

Innovations in Learning: **The present future of learning in the Knowledge Society**

Ilkka Tuomi

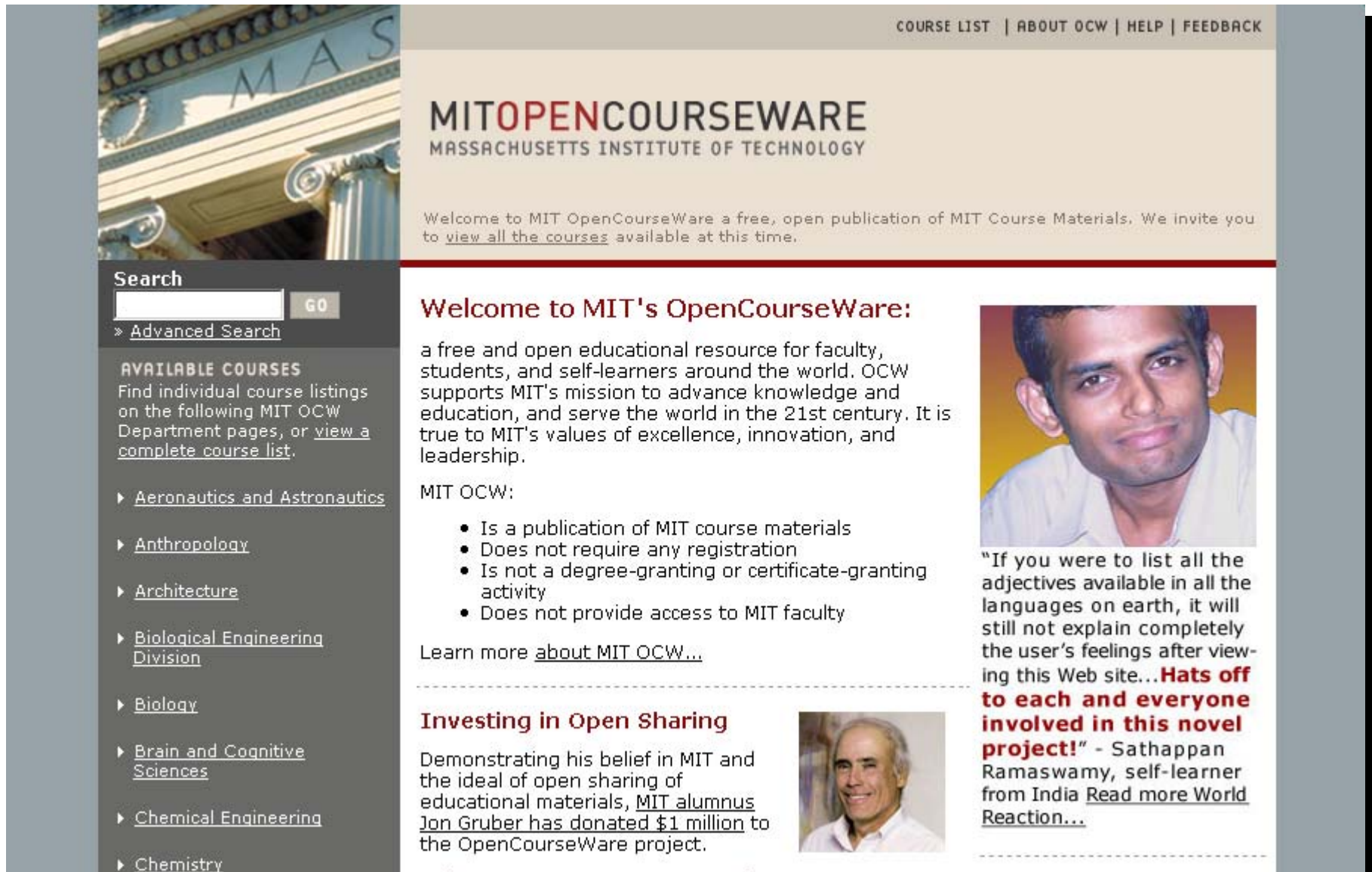
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- Ten provocative **theses** on trends in learning and technology
 - Very rapidly...

T1: Education becomes global

- Broadband networks enable global provision of educational services
- Global educational brands emerge and start to compete with national systems
- Mass-customized ICT-supported education will lead to cost-competitive services in lower tertiary
- Global networks enable students to enroll in high-end educational brands (a.k.a. “electric MIT/Harvard/ Stanford”)
- China will attract leading pedagogic skills in an attempt to overcome the challenge of the hierarchical Confucian educational system

Open course content, globally available



The screenshot shows the MIT OpenCourseWare website. At the top right, there are navigation links: COURSE LIST | ABOUT OCW | HELP | FEEDBACK. The main header features the MIT logo and the text 'MIT OPEN COURSEWARE MASSACHUSETTS INSTITUTE OF TECHNOLOGY'. Below this is a welcome message: 'Welcome to MIT OpenCourseWare a free, open publication of MIT Course Materials. We invite you to [view all the courses](#) available at this time.'

