



LMRO Partnership Initiative Enhancing Labour Market Relevance and Outcomes of Higher Education

Peer-Learning Activities 5th International Policy and Practice Seminar on

Supporting improvement in teaching and learning to address students' needs and labour market demands

Country Chair: Portuguese Ministry for Science, Technology and Higher
Education, and Directorate General for Higher Education

Seminar Brochure

10 March 2022 – virtual Zoom meeting

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About the LMRO Partnership Initiative

Technological advances, climate change, the digitalisation of the economy and exogenous shocks such as the COVID-19 pandemic are transforming labour markets. Today's students and workers must adapt to changing tasks and jobs, acquiring skills that allow them to perform new jobs and updating their skills throughout their lives. The fast pace and uncertain nature of labour market changes also present challenges for higher education institutions (HEIs): they must anticipate new and emerging jobs and skill needs, create study programmes that are relevant to changing labour markets, and rethink how to communicate with learners on future careers and with employers on graduate skills. Governments, for their part, face the need to re-examine how their portfolio of policies – funding, monitoring and labour market data systems – can better support learners and institutions in responding to these challenges.

To support policy makers and HEIs in their shared commitment to enhance the labour market relevance and outcomes (LMRO) of higher education, the European Commission and the OECD launched the LMRO Partnership Initiative in 2019, a collaborative project with the participation of Austria, Hungary, Portugal, and Slovenia.

Through policy analysis, peer-learning activities and the development of a self-reflection tool for use by HEIs, the project contributed to building national government and higher education institutional capacity to implement future higher education policy reforms. The project informed and supported the European Strategy for Universities, linking its planned aims to national and institutional contexts and encouraging the transformation of the higher education sector.

Peer-learning activities

The five peer-learning events of the LMRO-PI were designed for policy makers and practitioners to review innovative national policies, identify enablers and barriers to innovative institutional practices, and discuss key findings from research. The aim was to (i) facilitate peer learning, (ii) identify key questions relevant for policymaking and the adoption and upscaling of effective institutional practices, and (iii) stimulate and contribute to an international policy debate. The online events gathered an international audience of higher education policy stakeholders, including policy makers, leaders of HEIs, teaching and administrative staff, higher education researchers, and representatives of quality assurance bodies, industry and student unions.

30 November 2020	17 February 2022	24 February 2022	3 March 2022	3 March 2022
Using labour market information to improve learners' choices and curriculum	Widening access and attracting students to fields with high labour market demand	Raising study success through student support and improved career-study linkages	Stimulating innovation through inter- and transdisciplinarity in education and research	Supporting improvement in teaching and learning to address students' needs and labour market demands
	Country chair: Austria	Country chair: Slovenia	Country chair: Hungary	Country chair: Portugal

Download seminar brochures at: <https://www.oecd.org/education/higher-education-policy/>.

For more information on the LMRO Partnership Initiative, please contact: HigherEducation@oecd.org.

Seminar summary

Teaching students to connect theory and practice

The session explored the following questions:

- What teaching practices and courses enhance students' transversal skills and knowledge without replacing the teaching of subject-specific knowledge?
- What are innovative ways to involve labour market representatives?

Learning in representative authentic and real-life contexts

Interview: **Nuno Gomes Ferreira**, Portuguese Ministry for Science, Technology and Higher Education and National Co-ordinator of the LMRO Partnership Initiative interviewed:

- **Kerstin Helker**, Comenius Educational Researcher at TU/e innovation Space
 - **Tina Vrsnik Perse**, Vice-Dean, Faculty of Education, University of Maribor
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How can insights into the “world of work” increase student success?

An example of how study programmes can help students to experience the relevance of what they learn in the classroom, with positive effects on study engagement and student success, is the use of observational practice in schools to familiarise student teachers with their future profession. Student teachers are often surprised about the workload and different tasks that are part of a teacher's role. Study programmes at the University of Maribor's Faculty of Education organise regular school visits in first-year curricula. Monitoring of student progress suggests that gaining these insights early on increases student engagement and reduces attrition later on in the study programme.

What do students learn and what is expected from teachers in challenge-based learning?

A common form of active learning, that engages students in the learning process, is challenge-based learning (CBL). Here, the questions or challenges that frame the learning process come from an external party (e.g. business) rather than the teacher. CBL focuses on the development of the metacognitive ability of students to design and use problem-solving strategies. In CBL, teachers are more like coaches, or co-learners.

Read more on how insights into the “world of work” can increase student success in Slovenian higher education (OECD, forthcoming^[1]), and on challenge-based learning in higher education at [CBL Education](#), Eindhoven University of Technology.

Examples

Bachelor's programme in Human Resource Management at Budapest Metropolitan University, **Zsolt Kiraly**, Institute of Management

Project-Based Learning in Engineering at the University of Minho, **Anabela Carvalho Alves** (Department of Production and Systems)

Bright Start programme, **Pedro Dominginhos**, President of the Instituto Politecnico de Setubal and President of the Co-ordinating Council of Portuguese Polytechnic Institutes (CCISP)

Summer with Sciences at the University of Coimbra 2021 edition, **Cláudia Cavadas**, (Vice-Rector Research)

The **bachelor's programme in Human Resource Management** at Budapest Metropolitan University was updated in 2018 to embed more practice elements into the curricula with the aim of simulating the tasks involved in human resource management. During the first semester, students have the opportunity to experience several 'typical' HR situations in companies. This motivates students to choose specialisations and helps students who are unsure about their study choice to change field of study.

Bright Start programme is a short-cycle programme in Information Technologies that leads to a diploma in higher education with 120 ECTS. The programme was co-designed by the Setúbal Polytechnic Institute and Deloitte, based on business needs. Staff members of Deloitte teach, along with the HEI's teaching staff, and use active learning methods, such as problem and project-based learning. Adapting teaching methods was found to be very important and curricula are regularly reviewed and adapted. A specially designed learning space was created with the aim of replicating a typical real-world working environment.

Project-Based Learning in Engineering was introduced 2014 for first-year students of Industrial Engineering and Management as a curriculum innovation to teaching programming languages, general chemistry and calculus in the form of interdisciplinary projects. The aim was to increase student success through student engagement. A key success factor was peer-learning among teaching staff which increased participation and enhanced innovation in teaching and assessment methods.

"Summer with Science" projects are supported by the Portuguese Foundation for Science and Technology (FCT). They started in 2021 and target R&D units to organise research activities during the summer involving higher education students. The aim is to offer students, over the course of one month, an immersive experience of being involved in a research team and ongoing research projects. Key achievements have been immersing students in a real research environment and guiding them in the preparation of a research report. Some students have continued in the same research group for their master's research project.

Read brief descriptions of the initiatives: Bachelor's in Human Resource Management, Budapest Metropolitan University (Hungary); Bright Start programme, Setúbal Polytechnic Institute (Portugal); Project-Based Learning in Engineering at the University of Minho (Portugal);

Summer with Science Edition 2021, University of Coimbra (Portugal).

Integrating “practice” into curricula

Christoph Teller, Head of the Institute of Retailing, Sales and Marketing, Johannes Kepler University Linz interviewed:

- **Filipe Chaves**, Director of the School for Higher Professional Education at the Instituto Politecnico de Cávado and Ave on: co-designing study programmes in short-cycle tertiary education
 - **Blaz Nardin**, Dean of the Faculty for Polymer Technology (FTPO) on: embedding product design and Innovation management into second-cycle programmes
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Key points from the discussion:

- There are different ways to integrate practice into curricula, for example guest lecturers, visits to companies, internships, or embedding a challenge identified by a company into the classroom.
- Careful planning and implementation is needed to ensure students have an effective learning experience. Course co-ordinators have an important role in this.
- For students, having a “blueprint” of the knowledge and competencies developed can be helpful to “connect” different courses in terms of transferring and applying what they have learned through practice.

Examples

Talent programme, **Susanne Leeb**, Career Centre at the TU Vienna

Upgrade – Transversal Skills Development Programme, **Catarina Brandão** and **Fernanda Correia**, University of Porto

Practical training in master's programmes, **Sebastian Frumen**, Department of Education and Study, University of Maribor

Practical Training Semester, **Lisa Staffa** and **Florian Ruhdorfer** (Business und Career Centre), IMC University of Applied Sciences Krems, Austria

Practical Training in Chemistry, **Helena Prosen** (Chair of Analytical Chemistry), University of Ljubljana

Talent Programme is a six-day course (3 ECTS) with in-depth workshops to prepare students for job interviews, get-togethers with company representatives in a "chess dialogue", presentation training with experienced human resource experts, and company visits to get early insights into corporate culture and values, and the tasks and routines of entry-level jobs.

The **Upgrade Programme** started in 2019 as an extra-curricular course for transversal skills development. It was designed by the Organisational Psychology and Human Resources Unit at the University of Porto's Faculty of Psychology and Educational Sciences. Participating students develop an action plan and benefit from individual counselling and career coaching. Check-ins after six months showed that students used the action plans for their study and career planning, and for strategically building and enlarging their social networks.

Practical training in master's programmes is an extra-curricular activity for which students can earn up to 6 ECTS. It can last between one and four months. Upon completion, students have to prepare a two-page report in which they reflect on the skills acquired and how they relate to their study programme. Companies that wish to offer practical training need to apply with a brief description of the practical training content for students, the conditions (e.g. remuneration and reimbursement of food and travel costs), and the expected student profile.

The **Practical Training Semester** at the IMC is an integral part of full-time bachelor's programmes for which students receive 16-18 ECTS (around 400-450 working hours). To monitor the on-the-job learning development and measure learning outcomes and skills developed, students undertake a self-assessment

before and after the semester. The skills that are assessed were identified with the help of several company surveys carried out during the yearly career fairs.

Practical training is either a compulsory or an elective course in bachelor's programmes in chemistry and chemical technology. Students in their second or third year of studies take the course and work for 150 hours in industry, research facilities or government labs. Students have to find suitable placements and, if needed, can contact the faculty's practical training co-ordinator for support. A training programme is agreed between the student, the practical training co-ordinator and the supervisor in the partner organisation. Upon completion, the student prepares a report for the practical training co-ordinator and the supervisor completes a questionnaire assessing the student's performance. Students receive 5 ECTS for successful performance. Students that completed the practical training have more realistic views on jobs available upon graduation, which helps them to plan their further education and look for additional training opportunities.

Read brief descriptions of the initiatives: Talent Programme at the Technical University Vienna (Austria); Upgrade: - transversal skills development, University of Porto (Portugal); Practical training in master's programmes, University of Maribor (Slovenia); Practical Training Semester, IMC University of Applied Sciences Krems (Austria); Practical training in Chemistry at the University of Ljubljana (Slovenia).

How can public policy support the upscaling of institutional practices?

PKP and ŠIPK initiatives in Slovenia, **Mateja Berčan**, Ministry of Education, Science and Sport

In an attempt to reach more students with structured work experience including reflection on the skills developed, the Slovenian Ministry of Education, Science and Sport funded HEIs with two programmes to offer project-based learning with companies and civil society organisations. Evaluation of the two programmes showed positive effects on the employability of students and the interdisciplinarity of the educational offer.

- The Creative Path to Practical Knowledge (*Po kreativni poti do znanja* – PKP) programme ran from 2013 to 2020, with EUR 10 million funding for 630 projects involving 4 243 students, 1 940 mentors (pedagogical and work mentors), and 1 041 events involving transfers of knowledge, experience and good practice to higher education.
- A similar programme, involving public institutions and non-profit organisations, was developed in HEIs in 2016: the Students' Innovative Projects for the Benefit of Society (*Študentski inovativni projekti za družbeno korist* – ŠIPK) programme. It ran from 2017 to 2020, with EUR 6.4 million funding for 411 projects, including 3 379 students, around 500 pedagogical mentors at HEIs and 600 mentors from the local/regional non-profit sector.

Read a brief description of the initiative: PKP and ŠIPK: project-based learning for students in companies and civil society organisations (Slovenia), and see (OECD, forthcoming^[1]) for a discussion of how Slovenian HEIs implement the initiatives.

High-quality, inclusive teaching

The session explored the following question:

- How can teaching be adjusted to better suit different types of learners?

Higher education didactics for diversity-sensitive teaching

Moderated panel discussion

- **Gerti Kappel**, Dean of the Informatics Faculty at the TU Vienna on: Informatics didactics in higher education, and mentoring practices and institutional changes that support women to succeed in science careers
- **Gabor Lente**, Director of the Institute of Chemistry at the University of Pécs on: Innovative approaches in science didactics, and how collaboration with science teachers brings in new ideas
- **Sonja Rutar**, President of the Slovenian National Council for Quality and Evaluation of Education and Vice-Dean for Quality and Development at the University of Primorska, Faculty of Education on: Inclusive teaching in Slovenian higher education

Moderated by **Barbara Krumay**, Head of Institute of Business Informatics, Johannes Kepler University Linz

Key points from the discussion:

- Diversity-sensitive teaching has different meanings. Examples are gender, the disciplinary understanding of sciences, and diversity of subject-specific knowledge developed in different tracks of secondary education or through prior work experience (e.g. adult learners).
- To meet the needs of different types of learners, adapting and complementing pedagogies, curricula are ideally combined with student support and means to monitor study success.
- Continuous professional development opportunities for teachers are important. New teaching staff might be easier to reach, while teachers with several years' experience may be reluctant to engage in training. A quality label for diversity-sensitive teaching and for innovative teaching methods more generally, can be helpful to reach a larger group of teaching staff.

Examples in STEM studies

ProProg Together at TU Vienna, **Gerald Futschek** (Institute for Information Systems Engineering), **Phillip Prinzing** (Researcher), and **PolyFlip** at the Faculty for Polymer Technology, **Maja Mesl** (Career Centre and International Office) interviewed by: **Krisztina Lenart**, Eötvös Loránd University, ELTE (Department of Education Development and Talent Support, Education Directorate)

Rethinking engineering education at the Instituto Superior Técnico, Pedro Broguera (Physics Department)

ProgPro Together is a pre-study course for secondary school students to bridge the gap in programming between school and university. It was started during the COVID-19 pandemic and consists of eight online lectures (sessions) over four days, with a morning and an evening session. Each lecture consists of a theoretical and a hands-on element, where students solve programming tasks in peer groups.

PolyFlip is an international, practice-based project involving several HEIs across Europe with the aim of adapting and implementing the flipped classroom approach in engineering programmes, with a focus on polymer technology. Part of the project is dedicated to teacher training where teachers learn to apply the concept of the flipped classroom to their course and design teaching methods, content and assessment methods.

