A2.2, O1: Trained researchers in Challenge-Based Learning (CBL): researcher training activities organized by alliance members

This document has been developed during the pilot phase of the ECIU University Erasmus+ project between 2019 - 2022.

Beneficiaries

- Aalborg University, Denmark
- Dublin City University, Ireland
- Kaunas University of Technology, Lithuania
- Linköping University, Sweden
- Tampereen Korkeakoulusäätiö sr, Finland
- Hamburg University of Technology, Germany
- Universidade de Aveiro, Portugal
- Universitat Autonoma de Barcelona, Spain
- University of Stavanger, Norway
- Università degli Studi di Trento, Italy
- University of Twente, The Netherlands

Abstract

The challenge-based approach, the core element of the EICIU University requires alliance members to bring together different practices in innovative training and research, in order to provide researchers with competences in transferring results of challenged based research to teaching activities. This document presents the available training activities for researchers implemented by Alliance members in order to identify best practice and create a link with the activities foreseen in WP3 and WP4.

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Symbols, abbreviations and acronyms

AAU	Aalborg University, Denmark
DCU	Dublin City University, Ireland
EC	European Commission
ECIU	European Consortium of Innovative Universities
INSA	Institut National des Sciences Appliquées
KTU	Kaunas University of Technology, Lithuania
LiU	Linköping University, Sweden
TAU	Tampereen Korkeakoulusäätiö sr, Finland
TUHH	Hamburg University of Technology, Germany
UA	Universidade de Aveiro, Portugal
UAB	Universitat Autonoma de Barcelona, Spain
UiS	University of Stavanger, Norway
UNITN	Università degli Studi di Trento, Italy
UT	University of Twente, Netherlands

1   Introduction

The challenge-based approach to both education and research, which is a core element of the ECIU University, allows Alliance Members to bring together different competences in innovative training and research, and to scale it up to a European level for the benefit of learners and stakeholders from any background. Engaging with wider society as stakeholders in curricula redesign and developing challenge-based learning, whilst ensuring excellence of the educational offering requires Members to share practices and learning from each other on how to move from regular education to challenge-based learning, inspired, among others, by the Aalborg Teaching model for problem-based learning.

Leveraging the diverse competences and experiences provided by each Member, cooperation is enhanced by enabling the network to go beyond its current areas of activities, progressing from the process of simply sharing knowledge to the one of co-creating knowledge and education. This is due to its challenge-based approach with the ultimate goal being the development of novel educational programmes and curricula, based on the creation (or adaptation) of micro-credentials, relevant to address current challenges and tailored to the needs of learners.

WP2 is instrumental in further integrating university research outputs and education and in providing a model to develop a joint institutional strategy to accommodate **Challenge-Based Research** initiatives (see Appendix One for a definition of Challenge-Based Research). This will be achieved with a focus on the following three main areas as applied to UN Sustainable Development Goal- SDG 11:

> 1. Develop incentives and support schemes for researchers to engage in challenge-based research ensuring that results are fed back into educational provision

> 2. Develop supporting measures to engage researchers with citizen science and derive maximum benefit from this movement

> 3. Pursue joint research objectives for the benefit of all Members.

Activity 2.2 focuses on the first main area by developing specific training on education-research links related to SDG 11 for Early-Career Stage Researchers (ESRs), with the aim of improving the feedback loop between research and education. Following an initial mapping of all existing researcher training available among the Members, including information on what languages the training is available in, its timing and modalities, Activity 2.2 will provide a pilot of specific training activities, through the engagement with the Innovation in Education Lab of WP3 and WP4, to prepare PhD students, post docs and assistant professors to translate the results of their research activities into micro-credential course creation for education provision as foreseen in WP4. This activity also supports the objectives of WP6, allowing for greater research mobility with the purpose of learning from other member institutions.

2   Objectives

In this document we map and describe teaching training programmes and workshops organized by the Alliance Members and identify best/innovative practices in existing training in order to develop a plan of how researchers in member universities may partake in these training activities via both physical and online mobility to realise a core objective of the ECIU University.

3   Mapping

The mapping of Institutional activities was conducted between January and March 2020 by asking the 12 members Institutions about three kind of activities (Training courses for post doc and assistant professors, training courses for PhD students and workshops on teaching enhancement). Furthermore,

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Institutions have been asked about the existence of internal structures dedicated to the organization of these kind of institutional activities.