On the left side, there is a search bar with a 'GO' button and a link to 'Advanced Search'. Below the search bar is a list of 'AVAILABLE COURSES' with links to various departments: Aeronautics and Astronautics, Anthropology, Architecture, Biological Engineering Division, Biology, Brain and Cognitive Sciences, Chemical Engineering, and Chemistry.

The main content area has a section titled 'Welcome to MIT's OpenCourseWare:' followed by a paragraph describing it as a free and open educational resource. Below this is a list of bullet points: 'Is a publication of MIT course materials', 'Does not require any registration', 'Is not a degree-granting or certificate-granting activity', and 'Does not provide access to MIT faculty'. There is a link to 'Learn more about MIT OCW...'

Below the bullet points is a section titled 'Investing in Open Sharing' with a sub-paragraph about Jon Gruber donating \$1 million. To the right of this text is a small portrait of Jon Gruber.

On the far right, there is a portrait of Sathappan Ramaswamy and a quote: 'If you were to list all the adjectives available in all the languages on earth, it will still not explain completely the user's feelings after viewing this Web site... **Hats off to each and everyone involved in this novel project!**' - Sathappan Ramaswamy, self-learner from India. Below the quote is a link to 'Read more World Reaction...'

COURSE LIST | ABOUT OCW | HELP | FEEDBACK

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AVAILABLE COURSES

Find individual course listings on the following MIT OCW Department pages, or [view a complete course list](#).

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▶ [Anthropology](#)

▶ [Architecture](#)

▶ [Biological Engineering Division](#)

▶ [Biology](#)

▶ [Brain and Cognitive Sciences](#)

▶ [Chemical Engineering](#)

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Welcome to MIT's OpenCourseWare:

a free and open educational resource for faculty, students, and self-learners around the world. OCW supports MIT's mission to advance knowledge and education, and serve the world in the 21st century. It is true to MIT's values of excellence, innovation, and leadership.

MIT OCW:

- Is a publication of MIT course materials
- Does not require any registration
- Is not a degree-granting or certificate-granting activity
- Does not provide access to MIT faculty

Learn more [about MIT OCW...](#)

Investing in Open Sharing

Demonstrating his belief in MIT and the ideal of open sharing of educational materials, [MIT alumnus Jon Gruber](#) has donated [\\$1 million](#) to the OpenCourseWare project.



"If you were to list all the adjectives available in all the languages on earth, it will still not explain completely the user's feelings after viewing this Web site... **Hats off to each and everyone involved in this novel project!**" - Sathappan Ramaswamy, self-learner from India [Read more World Reaction...](#)

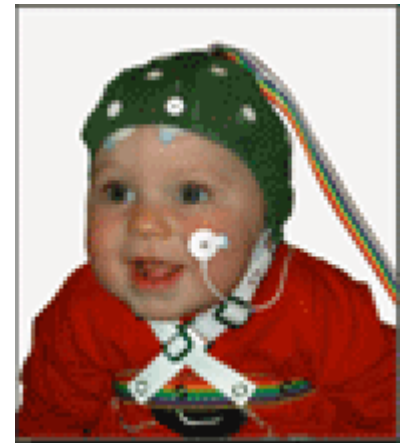
Open Educational Resources:

New learning institutions and models emerge

- Content
 - organized course material
 - user-produced content
- Social networks
 - teacher-learner interaction
 - expert-novice interaction
 - learner-learner interaction
 - "legitimate peripheral participation" in a community of practice
- Learning opportunities
 - "learning while producing"
 - "knowledge creating organizations" (for example, organizing for innovation)
 - "continuous learning paths"
"motive" + "opportunity" + "capability"
- Tools
 - collaboratories & learning environments
 - content production and distribution tools
 - rights management systems

T2: New disabilities become challenges for pedagogy

- Knowledge-Intensive Economy and Society makes new learning disabilities visible
- Cognitive problems (e.g. dyslexia) will be repaired using early-childhood “cognitive repair”



T3: Blogs become more important than formal certificates

- Informal educational portfolios become a major source of labour market advantage
- Employability in the knowledge society requires interdisciplinary state-of-the-art skills which can best be developed and tested in the real world
- Professional paths become unpredictable and people need to broadcast their job potential and interests
- Blogs provide track-records of formal and informal competence history, as well as information about access to social capital
- Standardized ePortfolios are widely used in some application areas

