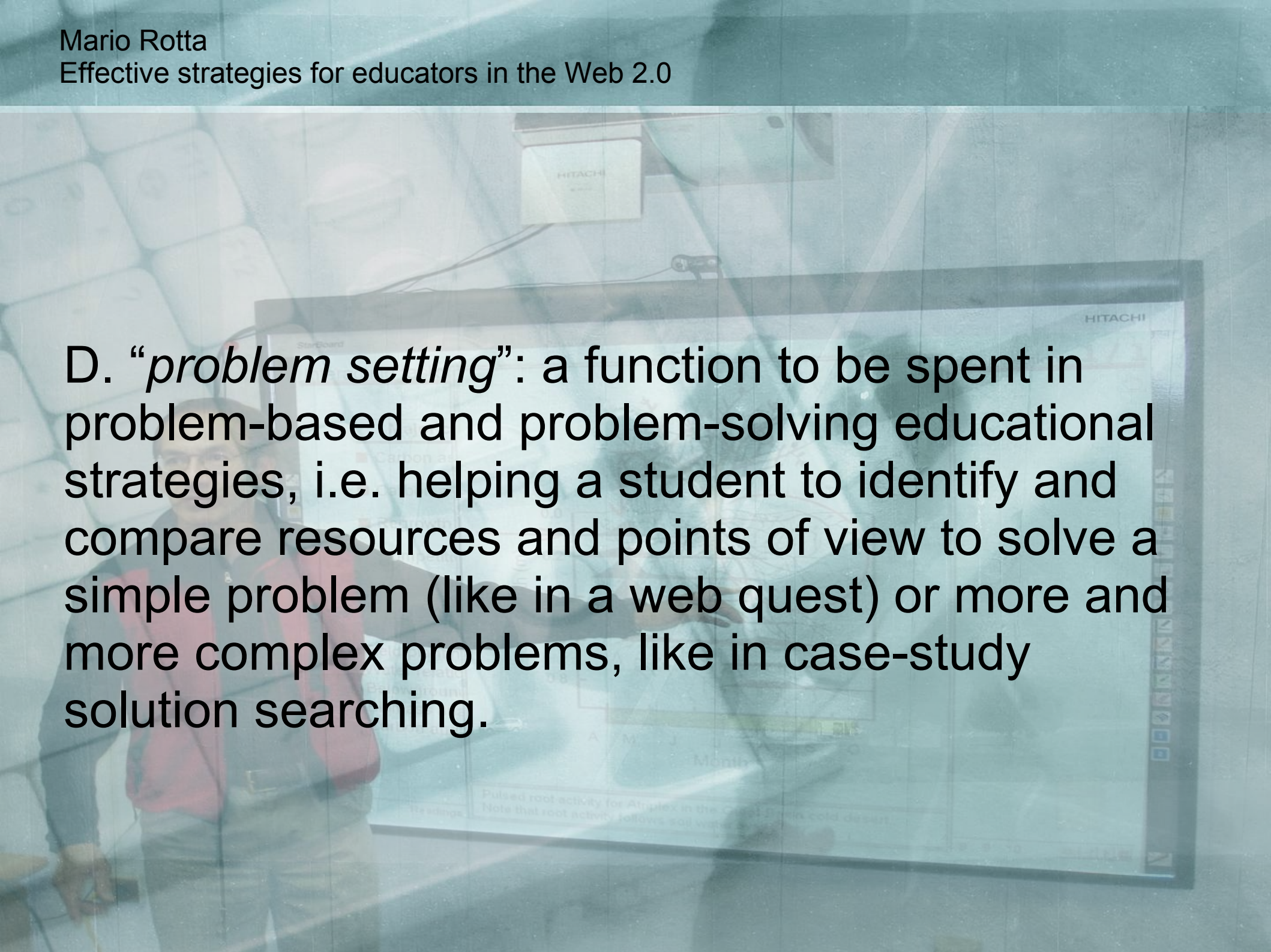


A. "*media educating*": a function to be spent in supporting envisioning and re-mediating needs of e-knowers, but also a well studied set of instructional action helping learners in understanding new media.

B. "*discrete connecting*": a specific extension of the community management skills, focused on the back-end actions needed to drive e-knowers in a more effective self-evaluation of their own networking and communicating capabilities.