The collected data confirms the active engagement of member institutions in organizing teaching enhancement activities for PhD students, post docs and assistant professors, following up on the conclusions of the Bologna Process Implementation Report of 2018 which points out that "in the past decade, more and more higher education institutions started offering it to enhance the quality of teaching, respond to larger and more diverse studentship, address student-centred learning, provide better skills for employment, citizenship and personal fulfilment, and change approaches in learning and teaching, including technology-enhanced provision". Furthermore, the EFFECT study on National Initiatives in Learning and Teaching in Europe concluded that in most higher education systems, the organisation of teaching enhancement is left to individual institutions and "that the main obstacle for the enhancement of learning and teaching remains the fact that research is valued more than teaching, both in terms of recruitment and career promotion".

Within the ECIU University, all Members are currently offering teaching enhancement workshops (partly in English) and the University of Twente, Aalborg University, Hamburg University of Technology, Linköping University, Tampere University are offering more structured teaching enhancement activities (both compulsory and optional) for post docs and assistant professors. Doctoral students of all Institutions can attend teaching training activities organized mainly by faculties or departments. For instance, the Taste of Teaching programme, of the University of Twente, has the aim to develop teaching skills of PhD candidates with a structured programme able to perform teaching activities that focus on effective student learning.

As for the organization of the activities, almost all Alliance Members have centres dedicated to the organization of teaching enhancement activities, based on expertise in learning and teaching as described in Table 3.1

Table 3.1: Researcher training activities organized by Alliance Members

Project Partner	Teacher training programme for post docs and assistant professors	Teacher training programme for PhD students	Teaching Enhancement Workshops	Unit/Center for Teaching/ Learning activities	Information and courses available in English
UT	•	•	•	•	•
AAU	•	•	•	•	•
DCU	•	•	•	•	•
TUHH	•	•	•	•	•
KTU	•	•	•	•	•
LIU	•	•	•	•	•
TAU	•	•	•	•	•
UAB	•	•	•	•	•

UA	•		•	•	
UIS	•	•	•	•	
UNITN	•		•	•	
INSA			•	•	

3.1 University of Twente (UT)

3.1.1 Institutional Teacher training programme for post docs and assistant professors

https://www.utwente.nl/en/ces/celt/utq/

https://www.utwente.nl/en/ces/celt/sutq/

https://www.utwente.nl/en/examination-board/Expertise_SKE/

The Centre of Expertise in Learning and Teaching offers a full certification for all UT teachers - the **University Teaching Qualification (UTQ).** The UTQ is a national certificate, valid for all Dutch universities, and is based on the teacher having acquired the basic competences on Design of Education, Teaching and Supervising, Testing and Assessment, Evaluation of Education, and own professionalisation.

In addition, the UT offers a **Senior Teaching Qualification (SUTQ)** for experienced teachers, and a **Senior Examination Qualification (SEQ)** for people with a broader responsibility on the quality of assessment in programmes, like members of the Examination Board.

Target Group

University Teaching Qualification – (UTQ): all teaching staff of the University of Twente (with a teaching task and an appointment of more than 0.1 fte) have to acquire this certificate within 3 years after their employment. An UTQ qualification is nationally acknowledged.

Senior Teaching Qualification – (SUTQ): experienced teachers

Senior Examination Qualification- (SEQ): staff who have the task and responsibility of ensuring or safeguarding the quality of assessment and the assessment processes and who are responsible for ensuring that graduates have achieved the intended final level of the degree programmes.

Prerequisites

University Teaching Qualification – (UTQ): teachers need to have sufficient responsibility in education (on all aspects of education - design, teaching, assessment) to be able to show all UTQ competences.
Senior Teaching Qualification – (SUTQ): UTQ qualification with several years of experience in education and a good motivation for innovation in their education.
Senior Examination Qualification- (SEQ): basic knowledge of quality of assessment (eg UTQ) and responsibility in quality of examination at programme level.

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University Teaching Qualification -UTQ: participants can take different courses (lasting from one to four hgenerate a portfolio showing their competences.

Senior Teaching Qualification – (SUTQ): consists of a large research/design project with several compulsory workshops. Time investment is about 160 hours in 1.5 years.
Senior Examination Qualification- (SEQ): multiple assignments, several (compulsory) workshops and a innovation project. Time investment is about 80 - 100 hours in 9 months.

Application and admission procedure

University Teaching Qualification -UTQ / University Teaching Qualification -UTQ / Senior Examination Qualification- SEQ: online registration and intake with educational advisor.

3.1.2   Institutional Teacher training programme for PhD students

https://www.utwente.nl/en/courses/945110/taste-of-teaching/

The Taste of Teaching programme consists of 2.5 days of didactical training (teaching and supervision), 2 assignments and half a day reflection session. 2EC (all UT PhD candidates are required to fulfil a doctoral education programme of 30 EC)

Target Group

PhD students with teaching task.

Prerequisites

No prerequisites.

Application and admission procedure

Online registration, via the Twente Graduate School.

