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Sustainable Schools: why and how?

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Introduction

„[...] the design, construction, and operation of academic buildings can be a liberal education in a microcosm that includes virtually every discipline in the catalog. The act of building is an opportunity to stretch the educational experience across disciplinary boundaries and across those dividing the realms of thought from that of application. “

(Orr, 1996, 18)

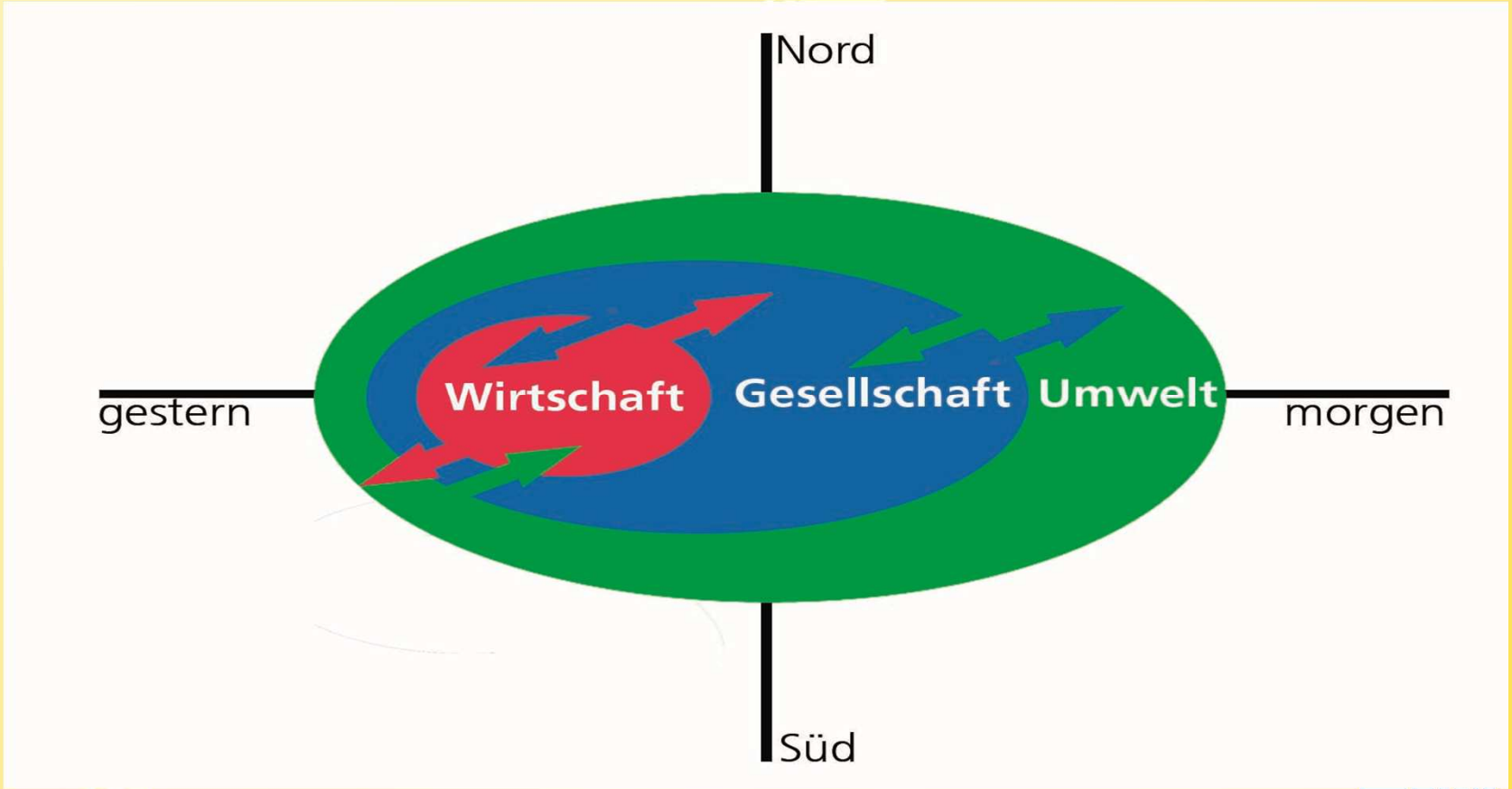
UNESCO: reorienting education

‘The crisis [of education] cannot be solved by the same kind of education that helped create the problems’ (Orr 1992: 83).

Crucial skills for a sustainable world

- Ability to act sustainably in the real world
- Systemic understanding of the biosphere as our life-support system (society and economy as dependent subsystems) -> see figure 1
- Appreciation of the resilience, fragility, richness, diversity and beauty of nature and the interdependence and equal importance of all forms of life
- Ability to develop and implement strategies for change in cooperation with others (networking, working in teams) (see Jucker, 2011)

Sustainability



Fachkonferenz Umweltbildung, Positionspapier Umweltbildung 2010

... and sustainable school projects???