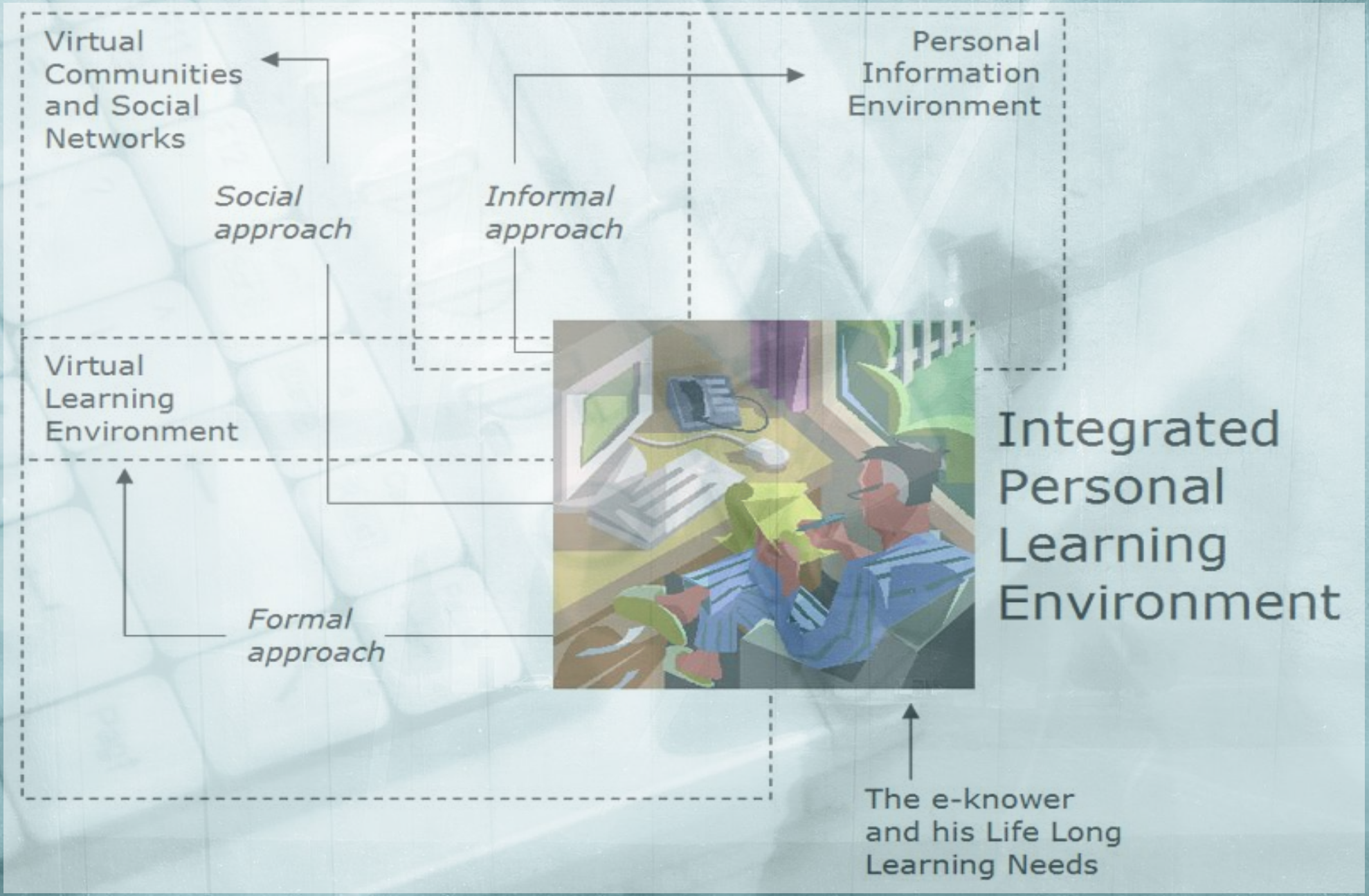
C. "*serendipitous following*": advanced co-learning functions integrated with information brokering skills, applied to the e-knowers' need to explore non-conventional resources on the Web.



D. "*problem setting*": a function to be spent in problem-based and problem-solving educational strategies, i.e. helping a student to identify and compare resources and points of view to solve a simple problem (like in a web quest) or more and more complex problems, like in case-study solution searching.

But this speculative inquiry is really useful? It might only help us to built a too much complicated theoretical framework (up to 19 main functions at the moment!), with a few possibility to be applied. So, we had to evaluate another way to plan an experimental strategy for next years...

The primary concept to be explored is the “Integrated Personal Learning Environment” (IPLE). An IPLE can be described as a dynamic answer to lifelong learning needs of e-knowers enough aware (or motivated by the context, i.e. if he is a professional with less time to spend or an adult with just-in-time or just-in-case needs) to learn usually following a three-way integrated strategy: a *formal* approach, an *informal* approach and a *social* approach.


Virtual Communities and Social Networks
Personal Information Environment
Social approach
Informal approach
Virtual Learning Environment
Formal approach
Integrated Personal Learning Environment
The e-knower and his Life Long Learning Needs

By this way, we can track easily the e-tutoring “core actions” referred to the different areas in which the e-knowers can interact.

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The e-Tutor
and his actions

e-networking

e-brokering

e-tutoring

e-counselling

Virtual
Communities
and Social
Networks

Personal
Information
Environment

Social approach

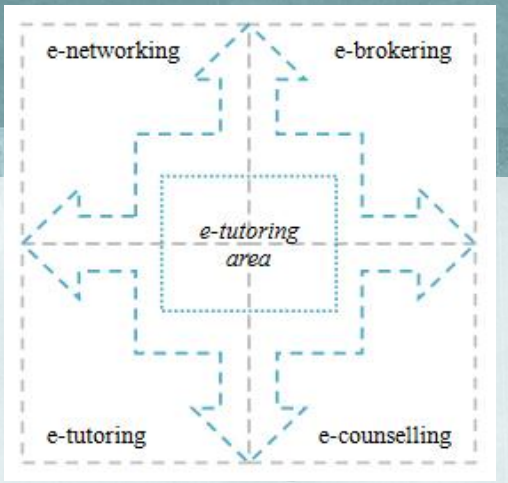
Informal approach

Virtual
Learning
Environment

Formal approach

Integrated
Personal
Learning
Environment

The e-knower
and his Life Long
Learning Needs



The primary essential action to be considered is the *e-counselling*: the e-knowers must to be supported and advised to set all their learning needs and find an integrated solution by a blending of formal, informal and social approaches.

The strictly *e-tutoring* action on the formal approach area is the more similar to the “traditional” e-tutoring: widely analyzed by the literature and explained above, this main action is anyway much important in all its functions, usually the content, the process and the metacognition facilitating.

The *e-brokering* action is quite innovative: the core function related is the “resources providing”. But it requests also the improvement of technical skills for effective working with personal information environments (including the capability to program intelligent agents for data mining), and strong attitudes to knowledge management and to a semantic approach to web resources.