3.1.3   Teaching Enhancement Workshops

https://www.utwente.nl/en/ces/celt/educational-staff-development/course-finder/

Additional workshops are organised, teachers can subscribe when the content fits their learning objectives. In addition, Centre of Expertise in Learning and Teaching (CELT) offers a Senior Teaching Qualification - SUTQ and Senior Examination Qualification- SEQ: development programme (see above).

Target Group

All UT teaching staff.

3.1.4 Unit /Office/Division with responsibility for teaching and learning support and development in the Institution

The Centre of Expertise in Learning and Teaching (CELT). www.utwente.nl/celt

3.2 Aalborg University (AAU)

3.2.1 Institutional Teacher training programme for post docs and assistant professors

https://www.learninglab.aau.dk/universitetspaedagogikum

Universitetspædagogikum is a 10 ECTS course, composed by elective and mandatory courses. To each participant is also assigned a pedagogical and a departmental supervisor (https://www.learninglab.aau.dk/adjunktpaedagogikum/).

Target Group

Training for assistant professors, post docs or senior University teaching staff at Aalborg University (AAU), who lack similar training from all faculties.

Prerequisites

It is a requirement that participants will undertake teaching during the duration of the *Universitetspædagogikum*.

Scope and preparation

This programme consists of a number of compulsory courses and several optional activities from which participants must select, as well as practical aspects. The theory should provide the basis for making pedagogical decisions. An essential aspect of the practical work is that each participant will be assigned to pedagogical and departmental supervisors who will observe and provide feedback. Participants will also observe teaching of others to reflect on their own practice (see framework provisions at: https://www.learninglab.aau.dk/universitetspaedagogikum/Adjunktp%C3%A6dagogikum+2020/

Application and admission procedure

The participation in the *Universitetspædagogikum* has to be agreed by the Head of Department.

3.2.2 Institutional Teacher training programme for PhD students

https://www.en.aau.dk/research/PhD/

The objective of the doctoral schools at AAU is to educate PhD fellows to a high academic level of international standing. The doctoral schools have the overall responsibility for organising and developing the PhD educational programmes offered (https://www.en.aau.dk/research/PhD/doctoral-sc

PhD students

Prerequisites

All courses must be planned in cooperation with assigned supervisor.

Scope and preparation

In the course of the PhD programme, students must attend and complete PhD courses corresponding to 30 ECTS or six months of work. However, the courses must be at PhD level and be relevant for the project in question. There are also courses related to more generic skills (namely professional communication, Problem Based Learning (PBL) and facilitation skills, project management etc.) and theory of science. (https://www.en.aau.dk/research/PhD/about-PhD/) (https://PhD.moodle.aau.dk/). Information about the course and courses available is provided in English.

Application and admission procedure

All courses and conferences must be planned in cooperation with the assigned PhD supervisor.

3.2.3   Teaching Enhancement Workshops

AAU annually organises teaching day which comprises a one day course with guest keynote speakers and thematic workshops related with current and relevant topics for the development of teaching capacity of AAU staff (https://www.learninglab.aau.dk/Undervisningens+Dag+-+University+Teaching+Day/). Also, AAU has online courses and resources as well as workshops organised by Aalborg UNESCO Centre for Problem Based Learning (PBL) (https://www.ucpbl.net/) and from the Problem Based Learning (PBL) academy (https://www.pbl.aau.dk/?page=1) targeting both internal AAU academic staff as well as external academic staff. Information about the workshops is available in English

The workshops aim to have a strong practical component, with exemplary hands-on exercises where participants can reflect and apply what they have learned in their teaching practices.

Target Group

All AAU teaching staff, across all faculties.

3.2.4   Unit /Office/Division with responsibility for teaching and learning support and development in the Institution

Problem Based Learning (PBL) academy (https://www.pbl.aau.dk/?page=1), Learning Lab (https://www.learninglab.aau.dk/), Aalborg UNESCO Centre for Problem Based Learning (PBL) in Eng. Science and Sustainability (ucpbl.net)

3.3 Dublin City University (DCU)

3.3.1 Institutional Teacher training programme for post docs and assistant professors

https://www.dcu.ie/teu/index.shtml

The Teaching Enhancement Unit (TEU) has the responsibility for teaching and learning support and development in the University and is part of the National Institute for Digital Learning (NIDL). The Unit is concerned with academic staff development with respect to new approaches to teaching and learning, educational research and the support of a wide variety of educational technologies.