Rethinking engineering Education: In 2021, Técnico updated its teaching model in engineering education and introduced new curricular components and new learning methodologies. For this, an internal commission was created to assess current practice and propose actions for improvement. The key question was: “How should Técnico adapt its current teaching and learning model to foster the development of critical, inventive and creative science-based spirit in its graduates and prepare them to anticipate, intervene and respond to the present and future societal challenges of the 21st century?” The commission concluded that most students, alumni, teachers and employers recognise that Técnico has a culture that is based on “the meritocracy of difficulty” of which the underlying idea is that the difficulty of engineering education is a guarantee for a successful career. This is not compatible with globalisation and the increasing importance of interdisciplinary knowledge and transferable skills. Many curricula units are too rigid in their content and the way in which students learn, which is too focused on repetition and leaves little room for creativity. The new teaching model seeks to address and overcome these challenges.

Read brief descriptions of the initiatives:

ProProg Together, TU Vienna (Austria);

POLYFLIP: flipped classroom approach for (polymer) engineering (Slovenia); Rethinking engineering education at the Instituto Superior Técnico (Portugal).

Continuous development of teaching and learning

The session explored the following questions:

- How can teachers in higher education be supported and incentivised to adopt new teaching methods?
- What processes and structures support the continuous development of curricula and teaching?

Processes and incentives to enhance continuous development of teaching and learning

Panel discussion moderated by **Terry Maguire**, teaching and learning enhancement expert and retired Director of the [National Forum for the Enhancement of Teaching and Learning](#), Ireland

- **José Paulo Cravino**, Pro-Rector for Pedagogical Innovation, University of Trás-os-Montes and Alto Douro on: ***Pedagogical Meetings “Tertúlias Pedagógicas”***
- **Andreas Körner**, TU Vienna (Teaching Award Winner) on: ***Best Teaching Awards and teacher training***
- **Tomaz Dezelan**, Advisor to the Rector of the University of Ljubljana on: ***Inovup***
- **Martin Stabauer**, Deputy Head of the Institute of Digital Business, Johannes Kepler University Linz on: ***Digital Skills Trainer Training - certificates for teaching skills***

Key points from the discussion:

- The COVID-19 pandemic has accelerated change in teaching and learning.
- There is a need to reflect on what works and why, what are key challenges and barriers, and to share lessons learned as innovative ideas through peer-learning networks and events.
- National guidelines can help to stimulate innovation if they are attached to financial support, stimulate peer learning and allow for diversity.
- At the institutional level, awards can motivate teaching staff, and support structures are needed to sustain innovative approaches, enhance wide application across disciplines and fields of study, and encourage interdisciplinary collaboration.

- To involve more teachers, support from institutional leadership is important, and involving those who are most active in strategic discussions can be highly motivating.
- The format of peer learning matters. An international dimension helps, and can also be organised online. Challenging regular participants by asking them to invite new participants can also help to spread the word and raise interest and attendance in peer-learning events on designing and implementing innovation in teaching and learning.
- The contribution of students as tutors is most effective when a structured course to prepare them for their teaching performance is combined with rewards (e.g. ECTS credits, certificate).

Read brief descriptions of the initiatives: National Forum for the Enhancement of Teaching and Learning (Ireland); Pedagogical Meetings, University of Trás-os-Montes and Alto Douro (Portugal); Digital Skills Trainer Training - certificates for teaching skills (Austria); Best Teaching Awards, TU Vienna (Austria); INOVUP (Slovenia) INOVUP (Slovenia).

Examples of central units to support innovation in teaching and learning

Strategic Education Development Centre at the TU Vienna, **Shabnam Tauböck (Director)**, and **IDEA-UMinho** at the University of Minho, **Manuel João Costa** (Director and Pro-Rector for Educational Innovation and Student Affairs), interviewed by **Darjo Felda**, Vice-Rector for Education, University of Primorska

The **Strategic Education Development Centre** was started in 2013 and reports directly to the Vice-Rector for Academic Affairs. Initially, a key objective was to improve the use of teaching facilities. This was complemented with quality management of teaching and didactics in higher education. Over time, closer connections were established with the Vice-Rector for Digitalisation and Infrastructure. Digitisation of teaching and learning are core aspects of all current developments.

Most important achievements are the introduction of the peer review procedure for the evaluation of study programmes, the design and implementation of the current ECTS workload survey for courses and the introduction of the pre-study phase for all bachelor's programmes. In the area of quality management, new mechanisms were created to collect student feedback on courses and examinations, and an annual teaching award was introduced.

The **IDEA-UMinho centre** was created in 2017 to stimulate and support innovation in teaching and learning across the university. It functions in close collaboration with the university's educational support services that are in charge of the development of educational technology and support for its application.

The IDEA-UMinho centre offers short training courses (2-3 hours) for teachers and for degree directors in various formats (onsite, hybrid, online), regular peer-learning events, and coaching for teachers and departments. Training materials are published regularly and there is an annual call for innovative projects. The student association of the University of Minho participates in the planning of the centre's activities and student tutors participate in the training courses.

Read brief descriptions of the initiatives: Strategic Education Development Center at the TU Vienna (Austria); IDEA-UMinho Center (Portugal).

Brief description of the initiatives

The brief descriptions of the initiatives have been provided and drafted by the relevant organisations themselves and have not been edited or amended by the OECD. Any questions relating to the initiatives should be addressed to the contact provided.

Talent Programme at the Technical University Vienna (Austria)

Key facts about the initiative	
Country	Austria
Name of the initiative (in English/in the local language)	Talent Programme and Talente Praktikum (Talent Internship)
Website (if available)	https://www.tucareer.com/Talentprogramme/Talente-Programme https://www.youtube.com/watch?v=ikBGLSRpY-g
Name of organisation implementing the initiative	Career Center of Technical University Vienna
Year it started and ended/is expected to end	Since 2017
Contact	office@tucareer.com
Short summary of the initiative	
<p>6-day career course as part of the Transferable Skills (3 ECTS) to promote your own career orientation.</p> <ul style="list-style-type: none"> • Application for the programme using modern recruiting tools incl. video interview & feedback • In-depth workshop to prepare students for job interviews, soft skills, (appearance, clothing, style advice, introduction, self-presentation, body language) • Opening (getting to know the companies within the framework of a specially developed competence-based methodology "chess dialogue", evaluation of the interviews by companies and students; allocation according to the evaluations) • Days in the company to experience everyday work, corporate culture, values, challenges • Presentation training with experienced HR experts • Final event (presentations, exchange of experiences and informal conclusion) 	
Why was the initiative launched?	
<ul style="list-style-type: none"> • Promotion of an early examination of one's own career orientation • Linking theoretical study content with professional insights from practice 	

- Training in the application process
- Promoting early professional networking (with peers/interdisciplinary as well as with the labour market)
- Creating awareness of the change in the job market towards the applicant market and the associated consequences for students and companies
- High-quality state-of-the-art employer branding / talent management format for clients

What are key achievements?

- Establishment of a continuously growing and active network of (former) participants and companies.
- Well-founded career orientation of the participating students
- Further development of soft skills and strengthening of the self-confidence of the participating students
- Establishment of follow-up projects at the TU (talent internship for civil engineering and subsequently for environmental engineering)
- Concrete offers for students afterwards (internships, theses, for example) or later after graduation (job offer)
- Company contact with hotly contested young talent takes place within a controlled framework (e.g. forbidden: "job out" - tempting students to drop out of studies through attractive offers)

What do you think were the key success factors?

University:

- TP to be installed as a course in the Transferable Skills (3 ECTS).
- Cooperation of the faculty in approaching companies (talent internship civil engineering)

Students:

- Offers in the transferable skills are attractive for students
- Word of mouth/peer factor: students from former courses recommend the programme to their fellow students, which also made it much easier to apply (see below Barriers)
- Getting to know high-ranking company representatives and experts - at eye level (as opposed to the old-fashioned application process).

Companies:

- Programme schedule, content and setting are of high quality and well-founded and tailored to the current labour market situation: it is a prestige project in which high-ranking company representatives participate
- Very high demand of the labour market for TU students and thus corresponding development of awareness for strategic employer branding / budget allocation

What do you think were the barriers?

Students:

- Achieve visibility among students; students receive a plethora of information for events; application was difficult in the beginning.
- Raise awareness of the importance of early career orientation

University:

- Initial scepticism and unwillingness to co-apply for the programme among faculties, especially in hotly contested courses such as computer science, as they fear that companies will poach students away

Companies:

- Make clear to companies the high quality and associated preparation/resource requirements, mindset and costs.
- Raise awareness of what the shift to an employee market means in talent management.

If you were to start again, what would you do differently?

At the beginning, we were not selective enough in choosing companies - participation only makes sense for companies that have a corresponding attitude and willingness to get involved in this new type of talent management (keyword: eye level).

At the beginning, we did not brief the companies as intensively as the students with regard to mindset, procedure and rules, so that there were sometimes different expectations at the beginning: e.g. students were briefed to ask critical questions; management was annoyed to be asked critical questions; in the meantime, companies appreciate these questions as direct, valuable feedback from a sought-after target group (what do they want, what do they expect from an employer).

Practical training in master's programmes, University of Maribor (Slovenia)

Key facts about the initiative	
Country	Slovenia
Name of the initiative (in English/in the local language)	ECTS accredited study practice within the 2 nd cycle study programmes (EDU-LAB) *Strokovna praksa na študijskih programih 2. stopnje/(
Website (if available)	https://moja.um.si/en/practical-training/Strani/default.aspx
Name of organisation implementing the initiative	University of Maribor
Year it started and ended/is expected to end	2018 until today
Contact	Sebastijan Frumen (sebastijan.frumen@um.si)
Short summary of the initiative	
<p>Connecting the study programmes and students more directly with the partners from the industry, thus creating a symbiotic relationship resulting in stronger participation of industry partners within the implementation of the study programme and ensuring students with the most relevant skills for a successful transition to the labour market.</p>	
Why was the initiative launched?	
<p>The initiative was launched as a feedback to the labour market, stating that our graduates have good theoretical knowledge, but they lack of practical competences and soft skills.</p>	
What are key achievements?	
<ol style="list-style-type: none"> 1. Greater connection of the university with external stakeholders, especially industry, which coincides with the strategic direction of the University of Maribor - to be a university that regionally connects with the environment. 2. Filling the gap of competences, which students don't acquire during their study, but with integration into the work environment – acquiring soft skills. 3. Connecting students with potential employers 	
What do you think were the key success factors?	
<ol style="list-style-type: none"> 1. Introduction of the practical training as an extra-curricular activity presented a solution without the necessity to change study programmes. 2. Our students, have on several occasions, pointed out that they would like to have more practical training during the studies. 3. The whole procedure (application forms for the companies and students, procedure to include the practical training into the diploma supplement) was prepared at the rectorate for all the members of the university 	
What do you think were the barriers?	
<ol style="list-style-type: none"> 1. There are several legal obligations for the university if professional training is a part of the study programme. 2. If it is an extra-curricular activity, the university is only a bridge to connect students with employers 	
If you were to start again, what would you do differently?	
<p>Evaluating the initiative, we discovered that it has been implemented correctly.</p>	

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

They have not.

Do you have plans to further develop the initiative? If so, what are they?

Not the initiative per se, but , we want a complete informatization of elective processes, which would also include professional practice at 2nd cycle study programmes. The first step has been computerized - students can find the desired internship in an individual company. The second step has not yet been implemented - establish a platform that will link the input of evidence and keep records of completed internships for students.

Practical Training Semester, IMC University of Applied Sciences Krems (Austria)

Key facts about the initiative	
Country	Austria
Name of the initiative (in English/in the local language)	Skills Self Evaluation pre-post Internships
Website (if available)	https://www.fh-krems.ac.at/en/service-centers/career-services/for-students/#overview
Name of organisation implementing the initiative	IMC University of Applied Sciences Krems
Year it started and ended/is expected to end	PTS Reflection reporting & data base: since September 2011 Skills Rating Scales: since September 2018
Contact	Career@fh-krems.ac.at Lisa.staffa@fh-krems.ac.at
Short summary of the initiative	
<p>IMC's Practical Training Semester (PTS) is an integrated part of the curriculum of full-time Bachelor programmes at IMC Krems, with a full semester of ECTS (equal 400-450 working hours) granted for it. All participants have to work for one semester in an institution/company which is connected to their study programme and fulfils certain criteria, like minimum working hours weekly, minimum of working weeks during the semester, corresponding job tasks to their study programmes.</p> <p>To secure a measurable outcome of the students' skills and learning development, we have established several steps of documentation and reflection from students' side over the years. All participants need to facilitate our system with a written agreement from their training institution, need to write reports during their time and since 2018 need to assess their skills before and after their internship with the help of rating scales concerning several skills. This list of skills was decided about with the help of several company surveys that were conducted during our yearly career fairs on campus. This way, we were able to engage our closest business partners to state and rate skills they require from our students during their internships with them as well as for their future career.</p>	
Why was the initiative launched?	
<p>Academia decided to make practical training an integral part of the study programmes. Including ECTS and grading of the semester. To measure the outcome of this semester, we had to install several points of metrics. Securing that students do not just pass the practical training semester but reflect on their development, realize and make use of positive and negative experiences, and make plans or add points to their career plan.</p>	
What are key achievements?	
<p>Students reflect on their career plans already during their studies. Most likely they know after their internship if this branch is something they want to focus on or what they were missing during their practical training. Most students keep saying after their PTS they still do not know where they want to work or which branch, they prefer, but they certainly know which branches, behaviours or work ethics they do not want for their future business life.</p>	

What do you think were the key success factors?

Establishing easy access for students to our data base (system) where all info is reachable any time. Personal coaching throughout the full study programme – pre- and post PTS by the IMC Career Center.

What do you think were the barriers?

Pursue students to meet deadline and fill data base incl. self-evaluation. Communicate how important reflection of practical training is. Reach all students – the motivated, very focused ones as well as the ones in need of more support.

If you were to start again, what would you do differently?

-

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

No.

Do you have plans to further develop the initiative? If so, what are they?

We started with our Business study programmes where it works very smoothly now. Current challenge is to apply and adapt students' reflection and skills evaluation of practical training to our other institutes of Chemistry and Engineering. They already have practical training semesters integrated in their curricula, but reflection and evaluation seems to be quite different to Business internships and require some revision on a long-term plan.