Finally, the *e-networking* function can configure a mediation between the e-knowers and the networks in which they are interested or involved, and a lot of actions: helping the e-knowers in selecting the network more goaled toward their learning (or professional) needs; drawing the architectures of their active participation; motivating them to share expertise, information, problems and more, so they could gather useful resources and build new knowledge.

2. Is really the Web 2.0 a “revolutionary road”? Elements and contradictions of the Social Internet

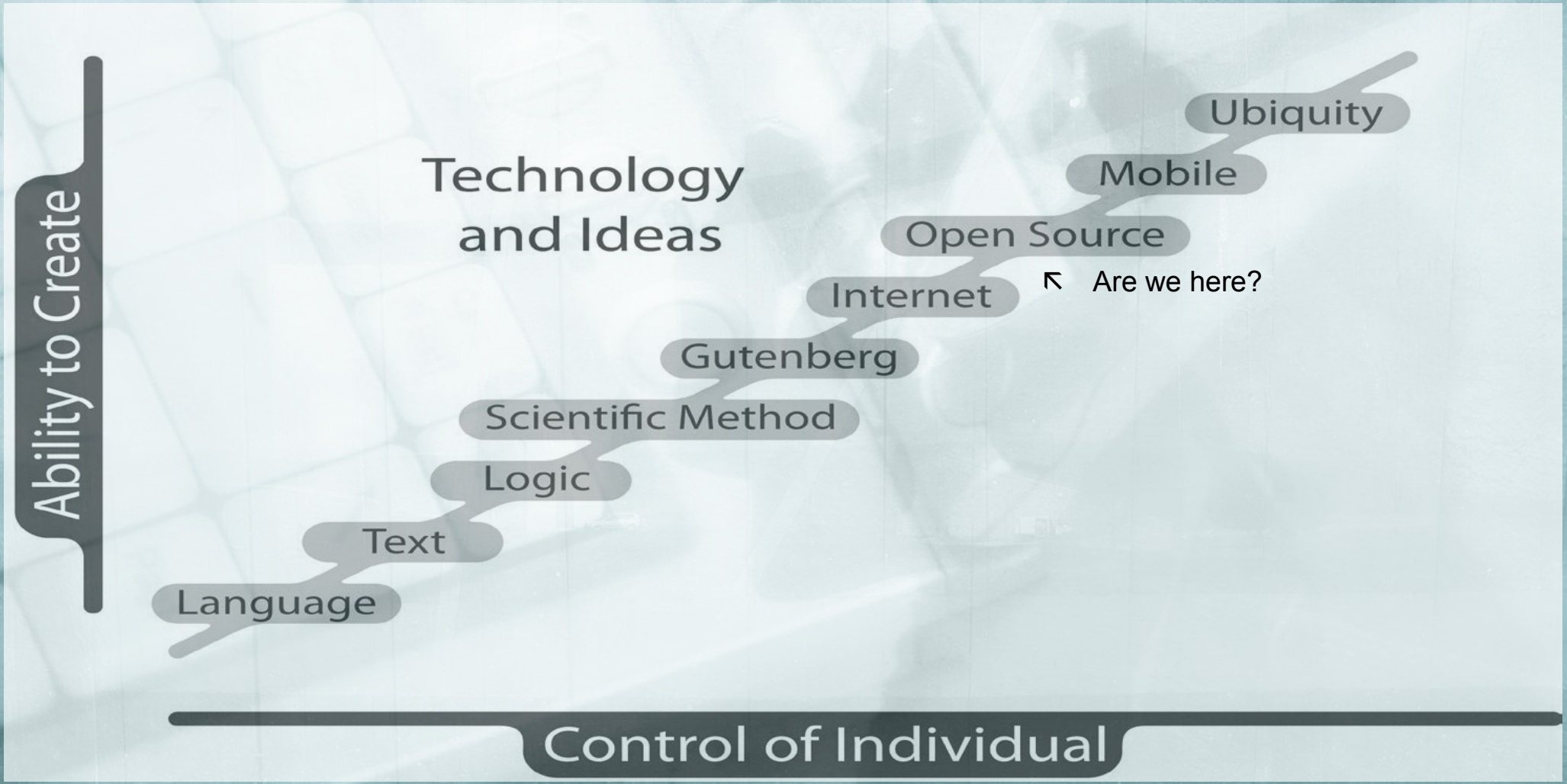
When we talk about the so-called Web 2.0 we emphasize items like social learning, sharing knowledge or user generated content. But is really the Web 2.0 so innovative and effective? What concrete trends and opportunities can we identify?

Some acceptable scenarios, but controverse...