Postgraduate Certificate in Teaching & Learning

The TEU provides a 5 credit level 9 certificate in Teaching & Learning, primarily aimed at postgraduate students and postdoctoral researchers, but it also open to new lecturers. Successful graduates are also encouraged and supported to apply for an Associate Fellowship of AdvanceHE

Learning Design

DCU employs the ABC Learning Design (ABC LD) framework when working with staff engaged in programme and module design/redesign. This framework offers an engaging, tightly timed, hands-on workshop that helps staff to identify and think through potential learning activities for a course. In under two hours, staff work intensively in teams to discuss and create a visual 'storyboard' of the intended student learning experience. Participants also learn about pedagogically appropriate, inclusive learning technologies for students and lecturers in higher education today. ABC learning design is particularly useful for designing new programmes or for those changing to an online or more blended format.

3.3.2 Teaching Enhancement Workshops

The TEU provides a suite of workshops designed to promote and enhance Universal Design for Learning (UDL), Academic Integrity with respect to assessment and also Technology Enhanced Learning (TEL). Information and workshops are available in English.

3.3.3 Unit /Office/Division with responsibility for teaching and learning support and development in the Institution

Teaching Enhancement Unit https://www.dcu.ie/teu/index.shtml has the mission to foster excellence in practice through leadership in teaching, the provision of professional development opportunities for staff, and the scholarship of teaching and learning.

3.4 Hamburg University of Technology (TUHH)

3.4.1 Institutional Teacher training programme for post docs and assistant professors

https://www2.tuhh.de/zll/angebot/en_weiterqualifizierung/

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The Center for Teaching and Learning offers tailored teacher training programmes for teaching staff of all status groups at TUHH.

Professors' Lounge https://www2.tuhh.de/zll/angebot-fuer-lehrende/weiterqualifizierung-fuer-lehrende/en_professorenlounge/

The lounge is aimed exclusively at Professors. In the lounge they discuss and work on current university didactic and research-related topics (examples: "Decoding the Disciplines", "Strategies and practices for engaging students in research and inquiry", "Doctoral Supervision in the 21st Century"). The Vice President Academic Affairs and Vice President of Research organize the events in cooperation with the Center for Teaching and Learning. Furthermore, a programme is being planned especially for newly appointed professors.

Target Group

For TUHH professors.

Prerequisites

There are no prerequisites.

Scope and preparation

The Professors' Lounge takes place in the afternoon and evening. Sometimes participants get some self-reflecting questions to answer or a paper to read as a preparation. In some cases, the Professors' Lounge is followed by a peer or expert visit in their lectures.

Application and admission procedure

Online registration

3.4.2 Institutional Teacher training programme for PhD students

PROGRAMME 1: https://www2.tuhh.de/zll/en_i3proteaching/

PROGRAMME 2: https://www.tuhh.de/alt/graduiertenakademie/home-page.html

PROGRAMME 1

https://www2.tuhh.de/zll/en_i3proteaching/

I3ProTeachING: The programme is aimed at postdoctoral researchers and PhD students. They concentrate on "Higher Education & Engineering Pedagogy" or "Research-Based Learning" and conduct workshops, self-reflection, peer visits and teaching projects according to their individual interests. Examples for workshops are "Identifying student difficulties" or "Accompanying students as co-researchers in final thesis". The workshops are organised by experts from the Center for Teaching and Learning or the Engineering Education Research Group."

Target Group

PhD students and postdoctoral researchers.

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There are no prerequisites. Everyone from the target group is welcome.

Scope and preparation

Participants can complete I3ProTeachING within a maximum of two years.

The qualification programme lasts 60 hours and is divided into an initial discussion, workshops, complementary elements (self-reflection, peer visits, teaching project) and a final presentation.

Application and admission procedure

Online registration

PROGRAMME 2

www.tuhh.de/graduiertenakademie

Graduate Academy of Technology and Innovation: offers a broad variety of services to support doctoral candidates and postdocs to strengthen their professional skills and career ambitions by providing workshops on transferable skills (e.g. academic presentation skills, project management, leadership skills, etc.), counselling, funding information as well as networking events involving experts from science and industry.

Target Group, Prerequisites

PhD students and postdoctoral researchers. There are no prerequisites. Everyone from the target group is welcome.

Scope and preparation

On application, doctoral candidates may receive a doctoral supplement from the Graduate Academy in addition to their doctoral certificate. It will document the generic competences and attainments they have acquired during their doctoral studies. The minimum requirement is a total of eight training or workshop days.

Application and admission procedure

Online registration

3.4.3 Teaching Enhancement Workshops

https://www2.tuhh.de/zll/angebot/weiterqualifizierung/en-workshops/

The university didactic workshops are aimed at senior engineers, PhD students and external lecturers. They attend the workshops according to their specific interests and requirements. Before the workshops the participants undertake self-studying tasks and after the workshops they are invited to take advantage of peer or expert visits. The workshop topics are diverse and range from " Planning a university course " to " Explaining and asking questions professionally ". The workshops are being held by experts from the Center for Teaching and Learning, the Engineering Education Research Group or external experts. When appropriate, students and/or other stakeholders from the TUHH are invited to

contribute their perspective to the workshop (e. g. examination office, centre for student counselling, quality management). A new development is a cooperation with two other universities, who plan to send their teaching staff to visit the university didactic workshops.

