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STEM Continuous Professional Development at European Universities

First achievements and plans for the future

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Agenda

- What are we going to do?
- ECTN role in STEM-CPD@EUni
- Results of the survey
- Roadmap with Recommendations and guidelines
- User cases
- Short online modules (microMOOCs)
- Summer school for CPD-Ambassadors



Background

The aim of the project is to promote the idea of discipline oriented continuous professional development among STEM lecturers.

1

- **two summer schools** will be organised for lecturers who intend to implement STEM-oriented CPD activities in their faculty.

2

- Following the summer schools these lecturers will become **CPD Ambassadors**, by sharing the knowledge in the higher education STEM-CPD community.

3

- The activities of CPD-Ambassadors will improve the **quality of teaching at their faculties** and beyond.



STEM-CPD@EUni project welcomes you!



Two ways of involvement

ECTN team

Coordination of dissemination,
sustainability

Website, Newsletter, IOs

ECTN member institutions

CPD Ambassadors

Summer school participants
dissemination, sustainability



Thank you for participation in our survey

- 420 lecturers from 26 countries (about 80 universities)
- 46 educational managers from 11 countries
- 53% respondents without pedagogical training



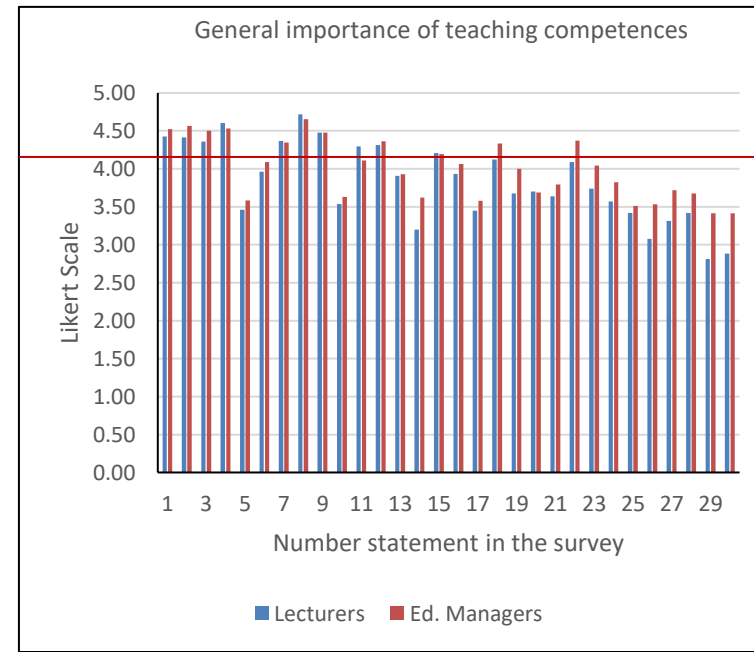


Questionnaire Part 1 – **COMPETENCES**

(30 statements)

Four most important components:

1. Develop **critical thinking** by students
2. **Engage students** and arouse interest for the discipline in the class
3. Give **prompt feedback** and support students during learning
4. Define **intended learning outcomes** in every course they teach





Questionnaire Part 2 – **Attitudes** (17 statements)

1. **Inspire** a positive attitude in their class
2. Be **reflective teachers** and reflect about their courses
3. **Use students evaluations** and the feedback of students to improve courses
4. Be **interested in their students' progress**





Questionnaire Part 3: **CPD activities** (19 statements)

- **Giving mentoring** to a junior lecturer
- **Getting peer-feedback** on own teaching practice from a colleague
- **Getting mentoring** from an experienced colleague
- **Attending presentations** about teaching approaches





A roadmap of STEM CPD

RECOMMENDATION 1 Organize local CPD activities

- STEM-CPD User case, scenarios, microMOOCs
- CPD activities take place in a blended learning environment

RECOMMENDATION 2.