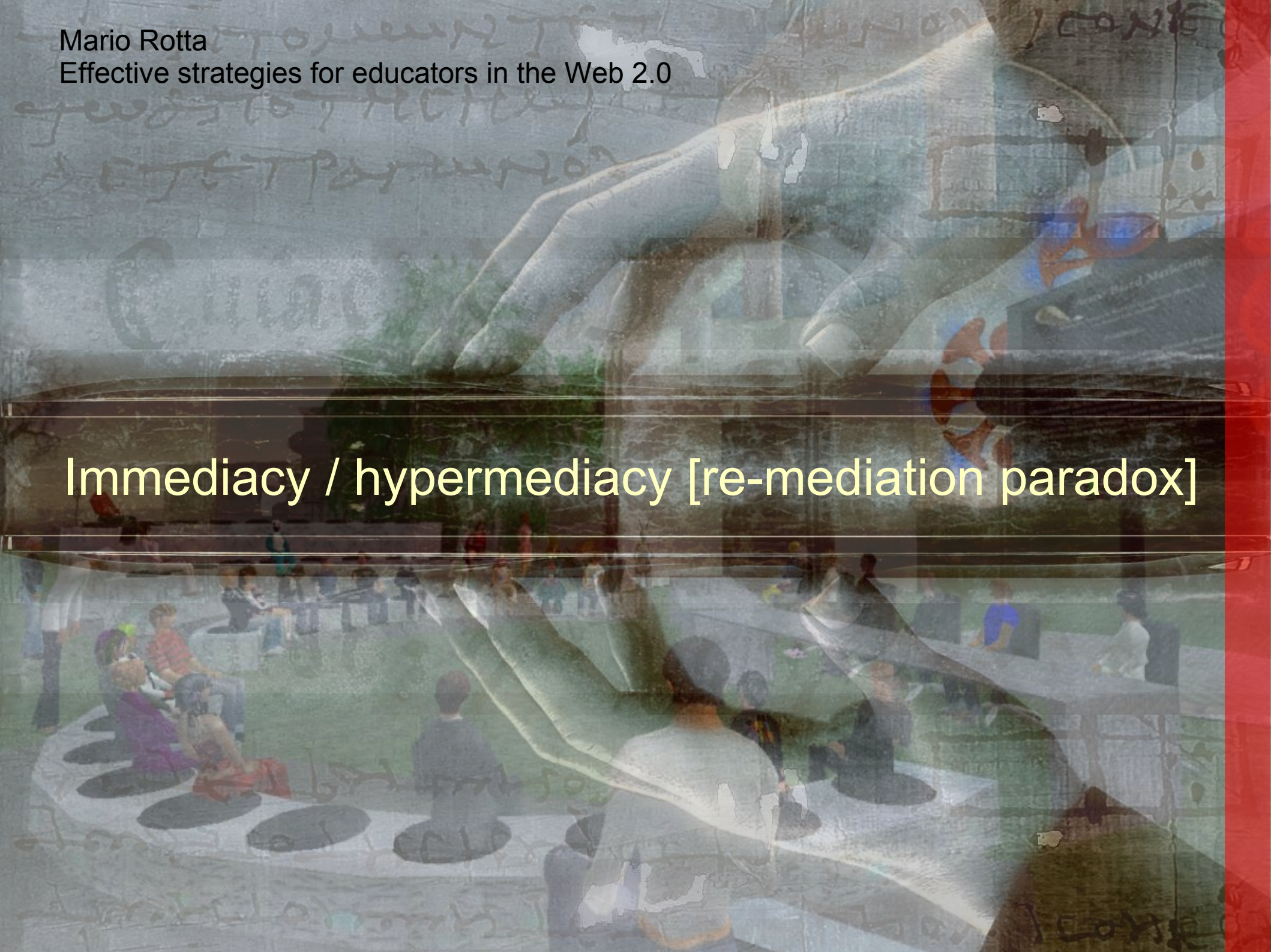
Anderson, the big ideas behind web 2.0

1 Individual production and User Generated Content
2 Harness the power of the crowd
3 Data on an epic scale
4 Architecture of Participation
5 Network Effects
6 Openness

Probably, the real revolution is in how changes the relationship between technology and ideas...