Practical training in Chemistry at the University of Ljubljana (Slovenia)

Key facts about the initiative	
Country	Slovenia
Name of the initiative (in English/in the local language)	"Practical Training" in Chemistry at the University of Ljubljana
Website (if available)	/
Name of organisation implementing the initiative	Faculty of Chemistry and Chemical Technology, University of Ljubljana
Year it started and ended/is expected to end	Since 2010
Contact	helena.prosen@fkkt.uni-lj.si
Short summary of the initiative	
<p>'Practical training' is either a compulsory or elective course in the bachelor (BSc) study programmes of Faculty of Chemistry and Chemical Technology (FKKT). Students select it in their second or third year of studies. The course comprises of 150 hours of practical training in industry, research facility, governmental lab, etc. from the field of study programme of the student. The first step for the student is to find a suitable placement, which they can do by themselves or they can seek help of practical training coordinator at FKKT. Then, a supervisor with appropriate qualifications is assigned to the student in the training organization and the practical training programme is negotiated between the student, supervisor at the training organization, and supervisor at FKKT. After the completion of the training, the student submits the report to the supervisor at FKKT, while the supervisor at the training organization submits the completed questionnaire on the student's performance. If the criteria for successful completion of the training are met, the student is awarded 5 ECTS. An anonymous survey on practical training is available to students, but is optional.</p>	
Why was the initiative launched?	
<p>The main purpose of 'Practical training' course is to give students the opportunity to learn about actual work in industry and at other facilities that are the main employers of the graduates of the particular study programme. They learn about the organization within the facility and about their principal challenges.</p>	

What are key achievements?

Students that have completed 'Practical training' have more realistic views on the actual jobs available to them upon graduation. Thus, they are more able to plan their further education and additional trainings to get a job they want. Key employers of FKKT graduates also see 'Practical course' as a good opportunity to come in contact with prospective employees.

What do you think were the key success factors?

Flexible design of the course that covers all possible jobs for the graduates of a particular study programme in Slovenia or abroad (mainly through Erasmus exchange).

What do you think were the barriers?

Some barriers are set by the prerequisite that the supervisor in the training organization should have certain qualifications, which is less feasible for smaller facilities. During COVID-19 pandemic, providing the practical training to students has been particularly challenging because industry partners were limited by epidemiological measures and were less able to accept students.

If you were to start again, what would you do differently?

Negotiate more flexible prerequisites for supervisors in training organizations.

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

Practical training of students is encouraged, but is not separately supported by any national policy. Funding is provided within the funding of study programmes.

Do you have plans to further develop the initiative? If so, what are they?

We would like to provide practical training also to the students of master (MSc) study programmes.

Project-Based Learning in Engineering at the University of Minho (Portugal)

Key facts about the initiative

Country	Portugal
Name of the initiative (in English/in the local language)	Project-Based Learning in the School of Engineering at the University of Minho /Aprendizagem baseada em Projetos interdisciplinares
Website (if available)	
Name of organisation implementing the initiative	Production and Systems Department
Year it started and ended/is expected to end	2004/2005
Contact	anabela@dps.uminho.pt

Short summary of the initiative

This initiative started in the academic year of 2004/2005 with Industrial Engineering and Management (IEM) first-year students as a curriculum innovation experience to implement Project-Based Learning involving the different courses (Introduction to IEM, Programming Languages, General Chemistry and Calculus) that were part of second semester (interdisciplinary projects). These started in the context of the preparation for changes within the Bologna Process demands and in the first two years, it worked without a formal course. Currently, interdisciplinary projects are part of the formal curriculum of the IEM program, being "Integrated Project" a defined course belonging to the formal curriculum design and study plan. The reasons behind this change were the development of competencies, technical and transversal, to attend to a different professional profile needed for IEM graduates, increase the students' motivation and engage them in a meaningful learning environment.

Why was the initiative launched?

The teachers involved want to teach in a different way from what our teachers did that, mainly using expositive lectures and exams to assess. We needed to feel that the learning had meaning for the students and for us, teachers of the Industrial Engineering and Systems group. Also, first-year IEM engineering students, like other engineering students, had Science and Mathematics content that students frequently questioned about its relevance. At the same time, the students of first year only in higher levels realized what an Industrial Engineer o in their professional future. So, having a project involving STEM content makes sense for all teachers involved in this particular year.

What are key achievements?

Students' satisfaction with the IEM program. More than 800 students developed the project, during 19 editions well succeed. Feedback is collected through a final workshop that includes some questionnaires at the end of semester. In these editions, more than 40 teachers and researchers, from the School of Sciences and School of Engineering, collaborated with each other to achieve such success. Recognizance of the IEM students' competences by the companies. Currently, IEM professionals are working in international companies like Amazon, BMW, Revolut, Nestle, Rolls Royce, among others. The team of teachers that promote the PBL in IEM program become education researchers and founded an association Project Approaches in Engineering Education (PAEE) (<http://paee.dps.uminho.pt>). The main outcome of this association is to promote an annual conference called International Conference on Active Learning in Engineering Education (PAEE/ALE). This year will happen in Spain (<https://www.huro.ua.es/paeeale2022>). Learning and sharing with others best practices is the main reason behind this conference. Another key achievement was the publication of a book in Portuguese that resulted from the team experience and intends to guide interested teachers in the process of PBL implementation (<https://doi.org/10.21814/uminho.ed.26>).

What do you think were the key success factors?

The teacher's teamwork and collaboration and the student's involvement and engagement. Also, having educational researchers doing their PhD with us that supported at the beginning the educational process

What do you think were the barriers?

Some skeptic teachers but also students, change resistance, spaces, and resources restrictions. The low value is given to the pedagogic innovation. Dedication and engagement in pedagogic are not considered for career progression of teachers in engineering or values less than the technical scientific part. The missing support to the administrative process of implementing a PBL (, booking of spaces) and even, educational research support, teachers have to do everything, since teaching, researching, managing the spaces among others tasks.

If you were to start again, what would you do differently?

If possible, to involve the students before the beginning of the classes but we are talking about freshman students that enters for the first time in the university. Companies' involvement in defining the projects

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

The initial training with Prof. Powell from Twente University was fundamental and this was promoted and supported by our rector at the time (2004_2005). However, the support needs to be continuous to build a strong culture in projects. Even today there are a lot of teachers that do not believe in the advantages of PBL. Also, better and larger infra-structures with good physical conditions are needed. More funding for research in engineering education, pedagogical training and professional development of teachers is needed. More recognizance to the teachers that dedicate their time to help students, sacrificing many times, their opportunities to progress in the career.

Do you have plans to further develop the initiative? If so, what are they?

Yes, try doing multidisciplinary projects involving first-year IEM students and Chemistry students to help each other in developing innovators processes.

Upgrade: - transversal skills development, University of Porto (Portugal)

Key facts about the initiative	
Country	Portugal
Name of the initiative (in English/in the local language)	Upgrade - Transversal Skills Development Program (Personal and social skills) / <i>Upgrade – Programa De Desenvolvimento De Competências Transversais</i>
Website (if available)	
Name of organisation implementing the initiative	University of Porto (Talent & Career area and Organizational Psychology and Human Resources Unit from the Faculty of Psychology and Educational Sciences)
Year it started and ended/is expected to end	Started in March 2019 / annual edition
Contact	carreira@reit.up.pt

Short summary of the initiative

The UPgrade Program is built on the motto of promoting students and graduates' development of personal and social skills and optimizing responses and adaptive strategies, enabling greater success when entering the job market. The programme integrates skills assessment and individual balance, a series of practical sessions (training) in some of the skills most valued by the job market and individual and group career coaching and counselling.

Presently, the programme is composed by the following modules and activities:

- UPgrade: Explore Soft Skills - free module of sessions / lectures for students of all years and study cycles and alumni of U.Porto (related to: digital transformation of work; Self-knowledge and personal development; Portuguese, European, citizen of the World - challenges and opportunities; Personal Marketing; Resilience and adaptability; the importance of personal and social emerging skills);
- UPgrade: Improve Job Skills – free module of some workshops related to lifelong employability and sustainable careers; CV and Pitch; be proactive in looking for jobs and social networks; online communication; skills assessment; job interview). It is specially for designed for (pre) finalist degree students of undergraduate, master or integrated master courses and recent graduates (up to 1 year) who are unemployed;
- UPgrade: Work Soft Skills – set of practical sessions on soft skills valued by the labour market (includes one opening session, six training sessions related to Teamwork, Emotional intelligence, Interpersonal Relationship, Time management and organization, Creativity and Problem Solving and one closing session). It also includes Coaching and Career Counselling on an individual and group basis. It's intended for (pre) finalist degree students of undergraduate, master or integrated master courses and recent graduates (up to 1 year) who are unemployed

In 2021 the modules Explore Soft Skills and Improve Job Skills integrated the Upgrade Career Summer School that was held on-line and on-site during July. The module Work Soft Skills was held mainly on-site between November and December.

Why was the initiative launched?

In 2019, it emerged as a pilot intervention project. It is an extracurricular training, focusing on the importance of soft skills as fundamental competences in the success of the personal and interpersonal performance and, as a critical success factor in the labour market and lifelong employability. It is considered as a complement to the wide diversity of academic programmes and study cycles of the University. Due to the results and impacts obtained, it is expected to be implemented annually.

Main goals of the initiative:

- Contribute to personal and professional training more suited to the demands of the labour market;
- Make the participants aware of the importance of soft skills as fundamental competences in the success of their personal and interpersonal performance and, as a critical success factor in the labour market;
- Promote self-knowledge and a critical and constructive analysis of their skills with a view to becoming active individuals in the construction of their projects / professional paths (sustainable careers) and promoting proactive

attitudes towards the job market and qualifying training;

- Promote reflection among participants on different dimensions, with an impact on employability and to identify, on that basis, the academic and professional goals they wish to achieve, as well as an action plan (strategic planning and time management) mainly through individual counselling / Coaching and Career Counselling);
- Foster skills related to personal marketing and how participants can present themselves to the labour market, through Curriculum Vitae, Motivation Letter, Interview and others;
- Raise awareness in the participants to the importance of networking and entrepreneurial attitudes in their personal and professional projects

What are key achievements?

- The diversity of participants (from several areas and study cycles, at least in the module Explore Soft Skills;
- Follow-up 6 months after the programme, allowed to assess that: although there were no significant differences between the control and experimental groups, in aspects such as: the number of application processes carried out, R&S processes in which the participant was integrated and contacts with companies, there was a significant difference in terms of strategies in connecting with employers and job/internships search and the preparation of applications. In the experimental group, we saw that those strategies were more intentional and contextualized according to the individual plan that participants had developed. We also noticed that those participants were able to make readjustments to this plan and recognize the importance of taking an active role in managing their own career, activating strategies to develop their network.
- More than 300 participants since 2019 until 2021 in the first module Explore Soft Skills and at least 28 students and graduates from each of the 14 faculties or different field of studies, per year in the practical modules Improve Job Skills and Work Soft Skills

What do you think were the key success factors?

- Trainers' and Participants' motivation/participation and involvement in the various initiatives (participants' high participation rate especially in the Explore Module)
- Participants were able to have group and individual career coaching and counselling, allowing them to: be better prepared to construct or transform their individual career plans; to identify and establish their career and life goals; to identify existing and necessary resources, current difficulties and obstacles (and consequently to identify how to overcome) and to know and leverage motivation and commitment in reaching those goals; to exploration of new career options; and to define and plan specific actions.
- The methodology of the programme which is very practical with: case studies; moments centred on the participant (self-assessment / self-diagnosis, behavioural assessment tools); practical and brainstorming exercises; group dynamics and the use of role playing; online self-registration after each session; evaluation of the programme by the participants after each session and at the end of the program
- Follow-up 6 months after the end of the program

What do you think were the barriers?

- Difficulty in conciliating the academic calendar with the programme's modules
- The fact that the Programme is not being recognized with ECTS. So, students may think that the participation in the programme is just not worth it when it comes to prioritize time to other units or when they are overloaded with academic tasks. This may impact participants' commitment.
- The dissemination of the Programme among students. There are so many activities at the University, being published on a daily basis, that sometimes it is quite difficult to get priority or attention in students feeds.

If you were to start again, what would you do differently?

In every edition, we have to adjust the programme, subjects, and skills that are going to be developed so that it can be customizable according to the participant's needs. Maybe it would be good to: introduce a module related to career transitions for alumni and senior profiles; promote more networking moments between employers/organizations and participants; have

consultants and facilitators alongside the advisers; and try to have the integration of more experiences such as internships, mentoring and others. These new activities would, of course, have to be balanced with the barriers identified above.

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

Do you have plans to further develop the initiative? If so, what are they?

We would like to scale up this programme to more students and graduates (maybe being done by each of our 14 faculties) with more than an edition per year as well as the possibility to integrate some activities with more connection with companies (speed recruitment, traineeships and so on)

Any additional information

The program was supported by the Amadeu Dias Foundation

Bright Start programme, Setúbal Polytechnic Institute (Portugal)

Key facts about the initiative	
Country	Portugal
Name of the initiative (in English/in the local language)	Bright Start programme
Website (if available)	https://www2.deloitte.com/pt/pt/pages/technology/topics/programa-brightstart.html
Name of organisation implementing the initiative	Setúbal Polytechnic Institute and Deloitte
Year it started and ended/is expected to end	2017 ...
Contact	pedro.dominguinhos@esce.ips.pt Almeida, Paulo Pessanha de <pauloalmeida@deloitte.pt> Albuquerque, Karla Cristine <kapereira@deloitte.pt> Nuno.pina@estsetubal.ip.pt
Short summary of the initiative	
<p>Creation of a short cycle - CTeSP (ISCED5, providing a diploma in higher education with 120 ECTS) in Informatic Technologies between Setúbal Polytechnic Institute (IPS) and Deloitte, according to the firm needs. This CTeSP is based on real business cases provided by Deloitte, using innovative pedagogical methods such as problem and project based learning. Both IPS and Deloitte provide teachers for CTeSP, belonging to IPS the scientific and pedagogical coordination. The learning space was designed to create a business environment and students benefit from support from Deloitte managers totally devoted to the programme in Setúbal. The students are selected using a combination of methods, finalizing with an interview both in Portuguese and English with a Partner from Deloitte. Deloitte provide a laptop for students as well as a mensal grant during the programme that increases with the involvement of students in real projects. Deloitte pays also tuition fees and all administrative costs.</p> <p>After finishing short cycle students can apply for BSc in Informatics where more than 45 ECTS are credited allowing student to go to second academic year. All the conditions provided by Deloitte and pedagogical model are similar. Specific schedules are designed for this students allowing them to split their time between academic projects and real business cases.</p> <p>After five years, Brighstart programme was launched in 5 more places: Leiria, Viseu, Coimbra, Braga and Faro (4 Polytechnics and one University)</p>	

Why was the initiative launched?