Promote student and CPD participant centred learning

- CPD-Ambassadors enable **(peer-)feedback and collaborative learning**
- CPD-Ambassadors promote **digital technology that supports active learning**

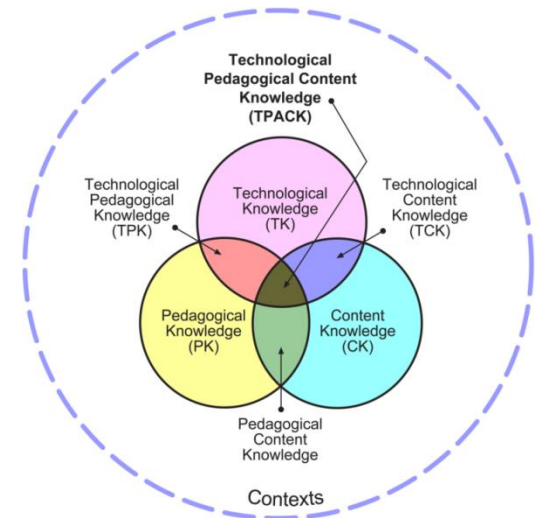




Recommendation 3.

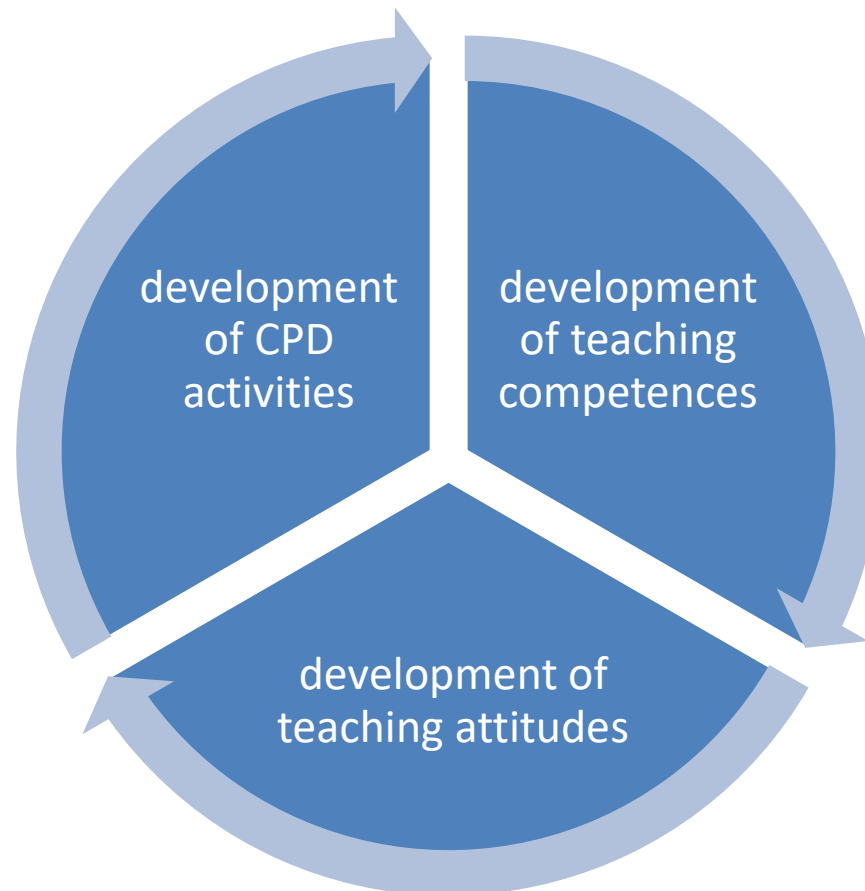
Follow Constructive Alignment and TPACK approach

- CPD-Ambassadors set and communicate **Intended Learning Outcomes**
- CPD-Ambassadors **evaluate CPD activities**
- CPD-Ambassadors **promote STEM teaching methods** for active learning





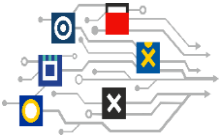
4. CPD-Ambassadors support three dimensions of STEM-CPD





CPD-Ambassadors choose appropriate CPD activities for their goal:

- Learning facilitation (face-to-face or online)
- Imparting information
- Collaboration
- Peer-feedback
- Mentor-mentee support
- Personal / individual expert support
- Knowledge sharing
- Innovation project



5. Train CPD-Ambassadors in the STEM-CPD Summer Schools

- CPD-Ambassadors **implement user cases in practice** and share Summer School information, knowledge and experiences **in home university**





6. STEM-CPD community support for the sustainable development of teaching and learning in HE STEM disciplines

- STEM-CPD Summer School and STEM-CPD **community** support the **local visibility and recognition** of CPD-Ambassadors
- CPD-Ambassadors contribute, by sharing their local experience, to the **development of knowledge about STEM-CPD in Europe**
- CPD-Ambassadors **support each other** and encourage fellow lecturers to become CPD-Ambassadors





HOW do we support CPD-Ambassadors?