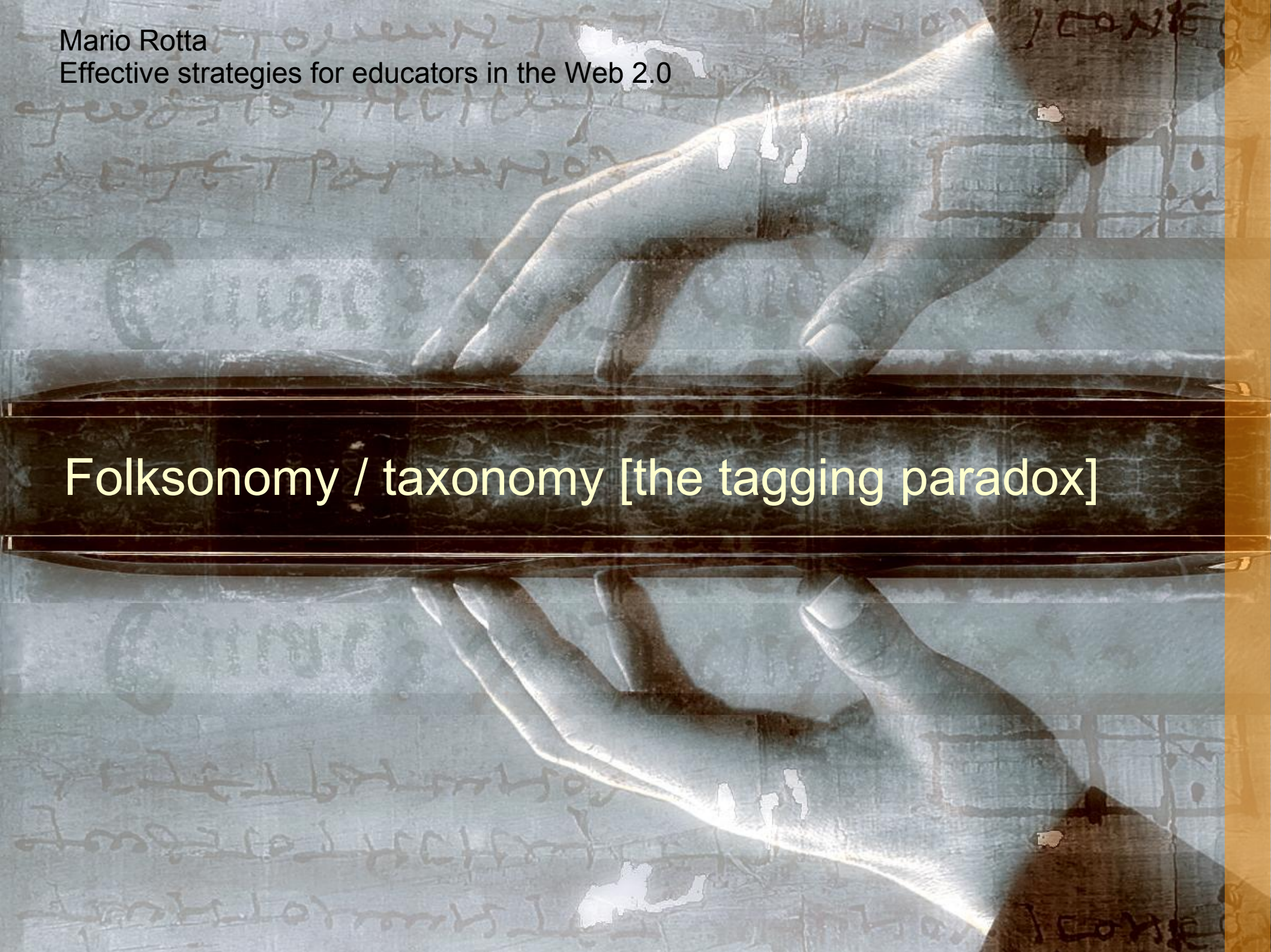


In reality the Web 2.0 is a “landscape” in which we can observe almost 7 main conflicts or paradoxes. We must start from this point any reflection on effective 2.0 educational strategies...

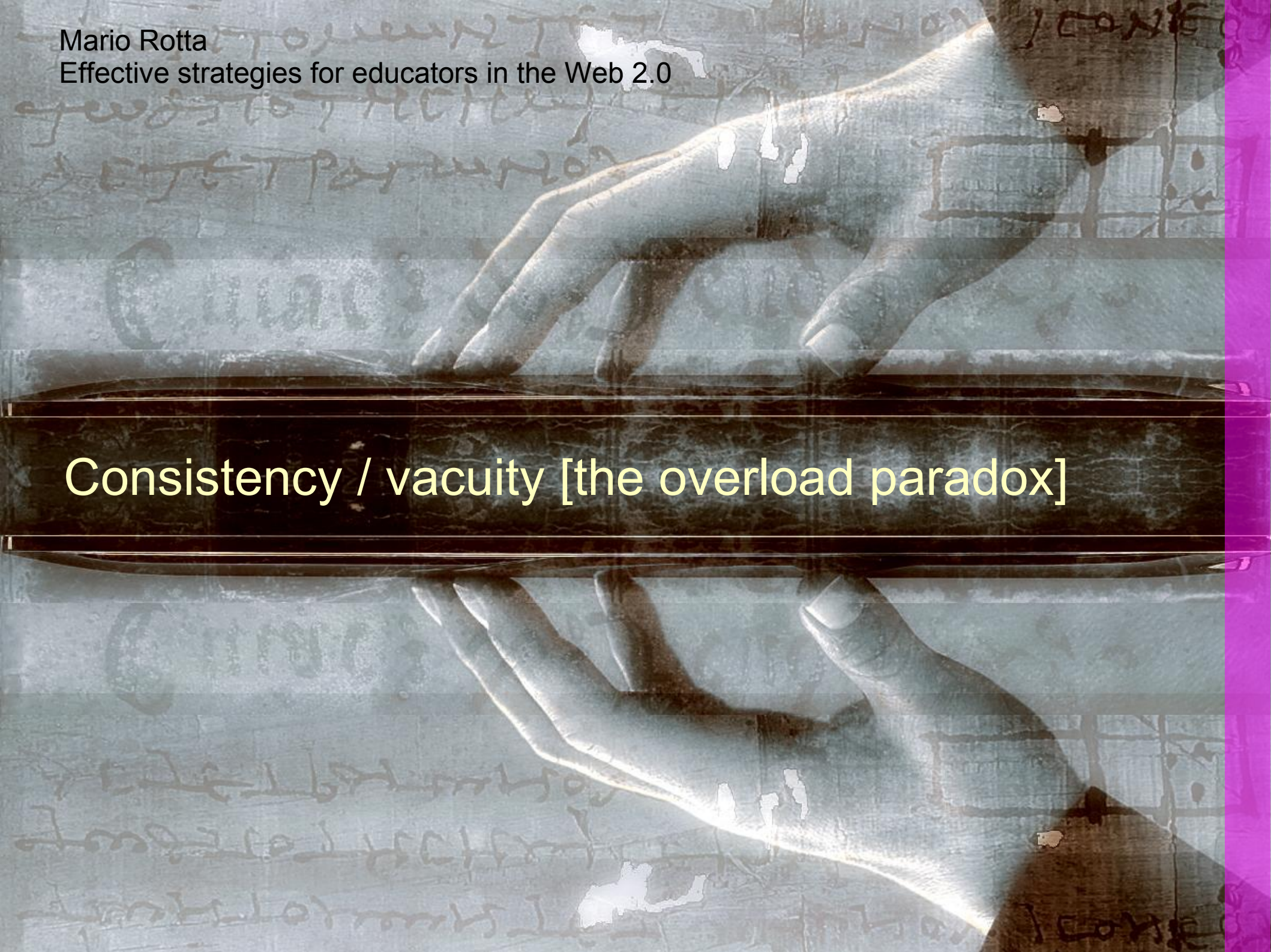


Immediacy / hypermediacy [re-mediation paradox]