[Lack of talent in ICT

Promotion of business-university cooperation

Pedagogical innovation

Promotion of inclusion in higher education, special for students from disadvantaged social and economic backgrounds

What are key achievements?

Launching of an Innovative and novel programme between a Polytechnic and a company

Scale the program nationwide

Promote inclusion, special for students from vocational schools

Stablish an integrate academic programme (Short cycle and BSc)

Promote employability and better salaries

Promote qualification and attraction of investment for regions[Insert here]

What do you think were the key success factors?

Commitment of top management both from IPS and Deloitte

Innovation of the programme

Disruptive pedagogical approach

Alignment with portuguese national policies towards digital competences development

Key managers for the program both for IPS and Deloitte

High level of applications from students

[Insert here]

What do you think were the barriers?

Some kind of distrust and obstacles from some people in both partners

Some lack of pedagogical competences in some teachers[Insert here]

If you were to start again, what would you do differently?

Involvement of more teachers since the very beginning

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

Investment in Short cycles and digital competences[Insert here]

Do you have plans to further develop the initiative? If so, what are they?

Scale the programme to master degree and consolidate shirt cycle in 6 locations

Set up a national network

Summer with Science Edition 2021, University of Coimbra (Portugal)

Key facts about the initiative	
Country	Portugal
Name of the initiative (in English/in the local language)	Summer with Science / Verão com Ciência - Edition 2021
Website (if available)	
Name of organisation implementing the initiative	University of Coimbra
Year it started and ended/is expected to end	2021
Contact	Claudia Cavadas
Short summary of the initiative	
<p>In 2021, The Portuguese Science Foundation - Foundation for Science and Technology (FCT) - provided for the 2nd time a special support for scientific and technological research activities in Portuguese R&D units with a view to enhance scientific and technological capacity and its relationship with higher education and society. This support aimed to stimulate the initiation of higher education students to scientific activity, thus contributing to the promotion of scientific and technological culture and to the dissemination and dissemination of scientific and technical knowledge among these students. It was supported “Summer with Science” projects with scientific and technological research activities in R&D units by funding research initiation fellowships for on-site scientific research activities for 1 month.</p> <p>The “Summer with Science” projects were carried out in person by higher education students, within the scope of the scientific activities of the R&D Units and framed by teachers and researchers. The proposals funded complemented existing scientific training initiatives and offering students to have for one month of immersive experience within research teams with ongoing research projects. Recipients of funding & Evaluation by FCT: the beneficiaries of this support were the R&D units classified as Good, Very Good or Excellent, awarded by the FCT in the 2017-2018 R&D Units evaluation process. The submission of proposals was limited to one application per R&D unit. The process of evaluating and selecting the work plans was based on the quality of the proposed work program and the feasibility of carrying out face-to-face R&D activities. The funding awarded was defined as a maximum of 10 grants for every 100 integrated PhD members of the R&D Unit, as indicated in the application process for the evaluation of R&D units up to the maximum of the foreseen budget allocation</p> <p>This special support “Summer With Science” was designed with a short application period, from July 9 to 23, with the possibility of implementation between July 30 and September 30, 2021. The work plans that receive financial support for the payment of scientific initiation grants had to start date within one month after the communication of the granting of funding by FCT.</p> <p>At the University of Coimbra, 11 R&D Units were awarded with a total of 65 fellowships, 61 students were enrolled: Coimbra Chemistry Center, Center for Innovation in Biomedicine and Biotechnology (CIBB), Physics Center of the University of Coimbra, Center for Geosciences, MARE - Center for Marine and Environmental Sciences, Center for the History of Society and Culture (CHSC), Center for Functional Ecology - Science for People & the Planet (CFE), Center of Mathematics of the University of Coimbra (CMUC), Center for Research in Anthropology and Health (CIAS), Institute for Philosophical Studies (IEF). In the end each student and the coordinator of the project of each research center did a final report.</p>	
Why was the initiative launched?	
<p>To stimulate the initiation of higher education students to scientific activity, thus contributing to the promotion of scientific and technological culture and to the dissemination and dissemination of scientific and technical knowledge among these students.</p>	
What are key achievements?	
<p>To give the students the opportunity to have a close contact with research environment, to have an immersive experience as a researcher. Each student was able to contribute to a specific and real research project. Some of those students continued in the same research groups for Master research projects. Scientific reports presenting very good quality were produced by each student. The students also participated in Science communication activities, namely at European Researchers’s Night. https://www.youtube.com/watch?v=96ba8j-K6Lg</p>	

What do you think were the key success factors?

The funding of students; the opportunity given to the student of an immersion experience into an excellence research environment; a final report and presentation session in which the students showed what they did during the internship.

What do you think were the barriers?

The short period of application and administrative load work.
Some research activities collided with classes that the students had.

If you were to start again, what would you do differently?

From the point of view of the R&D Unit coordination: "Use a bottom-up approach in asking PIs to show interest to receive students instead of being a top coordination of the program to select the groups."

From the administrative part "more time for applications and less administrative work load"...

From the University coordinator: longer fellowships; promote more the interdisciplinarity by funding Fellowships in two different R&D Units (in 2 different areas) ...

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

Yes. Funded the students' fellowships.

Do you have plans to further develop the initiative? If so, what are they?

Yes, if supported by FCT funding.

Any additional information

This initiative was funded by FCT - <https://www.fct.pt/apoios/veraocomciencia/index.phtml.en>

Summer with Science - Edition 2020 - <https://www.uc.pt/research/veraocomciencia/>

Other initiative (targeting High School Students): <https://www.uc.pt/uv/>

Bachelor's in Human Resource Management, Budapest Metropolitan University (Hungary)

Key facts about the initiative	
Country	Hungary
Name of the initiative (in English/in the local language)	METU HR Reloaded – The Analogy of Employee Experience Journey in a University Human Resources (BSc) Program
Website (if available)	
Name of organisation implementing the initiative	Institute of Management, Budapest Metropolitan University
Year it started and ended/is expected to end	Since 2019
Contact	Zsolt Kiraly (zkiraly@metropolitan.hu)
Short summary of the initiative	
<p>The initiative was part of the total renewing process (started in 2018) of Human Resource Management (BSc) program at Budapest Metropolitan University. Its aim was to implement the analogy of a general employee life cycle / experience journey as student life cycle / experience journey in the education program. As an important starting point for this, we have incorporated onboarding into the learning process, and we have given our students the opportunity in the first semester to decide whether the HR profession is suit for them or whether to switch to another profession. This also ensures that they are in the right place and they can be fulfilled in their university years.</p>	

Why was the initiative launched?

The Human Resources Management (BSc) program at Budapest Metropolitan University was first launched in 2013. After six years it was time to totally renew it because of the turbulent labor market environment, the rapidly changing expectations of employers, and a kind of revolution of the HR profession. In this case, renewing means not only and not mainly the developing of course contents and teaching methods. These are kind of activities which should be continuously anyway. The paradigm shift was needed.

We realized that we have to step out of the classical academic education box and think in a different way to keep pace with labor market expectations and make our students prepared for a successful career starting. Finally recognized that it is not available within the framework of university courses and relying on our academic staff only, even if most of them have active and relevant business experience. So we started to think in a wider framework and build a value-based ecosystem around the Human Resource Management (BSc) program with companies, experts from corporate HR world and HR consulting industry and relevant professional organizations.

The main goal was to elaborate a program close to real business life and incorporate the analogy of employee experience journey / employee life cycle.

What are key achievements?

- a renewed HRM (BSc) program
- **student experience journey / student life cycle reflects to the employee experience / journey employee life cycle** in the education, which means
 - focusing on candidate experience in recruitment campaign
 - **onboarding** for newcomers
 - **orientation** course for first-year students to help them making a decision to continue their studies in HR or not and prefer to change another program (to find the right place)
 - **community mentoring**: HR Mentoring Day after the first semester to support each other and getting feedbacks
 - **soft skill trainings** every semester
 - optional six session long **individual coaching** for final year students of HRM (BSc) program in the frame of an annual coaching program thanks to a strategic partnership with Hungarian Chapter of International Coach Federation
 - **free participation and / or voluntary programs in HR business conferences** thanks to strategic partnership with the organizers (limited numbers)
 - several **strategic partnership with HR business actors and professional organizations**
 - **supporting students to build individual professional portfolios** during their university studies
 - A strong student community: near 800 active students and alumni of HRM (BSc) program of METU (organizing an active digital platform for our students to professional network and help each other)

What do you think were the key success factors?

1. Team behind these planning and realization activities.
2. Co-creation approach during the planning process.
3. Thinking in a value-based ecosystem from the first time and start immediately to build it up. We asked HR leaders, senior professionals and HR event organizers for their opinion:
 - how to renew our HRM (BSc) program
 - what are the relevant needs by their organizations,
 - what do they see on the market,
 - how could we collaborate and develop the HRM BSc program together etc.

In this way we gain a lot of:

- different professional viewpoints to plan a new and modern program
- information for validation of the new specializations of the program
- information about relevant and up to date expectations of employers and HR business
- relationships of great value and practical benefit

- pro bono services
- education possibilities outside the university
- internship positions
- missing competencies and professional experts for launching new courses, trainings and building up a wide and renewable HR professional network

And last, but not least we won a wealth of possibilities to continue more effectively this modernization and building process in the future.

What do you think were the barriers?

- Strongly limited financial resources: We did not have any dedicated financial resource to reach these goals because it was a totally bottom up initiative. On the other side this lack was a resource too, because it made us to more creative, proactive, agile and encouraged us to network.
- Human capacity: the number of academic staff that could be involved was limited.

If you were to start again, what would you do differently?

We would slow down the pace of implementation.

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

It did not. During the whole process we focused on HR business actors, professional organizations and collaborating with them, because we believe this is the only way to follow the radically changes of HR profession in our curricula and education activities. Without them we would not have enough relevant competencies, methods, tools, techniques – and what the most important – experience to prepare our students for the future of HRM.

Do you have plans to further develop the initiative? If so, what are they?

Yes, we have, which are:

- exit interviews with students who are going to finish their HR studies in the renewed program (first time in May 2022)
- involving students in HR relevant open projects by HR LAB (from September 2022)
- HR relevant hackathons from 2022
- onboarding interviews with newcomers (from September 2022)
- Buddy program

PKP and ŠIPK: project-based learning for students in companies and civil society organisations (Slovenia)

Key facts about the initiative	
Country	Slovenia
Name of the initiative (in English/in the local language)	PKP – Creative Path to Knowledge ŠIPK – Student innovative projects for social impact
Website (if available)	PKP: https://www.srips-rs.si/razvoj-kadrov/po-kreativni-poti-do-znanja-pkp ŠIPK: https://www.srips-rs.si/razvoj-kadrov/studentiski-inovativni-projekti-za-druzbeno-korist-sipk
Name of organisation implementing the initiative	Ministry of education, science and sport
Year it started and ended/is expected to end	Started: 2013; ended: 2020
Contact	petra.arcan@gov.si
Short summary of the initiative	

In addition to formal education, young people need practical experience directly in the work environment during their studies in order to be able to enter the labor market faster and more easily. The PKP and ŠIPK initiatives enabled the connection of the higher education system with the working environment (PKP - with the economy and ŠIPK - with the non-economy sector). In a group of 4 to 10 students under the mentorship of a at least one pedagogical mentor and mentor from the company, students were working on a project ideas, challenges that working mentor have expressed. The focus was that the project teams were formed interdisciplinary (students from different fields of study and also pedagogical mentors from different fields of study). Each project has started and ended in one academic year.

Through the established activity, the PKP and ŠIPK encouraged the mutual exchange of knowledge, experience and good practices of both pedagogical mentors in the work environment and work mentors at higher education institutions. During their studies, young people were able to get involved in learning about challenges and real problem situations in the work environment. In this way, they acquired diverse competencies, additional knowledge and concrete work experience even before they completed their studies and entered the labor market.

Such added value is recognized by both involved students and pedagogical mentors at higher education institutions as well as by involved partners from the work environment (economy in the case of PKP and non-economy in the case of ŠIPK). This is just one of the indicators showing that the program has achieved its purpose.

Through the implementation of project activities of the partners involved in both programs, it was possible to coordinate and review, as well as to implement the existing study contents in the education system thus satisfying the needs of the labor market.

The importance of the initiative is also reflected in the fact that many students involved in project activities, stated that the participation in the projects was an important starting point and an opportunity for employment. As well, the partners from the work environment could thus be informed on the potential of future employees.

Target group: undergraduate and postgraduate students

Why was the initiative launched?

The main reason for both initiatives was to gain a better response of the higher education sector to the requirements of the labor market.

The initiative PKP was launched by the Sector of Higher Education at the Ministry of Education, Science and Sport in 2013 and was co-financed by the European Social Fund. The original idea was to co-finance student internships. Due to the co-financing requirements, it was then possible to set up the initiative only as full-time extracurricular activities and not as part of the regular study process.

The initiative PKP was then extended in 2016, again with the co-financing from the European Social Fund.

Due to the good feedbacks and results of PKP initiative ŠIPK initiative was launched in 2017. ŠIPK, beside students and pedagogical mentors, involved partners from the non-economic and non-profit sector in the local or regional environment (NGOs and local communities). This is also the key difference between the two initiatives.

What are key achievements?

By taking part in the initiatives, the students developed specific and generic competencies and became acquainted with challenges and problem situations accruing in the real-life work environment. With their involvement in project activities their employment opportunities increased and various forms of cooperation were been established, lasting even after the conclusion of the project (project work, student work, preparation of diplomas, master's theses, etc.).

PKP and ŠIPK initiatives encouraged the mutual exchange of knowledge, experience and good practices of pedagogical mentors and work mentors (in case PKP from companies, in case ŠIPK from non-economic and non-profit sector in the local or regional environment), thus enabling higher education institutions to modernize the content of their study programs and introduce an innovative approach to teaching including the transfer of latest scientific findings, theoretical approaches and methodologies to study contents.

PKP: The initiative lasted from 2016 to 2020, 10 million EUR were used for 630 projects including 4243 undergraduate and postgraduate students, 1940 mentors (pedagogical and work mentors), 1041 events involving transfers of knowledge, experience and good practices to higher education. All planned project indicators were achieved or exceeded.