- open online modules, the microMOOCs
- user cases and scenarios
- summer schools with the aim of training future CPD-Ambassadors





the microMOCs



Short course



STEM-CPD@EUni

UNIVERSITÀ DEGLI STUDI DI NAPOLI FEDERICO II

Eliciting students' misconceptions

M. Di Serio, A. Petrone, V. Russo, O. Tarallo, I. Testa

University of Naples Federico II

STEM-CPD@EUni

Co-funded by the Erasmus+ Programme of the European Union

How to speak and write so that students understand us

Iwona Maciejowska, Bartosz Trzewik, Michał Woźniakiewicz, Katarzyna Zięba, Aleksandra Lis

Faculty of Chemistry, Jagiellonian University in Kraków, Poland

2021

LUU

- 1 Introduction and general information of the course
- 2.1 What is peer assessment?
- 2.2 Advantages of peer assessment
- 2.3 Questionnaire - Advantages and challenges of peer assessment
- 2.4 How to execute peer assessment
- 2.5 Peer graded assignment: Sketch a peer assessment activity

3.1 Introduction

C Short intro



Continuous online assessment: Strategies for large classes

Matti Niemelä and Johanna Kärkkäinen

University of Oulu



STEM-CPD user cases

User case describes:

- **challenge**
- **local context** and goals/expectations / ambition (intended learning outcomes)
- **local CPD activities**
- **teaching and learning materials** for lecturers for self-supportive learning (e.g. microMOOC)
- Evaluation / **experiences**



Short term staff joint trainings

“**STEM CPD summer schools**” - who wish to become CPD-Ambassadors and develop their teaching competences, share with peers and organize STEM-CPD activities at their institution

10-15 October 2021, Krakow - you may join us!

October 2022, Naples





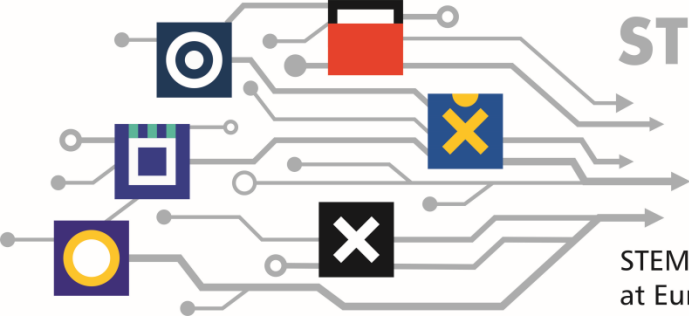
More details about the project

N. Brouwer, I. Maciejowska, A. Lis, C. Machado, St.
Grecea, J. Kärkkäinen, M. Niemelä, K. Kranjc,
Č. Podlipnik, S. Prashar, V. Russo, O. Tarallo,

*The Need for STEM Continuous Professional
Development at European Universities*

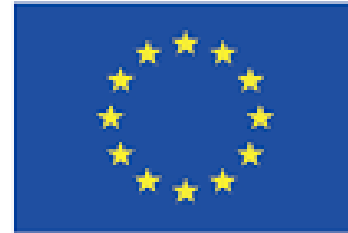
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STEM-CPD @ EUni



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at European Universities

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<http://ectn.eu/work-groups/stem-cpd/>



ECTN (our!) tasks

- **ECTN Newsletter – a chance to revive them!**
- **STEM-CPD one day workshop** based on the flipped classroom approach during its GA – 2022, 2023
- ECTNA Eurolabel activities **contacts with National Accreditation agencies** (and share roadmap)
- All outputs in digital form will be freely accessible on the ECTN website <http://ectn.eu/>.
- **MicroMOOCs** will be available on the open **Coursera** platform
- STEM-CPD scenarios shared on **Starfish platform – a chance to come back there**