REPORT 5:
MAPPING OF EXISTING PRACTICES AND DIVERSE PEDAGOGICAL APPROACHES

Report on outcome of partners review of local university pedagogical curriculum and interviews conducted by (ENSTA, TUD, MUAS, AAU) in 11 European STEM universities. Activity 3: Task 2.

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Executive Summary

This report summarises the mapping exercise carried out in 11 Universities in Europe to identify existing practices and diverse pedagogical approaches. The mapping is presented in tabular form to allow comparison between different Universities and different countries. What emerged was a diverse selection of different teaching pedagogies, structures, training requirements and opportunities and finally how students are organised in learning activities depending on the university and the type of teaching approaches used. Looking to the future, there was a focus on digitisation and online teaching, with an acknowledgement that the pandemic has created a situation where academics have moved very quickly to online teaching and that it is here to stay.

1.0 Summary of Overall Research Project

The main objective of the A-STEP 2030 project was to develop new and innovative teaching approaches relevant to learners' values yet appropriate to teach a new set of skills and competencies needed for the future. Our goal was to create an attractive and fascinating learning environment thereby encouraging young people and adult learners with diverse backgrounds to engage in engineering studies and the profession as a whole. The project comprised the following three activities:

Activity 1: Determine future roles and skills requirements of engineers to enhance the sustainable development of society.

Activity 2: Investigate the values and motivations of young people, students and adult learners to determine how this influences their future career choices and use this knowledge to make a career in engineering more attractive to all young people.

Activity 3: Develop new and innovative teaching and learning practices to respond to these findings.

The project consortium has 7 members from six EU countries (France, Denmark, Finland, Ireland, Sweden and Belgium) and 10 associated partners. The team includes four different European HEIs all involved in Engineering Education Research. (ENSTA Bretagne, France, TU Dublin, Ireland, Aalborg University, Denmark and Metropolia University, Finland.) The team is also complemented by representatives from SEFI and BEST (Board of European Students of Technology) which represents HEI students in STEM, and Universum - experts in research relating to student motivations and career choices.

Figure 1 shows the main activities associated with the project. This report focuses on the result of Activity 3: Task 1.
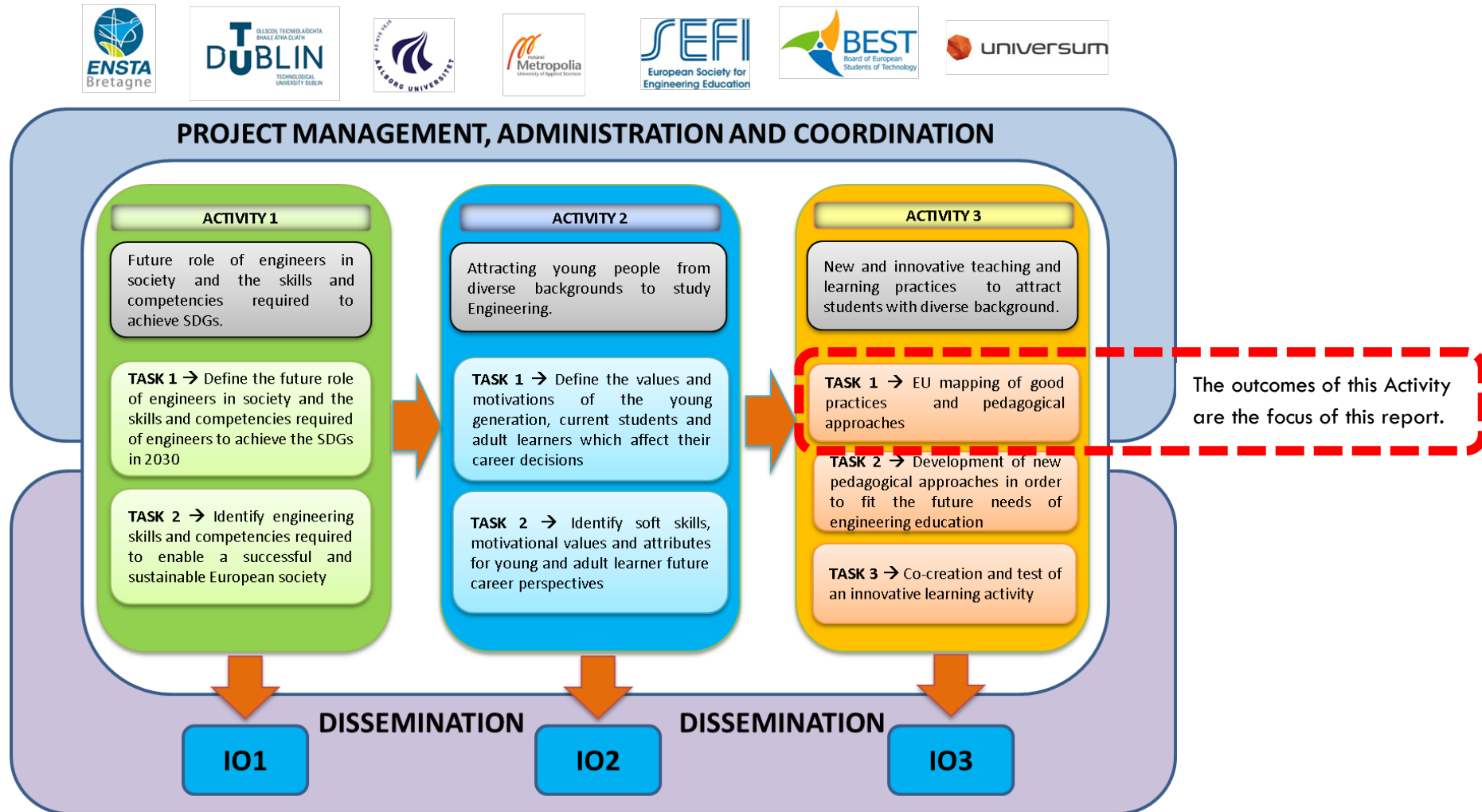
A-STEP 2030 - PERT Diagram