At the end of the project (in 2021) an evaluation was performed, which showed, among other that:

- the added value of the initiative was mainly that students gained various competencies and practical experiences, (opinion of 88% of respondents: new practical knowledge and experience, s acquired competencies in the field of teamwork, competences in development of innovation, etc.);
- activities are not only related to the duration of the project, but continue after the end of the initiative since students maintain contacts with their work mentors through various forms of continuous cooperation,(opinion of 54% of respondents), as well, acquainting students with real-life challenges and problem situations in the work environment was an important added value of the project (opinion of 60% of respondents);
- 62% of respondents estimated that involvement in the project can increase employment opportunities over other candidates when looking for a job after graduation;
- 41% of the students included in the survey were employed after the end of their studies.

ŠIPK: The initiative lasted 2017-2020, 6,4 million EUR were used for 411 projects, including 3379 undergraduate and postgraduate students, 465 pedagogical mentors at higher education institutions, 412 mentors from the non-economy and non-profit sector in the local / regional environment and 170 mentors from the non-economy sector who performed a supporting role in higher education institutions. All planned project indicators were achieved or exceeded.

At the end of the project (in 2021) an evaluation was performed, which showed, among other, that:

- the added value of the initiative was mainly that students gaining various competencies and practical experience, (opinion of 85% of respondents: students gained new practical knowledge and experience, students acquired competencies in the field of teamwork, competences in the development of innovation, etc.);
- activities are not only related to the duration of the project, but also continue after the end of the program, since students maintain contacts with their work mentors through various forms of continuous cooperation (opinion of 50% of respondents), as well, acquainting students with real-life challenges and problem situations in the work environment was an important added value of the project (opinion of 67% of respondents);
- 59% of respondents estimated that involvement in the project can increase employment opportunities over other candidates when looking for a job after graduation,
- 22% of the students included in the survey were employed after the end of their studies.

What do you think were the key success factors?

We believe that the contents, project activities and the way of partnership cooperation addressed by both initiatives were appropriately addressed and set according to key stakeholders (pedagogical and work mentors from the business and non-economic and non-economy in the local / regional environment and students).

The content and concept of the project reflected the rapidly changing situation in individual segments of society and have offered numerous answers to various issues (environmental, climate, health, etc.). The partners involved recognized that with this way of project cooperation each of them was able to gain new knowledge, understanding and insight into the functioning of the higher education system and the labor market situation regarding the necessary knowledge and innovative approaches of employees for an inclusive society of the future.

The evaluation of both initiatives carried out in 2021 also showed that they are of great importance for the further development of the higher education system. The implementation of both programs mainly means connecting students from different fields of study (interdisciplinarity) (assessed by 89% of respondents in PKP and 93% in ŠIPK). It was also crucial to connect pedagogical mentors from different fields of study (assessed by 69% of respondents in PKP and 80% of respondents in ŠIPK).

What do you think were the barriers?

Both initiatives were substantively and technically complex.

Due to the large number of partners involved the coordination was complex and administrative barriers were present for all participants involved (from higher education institutions, from the work environment and at the ministry) mostly regarding time consuming preparations of reports and other required documents.

If you were to start again, what would you do differently?

If we could start the project again:

- it would be useful to simplify the follow up of the performed activities carried out as the basis for eligible costs in order to reduce the administrative barriers for the partners involved;
- activities planning should be better integrated into the mechanism for promoting innovation in higher education institutions (i.e. strengthening activities for establishing and promoting partnerships between higher education institutions and companies of different sizes, municipalities and local communities);
- it would be beneficiary to strengthen the participation of stakeholders and their involvement in in the integration of new content in study programs (i.e. integration of research entrepreneurship and learning activities at higher education institutions);
- added value to the project would be to obtain data or information from projects completed by higher education institutions on their updates to study programs etc.

Did national policies/programmes support the initiation/implementation/development of the initiative? If so, how?

Yes, national policies support the integration and cooperation of the higher education system with the working environment, even more so as the result of the projects. Such initiatives are an important part of strategic documents:

- National Higher Education Program of the Republic of Slovenia 2021-2030. The key goals are to raise the level and quality of higher education in Slovenia while caring for the quality of education and excellence in research, to increase the responsiveness, flexibility and attractiveness of the higher education system to the needs of the economy, non-economy and society, to strengthen its international involvement, to improve access to education and opportunities for lifelong learning in higher education throughout Slovenia, increase the intensity of research and innovation, improve the transfer of knowledge to the social environment;
- The Operational Program for the Implementation of European Cohesion Policy in Slovenia for the period 2021-2027 envisages measures within established student centered supportive environment, where the assistance for a successful and timely completion of studies will be provided for students (similar project activities as the PKP and ŠIPK will be supported).
- Recovery and resilience found. Within Higher education reform for a green and resilient transition to Society 5.0 guidelines for the renewal of professional higher education are planned to be prepared, implementation of pilot project, the results of which will serve as a basis for the preparation of a blueprint for higher education reform for a green and resilient transition to Society 5.0 and Blueprint for investing in a green, resilient, sustainable and digitally connected education set.

Do you have plans to further develop the initiative? If so, what are they?

We plan that similar activities would become part of the support study curriculum and an important resource for skills intelligence. The activities will be carried out autonomously or directly by higher education institutions, which will also enable greater autonomy in the selection of projects.

For the academic year 2022/2023 an initiative is being prepared as the continuation of all contents and activities of PKP and ŠIPK. Namely, the project results showed that such initiatives are needed.

The European Social Fund provides in the programming period from 2021 to 2027, similar project activities as the PKP and ŠIPK initiatives.

ProProg Together, TU Vienna (Austria)

Key facts about the initiative	
Country	Austria
Name of the initiative (in English/in the local language)	ProProg Together
Website (if available)	https://informatics.tuwien.ac.at/news/2055
Name of organisation implementing the initiative	
Year it started and ended/is expected to end	2020
Contact	

Short summary of the initiative

ProgPro together is a pre-study course to bridge the gap in programming between school and university. It was initiated because of the Covid-19 pandemic to offer students a collaborative online course for programming introduction.

It consists of eight online lectures (sessions) on four days, with a morning and an evening session. Each lecture consists of a theoretical and hands-on part, where students solve programming tasks in peer groups supervised by a lecturer or tutor.

Why was the initiative launched?

First-year students coming from secondary schools often struggle with programming. There is a wide range of programming skills among the students depending on their secondary school type.

To close the gap between informatics education in school and university, the Vienna technical university faculty of informatics started introductory programming courses.

There are on-site courses, and there are also two MOOCs, "Programmieren mit Processing 1+2". The MOOCs intended to offer prospective students a didactically prepared programming introduction using the programming language Processing - a java-based programming language for creating animations with ease.

Due to the Covid-19 pandemic, we used the experience and contents of the MOOC "Programmieren mit Processing 1", to offer a supervised online course "ProgPro together", which means "becoming a programming pro together while programming with Processing together".

Switching from a MOOC, which most participants used as a self-study course, to an online lecture emphasising peer interaction should help students make contacts and motivate them to stay in the course while solving problems in groups.

What are key achievements?

What do you think were the key success factors?

- Providing the MOOC before ProgPro together starts: students can get familiar with Processing, fundamental programming concepts and develop programming skills before the lectures start, so they know their strengths and weaknesses and ask for support.
- Working in small peer groups.
- Working out the theoretical background together.

POLYFLIP: flipped classroom approach for (polymer) engineering (Slovenia)

Key facts about the initiative	
Country	Slovenia
Name of the initiative (in English/in the local language)	Polyflip
Website (if available)	www.polyflip.eu
Name of organisation implementing the initiative	Faculty of Polymer Technology
Year it started and ended/is expected to end	2020 - 2023
Contact	Maja Mešl
Short summary of the initiative	
<p>POLYFLIP - Development of a flipped classroom approach for (polymer) engineering study programs with the use of innovative ICT tools</p> <p>The project PolyFlip aims to build on good practice examples in other disciplines and levels of education, current research findings on this topic and adapt and implement the flipped classroom approach (FCA), to enable and encourage active, student centred and collaborative learning in (Polymer technology) engineering programs.</p>	
Why was the initiative launched?	
<ul style="list-style-type: none"> • HE are not well informed, nor equipped with the competences to successfully implement innovative pedagogies. • HE lack the knowledge and information about ICT tools available to support the development of efficient blended learning approaches. • There are some specific challenges in engineering studies that hinder the uptake of some methods. • HE cannot simply adopt methods from other disciplines and levels of education. • Implementing new methods and preparing new e-content takes time and requires support. 	
What are key achievements?	
<p>New concept of Flipped classroom method for engineering HE courses developed</p> <p>On-line course for HE teachers on using flipped classroom and e-tools for developing quality materials developed</p> <p>Good practice examples for different courses in development. These good practice examples will be implemented in 2022/2023, evaluated and presented in a report and as short promotion videos available on the website</p>	
What do you think were the key success factors?	
<p>Motivated HE teachers</p> <p>Available quality pedagogical training and ICT support and mentorship</p> <p>Good practice examples that show the value of the method and the key factors that lead to improvements in competences of students</p>	
What do you think were the barriers?	
<p>The biggest barrier is the time and motivation of professors</p> <p>The second one is the availability of quality support (pedagogical and ICT)</p>	
If you were to start again, what would you do differently?	
<p>Nothing. We wish we would have started sooner.</p>	
Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?	
<p>The project/initiative was based on previous activities of the faculty, which were funded under different national funding schemes – the development fund, INOVUP trainings and PKP project</p>	

Do you have plans to further develop the initiative? If so, what are they?

We want to spread the use of the methods to all HE professors and all courses at the faculty. We are also already thinking about a new project, which we will focus on using AR and VR technologies for creating quality e-materials. We have also been invited into a capacity building Erasmus project with Palestine and different EU HE engineering faculties spreading the use of the method.

Rethinking engineering education at the Instituto Superior Técnico (Portugal)

Key facts about the initiative	
Country	Portugal
Name of the initiative (in English/in the local language)	Rethinking engineering education at IST / Comissão Análise do Modelo de Ensino e Práticas Pedagógicas (CAMEPP)
Website (if available)	https://tecnico.ulisboa.pt/en/education/courses/teaching-model/ https://www.youtube.com/watch?v=B4esC9HqAQg
Name of organisation implementing the initiative	Instituto Superior Técnico (Técnico)
Year it started and ended/is expected to end	2019 -
Contact	pedro.broqueira@tecnico.ulisboa.pt

Short summary of the initiative

In 2021, Técnico updated its teaching model to meet the demanding challenges of today's world. **New curricular components** were introduced and **new learning methodologies** were adopted, valuing the students' academic career as well as their extracurricular experiences, in line with the best schools of Science and Engineering in Europe.

Why was the initiative launched?

Técnico created an internal commission (CAMEPP) in February 2018 with the mandate to independently re-think its teaching model and pedagogical practices. The following question summarizes the terms of reference approved by Técnico's management bodies:

"How should Técnico adapt its current teaching and learning model to foster the development of critical, inventive and creative science-based spirit in its graduates and prepare them to anticipate, intervene and respond to the present and future societal challenges of the 21st century?"

The challenge faced by the internal commission was initially framed against the UNESCO guidelines commonly known as the four pillars of education: "know", "do", "live together" and "be". Noteworthy are some recent trends: (i) the inversion of the global engineering education leadership axis towards the south and Asia, mostly due to strategic investments from emerging economies; and (ii) the move towards socially relevant outward-facing engineering education models where curricula emphasizes student choice, multidisciplinary learning and societal impact.

Major findings from a diagnosis of the current pedagogical and teaching model at Técnico (based upon a comparison to reference universities, analyses of indicators and interviews with stakeholders) show that: most students, alumni, teachers and employers recognize that Técnico has a culture based on a set of principles that can be called "the meritocracy of difficulty" - the underlying idea is that the difficulty of engineering education is the guarantee of a successful professional future and comfortable material existence. It is therefore not surprising that the inherent effort and merit necessary to overcome the difficulties of the academic life is one of the values that best defines the experience of those who passed through Técnico.

Furthermore, it was identified the excessively rigid and prescriptive character of most current curricula as incompatible with a time when globalization, inter- and intra-specialty collaborative work, the profusion of information and computing

technologies and the fast pace of change are the new norm. This rigidity is also reflected in the contents of many curricular units and in the way they are taught, and, most importantly yet, in the way students learn, study and apply them. In most cases, students are formatted to solve standard problems of high complexity. Often, student's time is consumed in too repetitive, as opposed to more hardcore creative, work. Also, analyses have highlighted the scope and need to improve formative efficiency at Técnico.

The following principles were set to define the boundaries for the new educational model:

- a) To ensure the core and specialized engineering education with academic rigor, digital fluency and high scientific standards, in continuity with the tradition of Técnico and with the national and international recognition of the technical skills in STEM of its graduates.
- b) To implement an active learning model with strong student co-responsibility based on pedagogical models inspired by hands-on, project-based learning, research-based learning, problem-based learning, design and engineering practice and including continuous assessment.
- c) To promote learning in a collaborative, interdisciplinary and multicultural environment, stimulating communication, as well as critical and structured thinking, which, together with the capacity for persuasion and argumentation, is capable of inspiring others and fostering leadership.
- d) To adapt learning to an ever-changing world (ruled by contexts of unpredictability, uncertainty and lack of definition), making curricula more flexible and allowing graduates to respond adequately to the challenges of the 21st century.
- e) To stimulate creativity, innovation and entrepreneurship.
- f) To provide exposure to societal thinking and the goal of value creation, to the awareness of the concepts, ideas and systems of thought underlying human activities, to the understanding of the social, political and economic frameworks of different societies, and the communication and expression of the arts and their contribution to a sustainable society based on ethics and human values.
- g) To ensure adequacy between the teaching model and the human resources, the infrastructures, the work hours of students and teachers and the ECTS of the different courses, taking into account that Técnico is a research university in which faculty members have to supplement teaching with research and knowledge transfer activities.
- h) To create a school-individual-society ecosystem as the nucleus of better learning and a positive experience for students inside and outside Técnico.
- i) To position Técnico as one of the global leaders in engineering education and to enhance its international attractiveness to students, researchers and teachers

What are key achievements?