T4: Demographic change leads to slowdown of job growth in Europe

- Aging and the decline of the share of younger population in the EU requires very fast increase of tertiary education to make job creation possible
- European educational systems need to create “fast-track” entry paths for immigrant students, high-profile centres of excellence to attract global talent, and systems that build global knowledge and innovation networks

T5: Home becomes the classroom

- The functions of school as a daycare centre and learning centre will be separated
 - Parents do not work from nine to five anymore
 - Women enter the workforce
 - Childcare needs do not fit school hours anymore
 - Learning becomes a critical success factor in the knowledge-intensive society and economy
 - -> the perceived benefits of school-centred primary education decline
- ICT supported learning becomes independent of location, and, thus, can be moved to where parents can participate in the education of their children (co-presence & active participation)
 - -> the benefits of parent-child collaboration in learning increase
- Social capital differences make an increasing difference
 - Children from families with positive attitudes on education and learning will benefit most

T6: Immersive social games replace textbooks

- Immersive environments make learning an experience, with emotional and cognitive focus (attention)
- Learning can be fun
- Games can enable imagination and creativity, and motivate learning
- Social learning becomes part of the learning process
- Social and communication skills are learned as a side-effect
- Game environments can support constructivist and problem-oriented pedagogic models that can be bridged to the practical reality of work environments



T7: Audio makes education portable

- Adult education becomes increasingly “aural”
 - Audio can be used in parallel to other activities (e.g., commuting, jogging)
 - Books are already digital, and can be translated to speech easily
 - Compression technologies and wireless networks will allow downloading large audio files in minutes, as a background activity
 - Technology is dirt cheap (because it can piggyback music industry)
 - Audio can easily be combined with net-based learning services

“4 GB, 1,000 songs”



“...or, Linguaphone strikes back”

T8: Products become pedagogic

- Functional products (e.g., microwave ovens, video recorders, screw drivers, cars, web browsers...) are not purely technical artifacts; they are combinations of technical artifacts and competent use
- Product designers can add value by reducing the competence requirements (e.g., through user interface design, interactive help systems), or by creating products that accelerate competence development
 - Products that make competent users are becoming possible, as technical artifacts become informationalized and networked
 - Scaffolding functionality will be built in to the products
“pedagogic veils”
 - This requires user modelling in software, and perhaps social support (e.g., integrated helpdesk functionality; access to communities of practice)
- Specialized “learning objects” with “guides through zones of proximal development” will enter the classroom

T9: Informal social learning becomes key to competence development

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Hardware: OSDL's Mobile Linux Initiative

Posted by [CmdrTaco](#) on Tuesday October 18, @12:12PM
from the [and-it-fits-in-the-palm-of-your-hand](#) dept.

Rob writes "*The Open Source Development Labs has [introduced a new initiative](#) to accelerate the adoption of Linux in the mobile market by providing a forum for device manufacturers, network operators, and application developers. Like the OSDL's other working groups, the MLI will provide a forum for creating requirement specifications based on existing implementations and invest in existing and new mobile Linux projects to identify and fill gaps in the open source operating system's functionality.*"



([Read More...](#) | [13](#) of [16](#) comments | [hardware.slashdot.org](#))

IT: Office + OpenDocument, Never Say Never

Posted by [CmdrTaco](#) on Tuesday October 18, @11:36AM
from the [i'll-believe-it-when-i-see-it](#) dept.

