REORIENTING EDUCATION IN THE POST 2015 UN DEVELOPMENT AGENDA

TRANSFORMING TEACHING AND LEARNING FOR THE 21st CENTURY


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Education for Strong Sustainability and Agency (ESSA)
42 Institutions in 14 countries

- Background
- North – South Collaboration
- Strategies for change
  - Materials
  - Workshops / Change projects
- Navigation Tool
The truth is that without significant precautions, education can equip people merely to be more effective vandals of the earth. If one listens carefully, it may even be possible to hear the Creation groan at every graduation ceremony when another batch of smart, degree-holding, but ecologically illiterate, Homo sapiens who are eager to succeed are launched into the biosphere.

David Orr (1994) Earth in Mind
What are the new demands for the 21st century teacher?
The 21st century teacher

- Collaborative
- Critical
- Creative
- Constructive
- Computer Savvy
- Connected
- Ethical
- Communicative
Research questions

Teacher Educator’s question:

How can we prepare teacher educators and teachers with professional competences that meet the local and global challenges of the 21st century and beyond?

Teacher Education Institutional question:

How can teacher education institutions best be empowered to adopt teaching and learning approaches that develop competences to meet the local and global challenges of the 21st century and beyond?
Learning how to think

Learning how to learn is life's most important skill.

— Tony Buzan —

1. What does this mean?
2. How does it make a difference?
Two cycles of Action Research:

- a “core action research cycle”, which refers to the aims or content of the research project (materials development) and
- a “thesis action research cycle” or “meta-learning cycle” which relates to how the project itself is going (change projects).

Action Research cycles
Coghlan and Brannick (2001)

Diagram:
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Diagnosing

Evaluating Action

Planning Action

Taking Action
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2a. Institutional Approval & support

2b. Institutional Change Projects

Cycle 1
Dialogue with partner institutions

Cycle 2
2a. Dialogue with the deans
2b. Dialogue with teacher educators

Cycle 3
The Fundisana Online Dialogue Platform

Meta-learning 1

Meta-learning 2

Evaluating Action
Diagnosing
Planning Action
Taking Action

WORK IN PROGRESS
What are the new demands on science and society?
1. New demands on Science and Society
   - Environmental Degradation
   - Climate change
   - Health and disease
   - Economic meltdown
   - Inequalities
   - Migration
   - Violence

2. Classroom
   - Plans
   - Lessons
   - Examples

3. Teacher education 1.0
   - Syllabus
   - Methods
   - Approaches

4. Dialogue
   - Change projects

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The 21st century teacher

We cannot solve our problems with the same thinking we used when we created them.

Albert Einstein
German Theoretical-Physicist
(1879-1955)
Environmental Degradation
• Climate change
• Health and disease
• Economic meltdown
• Inequalities
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• Violence

New demands on Science and Society

Classroom
• Plans
• Lessons
• Examples

The 21st century teacher

We cannot solve our problems with the same thinking we used when we created them.

Albert Einstein
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ESD IS KEY TO ALL SDGs
Inclusive, quality education for all (SDG 4)

What **matters of concern do we need to engage so as:**

Global **Partnerships** for SD (G:17)
Inclusive, quality education for all (SDG 4)

What **matters of concern do we need to engage so as:**

to live together in a healthy social-ecological **context?**

- No poverty (G:1)
- No hunger (G:2)
- Good Health & wellbeing (G:3)

- Gender equality (G:5)
- Reduce inequity (G:10)
- Peace & justice (G:16)

- Decent work and Economic growth (G: 8-9)
- Sustainable cities (G: 11)
- Responsible production & consumption (G:12)

- Clean Water & Energy (G:6 & 7)
- Climate action, Resilient life below water and on land. (G:13-15)

- To all use life-giving resources with **care?**

To develop ESD pathways to sustainability that are peaceful, just and safe?