PROJECT MANAGEMENT, ADMINISTRATION AND COORDINATION

ACTIVITY 1

Future role of engineers in society and the skills and competencies required to achieve SDGs.

TASK 1 → Define the future role of engineers in society and the skills and competencies required of engineers to achieve the SDGs in 2030

TASK 2 → Identify engineering skills and competencies required to enable a successful and sustainable European society

ACTIVITY 2

Attracting young people from diverse backgrounds to study Engineering.

TASK 1 → Define the values and motivations of the young generation, current students and adult learners which affect their career decisions

TASK 2 → Identify soft skills, motivational values and attributes for young and adult learner future career perspectives

ACTIVITY 3

New and innovative teaching and learning practices to attract students with diverse background.

TASK 1 → EU mapping of good practices and pedagogical approaches

TASK 2 → Development of new pedagogical approaches in order to fit the future needs of engineering education

TASK 3 → Co-creation and test of an innovative learning activity

The outcomes of this Activity are the focus of this report.

DISSEMINATION   **DISSEMINATION**

| IO1 | IO2 | IO3 |

Figure 1: Overall Project details showing the aims of each activity.

2.0 Aims

This task aims to identify the following:

- What teaching approaches are applied in European engineering education?
- Can patterns be identified – differences / similarities?
- What challenges in particular can be identified in relation to identified challenges (IO1)?
- What is best practice approaches?
- What is an innovative teaching approach?
- What does a picture of pedagogical approaches in engineering education look like?

3.0 Methodological Approach

Based on results from Activity 1 and Activity 2 and a document analysis of the partner universities' tendering and implementation of university pedagogy, a loosely structured interview guide was designed. The interviewers from the A-STEP 2030 partner universities applied this interview guide to structure interviews with respondents. The respondents were selected by the university partners who have the most knowledge of the university in question where the interview was to be conducted. The interviews lasted between 30 - 90 minutes and they were all transcribed and categorized according to the themes of the interview guide. NVivo was used for a more detailed and structured analysis of the interviews.

The Universities included in interviews for this analysis were selected by project partners as Universities which offered diverse approaches in each country. They are:

AALTO University in Helsinki, Finland

Aalborg University in Aalborg, Denmark

Absalon University Coellge in Kalundborg, Denmark

Budapest University of Technology and Economics in Budapest, Hungary

ENSTA, Bretagne, France

Institute of Technology Sligo, Ireland

KU Leuven, Belgium

Metropolia University of Applied Sciences in Helsinki, Finland

TU Dublin, Ireland

University of Limerick in Limerick, Ireland

University of Southern Denmark in Odense, Denmark

4.0 Mapping

The mapping is presented in tabular format to allow comparison between Universities and includes a summary and relevant quotes where appropriate.

4.1 Respondents interviewed for the mapping

The Respondents selected for this analysis have different backgrounds; education and employment. The biggest difference that is reflected in the respondents' answers is whether they have an administrative or academic employment. Administrative staff respondents have more focus on structure and strategy where the academic staff have more detailed knowledge in teaching approaches. Overall, the difference in respondents provides a more nuanced picture of the activities of EU universities.