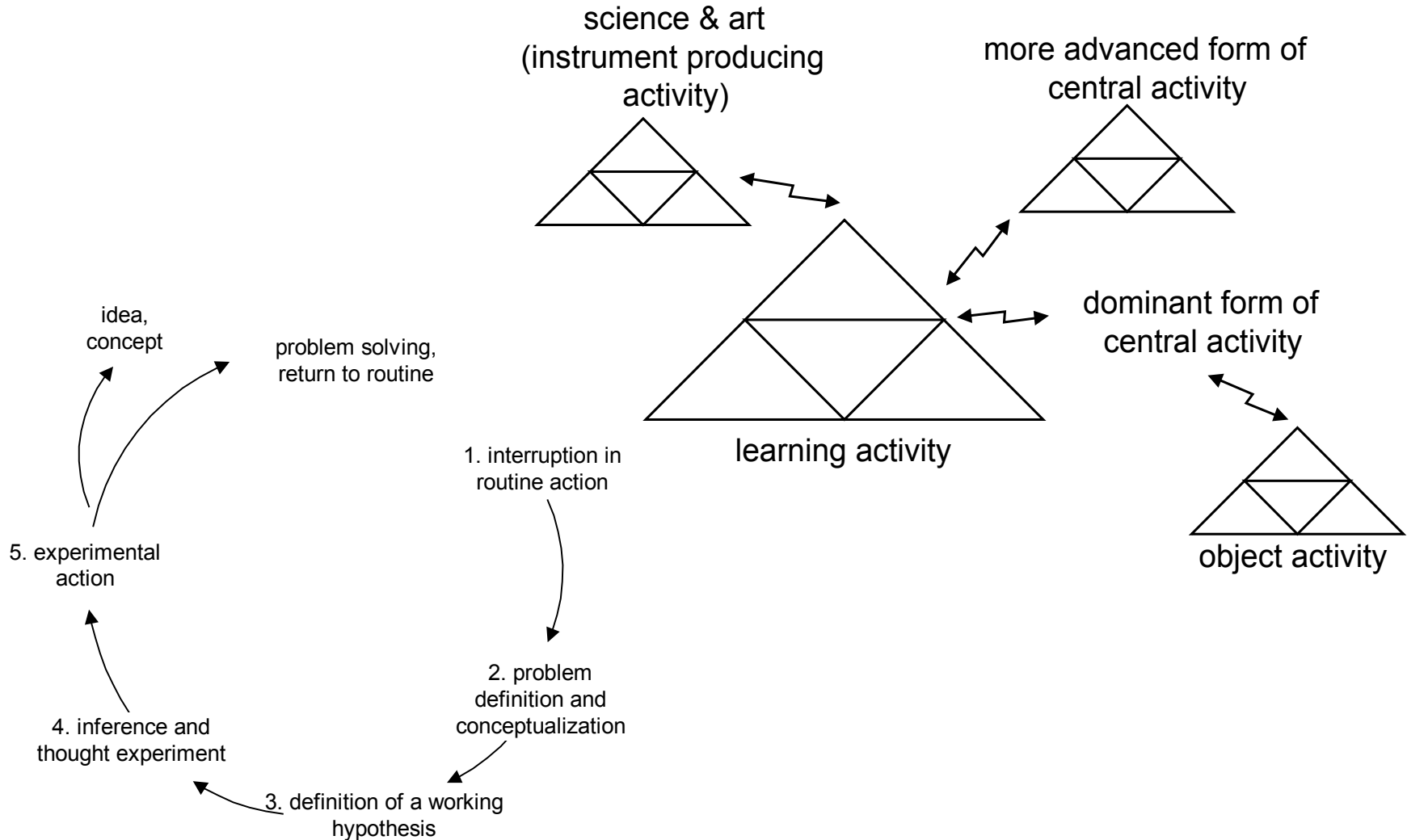
[barryfreed](#) writes "*There's a blog entry by Andy Updegrave at ConsortiumInfo.org that says Microsoft has [officially stated](#) to him that support of OpenDocument in MS Office could happen. Microsoft sent the statement in a response to an article Updegrave wrote called [Massachusetts and OpenDocument: A Brave New World?](#)*"



([Read More...](#) | [74](#) of [90](#) comments | [it.slashdot.org](#))

Science: Maps Show Mars Was Once More Like Earth

T10: Educational programmes become integrated with real social change



Critical Voices

- “In September 2000 the Alliance for Childhood published *Fool’s Gold: A Critical Look at Computers in Childhood* and issued a call for action, endorsed by dozens of leading educators, health professionals, researchers, technology experts, and other advocates for children. The group called for a moratorium on the further introduction of computers in early childhood and elementary education, a new emphasis on ethics, responsibility, and critical thinking in technology education for older students, and a broad public dialogue on how computers affect the real needs of children...
- Four years later, ...we remain convinced that, at the elementary school level and below, there is little evidence of lasting gains and much evidence of harm from the hours spent in front of screens.”
 - Alliance for Childhood (2004) *Tech Tonic: Towards a New Literacy of Technology*

- Educational systems are difficult to change, partly because they are designed to transfer traditions across generations. Many technology initiatives have implicitly focussed on "hardwiring" outdated institutional structures.
- At the same time, there has been an explosion in informal learning, and new learning requirements have emerged.
- Innovative, radical, and revolutionary learning is becoming the source of economic growth. Educational institutions and organizations are not well prepared for this.
- ICT is penetrating the system and fundamentally changing its constraints and possibilities. Again, we have to ask what is the role of education in human and social development.
- Can virtue be taught? Can cognitive capabilities be learned? Do we need "computer skills"?
- Additional thoughts:

"The Future of Learning in the Knowledge Society: Disruptive Changes for Europe by 2020."
Report for DG JRC – IPTS and DG EAC

<http://www.meaningprocessing.com/personalPages/tuomi/articles/TheFutureOfLearningInTheKnowledgeSociety.pdf>