**Global Partnerships** for SD (G:17)

- UNESCO GAP PN3
- LT Network
- SANORD
- BUP
Inclusive, quality education for all (SDG 4)

What matters of concern do we need to engage so as:

to live together in a healthy social-ecological context?

to develop ESD pathways to sustainability that are peaceful, just and safe?

to all use life-giving resources with care?

to be ethical and fair?

Global Partnerships for SD (G:17)

UNESCO GAP PN3
LT Network
SANORD
BUP

No poverty (G:1) No hunger (G:2) Good Health & wellbeing (G:3)

Gender equality (G:5) Reduce inequity (G:10) Peace & justice (G:16)

Decent work and Economic growth (G: 8-9) Sustainable cities (G: 11) Responsible production & consumption (G:12)

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- Decent work and Economic growth (G: 8-9) Sustainable cities (G:11) Responsible production & consumption (G:12)

**NEXUS of sustainability concerns**

- UNESCO GAP PN3
- LT Network
- SANORD
- BUP

Global **Partnerships** for SD (SDG:17)

to develop ESD pathways to sustainability that are peaceful, just and safe?

to be **ethical** and fair?

to all use life-giving resources with **care**?
STRATEGY

1. New demands on Science and Society

2. Classroom
   - Plans
   - Lessons
   - Examples

3. Dialogue
   - Change projects

4. Teacher education 2.0
   - New Syllabus
   - New Methods
   - New Approaches

The 21st century teacher

We cannot solve our problems with the same thinking we used when we created them.
The 21st century teacher

What are the necessary competences?
How can teaching and learning accelerate social innovation?

**ESSENTIAL COMPETENCES FOR SUSTAINABILITY**

- **Key competences for sustainable development** (Rieckmann, 2012):
  - key competencies compiled in a survey between global north and south ESD experts

- **Key competences in sustainability** (Wiek et al., 2011, 2016):
  - original five key competency framework and adding problem-solving competence in 2016

- **Sustainability competences** (Wals, 2015):
  - Dynamics and content of sustainability, Critical dimension of sustainability, Change and innovation dimension of sustainability
8 Key competencies essential for sustainable development

- **Systems thinking:**
  the ability to recognise and understand relationships - to think of how systems are embedded within different domains and different scales and to deal with uncertainty

- **Futures thinking:**
  the ability to understand and evaluate multiple futures – to create own visions for the future, to apply the precautionary principle, to assess the consequences of actions and to deal with risks and changes

- **Values thinking:**
  the ability to understand and reflect on the norms and values that underlie one’s actions and to negotiate sustainability values, principles, goals, and targets

- **Strategic thinking:**
  the ability to collectively develop and implement actions that further sustainability at the local level and further afield

- **Collaboration competence:**
  the ability to learn from others, to understand the needs, perspectives and actions of others, to deal with conflicts in a group and to facilitate collaborative and participatory problem solving

- **Critical thinking:**
  the ability to question norms, practices and opinions, to reflect on own one’s values, perceptions and actions, to take a position and to understand the perspectives of other stakeholders

- **Personal competence:**
  the ability to reflect on one’s own role in the global system and to continually evaluate and further motivate one’s sustainability actions.

- **Integrated problem-solving competence:**
  the overarching ability to apply different problem-solving frameworks to complex sustainability problems and develop viable solution options – integrating the before mentioned competencies.
The 21st century teacher

What is necessary to know?
“Social and economic development within planetary boundaries creating a decent and healthy life built upon fairness and social justice”
The 21st century teacher

How should we teach about these issues?
The illiterate of the 21st century will not be those who cannot read and write but those who cannot learn, unlearn, and relearn.

Use example to explain
a. Un-learning
b. Re-Learning
CREATIONAL THINKING; Jason Ohler, 2013

Creative Thinking

Creatical Thinking

Critical Thinking

Robert King, - Creatical thinking is like respiration which is more important, breathing out or breathing in?
Effective methods

Participatory
Active citizenry
Social learning

Collaboration
Co-creation
Persuading & Negotiating

Communication
Giving and accepting critique
Presenting & Reporting

Transformative
Co-created
Socially critical
Action-orientated & Open

LEARNING HOW TO THINK

Creative Thinking
imagine, invent, change, design, create...