Background information about the interviewee	FI	Head of Teacher Services and Matrix superior of [REDACTED UNIVERSITY] pedagogical training team
	FI	Director, Lifelong Learning
	FR	Associate professor, Head of the bachelor level educational program, 23 years of teaching experience
	HU	Assistant professor, deputy head of the department for education, 10 years of teaching experience
	B	Associate professor, Applied mechanics, 15 years of teaching experiences
	DK	20 years with teaching & 11 years as an educational consultant
	DK	Head of education for the diploma engineering programs
	DK	Associate professor, Teaching experiences of 15+ years within different subjects
	IE	Teaches on an engineering programme 13 Years of teaching experience
	IE	Teacher (Quality (Lean, Six Sigma etc.) , Statistics 15 years – all online.
	IE	Lecturer in Teaching Pedagogy as part of Learning and Teaching Centre 18-19 years

4.2 Teaching method at European STEM universities

Teaching approach: The question HOW does teaching take place at your institutions? The interviews show a diverse picture of how teaching and learning activities are organised and performed at various universities. The variation is found in a range from - no single approach to teaching; and, the teacher has the responsibility of choosing a suitable pedagogical solution; through, tradition governs approaches; to, specific models such as CDIO, DSMI, PBL.
Common to all universities is that they all give lectures some perhaps more traditional than others. Lectures are something everyone mentions, but therefore they are not necessarily the most frequently performed teaching activity at all universities. Another activity which is common to all universities are the laboratory exercises / practical exercises but it is not elaborated how such exercises take place. Most universities mention project work or studio as a learning environment for the students and some qualify this as learning activities such as CDIO, DSMI and PBL approaches. Some universities mention a strong influence and support from industry and most mention digitalization and online learning not least in relation to the pandemic.

Examples of teaching approach (methods) at the	FI	There is no single approach to teaching in this university. The tradition is that teaching has been more discipline-focused, but nowadays it starts to be more towards multidisciplinary aims.

various interviewed universities	FI	The teacher has the responsibility of choosing a suitable pedagogical solution (method and activities) based on the learning objectives of the curriculum Simulation pedagogy is highly advanced, now in the social and health care programmes. Simulation exercises are possible to be organised even online at the moment.
	FR	We have traditionally a practice-based pedagogical approach with a strong influence and support of industry because of our technical domains/specialisations represent key areas in industry. We have specialised workshops (e.g: mechanical conception, fluid mechanics or dismantling room) for practical teaching. We have relatively few crosscutting courses.
	HU	There is 40% of lecturer gathering the whole promotion in a lecture room and 60% of practical work (in laboratories and project work)
	B	It is really about problem solving and design. Students have to be interdisciplinary with a very good scientific basis. 40% of lecturers, 40% exercises and 20% project works) Cross cutting activities: mainly interdisciplinary projects during the first 3 semesters.
	DK	DSMI model 33% study work 67% course work (lessons / lectures) Teaching for the first 12 weeks, so there are usually 3 weeks without teaching for project work
	DK	Ped. Model (inspired by SDU DSMI) Classroom teaching groups at max. 40 students. Project work in some courses (purely project-based) Laboratory work (completely practical) 4 large group projects (through engineering education) based on real cases in 1-2-4-5 semesters + bachelor project in 7th semester. Confrontation time: approx. 24 lessons / week with teacher (most weeks are the same scheduled) Study activity model varies from semester to semester, usually approx. 33% teacher-led
	DK	Explicit strategy for implementing PBL – all employees have to act out PBL 50% = PBL project work 50 % = courses which include labs. are often organised with a student centered approach
	IE	A mix, but Problem Based Learning, CDIO, has a very strong core through the program. 30% studio – "we see this as a driver for learning, if you get the studio right, it drives a lot outside of the studio itself, labs tutorials, lectures" "this remains the most significant part of the programme" 15% labs 15% tutorials 40% lectures (although named "lecture" there are variations of pure lectures and flipped classroom) Sometimes there are cross cutting projects, but the marks for that project are allocated within each individual module
	IE	[REDACTED UNIVERSITY] has invested significant funding into online teaching. Now approx. 50% online and 50% physical classes (pre COVID). Online, it tends to be live lectures using breakout rooms, flipped classroom etc. similar mix in physical classes. "We really do stress the live lectures, we really think live is important. The academic staff are expected to give live lectures"
	IE	Mainly lectures but with the caveat that they are not always very traditional lectures, they are split up with small group working, lots of student interaction. [REDACTED UNIVERSITY] also has lots of tutorials and practicals, computing labs and so on mixed into modules. 25% lectures, 25% labs, 25% tutorials, 25% practicals

4.3 The structure of the educations

Structure: The most common overall structure is two semesters in an academic year but the length of a semester range from 15 to 21 weeks incl. exam period, which is normally a period of three weeks. There is though, an example of a structure if five periods in an academic year where one period is about 7 weeks and another were one semester has four + one periods where a period is approximately 8 weeks. In some universities, summer courses are offered.