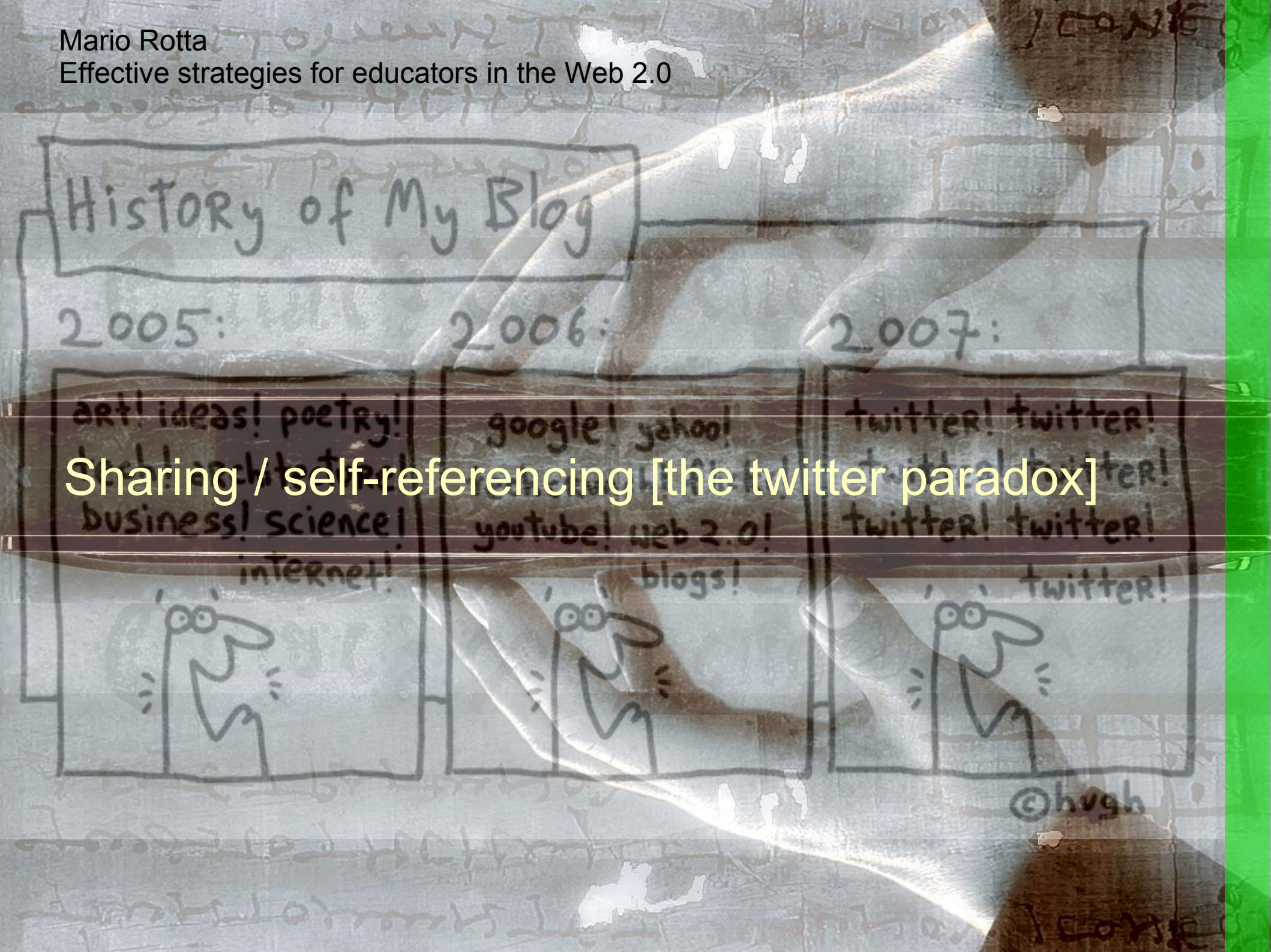
Being integrated / being specific



Folksonomy / taxonomy [the tagging paradox]



Consistency / vacuity [the overload paradox]



Sharing / self-referencing [the twitter paradox]