The reflection undertaken has shown that there is a need to introduce changes in the teaching model of Técnico, which include, among others:

- adopting alternatives to the traditional model of education;
- increasing curricular flexibility, to allow students to draft personalized programs;
- training in complementary areas, including curricular accreditation of research internships in corporate and business environments;
- increasing mobility between programs at the BSc and MSc levels;
- strengthening computational thinking education, as part of the core engineering education;
- maintaining a solid training in basic STEM contents, but with enhanced adaptation to specific study programs;
- expanding student training in innovation, entrepreneurship and technology transfer;
- integrating digital content and tools

Given the emerging professional contexts in which engineers operate, the new educational trends in engineering, and the teaching models currently adopted in reference universities, it is imperative that Técnico moves towards teaching and pedagogical practices that answer the new challenges of the 21st century. Departing from the accepted principles, the following key Eliminate-Reduce-Increase-Create- changes were proposed to the School, with each change encapsulating a set of reforming measures to be applied altogether to all graduate courses at Técnico:

1) Eliminate

- Restrictions to flexibility and curricular mobility
- Restrictions to the autonomy of Coordination and Scientific Commissions of a given Degree
- Obstacles to interdepartmental collaboration in school offerings

2) Reduce

- Evaluations by exams and tests
- Weekly (teaching) contact hours (while maintaining, approximately, the total number of contact hours per semester)

3) Increase

- Academic success rate
- Flexibility and curricular mobility
- Active and autonomous learning
- Project learning
- Connection to industry
- Articulation of content between core courses and specialized courses
- Faculty role in designing and monitoring new projects and problems
- The number and diversity of teaching actors (to complement faculty with teaching assistants, graders, invited professors and assistants, researchers, engineers, entrepreneurs,...)
- Level of proximity with students
- International attractiveness
- Co-responsibility of students in their training
- Continuous student evaluation
- Awareness of ethics and values

4) Create

- Training opportunities in Humanities, Arts and Social Sciences
- Personal development opportunities
- A real academic eco-system
- New philosophy of experimental training
- Training opportunities in Innovation and Entrepreneurship

The timespan for the discussion and implementation of these reforms, partly imposed by external factors, was short. Gradually, during the discussion and implementation process, more and more people in the School's community became increasingly aware of the proposed reforms, perhaps not always in a timely manner. These problems are somehow intrinsic to this kind of large scale reform and were probably unavoidable.

All IST courses were restructured to comply with the above recommendations, most of them came together with minimum targets:

1. Credit recognition for student activities (3 to 6 ECTS)
2. Optional courses to choose from the full university catalog without restrictions (18 to 36 ECTS)
3. Capstone (42 ECTS)
4. Multidisciplinary minors (18 ECTS)

The model for Técnico is grounded on a set of principles that aim at improving the teaching model and pedagogical practices, aligning them with a more international, modern and competitive vision of engineering education. To implement those principles, a comprehensive, coherent and articulated set of measures was proposed, and the corresponding necessary means were identified.

The implementation of the model proposed is a significant challenge and, as for all major reforms, difficulties can be foreseen. Besides the necessary means to implement the various measures, the success of the model depends very much on the strong engagement of faculty members and students and, to a great extent, on a general transformation of academic and cultural mentalities.

What do you think were the key success factors?

The working methodology of CAMEPP encompassed three main axes of analyses: (i) the global challenges and trends in engineering education; (ii) the main features of the engineering education offered in reference universities; and (iii) a comprehensive and critical assessment of the teaching system at Técnico.

The model Técnico2021 was developed based (i) on the main findings from those analyses – “the rationale for change” – and (ii) on the recognition of the strong points of Técnico – a secular tradition of recruiting the best students, providing them with solid technical and scientific education and promoting a strong working spirit. The model Técnico2021, being centered in Técnico’s main asset – its students – aims not only at preparing well-trained professionals, but also at maximizing their skills and talent, creating a future generation of inspiring leaders.

The model Técnico2021 is grounded on a set of principles that aim at improving the teaching model and pedagogical practices, aligning them with a more international, modern and competitive vision of engineering education. To implement those principles, a comprehensive, coherent and articulated set of measures was proposed, and the corresponding necessary means were identified.

What do you think were the barriers?

The implementation of the model proposed herein presents a significant challenge to all the Técnico’s community since, for all major reforms, difficulties can be foreseen. In terms of human resources, a significant increase in the number of teaching assistants and graders, and researchers need to be added to the system to ensure the proximity between teacher and student hallmark. On the other hand, in terms of infrastructure, well equipped 24 hours laboratories, plenty of study rooms and open classrooms, not to mention dorms and sport facilities, are required to develop the desired hard and soft skills of tomorrow’s engineers.

A strong commitment of the faculty is also required for the success of the model. It is, thus, essential to provide the faculty training in the pedagogical practices here proposed so that they can be fully explored. The reform of Técnico’s human resources management system should also be considered, in particular of the faculty evaluation regulation, to account for the time required to prepare active, challenging and updated classes that go beyond the effective teaching hours. The collaboration between different departments and research institutes should also be considered and promoted. All these measures will free up time for the full development of faculty in different areas, including research.

The school calendar is another important point for the success of the Técnico2021 model. The key words here are autonomy and flexibility: the increase of autonomous work time, coexistence of CU of different nature (compulsory, optional, free options, minors, HASS, projects in companies, projects in research units and capstone projects) and a suitable 2nd cycle application system that enables mobility between cycles of studies across different engineering branches are fundamental to create differentiated engineers. The tight collaboration with companies is also crucial to train future engineers to solve real life problems.

The success of the model depends very much on the strong engagement of faculty members and students and, to a great extent, on a general transformation of academic and cultural mentalities.

If you were to start again, what would you do differently?

In accordance with its mandate, CAMEPP, while obviously maintaining IST’s actual context in the background, did not restrain itself by existing material or human resources in the model that it proposed. While one could argue that such restraint could have produced a model easier to accommodate and less prone to ad-hoc changes in the implementation phase, it is also true that the depth of the ensuing debate in Técnico would be smaller.

Another point to be mentioned is that the proposed measures are also a consequence of internal restrictions, tradition and the external framework of IST, namely international partnerships. The change of the academic calendar seems to be the main obstacle identified by the community. Alternative academic calendars (trimesters of 11 weeks, semesters with 4 simultaneous UCs), that would allow to decrease the number of weekly classes without significantly changing the overall contact hours, were also initially considered and found to be advantageous. However, these calendars would not allow an easy exchange of foreign students with partner schools in the framework of well-established and fruitful programs and were not adopted.

Of course, some of the measures that were proposed imply major challenges for IST. However the internal discussion was focused on some particular and not so important details (as the academic calendars) and less in the main and more innovative aspects of the model. A different communication strategy planned from the beginning would eventually help.

Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?

Partially. Of course, some of the measures that were proposed imply major challenges for IST. This happens both at the level of financial resources, where the most critical aspect is the number of human resources dedicated to teaching, and also a significative investment related namely to the infrastructures, laboratory equipment, etc. But also at the level of changing past practices, for instance in what regards interdisciplinarity and increased cooperation between departments (within the regulatory framework). However the public university is under-financed limiting the full development of the initiative.

Do you have plans to further develop the initiative? If so, what are they?

The new model is being implemented, of course with changes that resulted from the interaction with Técnico's community. While CAMEPP aimed at proposing an ideologically cohesive model, there is a risk that, in spite of IST's community best efforts, some of this cohesion will be lost in the actual implementation of the reforms. Monitoring the process is thus crucial for the success of its implementation.

Any additional information

A short paper with the proposed model is available from <https://ieeexplore.ieee.org/document/9507237> (DOI: 10.1109/CISPEE47794.2021.9507237)

Best Teaching Awards, TU Vienna (Austria)

Key facts about the initiative	
Country	Austria
Name of the initiative (in English/in the local language)	Best Teaching Awards (BTA)
Website (if available)	https://www.tuwien.at/studium/lehren-an-der-tuw/best-teaching-awards
Name of organisation implementing the initiative	TU Wien (Vienna University of Technology)
Year it started and ended/is expected to end	2017
Contact	teachingawards@tuwien.ac.at
Short summary of the initiative	

Almost 30,000 students are supervised in more than 2,000 courses at the Vienna University of Technology every semester. Teachers therefore make a remarkable achievement, which is the basis for the excellent reputation and worldwide success of TU graduates. The awards and the ceremony to hand over the awards shine the spotlight on all teachers who show above-average commitment to providing TU students with the best possible education.

Who can be nominated?

All lecturers at the TUW who held courses in the academic year 2020/21 (winter semester 2020/21 and summer semester 2021) can be nominated for a Best Teacher Award. External lecturers will be considered for the special prize as part of the selection process. Courses held in the 2020/21 academic year can also be nominated for the second category "Best Distance Learning".

Self-nomination is not possible. Those involved in the organization and processing of the Best Teaching Awards are excluded from the nomination. Award winners from 2020 cannot be nominated in 2021.

Who can make nominations?

All students and TU members are invited to nominate teachers and courses that they think have stood out particularly positively. Courses that start after the end of the nomination phase cannot be nominated.

Two votes can be cast per person - one per category.

Even if students experience the teaching most directly, it is important to the Rectorate that teaching at the Vienna University of Technology is viewed from a wide variety of perspectives. Therefore, all TU members are given the opportunity to nominate teachers who, in their opinion, are characterized by extraordinary commitment to teaching.

Each award is endowed with EUR 5,000 and can be used by the award winners in accordance with the applicable guidelines, opens a file in a new window for support in teaching (e.g. for tutors or study assistants), purchases for teaching (literature, infrastructure), personal further education or conference participation with a technical focus or to support your own employees in these areas.

Why was the initiative launched?

Feedback from courses was transparent for lecturers, but positive feedback has not yet been public. Only the deans of studies knew about it, who had to investigate the problems in case of strong negative criticism. The BTA now offer a platform to get these outstanding teachers on stage and to make this success public. The commitment of courageous teachers who provide high-quality teaching that is appreciated by students should be rewarded.

What are key achievements?

The BTA is intended to motivate teachers to constantly revise and update their courses in order to achieve good results without reducing the quality of the achievements to be achieved.

Teachers who provide challenging, appealing and fair teaching are rewarded in this way.

What do you think were the key success factors?

Two factors were decisive: The selection was made by a jury, but based on the LVA feedback from the students. Courses that were known as difficult were also selected. In addition, all teachers, from assistants to lecturers to professors, could be chosen. When the prize was awarded, some feedback from the students was presented to give an impression of the acceptance of the teachers/courses.

What do you think were the barriers?

Courses with a small number of students were more difficult to finalize than larger courses. In addition, there is the problem that positive aspects are occasionally lost in the feedback and students tend to respond to negative aspects. This contradicts the basic idea of considering feedback as constructive and incorporating both forms. Some courses have worse feedback than that from students.

If you were to start again, what would you do differently?

The Rectorate, the students, nominees and teachers are satisfied with the design and a different approach would not make sense

Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?

TU AlumniClub supported the BTA, besides it was a TU internal innovation.

Do you have plans to further develop the initiative? If so, what are they?

More categories are planned for the BTA in the future in order to be able to diversify the appreciation.

Any additional information

At the beginning, the categories Best Teaching Award and Best Lecture Award were up for nomination. Since the COVID pandemic, the Best Distance Learning Award has been set up instead of the Best Lecture Award.

Digital Skills Trainer Training - certificates for teaching skills (Austria)

Key facts about the initiative	
Country	Austria
Name of the initiative (in English/in the local language)	Digital Skills Trainer Training - certificates for teaching skills
Website (if available)	
Name of organisation implementing the initiative	Johannes Kepler University (JKU), Linz, Austria
Year it started and ended/is expected to end	Ongoing since ~2016
Contact	office@idb.edu
Short summary of the initiative	
<p>Students are offered a specialized training to make them employable as tutors for various blended-learning and e-learning scenarios across study programs, faculties and disciplines. The initiative is part of a comprehensive project at JKU (called "MUSSS") aiming to offer wide parts of numerous – mostly Bachelor-level – study programs as blended-learning or e-learning alternatives, including customized study material and tutoring offers. Within the initiative "Digital Skills Trainer Training", future tutors receive extensive training (6 or more ECTS) in the following subjects: Didactics, Online Communication, Media Design & Content Creation, Law, Learning Techniques and Course-specific skills.</p>	
Why was the initiative launched?	
<p>We introduced the Digital Skills Training for students to become valuable tutors for various blended-learning and e-learning scenarios. Keeping up with the fast-moving development of technological advances and diverse opportunities of teaching and learning methods and settings offered by JKU were also part of the reasoning. Tutors should be enabled to take over numerous activities throughout the supported courses in order to assist teachers in various ways, from technical questions over didactical and content creation aspects to legal and communicational considerations. They should become experts in JKU's LMS (Moodle) and diverse other e-learning tools, advising the teachers on course-specific circumstances.</p>	
What are key achievements?	
<p>Centralized training for tutors of various subjects and courses allows for consistent skills and knowledge. Course-specific lessons complement the generic subjects. The digital skills taught in the trainer training not only help students to become better tutors, but also help them in future work settings. Educating students to become tutors also forms future junior scientific staff.</p>	
What do you think were the key success factors?	
<p>Students were incentivized with very flexible learning paths and different ways to fulfil their learning agreement. They get certified to be able to demonstrate their skills. Moreover, teachers were provided with additional tutoring hours compared to earlier approaches.</p>	
What do you think were the barriers?	
<p>Teaching staff sometimes need to rethink their traditional ways of teaching. Not always are they open to new ways of knowledge transfer, new methods and tools, or working together with student tutors. However, given the quality of the tutors' education, most sceptics could be convinced.</p>	
Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?	
<p>No</p>	
Do you have plans to further develop the initiative? If so, what are they?	
<p>The initiative is in a constant process of development. New forms of blended learning and e-learning become known, new tools and methods emerge and new subjects and courses join the project which brings in new students, tutors, and teachers.</p>	

INOVUP (Slovenia)

Key facts about the initiative	
Country	
Name of the initiative (in English/in the local language)	Innovative Learning and Teaching for Quality Careers of Graduates and Excellent Higher Education (INOVUP) <i>(Inovativno učenje in poučevanje za kakovostne kariere diplomantov in odlično visoko šolstvo (INOVUP))</i>
Website (if available)	http://www.inovup.si/en/
Name of organisation implementing the initiative	Units at all four public higher education institutions in Slovenia. In addition, more than 20 other HEI are involved.
Year it started and ended/is expected to end	2018-10-01 -- 2022-09-01
Contact	inovup@uni-lj.si or practice coordinator directly tomaz.dezelan@uni-lj.si

Short summary of the initiative

Supporting the innovation of teaching and training. Units at all four public higher education institutions in Slovenia. In addition, more than 20 other HEI are involved. The units most actively contributing are the units for educational development (T&L) and QA at the level of universities, all relevant research institutes in the field of T&L. Programme coordinators, vice-deans of education and human resource development services of universities and member faculties are also involved.