Again the interviews reflect a structure of the three overall teaching and learning activities. The lectures; laboratories exercises and practical curses/project work which, however, has different weightings at the different universities. Lectures are performed 25% - 40% of the time but some universities are running lectures as part of modules which also includes laboratories exercises. The practical courses/projects work is performed in 50% - 60% - which might also include laboratories exercises.

It seems as the universities interviewed have different views on where laboratories exercises belong – as a part of the practical course/project work or as a part of the lectures/courses. This different view affects the various % of lecturing and project work.

Examples of structure at the various interviewed universities	FI	[REDACTED UNIVERSITY] has 5 periods in the academic year, one period is about 7 weeks. Summer course offerings have been increased lately. Students typically have 3 courses in one period Digitalisation, blended-learning and multidisciplinary take central role in the university development. The new normal is blended learning.
	FI	One semester has 4 + 1 periods. The summer period in use, where there are courses organised by [REDACTED UNIVERSITY] and a consortium of three metropolitan area universities of applied sciences together One period is approximately 8 weeks.
	FR	Two semesters of 16 weeks in the academic year. 25% amphitheatres (for the whole students cohort = appr. 200 students/year). - 10-15 % resolution of exercises related to theoretical courses (mainly calculations) in group (limited to 22 students) - 60% practical courses
	HU	There is 40% of lecturer gathering the whole promotion in a lecture room and 60% of practical work (in laboratories and project work)
	B	We have two semesters with 15 weeks (from 21st September – end January & 1st February – end June. I is a year based system
	DK	5 ects course = 48 hours teaching - 4 hours teaching / week Scheduled 16 hours + possibly. Laboratory exercises remaining time project + self-study fixed schedule 2 semesters / year in 15 weeks + 3 weeks exam on top
	DK	Mix DK + international students in projects in 5th semester. Some courses read together in English (some resistance from DK students) Two semesters / year 13 weeks teaching + exam / exercise period 3-4 weeks Fixed weekly schedule (most weeks) e.g. 8 lessons math + 8 physics + 8 project, often several hours for project at the end of semester
	DK	2 semesters of 20 – 21 weeks incl. approx. 3 weeks for exams 50% = PBL project work 50 % = courses are often organised with a student centered approach 15 ECTS PBL project 3x5 ECTS courses – student centered Capstone projects 30 ECTS

	IE	2 semesters, 15 week semester which has 13 teaching weeks and 2 exam weeks. Notionally 12 teaching weeks and 1 review week, so some teaching still takes place in that week, but review type classes – no new material. "For example in third year, one semester is based around a large project, but 5 modules feed into that project. There is one design studio for the project, but it covers all modules in the semester."
	IE	2 semesters per academic year. 12 teaching weeks 1 x reading week 2 weeks on top of that for exams. Modules are typically 5 ECTS or 10 ECTS and are independent of others, i.e. are all assessed individually. They run over the course of a full semester or full 2 semesters A capstone or final year project may well be 10 ECTS
	IE	2 semesters of 12 weeks teaching with 1 week reading week. 2 weeks of exams. Most modules in undergraduate courses are 5 or10 ECTS. A mix of lecture theatres, group room, computing labs and physical labs. It depends on which building you are in, some are modern, some very old.

4.4 Strategies for pedagogy

A common answer is 'the university does not have a separate pedagogical strategy' or ' there is no officially defined educational approach.' Most universities do not have a strategy for their pedagogical approach. It seems to be informally organised and takes place in joint pedagogical discussion and, teachers who are encouraged to share good practices. Most often each teacher develops their pedagogical program in function of the subjects, where the most adequate solution is found.

However, some universities indicate changes and refer to actions or activities such as 'important changes in our pedagogical approach into a research-based pedagogical approach' or 'The President was really pushing for major change in teaching' or 'at the moment an Educational Model in which there is a curriculum framework and so at a strategic level, we are looking to bring leading edge educational development into practice'. While at some universities there seems to be a change going on, others have implemented and engaged everyone in the pedagogical approach - CDIO. One university has an explicit strategy that all educations must be designed according to a PBL Model and that all teachers must implement PBL in the learning activities.