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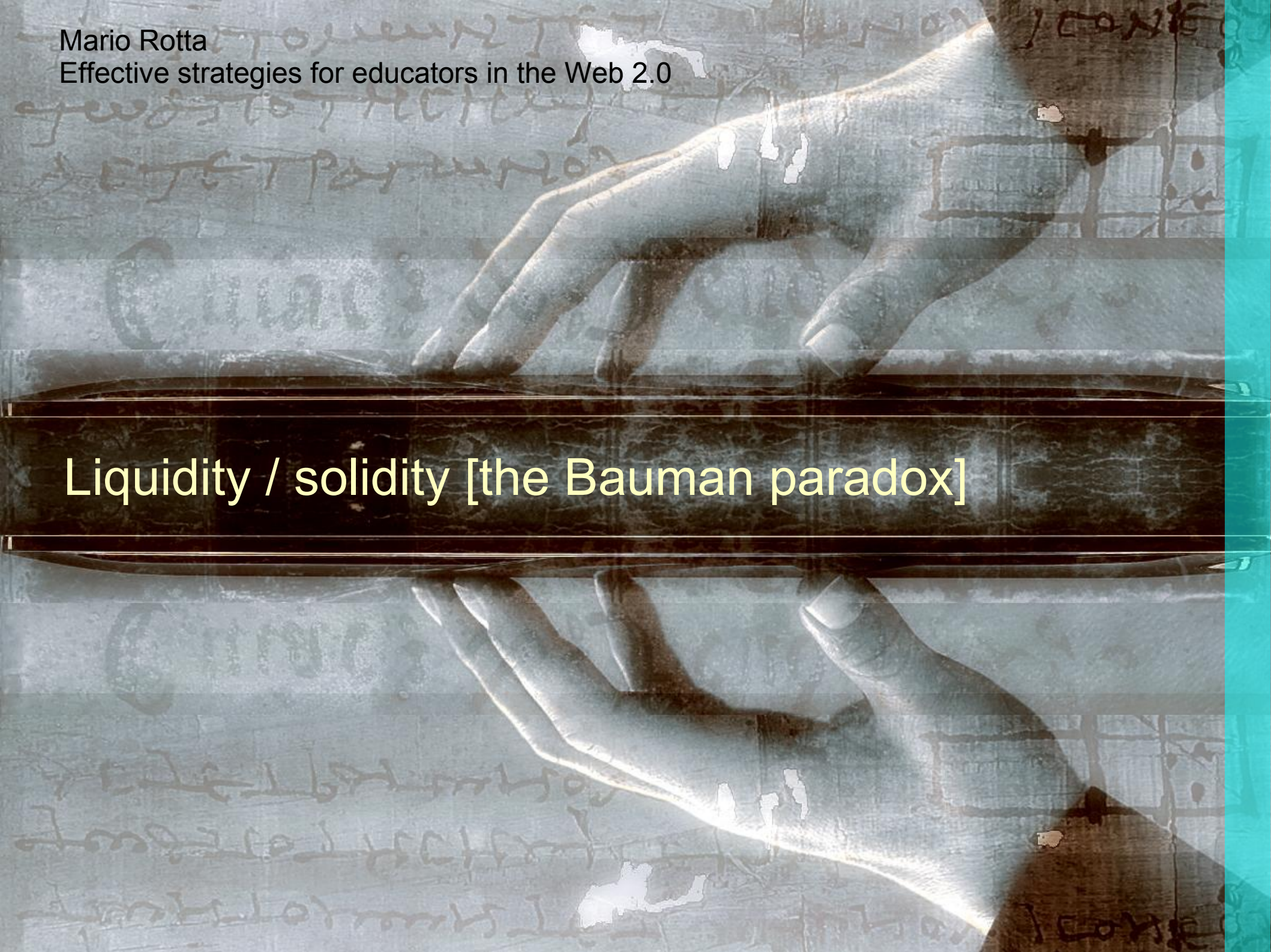
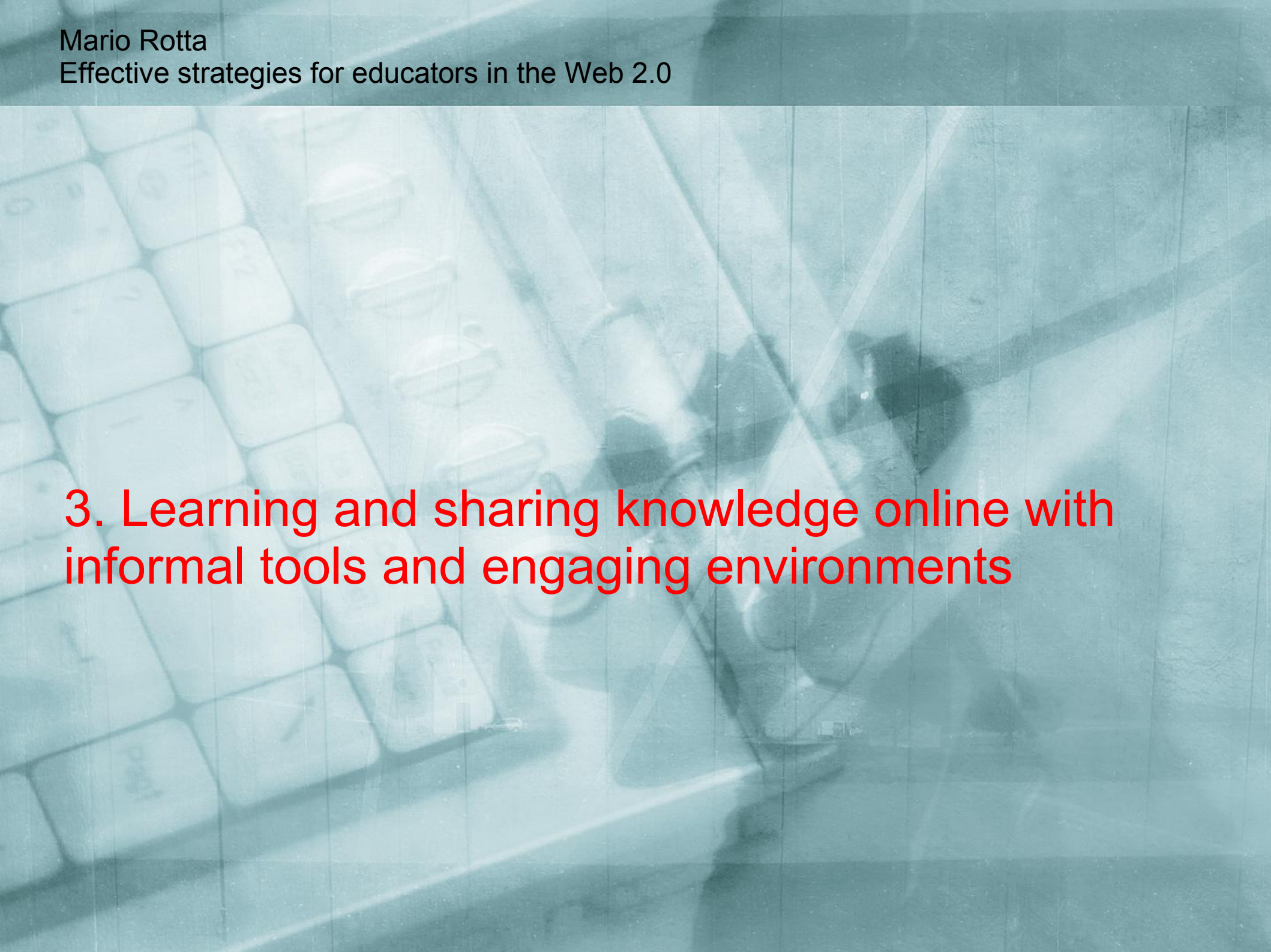
Ubiquity / geolocation [the “glocal” paradox]



Liquidity / solidity [the Bauman paradox]

We must work on these suggestions if we want build an integrated learning environment for lifelong education based on Web 2.0 typical tools. We could define such an environment **learning^3**.