Furthermore, the Center for Teaching and Learning ZLL carries out the so called "network meetings". Here teachers and higher education didactic experts can exchange ideas, experiences and best practices about their teaching innovations. This concerns innovations in the planning stage and new approaches already evaluated. These meetings create a space to look at the teaching and learning on a meta-level and to discuss the different approaches with other teachers. The basis for the discussions is always a poster which details the core elements of the project.

Target Group

All TUHH teaching staff

3.4.4 Unit /Office/Division with responsibility for teaching and learning support and development in the Institution

The Center for Teaching and Learning (ZLL) is one of the most respected centers in Germany for engineering education. It's goal: The science-based development of contemporary teaching methods in engineering – for the TUHH and for the specialist community beyond TUHH. https://www2.tuhh.de/zll/

The Engineering Education Research Group at Hamburg University of Technology (TUHH) seeks to scientifically describe teaching and learning processes in engineering. A special focus is on analyzing student understanding of key concepts and their relationships in basic engineering courses. In our research, we use qualitative as well as quantitative empirical methods, e.g. semi-structured interviews and diagnostic tests.

https://cgi.tu-harburg.de/~zllwww/fachdidaktik/?lang=en

3.5 Kaunas University of Technology (KTU)

3.5.1 Institutional Teacher training programme for post docs and assistant professors

https://en.ktu.edu/edu_lab/

EDU_Lab Center for Excellence in Learning and Teaching invites all academic staff (including post docs and assistant professors) to study basic didactic courses, different teaching courses based on the different methods.

Target Group

For all academic staff. The basic didactic course is compulsory for the new academic staff members and is made available to the whole university academic community.

Prerequisites

Depends on the training programmes.

Scope and preparation

Depending on the training programmes. However, there are some tasks provided to prepare for the training courses. For e.g. required readings, homework to reflect on the existing practice or to prepare some tasks regarding training course content.

Application and admission procedure

Online registration

3.5.2 Institutional Teacher training programme for PhD students

https://en.ktu.edu/edu_lab/

PhD students can voluntarily join the basic didactic training course provided by the EDU_Lab Centre for Excellence in Learning and Teaching. In the case where they are starting their early teaching career by assisting professors, they can join different training programmes.

Target Group

PhD students and all academic staff

Prerequisites

Depending on the training programmes

Scope and preparation

Depends on the training programmes. However, there are some tasks provided to prepare for the training courses, E.g. required readings, homework to reflect on the existing practice or to prepare some tasks regarding training course content.

Application and admission procedure

Online registration

3.5.3 Teaching Enhancement Workshops

https://en.ktu.edu/edu_lab/

Edu_Lab offers a variety of teaching enhancement workshops: Basic Training for Development of Didactic Competences; Teaching in Foreign (English) Language; E-learning Tools and Methods; Improvement of E-learning Skills; MOODLE for Beginners; Problem and Project Based Learning; Design Thinking; Application of the case analysis method in the study process; Study Programme Construction; Masterclass on Leading and (Re) Design Study Programmes

Target Group

Academic employees and PhD students

3.5.4 Unit /Office/Division with responsibility for teaching and learning support and development in the Institution

Department of Academic Affairs EDU_Lab and EDU_Lab Center for Excellence in Learning and Teaching; Human Resources Department

3.6 Linköping University (LIU)

3.6.1 Institutional Teacher training programme for post docs and assistant professors

https://old.liu.se/didacticum/kurser

The Didacticum Centre organises a number of institutional teacher training programmes for post docs and assistant professors. For example: "Research supervision, course in advanced level, Higher Education"

Target Group

For all academic staff. Some courses are compulsory for appointment/promotion to Professor, Reader and/or Associate Professor or to be granted Senior Research Fellow status, etc.

Prerequisites, Scope and preparation

Differs between training programmes

Application and admission procedure

Online

3.6.2 Institutional Teacher training programme for PhD students

Each Faculty (4) provides training programmes for PhD students relevant to the disciplinary areas which are organised by a Faculty Programme Director. https://liu.se/en/research/doctoral-studies. In addition to this, LiU also conducts a development programme for doctoral students in collaboration with the occupational health services https://insidan.liu.se/HR-Personal/kompetensutveckling/doktorander?l=en&sc=true.

Target Group

PhD students within each faculty.