Key objectives:

1. Innovation in teaching and learning
2. Teaching and learning excellence
3. Teaching and learning adapted to students, different target groups and different disciplinary backgrounds
4. Improvement of T&L in terms of better and more relevant skills and competences' acquisition

Activities:

- Implementation of trainings and creation of multipliers, which will help to introduce more flexible and innovative forms of learning and teaching in Slovene higher education institutions. At workshops, higher education teachers and other employees learn how to use modern forms, methods and approaches of teaching, resulting in improved key competencies of students for lifelong learning. Multipliers are trained at foreign higher education institutions and disseminate the gained knowledge into the Slovene Higher Education Area.
- Analysis of the situation, which is carried out for all project partners and interested higher education institutions in order to define the current situation regarding the promotion of innovative pedagogical approaches, methods and forms of teaching. Based on the analysis and other project activities, a strategic document of the training of higher education teachers and other employees for teaching in higher education in Slovenia will be prepared by the end of the project.
- Establishment and operation of the Project Council for expert and substantive monitoring of project implementation as well as promoting strategic alliances between consortium partners. The Project Council is responsible for the implementation of activities in accordance with the latest findings in higher education didactics.
- Preparing materials on higher education didactics from all fields of study, considering the results of the carried out situation analysis and the use of the established modern, flexible and innovative forms of teaching and learning, disseminated by trainers and multipliers. The latter will enable further realisation of modern, innovative and flexible forms of learning and teaching, the establishment of a training system as well as continuous professional development of higher education teachers in pedagogy.
- Raising awareness of the importance of higher education didactics. Through various events and national consultations as well as by publishing expert material on the web page, the consortium is extending modern, flexible and innovative forms of learning and teaching to the Slovene Higher Education Area as well as to other sectors of education.

Why was the initiative launched?

To ensure the transfer of knowledge on innovative and flexible forms of teaching and learning to Slovene higher education teaching staff. The direction of the transfer of knowledge is designed to be from other advanced HEI and HE systems as well as from disciplines/fields (also domestic) that nurture such innovation in teaching and learning. Staff involved will thus gain and improve knowledge, competencies and skills of future graduates that are relevant for a successful integration of young people into society and the labour market.

What are key achievements?

1. Harmonization of support to teaching and learning as well as development across the HE sector
2. Introduction of first comprehensive set (portfolio) of teaching and learning development trainings for HE teachers in Slovenia
3. Evidence-based design of individual as well as sets of trainings in T&L innovation in HETeaching and learning adapted to students, different target groups and different disciplinary backgrounds
4. Extremely productive collaboration of key competing HE institutions / Pooling together scarce resources (trainers, financial, infrastructural) across participating institutions to enable all HE teaching staff in Slovenia free high quality trainings

What do you think were the key success factors?

1. Excellent collaboration of three biggest higher education institutions in delivering the practice
2. Sustained support to HE teaching staff, particularly during the pandemic
3. Holistic support to HE teaching staff with a wide set of trainings, also with ability to design tailor-made trainings
4. Extremely productive collaboration of key competing HE institutions / Pooling together scarce resources (trainers, financial, infrastructural) across participating institutions to enable all HE teaching staff in Slovenia free high quality trainings

5. What do you think were the barriers?

1. Financial and administrative rules regarding inclusion of experts / trainers, key international academic authorities in the field
2. Very moderate support to teaching and learning at HE institution before the practice (some institutions had to start from scratch)
3. Huge administrative burden

If you were to start again, what would you do differently?

Negotiate more goal-oriented administrative and financial rules from the start. Focus on qualitative indicators rather than quantitative ones (which were more or less fixed for us).

Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?

Public funding.

Do you have plans to further develop the initiative? If so, what are they?

What additional evidence would you like to have? Evidence on the impact of our intervention. We're in a design phase of such a study that would assess the long-term impact of teacher trainings in teaching and learning innovation.

Any additional information

We regularly report to university leaderships, key veto-players in dissemination of our practices (vice-deans for education, programme coordinators), key stakeholders (national QA agency, national ministry, Slovenian Rectors' conference). We also report about our activities on a bi-annual basis at our semestral conferences.

National Forum for the Enhancement of Teaching and Learning (Ireland)

Key facts about the initiative	
Country	Ireland
Name of the initiative (in English/in the local language)	National Forum for the Enhancement of Teaching and Learning
Website (if available)	www.teachingandlearning.ie
Name of organisation implementing the initiative	
Year it started and ended/is expected to end	2012 - Ongoing
Contact	Admin@teachingandlearning.ie
Short summary of the initiative	

Ireland's National Forum for the Enhancement of Teaching and Learning in Higher Education was formed by ministerial order in November 2012. The announcement of the establishment of the National Forum represented the beginning of a new era for Irish higher education. Ireland's National Strategy for Higher Education to 2030 had outlined the importance of ensuring the centrality of teaching and learning in Irish higher education and the National Forum became the national body responsible for leading and advising on the enhancement of teaching and learning across the sector.

Vision

A valued and informed teaching and learning culture in Irish higher education

Mission

To lead the enhancement of teaching and learning in partnership with students, staff and leaders in Irish higher education to develop an inclusive, collaborative and innovative culture that maximises learning impact for the success of all students

Key Strategic Priorities

The Professional Development of All Those Who Teach

Promoting evidence-based, flexible, inclusive professional development for all those who teach, reflecting the contextual needs and drivers within and across higher education institutions

Teaching and Learning in a Digital World

Supporting those who learn, teach, and support learning to embrace and harness the potential of digital technologies with the goal of enhancing learning, teaching, and overall digital capability

Teaching and Learning Enhancement Within and Across Disciplines

Recognising that disciplines are a key unit of change in higher education, with a focus on disciplinary excellence in learning, teaching and assessment

Student Success

Developing a vision of success, in partnership with students, with the aim of providing all students with the opportunity to fulfil their potential and become creators of new knowledge who are community engaged, ethically conscious, professionally competent and equipped to flourish in a global world

Why was the initiative launched?

To support the enhancement of teaching and learning in higher education in Ireland

What are key achievements?

The success of education for students and society is dependent on the teaching and learning experience. It is the central mechanism through which engagement in education supports 'people to reach their full potential', prioritised in the mission of the Ministry in Ireland

- On a practical level, the existence of the National Forum adds value to the work of the Ministry and the Higher

Education Sector in many ways

1. It has credibility with the sector - It acts as a link between national and local policy and practice – ensures that national developments are understood by the wider HE community and that national decision-making is informed by the experiences and views of those who teach, learn and lead.
2. It keeps the sector informed and up to date - It gathers evidence related to teaching and learning that informs important decision-making, e.g. the INDEX Survey of the digital experiences, engagement and expectations of close to 30,000 students and staff is a unique dataset – no other country that we are aware of has this glimpse in to the digital lives of its sector immediately before the pandemic.
3. It optimises use of funding - It ensures funding is directed in ways that make it most impactful and that funding structures and processes are endorsed by those who will engage with them, e.g. SATLE.
4. It is crucial to ambitions re digital transformation - It has been at the forefront of all developments with respect to digital in higher education since 2013, building evidence, collaboration and expertise. Ireland is now ahead of the curve internationally in this regard.
5. It has well-established, effective approaches to mainstreaming - Through strategic alignment, evidence building, fostering understanding, and building capacity and capability, massive strides have been made in areas such as student success, assessment, building digital capacity and enhancing professional development of those who teach.
6. It leverages efficiencies and economies of scale - It facilitates collaborative work across institutions, and the sharing of its outputs, thus maximising the value of human and capital investments in the sector...it is the rising tide that raises all boats with respect to T&L.
7. It works effectively in partnership with students (Partnership with USI, Student Intern, Student Associate Assembly)

- **The National Forum has a significant contribution to make to the sector's recovery from the pandemic**

The spotlight has been on teaching and learning in the last year and the importance of the structures, supports, design, assessment, staff professional development, etc. is now better understood by everyone. Institutions are now considering the optimal balance to strike between in-person and online/remote teaching and learning and how to ensure equity of provision across the sector into the future. National guidance and opportunities to share learning and collaborate, which the National Forum provides, will be crucial on topics such as developing agile curricula, re-thinking assessment, supporting professional development, building digital capacity and capabilities.

1. The National Forum led a sectoral partnership project (November 2021) to agree the next national teaching and learning strategy, to be developed in collaboration with the ministry <https://www.teachingandlearning.ie/VITAL/nextsteps#!/inav>

- **The National Forum has a significant contribution to make to talent.**

As needs with respect to talent and skills are identified, higher education institutions need to be in a position to respond effectively. The National Forum is focused on supporting agile, responsive curricula, assessment and teaching approaches that underpin this ability to meet evolving talent and skills needs.

It is unlikely that we can optimise the potential that lifelong learning offers without the necessary teaching and learning infrastructure and support, and without continuous professional development for all staff who teach.

- **The National Forum has a significant contribution to make to innovation.**

Enhanced teaching and learning is a primary driver of success across innovation and research. An appreciation of the synergies between teaching and learning, innovation and research is fundamental to higher education optimising its impact and leveraging its full value for generations of the future. The National Forum has a longstanding collaborative relationship with the Irish Research Council, which has leveraged these synergies.

- **The National Forum has a significant contribution to make to inclusion.**

The National Forum has worked closely with the Access Section of the Ministry over recent years to develop a national understanding of student success for all students in HE. The National Forum will be working with the HEA to guide institutions in the formulation of whole-of-institution strategies for student success over the coming years.

Universal design for learning (UDL) is generally now accepted internationally as key to fostering inclusion in education. The National Forum has been working closely with AHEAD to build capacity in UDL among all staff who teach in Irish higher

education and related resources and guidance have been exceptionally popular due to its relevance for all those who teach in all contexts for all levels of education.

Open education is also a key facilitator of access, equity and inclusion. The National Forum is an international leader in this space and is building capacity across the sector to ensure teaching, learning and assessment approaches have an open approach from which all can benefit.

What do you think were the key success factors?

Collaboration, shared vision and trust . Evidence-based decision making. Believing in the people who work within the HE sector and in their capacity for enhancing HE. Developing agreed structures and frameworks to work with. Having strong partnership with students and other key players in the sector.. Building staff capabilities in accessible ways. Focusing on moving 1000 people one step forward rather than a few a 1000 steps forward. Recognising we are stronger and smarter together.]

What do you think were the barriers?

Lack of sectoral and system alignment

If you were to start again, what would you do differently?

Take a principles based approach to provide alignment and ensure Learning and Teaching has an explicit funded National Strategy developed and agreed through consultation but situated at policy level by the Ministry with an associate and agreed performance framework for the Higher education sector.

Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?

Yes, the National Forum was established by the Ministry and T&L has benefitted from dedicated enhancement funding.

Do you have plans to further develop the initiative? If so, what are they?

The National Forum is now receiving recurrent funding (since Jan 2022) by the Ministry and has been transferred under the umbrella of the Higher Education Authority in Ireland <https://hea.ie/> (The HEA leads the strategic development of the Irish higher education and research system with the objective of creating a coherent system of diverse institutions with distinct missions, which is responsive to the social, cultural and economic development of Ireland and its people and supports the achievement of national objectives. The HEA has a statutory responsibility, at central government level, for the effective governance and regulation of higher education institutions and the higher education system).

It remains to be seen how the National Forum will continue to develop.

Any additional information

The National Forum has developed frameworks across each of its strategic priority areas, each of which focuses at a different level (individual/discipline/institution)

At the **individual level**, the National Forum developed the [National Professional Development Framework for all Staff Who Teach](#) (see also, one-page overview [here](#)) in 2015. The Framework was published after two years of consultation across the sector and the development of a strong evidence base. This consultation process and the resulting Framework served to foster understanding with respect to the domains of professional development a person might like to focus on, the elements involved in each, and the levels and types of professional development that can be engaged with.

The Professional Development Framework now underpins a range of PD Open Courses that those who teach can engage with, each course involving 25 learner-effort hours, each linking to particular domains of the Framework and each focused on a topic of particular interest. The range of Open Courses, their content and structure can all be viewed on a dedicated interface [here](#).

At the **discipline level**, the National Forum developed the [Disciplinary Excellence in Teaching, Learning and Assessment \(DELTA\) Framework](#) in 2017. The DELTA Framework was rooted in the consultation around professional development and a concurrent consultation on building digital capacity which took place up to 2015 (see on that more [here](#)). It was recognised that the discipline is the key unit of change within any institution and the practices and priorities at discipline level can be influential both on individuals and on the wider institution.

The DELTA Framework now underpins the [DELTA Award](#), which is presented to discipline groups who can demonstrate a record of excellence in teaching and learning enhancement and who commit to an ongoing, clearly articulated, shared process of continued enhancement.

At **institutional level**, following an expansive exploration of the literature, policy/strategy documents, and student perspectives (see report [here](#)), the National Forum recently developed a [Guiding Framework for Embedding Student Success](#). This Framework recognises that if the success of students is to be achieved, a whole-of-institution approach must be taken, encompassing enabling institutional capabilities, enabling institutional culture, and enabling institutional practices.

This Framework is currently being used as a base for an accompanying toolkit <https://studentsuccess.teachingandlearning.ie/> which institutional communities can use to guide their enhancement efforts in a holistic manner.

At **Sectoral/System level** the National Forum led an sectoral collaborative project to develop a shared vision for the enhancement of teaching and learning across all stakeholders in Irish Higher Education. Details and outputs of the project Next Steps for Teaching and Learning: Moving Forward Together is available at <https://www.teachingandlearning.ie/VITAL/nextsteps#!/inav>.

