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**Education, Research and Innovation for a
Global Society**

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UNITED NATIONS UNIVERSITY



Traditional question:

from teaching/research to innovation

- How to build the research experience into teaching
- How to promote critical, creative and innovative thinking by appropriate research based teaching
- How to make (technical) innovations profitable for the market

Today's question:

Innovation focused teaching/research

- What kind of innovations are needed **in a globalized world, in a global society** : in science and technology, in the political and social realm and in the economic world
- How to adapt teaching and research to prepare the ground and the researchers for the necessary innovations

Basic hypothesis

- Improving collaboration universities-academia
- Furthering entrepreneurship
- Mobilizing more venture capital
- Improving students mobility
- Strengthening European collaboration
-

Are all **necessary** tasks but they are **not sufficient** any more in a **globalized** world

Exported Engineering

March 11, 2011:

2 Examples of Failure



Nuclear reactors in Fukushima:

- No robots to go inside the reactors
- Insufficient measurement of radioactivity: 1 measuring point for all of Tokyo
- TEPCO wanted to “get out” on day 4
- Pumps for emergency cooling were on the ground:
they were destroyed by earth quake and tsunami.

Why were the on the ground?

Answer

The Power Plants were built by a US company following plans used in the US.

In the USA the great threat are typhoons and hurricanes hence the emergency pumps have to be on the ground, to be safe

What is needed?

A globalized society needs engineering based on
“global thinking” and on
“global caring”

global both in space and in time

The basis of sustainable development is ultimately
a **moral question** to be decided by society and
politics-not to be left to the economic side

UN Millennium Development Goals

- End Poverty and Hunger
- Universal Education
- Gender Equality
- Child Health
- Maternal Health
- Combat HIV/AIDS
- Environmental Sustainability
- Global Partnership

But there is more:

- Energy
- Climate
- Water
- Biodiversity
- Infectious diseases
- Nuclear armament
- Terrorism
- Peace building, peace keeping

But also

- Global public policy
- Development economics
- Cyber Security
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Innovations are needed:

Traditional:

Universities prepare for expertise in disciplines and for civic leadership

Now:

Global experience, Problem focused, Systems thinking,
Global leadership

(this is not an argument against curiosity driven research)

And:

Universities as Think Tanks of Governments and UN and of the economic world

Innovations in these fields call for

- a redirection of teaching, in particular at the masters and doctoral level: Themes rather than disciplines
- more “user focused” research (not user dictated!)
- giving a new weight and urgency to building up global partnerships in teaching and research, in particular involving both developing and developed parts of the world
- shifting back much of the societal responsibility to global public partnership and governance

Example for an attempt to handle some of these problems

The United Nations University

- Founded in 1973 as a **global** University
- Financially independent of the UN
- 14 Institutes in 12 different countries
- Structured according to themes, not disciplines

United Nations University: what is special?

- its **global structure**, with institutes and programs in 12 different countries;
- its being an **institution of the United Nations**, therefore it has close collaboration with many UN and governmental offices in research and in placing students for internships and the like;
- its ability to bring in **experts** from other UN agencies and from the political/diplomatic world;
- its **collaboration** with the best universities in many countries, developed and developing;

What is special (continued)

- its focus on **problems and themes**, not on disciplines; its structure that is problem-focused;
- its **high relevance** to the problems of **sustainability**, in particular of developing countries and the United Nations system;
- its focus on **user needs** both in research and in teaching;
- Its role as a **global think tank**; and
- its efforts to **bridge the gaps** between the developed and the developing world by building partnerships in research and in teaching

UNU Postgraduate Programmes

- UNU-ISP Master's in *Sustainability, Development and Peace*
- UNU-MERIT PhD Programme in *Economics and Policy Studies of Technical Change*
- UNU-MERIT PhD in *Public Policy, Innovation & Development*
- UNU-INWEH Diploma Program *Water Without Borders* in cooperation with McMaster University
- UNU-MERIT Master's in *Public Policy and Human Development (MSc)*
- UNU-IAS Master's in *Environmental Governance Specialization in Biodiversity (MSc)* which will commence in September 2011

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UNU Postgraduate Programmes

- UNU-IIST PhD in ICT for *Sustainable Development*
Joint programme with the University of Pisa commencing in autumn 2011 on the basis of existing cooperation.
- UNU-CRIS Master's in *Comparative Regional Integration* (MSc)
Joint program with the University of Bonn starting in autumn 2012
- UNU-EHS Master's in the *Geography of Environmental Risks and Human Security* - foreseen to start in the fall semester of 2012

Twin Institutes

- Idea: to strengthen partnership between developed and developing countries
- To share experience, teaching and research
- To help building capacities in developing countries
- To fight brain drain

Twin Institutes: Principle

The United Nations University consists in 14 Institutes in 12 countries

New rule: **every Institute has to become a TWIN INSTITUTE**

Definition: a Twin Institute is an Institute

- with two different campuses, one in a developed and one in a developing country,
- each one with students, teachers and researchers
- With a joint strategy, teaching and research programs and a joint budget

Twin Institutes: Finances

- The UNU does not get any financial support from the UN
- There is an endowment provided by Japan that finances the central administration
- The institutes are financed by the host country
- **New:** in a Twin Institute the developed host country pays the full cost of its Twin, the developing host country pays at least 30% of the cost, the rest has to be acquired through research or teaching projects, submitted to the funding agencies of the developed country.

UNU as a Global Think Tank

- University of Pennsylvania ranking of 6000 Think Tanks.
- UNU is among the leading 10 in two categories

Conclusions

The idea is not that other universities should copy the structure of UNU,

but they should move in that direction to push for **innovations** that help

coping with the pressing global problems, humanity is facing.