Prerequisites, Scope and preparation, Application and admission procedure

Differs between training programmes

3.6.3   Teaching Enhancement Workshops

The Didacticum Centre organises a number of teaching enhancement workshops for teaching staff, for example: "Becoming a teacher in Higher Education course at advanced level, Higher Education", "Course Design and Implementation course at advanced level, Higher Education" and "Problem Based Learning and small group tutorial" https://old.liu.se/didacticum/kurser

3.6.4   Unit/Office/Division with responsibility for teaching and learning support and development in the Institution

Didacticum is a centre set up by the Vice Chancellor. It complements the developmental work conducted within the Faculties and Departments (see above). It organises mandatory courses for teaching staff and other teaching and learning support for both academic and technical/administrative staff (https://old.liu.se/didacticum/kurser)

3.7   Tampere University (TAU)

3.7.1   Institutional Teacher training programme for post docs and assistant professors

University pedagogy studies (UNIPS) (60 ECTS courses)

Open educational resource which allows modules to be taken independently or in a course: https://unips.fi University pedagogy studies 60 ECTS courses. The 60 ECTS is divided in smaller parts (10-5 ECTS), that can be taken separately and eleven UNIPS-pedagogical online courses (1 ECTS each), for both guided and for independent study, and the course for PhD supervisors is under developments, in the Horizon 2020 project - DocEnhance

Target Group

Staff with the pedagogical tasks. The applicant has to have an employment contract with the university. In the case where the applicant is a doctoral researcher they do not need to have this contract.

Application and admission procedure

Applications are submitted via university's intra system and evaluated by the university lecturers responsible for each of the courses.

Course structure: 60 ECTS organised is smaller courses that can be taken also separately

3.7.2   Institutional Teacher training programme for PhD students

Teacher Training courses (as above described) and UNIPS structured courses: usually 20-25 students/course. UNIPS independent study: no limits.

Target Group

PhD students at the Tampere university, together with staff participating in some teaching tasks.

3.7.3 Teaching Enhancement Workshops

Workshops organized by the University HR and Doctoral School

Target Group

Staff interesting in pedagogical tasks and development

3.7.4 Unit/Office/Division with responsibility for teaching and learning support and development in the Institution

Studies of 60 ECTS: Faculty of Education and Culture. **UNIPS online courses**: Education & Learning, team for Pedagogical development support. **Supervisors training (DocEnhance project):** Doctoral School, https://www.tuni.fi/en/research/doctoral-school, **Continuing Education, open higher education studies**: https://www.tuni.fi/en/study-with-us/continuing-education

3.8 Universitat Autònoma de Barcelona (UAB)

3.8.1 Institutional Teacher training programme for post docs and assistant professors

https://www.uab.cat/web/research/itineraries/uab-research/professional-development/research-career-1345718058633.html

Schedule depending on the demand among this cohort of researchers.

Target Group

Postdocs

Prerequisites

Recipients of one of the following grants qualify to participate in the training programme: Ramón y Cajal, Juan de la Cierva, Beatriu de Pinós, Talent and Marie Curie IF.

Scope and preparation

Training courses based on the demand among this cohort of researchers.

Application and admission procedure

Registrations via online form. Admissions in order of registration and subject to availability.

3.8.2 Institutional Teacher training programme for PhD students

https://www.uab.cat/web/study/phds/transferable-skills-training-1345765107483.html

Annual schedule based on the Professional Competence model for UAB researchers: https://www.uab.cat/web/research/itineraries/uab-research/professional-development/professional-competence-model-for-uab-researchers-1345704297585.html

Target Group

Early Stage Researchers (PhD students)

Prerequisites

Existing enrollment in a UAB PhD programme. For English language courses, a minimun B2.2 English level is required.

Scope and preparation

Course based on 6 main competences: interpersonal, cognitive, communicative, research, organisational and influencing and impacting skills.

Application and admission procedure

Registrations via the virtual classroom for PhD students: Aula Moodle. Admissions in order of registration and subject to availability.

3.8.3 Teaching Enhancement Workshops

FDES programme (Teaching Training in Higher Education).https://www.uab.cat/web/personal-uab/personal-uab/personal-academic-i-investigador/formacio-i-innovacio-docent/programa-fdes/estructura-1345703511726.html (information only available in Catalan).

Target Group

Teaching staff

3.8.4 Unit/Office/Division with responsibility for teaching and learning support and development in the Institution

Transversal training courses are offered by the Strategic Project Unit together with the Doctoral School. Teaching training is offered by the Teaching Quality Office.

3.9 University of Aveiro (UA)

3.9.1 Institutional Teacher training programme for post docs and assistant professors

UA organizes, in collaboration with the University of Minho, a 3-day training course, aimed at training teachers at the beginning of their academic careers. In addition to this specific event, teachers at the beginning of their careers can benefit from the training sessions included in the general training programme described below. The 3-day program includes training sessions, workshops on changes to the courses they will teach and conversations with institutional leaders.