Other exemplars of National Forum publications:

- A report on students' perspectives on excellent teaching, based on an exploration of approximately 4,000 nominations to our student-led Teaching Hero Awards: [‘Making A Difference’ A Student View of Excellent Teaching](#)
- National Forum Insights on the concept of impact, resulting from an exploration of the related literature and discussions across the sector:
 - [Evidence-based Insights About Impact in Teaching and Learning](#)
 - [Insights from Practice About Impact in Teaching and Learning](#)

For all publications please visit the National Forum Resource Hub and publication at <https://hub.teachingandlearning.ie/rescat/national-forum-publications/>

Pedagogical Meetings, University of Trás-os-Montes and Alto Douro (Portugal)

Key facts about the initiative	
Country	Portugal
Name of the initiative (in English/in the local language)	Pedagogical Meetings “ <i>Tertúlias Pedagógicas</i> ” at the University of Trás-os-Montes and Alto Douro
Website (if available)	https://grupomea.utad.pt/tertulias-pedagogicas/
Name of organisation implementing the initiative	Grupo MEA & Pro-Rectory for Pedagogical Innovation (previously Pro-Rectory for Quality)
Year it started and ended/is expected to end	2019 (ongoing)
Contact	jcravino@utad.pt ; prip@utad.pt
Short summary of the initiative	

The Pedagogical Meetings (“*Tertúlias Pedagógicas*” in Portuguese) are informal meetings of teachers and other people interested in teaching and learning at the university. These meetings are convened through an open invitation sent by email to all the staff at the university and are also advertised in the university’s event agenda. The meetings are open to everyone, including students, researchers and non-teaching university staff. There is usually one meeting in each season of the year (from Autumn to Summer). Each meeting has a topic specified in the meeting invitation. Usually there are also links to short articles or videos relating to the meeting topic, as a means to inform the participants and help start the discussion at the meeting. The meeting opens with some remarks made by the organizers and then the discussion continues freely, with only light moderation. The meetings last for one and a half to two hours and were initially held in an open-space room at the university campus. Then the pandemic forced the meetings to go online at the Zoom platform.

The meetings are organized by the members of Grupo MEA (Group for the Improvement of Teaching and Learning). This is a group of people interested in improving teaching and learning at the university, invited initially by the Pro-Rector for Quality and currently by the Pro-Rector for Pedagogical Innovation, who are responsible, among other initiatives, for the organizing the Pedagogical Meetings (“Tertúlias Pedagógicas”).

Why was the initiative launched?

The Pedagogical Meetings (“Tertúlias Pedagógicas”) were created to promote a forum where teachers and other people interested in teaching and learning at the university could discuss topics relating to these issues and share their experiences. There was nothing similar at the University of Trás-os-Montes and Alto Douro (UTAD) and a lot of people felt that such forum was necessary. Most teachers at UTAD lack formal pedagogical training but many felt that they needed some.

What are key achievements?

For the first time, teachers and other interested people have an informal forum, where they can discuss openly about teaching and learning at the university. Everyone can contribute to the discussion by talking about their difficulties, experiences and successes. Teachers from different areas and backgrounds are brought together in these meetings, where they can share their experiences and find other people who share their concerns or have similar problems. This helps in reducing a frequent sense of isolation among university teachers, by promoting interdisciplinary dialogue and exchange of ideas. Sometimes experiences and solutions are presented, that other people may find useful and use in their own teaching practice.

What do you think were the key success factors?

The key success factor is the informal and participatory character of the meetings. A contributing factor is the variety of themes that were discussed in the Pedagogical Meetings.

What do you think were the barriers?

Some people would like the meetings to lead to solutions for their problems, but this is not the goal of these meetings, even if proposals may be discussed and taken to other forums.

If you were to start again, what would you do differently?

A more structured organization process would probably help. One possibility is to define a calendar of meetings for the year and in each meeting discuss and (pre-)define the topic for the next meeting.

Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?

No.

Do you have plans to further develop the initiative? If so, what are they?

Yes, this is an ongoing initiative that we intend to promote regularly at UTAD. The main challenge is to have more people participating in each Pedagogical Meeting (“Tertúlia Pedagógica”). We will continue to fine tune the themes addressed and the format of the meetings to make them more relevant and appealing to a wider range of participants.

Strategic Education Development Center at the TU Vienna (Austria)

Key facts about the initiative	
Country	Austria
Name of the initiative (in English/in the local language)	Strategic Education Development Center
Website (if available)	https://www.tuwien.at/studium/lehren-an-der-tuw
Name of organisation implementing the initiative	Technische Universität Wien
Year it started and ended/is expected to end	2019 -

ContactShabnam.tauboeck@tuwien.ac.at**Short summary of the initiative**

The Strategic Education Development Center reports directly to the Vice-Rector for Academic Affairs. Development, optimization and evaluation of all processes in the area of teaching and learning are handled here, and the necessary support services are developed and implemented.

The main topics are:

- Training of lecturers in higher education didactic competences and individual consultancy services.
- Central teaching and learning room management, teaching schedule coordination, the use of lecture rooms as learning rooms
- Preparation and evaluation of study-related data for strategic decision making as well as design, development and optimization of processes within the Vice-Rectorate for Academic Affairs. Furthermore, the evaluation and continuing improvement of processes and the associated strategy development and change management.
- Quality management in teaching and learning – this comprises the Best Teaching Awards, the regular evaluation of courses and exams, the ECTS workload survey and the newly established peer review procedure for study programs, all of which are developed, carried out and monitored.
- Design of the admission procedures for Bachelor's degree programs at TU Vienna as well as specific actions to support studyability.
- Digital teaching and learning: The number of tools on offer is constantly being expanded, existing tools are being further developed and training and support for their use is being provided.
- Crisis management and coordination of online teaching and testing during the COVID pandemic and provision of guidance, orientation, training and tools.
- Implementation of the strategy for the digitalization of teaching and learning at TU Wien.

Why was the initiative launched?

The genesis of the Strategic Education Development Center actually began back in 2013 when a new position was created at the Vice Rectorate for Academic Affairs in order to reorganize reporting and the determination of key indicators. Over time, the responsibilities grew to also include process management in all matters concerning academic teaching and learning, quality management in teaching as well as didactics in higher education - it became more people and even more tasks. Due to this increase the Strategic Education Development Center was established in order to bundle all projects and topics that were located in the Vice Rectorate for Academic Affairs at that time in one department. This consolidation allows synergies to be optimally exploited and processes to be developed and established efficiently and quickly. The 5 main areas of responsibility are located in individual units:

- Didactics in higher education
- Central room management for teaching and learning
- Quality management, process management and strategic project management
- Student admission and performance management
- Digital Teaching and Learning

What are key achievements?

The most important achievements of the Strategic Education Development Centre include the introduction of the peer review procedure for the evaluation of study programs, the design and implementation of the current ECTS workload survey for courses and the introduction of the pre-study phase for all Bachelor's programs.

In the area of quality management, student feedback on courses and examinations was revised and introduced, and the best teaching awards are awarded annually.

Another ongoing project in the context of good academic practice is the complete redesign of the digitalized process for writing theses, incorporating aspects of plagiarism prevention and research ethics.

Digitization in studying and teaching are core aspects of all current developments. We were also able to win a major digitization project on predicting academic success with a duration of 3 years, which is funded by the Federal Ministry of Education, Science and Research.

What do you think were the key success factors?

An essential factor for the success of the Strategic Education Development Centre is certainly the bundling of all those involved in study-related processes in one department. This promotes efficient exchange and accelerates the well-coordinated implementation of all new developments. The intensive exchange with other departments featuring well-established communication interfaces is also an integral element of the Centre's success.

In addition, there is the direct proximity to the rectorate: several times a week, exchange with the vice rector for academic affairs and regular exchange with the vice rector for digitalization and infrastructure enables fast decision-making and implementation.

What do you think were the barriers?

Probably the biggest barrier to the Centre's work is the distance between the faculties and the central administration. However, since some of our staff come from within the faculties - former staff members as well as graduates - we have been very successful in bridging this gap and establishing good communication.

If you were to start again, what would you do differently?

Would it be presumptuous to say that there was nothing major? Maybe we could have started earlier to communicate our output, our results and also the ongoing projects a little bit more loudly to raise our visibility even more, but otherwise I think it worked very well the way it went.

Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?

Maybe indirectly, but definitely very strongly. Many of our plans and projects that we have realized or are currently realizing are driven by national strategies. The national strategy on the social dimension, the digitalization strategy, the requirements for the improvement of study conditions, the requirements for quality and further developments in teaching and learning, to name but a few.

This has led to a continuous increase in tasks, which in turn has led to a single body becoming an entire Centre.

Do you have plans to further develop the initiative? If so, what are they?

Definitely yes. The Strategic Education Development Centre continues to grow and develop, and is highly motivated in pushing forward further developments in the field of studying and teaching at TU Vienna.

IDEA-UMinho Center (Portugal)

Key facts about the initiative	
Country	Portugal
Name of the initiative (in English/in the local language)	IDEA-UMinho Center at the University of Minho
Website (if available)	https://idea.uminho.pt/pt https://twitter.com/IdeaUminho https://www.facebook.com/ideauminho
Name of organisation implementing the initiative	University of Minho
Year it started and ended/is expected to end	Inaugurated in 2017, not expected to end
Contact	idea@reitoria.uminho.pt
Short summary of the initiative	

The center IDEA-UMinho was created in 2017 with the primary goal of promoting the development and valuing innovations in Teaching and Learning across the University of Minho. The mission statement of the center then evolved to “the improvement of student experiences at the University of Minho through the support and development of teachers”.

The Center seeks to stimulate innovation in teaching and learning practices within and beyond the university's campi, inside and outside the classroom. By supporting teachers, the IDEA-UMinho Center is committed to valuing teaching as a central part of the mission of the University of Minho. By supporting teachers the center expects to induce organizational changes that increase the parity of esteem between research and teaching learning.

The Center operates in articulation with the university's educational support services, which are in charge of the development of educational technology and provision of educational technological support to the community of the university. The IDEA-UMinho center actions have different typologies and are designed to work as a faculty development system:

- Short (2-3 hours) focused development modules (onsite, hybrid, online) for teachers and for degree directors;
- A project based (15-18h) transformational development module – “Docencia+”;
- Regular peer-learning events;
- Annual call for innovation in learning and teaching projects;
- Induction and support to communities of practice;
- Publication of short materials to disseminate research informed teaching;
- Inter-institutional and international collaborative initiatives;
- Permanent consultancy for individual teachers and departments;
- Support of learning and teaching initiatives and events lead by the schools or departments of the university;
- Participation in national and international academic development events,
- Support of scholarship of teaching and learning.

Why was the initiative launched?

The center IDEA-UMinho was established when there was a perception on the part of the Rectorate team that teaching functioned essentially through traditional practices and that it was necessary to make an effort to change the situation.

This need was motivated by internal circumstances but also by the perception that the university needed to take action as other universities in Europe already integrated projects and centers with this mission.

What are key achievements?

The key achievement is the systemic increase across the whole university of the conviction that research informed quality teaching is important and is possible for all who wish to develop in that direction.

The systemic growth of this conviction results from several factors:

- of the approximately 1300 university professors, several hundred have already been involved in the center's activities or at least participated in some of its initiatives
- the pedagogical governing structures of the Schools are committed to the innovation process of teaching and learning and recognize and support the activity of the center
- the student association of the University of Minho participates in the planning of the center's activities and students are involved directly in some initiatives, such as a teacher training initiative in which students are tutors of teachers in projects for the transformation of curricular units
- the center's articulation with educational support services increased and enhanced the offer of Pedagogical Innovation and Technological Innovation opportunities benefiting from the perspective of teachers and support technicians in the co-design of activities
- the center adopts a snowball strategy for its dissemination, which resulted in a significant involvement of several university professors in the organization and delivery of activities as well as in initiatives that they organize within their schools within the scope of pedagogical innovation
- there are consolidated collaborations with Pedagogical training structures from other Portuguese higher education institutions
- there is a growing interest from international partners in collaborations and networking activities

What do you think were the key success factors?

The main success factor was the adoption of a mindset that the center's activity would aim at creating a community of professors involving the entire university and that, therefore, the center's initiatives would have as their main objective the

promotion of collaboration between professors from different schools and departments, with the aim of improving teaching practices

In addition, the commitment of the leadership of the university as a whole is crucial at the level of the rectoral team and the Pedagogical leadership structures in the different schools with the process of pedagogical development and innovation with regard to the way the center operates, the involvement of teachers from different organizational units and with different perspectives and experiences in terms of pedagogical innovation is crucial

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it is also important the permanent and intentional work so that the center appears associated with other centers of innovation in Portuguese international education

The experience also revealed the importance of the involvement of students in the reflection, discussion and activities developed by the center is fundamental. Contrary to what happens in other countries in Portugal it is not yet an institutional practice to create units of this nature

What do you think were the barriers?

A fundamental difficulty was the novelty of the concept in the panorama of the institution and the country. which gave the creation of this Center a somewhat pioneering character with its difficulties but also with some advantages

At a given moment it seemed that the only teachers interested in the center were those who had already developed activities with some innovative character. This was a difficulty of the first year and a half of activity for which the diversity of perspectives existing in the team was important to overcome.

A fundamental difficulty is related to the inexistence of human resources specific allocated to the activity of the center. Therefore, the center's activity must always be developed considering the availability of resources whose main function is not the development of teaching and pedagogical training.

With regard to the involvement of professors in the center or in the frequency of activities, there is a lack of formal incentives that greatly hinders the process of transforming pedagogical activities at the university

Finally, the lack of funding in the country for this type of structures or activities associated with it

If you were to start again, what would you do differently?

The center started from a decision by a rectorate team that initially summoned some professors from the university with Pedagogical capacity and with creativity to develop training for faculty across the university. If we could start over, we should do it with a different mindset of developing communities of teachers across the university. In addition, it would be important to engage students from the beginning to foresee the involvement of pedagogical leadership structures in each university school and to consider the articulation of the center with other university services related to support all of those who teach and learn in the university.

Did national policies/programmes/support support the initiation/implementation/development of the initiative? If so, how?

No such policies or programmes exist in the country, which is a critical flaw for the promotion of research informed 21st century teaching and learning.

Do you have plans to further develop the initiative? If so, what are they?

The center would also like to increase its activity in creating and supporting communities of practice for professors at the university, which it has already done in most recent 3 years, and to invest further in the internationalization of its action through networking and developing projects with other centers. Finally, the center would wish to be involved with academic studies to further clarify the impact of its activity.

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119 participants registered from 24 countries: Argentina, Austria, Bahamas, Belgium, Brazil, Bulgaria, Canada, Finland, France, Germany, Hungary, Indonesia, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Nigeria, Portugal, Romania, Russia, Slovenia, the United Kingdom, and the United States. The aim of the seminar was to create room for exchange and peer learning, and – with this seminar brochure – a resource for policy makers and practitioners to support new and further develop existing initiatives that have the potential to widen access to higher education, guide learners in their choices and support study success, particularly during the first year.

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