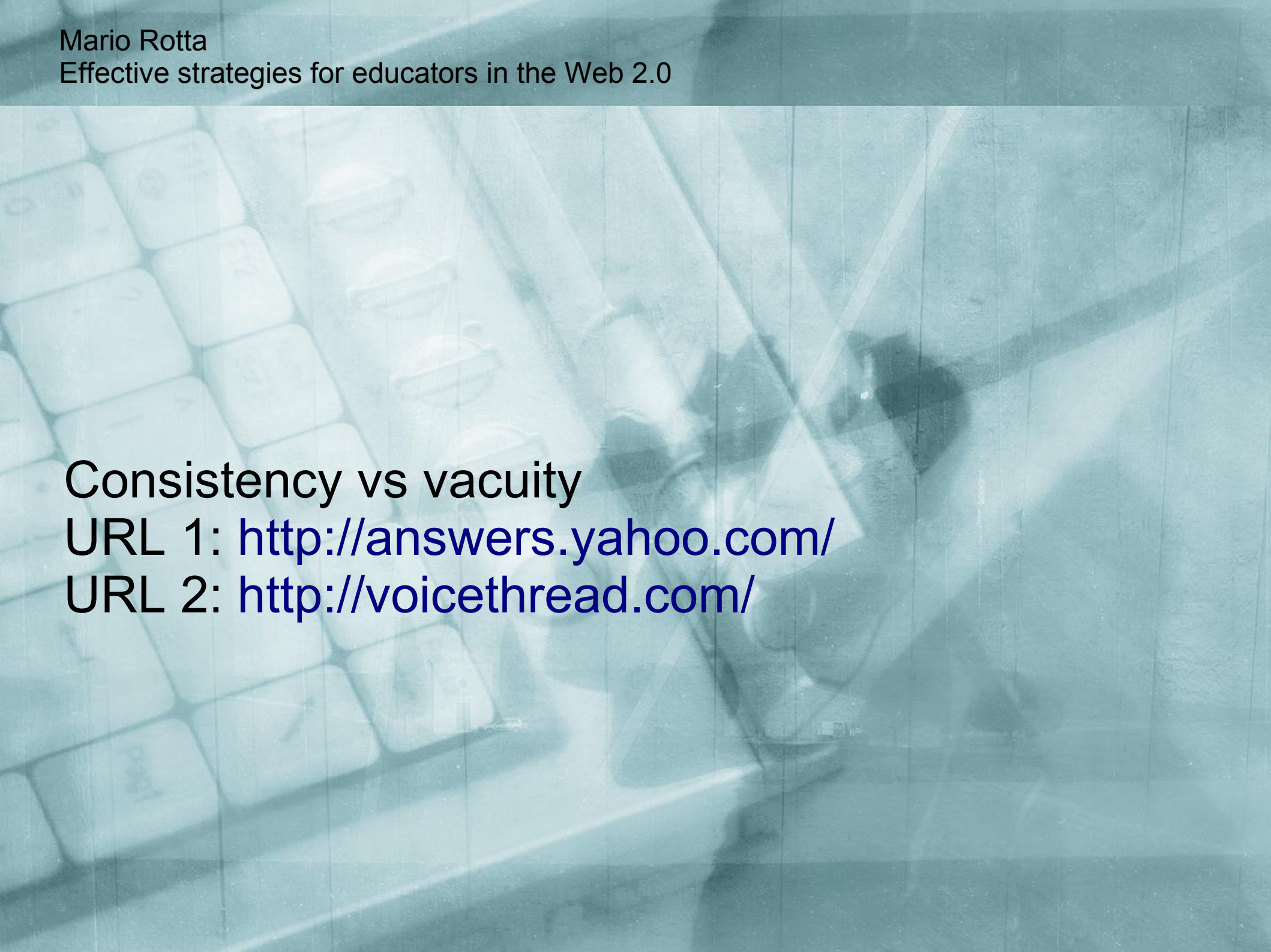
3. Learning and sharing knowledge online with informal tools and engaging environments

Starting from the 7 paradoxes identified in the Web 2.0 as educational environment, we can try to explore some applications putting in evidence the terms of each paradox as strenghts or weaknesses (like in Swot analysis).

Immediacy vs hypermediacy
URL 1: http://secondlife.com/?v=1.1
URL 2: http://www.activeworlds.com/

Being integrated vs being specific
URL 1: http://www.facebook.com/
URL 2: http://www.ning.com/

Folksonomy vs taxonomy
URL 1: https://www.freebase.com/
URL 2: http://www.anobii.com/



Consistency vs vacuity
URL 1: http://answers.yahoo.com/
URL 2: http://voicethread.com/

Sharing vs self-referencing
URL: http://twitter.com/

Ubiquity vs geolocation
URL: http://earth.google.com/

Liquidity vs solidity
URL: http://debategraph.org/

We can share and discuss any impression in a social environment. So we can verify is we learned something really useful... ;-)

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