Problem Solving
improve, design, refine, find, invent criteria to, combine...

Critical Thinking
analyse, break down, compare, categorise, list, sequence, rank...

LEARNING HOW TO THINK
Effective methods

- Transmissive
  - Predetermined
  - Prescribed
  - Closed

- Authoritative
  - Training
  - Conditioning

- Participatory
  - Active citizenry
  - Social learning

- Transformative
  - Co-created
  - Socially critical
  - Action-orientated
  - Open

Jickling & Wals, 2008
Effective methods

Methods that encourage:

- Reflexive thought and action
- Collaborative learning
- Making connections
- Learning as inquiry
- Enabling empowerment, transformation and emancipation
Weaving a mat ...

Patterns of integrated knowledge = COMPETENCES
THE NAVIGATION TOOL

COMPETENCES FOR SUSTAINABILITY

- Systems thinking
- Futures thinking
- Values thinking
- Strategic thinking
- Collaboration competence
- Critical thinking
- Personal competence
- Integrated problem-solving competence

METHODS

- Reflexive thought and action
- Collaborative learning
- Making connections
- Learning as inquiry
- Enabling empowerment, transformation and emancipation
What are the 21st century skills?

- **C**: COMMUNICATION
  - Sharing thoughts, questions, ideas & solutions

- **C**: COLLABORATION
  - Working together to reach a goal. Putting talent, expertise, and smarts to work

- **C**: CRITICAL THINKING
  - Looking at problems in a new way and linking learning across subjects & disciplines

- **C**: CREATIVITY
  - Trying new approaches to get things done equals innovation & invention
COMPETENCES FOR SUSTAINABILITY

- Systems thinking
- Futures thinking
- Values thinking
- Strategic thinking
- Collaboration competence
- Critical thinking
- Personal competence
- Integrated problem-solving competence
The only person who is educated is the one who has learned how to learn and change.

(Carl Rogers)
Essential skills at school

INVESTIGATIVE EXPLORERS
Developing research skills and using technology to find solutions

INNOVATIVE PROBLEM SOLVERS
Investigating real-world problems and finding creative ways to solve them

CREATIVE COMMUNICATORS
Exploring different points of view and using evidence to support and express ideas

VERSATILE READERS
Learning about the world with challenging fiction and nonfiction texts

CRITICAL THINKERS
Analyzing complex topics and learning academic vocabulary to navigate different subjects

RESOURCIFUL LEARNERS
Building a strong foundation of skills and expanding on those abilities every year

21ST-CENTURY COLLEGE AND CAREER SKILLS
Colleges and employers are seeking people to solve the problems of tomorrow. Here are 3 TOP SKILLS students will need for college and career success in the 21st century:

ADAPTIVE PROBLEM SOLVING
Versatile individuals who approach problems in creative ways

COLLABORATIVE COMMUNICATION
Global thinkers who express themselves effectively and work with people all over the world

DIGITAL FLUENCY
Tech-savvy workers who use technical and digital media skills in their everyday work
THANK YOU

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D3
Reorienting education in the post 2015 UN development agenda: The 21st century teacher

Presenter: Dr. Shepherd Urenje, SWEDESD - Uppsala University, Visby, Sweden

Workshop. 60 min. Target group: General

Increasing complexity of current and future environment and sustainability challenges continue to put pressure on science and society. Despite current developments in pedagogy, we have learnt that many teacher educators and teachers still struggle with the practical implementation of Education for Sustainable Development (ESD) in their own teaching. This worldwide phenomenon demands a 21st century teacher equipped with new competences essential for a sustainable society. The workshop will discuss a teaching and learning tool, ESD Navigation Tool, which we are experimenting with to investigate effective learning for a sustainable future – developing learners with essential skills for a changing world.