Target Group

Teachers at the beginning of their academic careers.

Prerequisites

Teaching activities at UA.

Application and admission procedure

Free registration among UA teachers. Early career teachers with limited teaching experience are chosen as participants. No specific preparation is required.

3.9.2 Teaching Enhancement Workshops

UA makes available to teachers, every month, a set of training sessions dedicated to 4 central themes: 1) Teaching Methodologies; 2) Educational resources and technology in the teaching and learning process; 3) Learning objectives and learning methods; 4) Development of teachers' personal skills. Taking advantage of the period of student evaluations (without classes for teachers), in the months of January and June, we organise the Pedagogical Innovation Week - a training week with a broader set of workshops available to teachers. More information available at https://www.ua.pt/inovacaopedagogica/Default.aspx (only available in Portuguese).

The workshops have a variable structure and duration. At this stage of the Programme, we are introducing training sessions of variable formats and applying evaluation questionnaires so that, in the future, we can make more informed decisions about the sessions to be offered.

Target Group

It depends on the specific objectives of each workshop. Generally, the workshops are comprehensive in terms of the target audience, but there may be some targeted at specific groups.

3.9.3 Unit/Office/Division with responsibility for teaching and learning support and development in the Institution

Currently, the unit responsible for supporting teaching and learning is the Teaching and Learning Center. The Teaching and Learning Center is a newly created structure (recently established) and is dependent on support from the Office of the Rector.

3.10 University of Stavanger (UiS)

3.10.1 Institutional Teacher training programme for post docs and assistant professors

https://www.uis.no/om-uis/styringsdokumenter/kvalitet-i-undervisningen/

150 hours' compulsory course for every research staff member with teaching obligations. There is subsequently a progression based system run every five years on a demand basis of at least 50 hours

of competency development consisting of more flexible modules and seminars offered on a needs basis. For the basic course, modules included as part of the course are: Topic 1 Theoretical perspectives on teaching and learning on the spectrum between duty and creativity. Topic 2: Dual professionalism and the university teaching profession.

Target Group

All scientific staff who lack a documented basic competency in higher education pedagogies

Scope and preparation

A more general pedagogical and didactical scope for the basic course, followed by more specific domain courses in the advanced porgramme.

Application and admission procedure Applications are open every year

3.10.2 Institutional Teacher training programme for PhD students

The PhD-students are eligible to apply for the basis courses offered.

Target Group

PhD students with teaching responsibilities.

3.10.3 Teaching Enhancement Workshops

Workshops are offered during the academic year in collaboration with the different departments.

3.10.4 Unit /Office/Division with responsibility for teaching and learning support and development in the Institution

The higher education pedagogy department

3.11 University of Trento (UNITN)

3.11.1 Institutional Teacher training programme for post docs and assistant professors

https://projects.unitn.it/formid/it/

UNITN fosters the implementation of innovative training programmes specifically designed for teaching staff. These courses are aimed at promoting actions aimed at enhancing the particular linguistic and methodological competences necessary to teach in a foreign language and design programmes to encourage the learning of cross-sectorial skills within degree programmes. Current evaluative parameters used by universities and European descriptors pertaining to the goals of higher education underline the need to recruit researchers that are both competent scientists and educators. Therefore, UNITN offers a series of seminars open to all UNITN teaching staff and run a one-day course specifically dedicated to new hired staff. The seminars are designed to provide both theoretical and

practical instruments, as well as encouraging the exchange of ideas on the development of novel methods for teaching and training at University.

Target Group, Application and admission procedure

Free registration, open to all UNITN teaching staff.

3.11.2 Institutional Teacher training programme for PhD students

All Doctoral Schools provide training programmes for PhD students within their respective disciplinary areas. Furthermore, PhD students are eligible to attend seminars and workshops organized by FormID.

3.11.3 Teaching Enhancement Workshops

Every Academic Year FormID (Competence Centre for Academic staff training and Innovation in teaching methods) organizes seminars and focus groups on teaching, learning and assessing such as: Focus Group on teaching, learning and assessing in English; Memory and Learning Processes; Group Work Methodologies; Narrative Competence in the Teacher-Student Relationship; Participative Didactics; From the Syllabus to Examination; Quality of Teaching.

3.11.4 Unit/Office/Division with responsibility for teaching and learning support and development in the Institution

FormID (Competence Centre for Academic staff training and Innovation in teaching methods) https://projects.unitn.it/formid/it/ , established as part of the UNITN Strategic Plan 2017-2021, promotes the implementation of innovation through training programmes and coordinates the laboratory on the quality and innovation of teaching "LIQUID – The Interdisciplinary Laboratory for Quality and Innovation in Teaching" https://sites.google.com/unitn.it/liquid/home.

