Learning and Innovation
What does it mean at the University?

ECIU Masterclass
19th - 20th September 2016
Lodz University of Technology

Tomasz Saryusz-Wolski
Lodz University of Technology
International Faculty of Engineering
Two terms and two challenges

1. „Learning” and „ability of learning”

2. „Innovation” and „skills for innovation”
System based on „learning outcomes”

• ‘learning outcomes’ means statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence (EQF recommendation, April 2008)

• We have system „based on learning outcomes”
  – We define, write, describe learning outcomes for the study programme and it’s educational components
  – We teach students to achieve learning outcomes
  – We assess learning outcomes

• Sometimes we are not satisfied with students’ learning
  – We have taught them but they didn't learn
  – We have supported students’ learning but ....
  – They didn't’ achieve learning outcomes, why?

Learning to learn

• Are we sure students have *ability to learn*?
• Have we written, in study programme, the learning outcomes concerning *ability to learn*?
• Can we point out courses students *learn to learn*?
• Do we support development of *skills for learning*?
• Do we assess *learning skills* according to the level of qualification?
„Learning” in Polish Qualification Framework (for LLL)

PQF – Skills – a person is able to:
Level 1-2. – learn under direct guidance in a structured form
Level 3. – learn partially autonomously under direct guidance in a structured form
Level 4. - learn autonomously under direct guidance in a structured form
Level 5. - learn autonomously
Level 6 – (I cycle) – Autonomously plan one’s lifelong learning
Level 7 – (II cycle) - Autonomously plan one’s own lifelong learning and direct others in this area.
Level 8 – (III cycle - PhD) – Autonomously plan one’s own development as well as inspire development of others.

Lifelong learning perspective (XXI century)

- The most important learning outcome at any level of education is development of **ability to learn** *(in formal, non-formal context and informal learning)*

- How to help students to be prepared for LLL, to be able to learn?
  - To learn every day, to learn at the workplace, to learn from experience

„Innovation” at the University

• We develop innovations (by research)
• We transfer innovations to society and economy
• We implement innovations in university
• We develop innovative study programmes
• ....
• ....

• Do we help students to develop „skills for innovation”?
Skills for innovation

• Skills for innovation – *21st century skills*
  – Technical Skills including disciplinary know-what and know-how
  – Thinking and creativity skills
    • Curiosity, critical thinking, problem solving and making connections, open-mindedness, critical questioning ..
  – Social and behavioural skills
    • Interest, engagement, self-directed learning, self-confidence, organisation, communication (cross-cultural) collaboration, teamwork, leadership ...

* OECD/CERI Innovation Strategy for Education and Training: www.oecd.org/edu/innovation
„Innovation” in the EQF for LLL

• Level 6 (I Cycle)
  – Advanced skills, demonstrating mastery and innovation .......

• Level 7 (II Cycle)
  – Specialised problem-solving skills required in research and/or innovation .......

• Level 8 (III Cycle – PhD)
  – The most advanced and specialised skills and techniques ......, required to solve critical problems in research and/or innovation

What we have to do...... ?

- Write appropriate learning outcomes
- Help students to develop this learning outcomes
  - Teaching and learning methods
  - „flipped education”
- Assess this learning outcomes

- How to do this ....?????
„Flipped learning”
How to implement it?

Traditional Model
- Students are responsible for homework in these levels of understanding.
- Teachers introduce new material to students.

Flipped Model
- Students and teachers work together during the school day on these levels of learning.
- New material is introduced to students outside of class as their homework.

Blooms Taxonomy

What we have to do......?

• Write appropriate learning outcomes
• Help students to develop this learning outcomes
  – Teaching and learning methods
  – „flipped education”
• Assess this learning outcomes

• How to do this ....??????
I wish you a fruitful discussion