Ideally suited for:

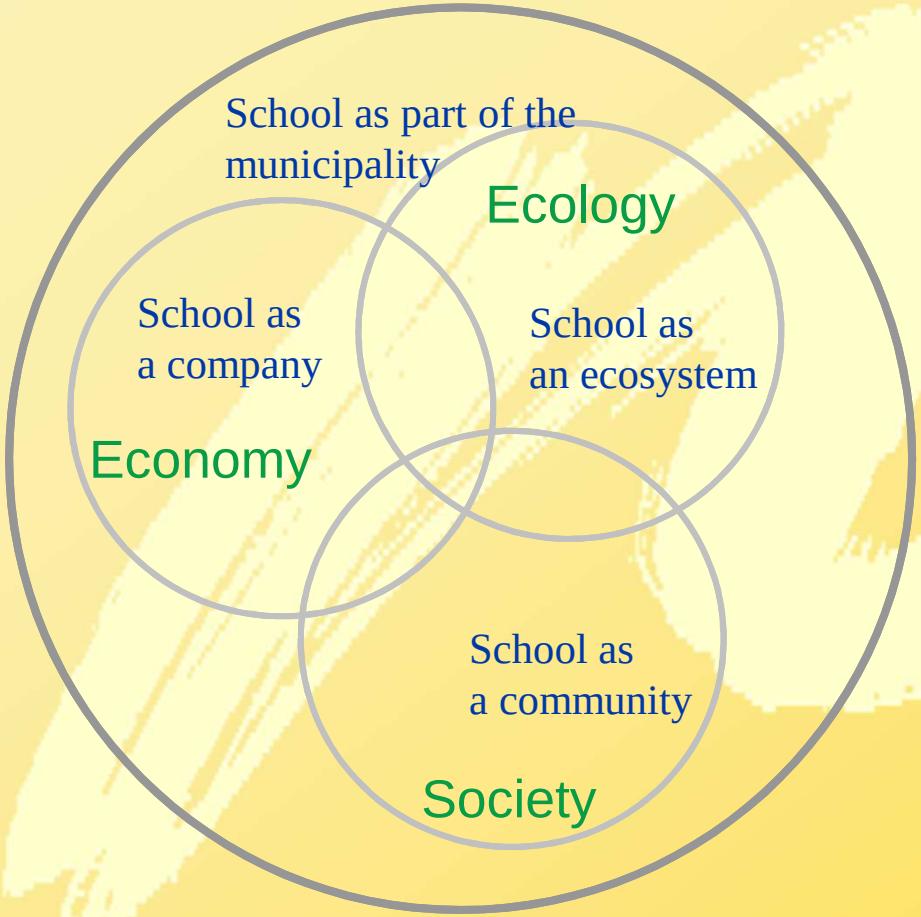
- Participation, ownership and real involvement
- Solution-oriented, holistic and transdisciplinary learning
- *empowerment*: concrete results instead of hopelessness in the face of global challenges and threats
- Practicing to be a *change agent*: concrete action rather than virtual games
- Reattaching learning to a sense of place.

Action not words

“First, for students [such projects] reduce large and unsolvable global problems to manageable scale. Students cannot solve the problem of global warming for example, but they can comprehend and help to solve the problem of energy efficiency on their own campus. In the process they learn that many things that appear to be hopeless are, in fact, amenable to reason, effort, and an ecologically disciplined intelligence. Second, students learn how to analyze problems in order to render them solvable.“

(Orr, 1996, 22)

Sustainable Schools and LA 21



Active Involvement of all parties (students, teachers, headmaster, parents etc.).
A step-by-step process of integration of results from projects into «everyday life».
School as a „learnscape“ interacting with its neighbour-hood and municipality.
Learning as an action- and solution-oriented process

Criteria for sustainable school buildings

- human scale = right scale
- simplicity
- a close fit between means and ends
- durability
- efficient and frugal use of resources
- sound regional economies
- social resilience. (see Orr, 1994, 104)

School buildings and 2000 W society

- energy efficiency (Minergy standard or better)
- Durability, building materials (eco-label)
- solar energy on roof tops
- Energy and climate change in the curriculum
- Links between «hardware» (technology) and «software» (curriculum, schoolhouse rules etc.)
- Links between schools and community/municipality

Examples of good practice

«Im Birch» School, Zurich (K - 9 school, 800 pupils)

Fotos: Walter Mair, Zurich

Examples of good practice: Im Birch

- Kindergarden, elementary and secondary school
- Builder-owner: City of Zurich, architects: Peter Märkli
- Year of construction: 2002-2004 (in new quarter)
- Minergy label, recycled concrete as main material, solar energy on roof tops
- Energy and climate change in elementary school curriculum (in cooperation with NGO myclimate.org)

Examples of good practice: Eichmatt, Cham

- Kindergarden and elementary school (350 pupils)
- Cooperation between two adjacent communes: Cham and Hünenberg (about 50 km from Zurich)
- Year of construction: 2007-2009 (new residential district)
- Learning clusters and interior courtyards (public)
- Minergie-P label (passive h.) solar electricity from roof top
- Combined with geothermic probes (150 m deep)
- Regional materials, clad walls with larch wood facade

Conclusions

- Buildings embody powerful long-term decisions: what we build today influences and limits choices of people in the future
- 'shadow curriculum': learning environments are at least as important for learning processes than taught content
- If all stakeholders build (or refurbish) their school together, sustainable, effective and meaningful learning is guaranteed.
- Experiential learning is central to education for sustainability

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