3.12 Institut National des Sciences Appliquées (INSA)

3.12.1 Institutional Teacher training programme for post docs and assistant professors
Not available

3.12.2 Institutional Teacher training programme for PhD students
Not available

3.12.3 Teaching Enhancement Workshops
https://pedago-insa2019.sciencesconf.org/

Every 2 academic years, INSA group organizes a workshop dedicated to the teaching methodologies, the evaluation of students and the experience of senior teachers. This workshop is in French and It is mainly for new appointed assistant professor.

3.12.4 Unit/Office/Division with responsibility for teaching and learning support and development in the Institution

http://c2ip.insa-toulouse.fr/fr/le-c2ip.html

The goal of the Center of Innovation and Educational Engineering is to help teachers to provide new and innovative teaching approaches and methodologies.

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5 Appendix One: Definition of Challenge Based Research

5.1 Challenge-based research

Some background

Within ECIU we are currently exploring challenge-based learning, research, and innovation. Somewhat surprisingly, students, teachers, researchers, and practitioners alike seem to have very little problem with addressing challenges and even sometimes produce inventive solutions. Similarly, a simple search for challenge-based efforts leads to descriptions that indicate that what a challenge is, is more or less straightforward. To give a few examples:

- "Challenge Based Learning (CBL) provides an efficient and effective framework for learning while solving real-world challenges. The framework fuels collaboration to identify big ideas, ask thoughtful questions, and identify, investigate and solve challenges. CBL helps learners gain deep subject area knowledge and develop the skills necessary to thrive in an ever-changing world" (see also Wikipedia and challengebasedlearning.org). Very little is said about what makes a (good) challenge, except that "a challenge is immediate, actionable, and builds excitement." CBL concentrates on the framework to identify and work on challenges.

- "Challenges are short innovation processes in which interdisciplinary student teams work closely with citizens and professionals on innovative solutions to social issues" (translated from

a Dutch Website). Note that nothing is said about challenges, and certainly wrongfully only associated with a process of innovation.

- "Challenge-based learning is an innovative type of learning where students work on real open-ended challenges that have a direct impact on our world and where students take ownership of their learning" (translated from the TU Eindhoven Website). Again, there is the emphasis on learning, but nowhere is attention paid to what a challenge is.

- "Challenge-based innovation is about creating opportunities for business, research and government to work together to solve real-world problems" (industry.gov.au).

The list can easily be extended, but what all these descriptions tend to have in common is that they fail to describe what makes a good challenge. Sometimes it is referred to as a real-world problem, but even in that case, one can hardly assume that every such problem is a good challenge. For example, when riding a bike in the middle of nowhere and getting a flat tire raises a truly real-world problem, but not one fit for challenge-based learning, research or innovation. Likewise, many a politician is a real-world problem, but surely unfit as a challenge.

Criteria for a good challenge

Any definition of what a challenge is, will instantly lead to exceptions that are, in fact, also good challenges. In this sense, it may be more practical to focus on a (preferably small) set of criteria that should be met before we can speak of a good challenge. Regardless whether we are dealing with a challenge for learning, research, or innovation purposes, a good challenge is characterized by the following:

1. The problem or issue being addressed by a challenge is relevant and urgent. Relevance is completely determined by the context of the challenge: we may be dealing with a relevant societal issue, an industrial issues, a business issue, etc. Regardless that context, the relevance and urgency should always be made explicit, and there should be general consensus among the stakeholders about the relevance and urgency.

2. A challenge should be well understood. This may seem obvious, but in many cases people consider a good challenge to have a degree of wickedness, exemplified by incomplete and changing requirements, or even contradictory requirements. Wicked challenges may often also bear no solution: once reaching a solution, the challenge has changed or the solution is outdated. A well-understood challenge can be relatively easily explained to a broad audience. Obviously, not everything that can be easily explained makes a good challenge.

3. A good challenge inherently requires a diverse set of stakeholders to come to a solution. In other words, multidisciplinarity is a **consequence** of tackling of good challenge. Again, simply solving an issue in a multidisciplinary way does not make that issue a good challenge.

4. There should be a sense that the challenge can be solved. Essentially, this criterion pulls a challenge into the space of solvable issues without necessarily knowing what the solution should be. It makes a challenge manageable, although perhaps immensely complicated.

These four criteria essentially make each challenge smaller than a mission (which often has a degree of wickedness) and larger than a problem (which often has just a single, if not even monodisciplinary solution).

For challenge-based research, we additionally demand:

5. A sense that there are truly open questions: questions for which there are no known answers and will thus need research.

The fifth criterion is the one that will lead to new knowledge in the process of solving a challenge. It lies at the core of (scientific) research.

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