	FI	[REDACTED] University does not have a separate pedagogical strategy Digitalisation, blended-learning and multidisciplinarity take central role in the university development. The new normal is blended learning.
Strategy for pedagogy at the various interviewed universities	FI	There has not been a joint pedagogical discussion in the institutional level lately. Pedagogical research is ongoing about MINNO projects and innovation as well as in different RDI projects of [REDACTED UNIVERSITY] [REDACTED]'s strategy 2021-2024 has a focus in lifelong learning, in high quality learning and learner-centered approach in teaching. [REDACTED UNIVERSITY] strives for a demand-driven education portfolio and a learner-centered guidance model. The teacher is encouraged to share good practices. Transparency is one of [REDACTED UNIVERSITY]'s strategic values. The quality of learning is at the core of everything and pedagogical solutions applies it.
	FR	The pandemic situation. In our school, we have new equipment in the teaching rooms for online teaching We will have important changes in our pedagogical approach into a research based pedagogical approach (that is written clearly in our school's objectives for the next five years).

	HU	There is no officially defined educational approach, each teacher develop his pedagogical program in function of his subjects (find the most adequate solution).
	DK	Everyone is involved in [pedagogical development] CDIO member - development in project courses Prepares development of networks / conferences with CDIO
	DK	[REDACTED UNIVERSITY] has a strategy that all educations must be designed according to the [REDACTED UNIVERSITY] PBL Model and that all teachers must implement PBL in the learning activities. There are, of course, different flavors of PBL in the various degree programs. But the structure of 50% PBL project work and 50% courses are the general structure PBL is integrated as an explicit learning goal in all curricula
	IE	Trying to focus on good pedagogical approaches when lecturers are under pressure to research and produce research output "The President was really pushing for major change in teaching, but whether it would be successful I don't know" "There are pockets of great activity happening in every single programme so that's not in doubt, but it was to have a more consistent set of engaging activities in all programmes, such as interdisciplinary modules cross faculty"
	IE	Online teaching is here to stay, but undergraduates especially need physical classes too. Students will be much more discerning about coming in for physical classes, particularly postgrads. When they attend class, they will want a rich experience, they won't stand for chalk and talk type of lecturing. Students won't stand for that. The technology itself isn't that new, but it's not only about the technology, it's about how we use it. And the forced move to online has meant many lecturers have gone online as a necessity.
	IE	There is work going on at the moment on an Educational Model in which there is a curriculum framework and so at a strategic level, we are looking to bring leading edge educational development into practice. Then you have the centres for Teaching and Learning where we offer courses, workshops, webinars and accredited programmes so people can pick and choose. We have a CPD Framework which aligns with a National Framework for Teachers Professional Development in Higher Education."

4.5 Pedagogical training for academic staff

Pedagogical training of academic staff: In this question, it seems to be a 50-50% response to whether pedagogical training is compulsory for academic staff. There is also great variation when it comes to the range and scope of the pedagogical training offered. Some of the programs offered are quite extensive 60 ECTS whereas others are typically short (1-2 days) training or online training (webinars). However, there is a strong recommendation at universities where training is not compulsory and for the universities where pedagogical training is required, it is most often in connection with a permanent position as an associate professor. Furthermore, academic staff is encouraged to attend SEFI, ETALEE and CDIO and some universities have Centre for Teaching ect..

	FI	There is a strong recommendation for completing 25 ECTS pedagogical studies and varying elective pedagogical courses. The aim of the pedagogical education for new teaching staff members is to be able to enter the University's way of working and pedagogical thinking.
Examples of staff Pedagogical Training University Pedagogy		

	FI	Pedagogical qualification of 60 ECTS is required for all permanent teaching staff. In addition, internal pedagogical courses and trainings are widely offered for the teaching staff.
	FR	There is no compulsory pedagogical training for academic staff for the moment
	HU	There is no officially required mandatory pedagogical training. Possibility of pedagogical training is on a voluntary basis: these are typically short (1-2 days) training or online training (webinars) provided by external companies.
	B	10 ECTS first year. Required for assistant professors (to be able to be hired as associate professors) Annual employee development interview to discuss Teaching portfolio Difficult to motivate teachers to participate in pedagogical meetings, as they are very pressed for time and lack curiosity to explore new paths. Sometimes in workshops for teachers, we are lucky if there are 15 (out of 300)
	DK	Joint pedagogical education 5 days / semester for 2½ years Development days + guidance (associate professor assistant professor + pedagogical development project) Encouraged to attend SEFI, ETALEE and CDIO etc. conferences (budget constraints)
	DK	New employees are systematically introduced to PBL, and the department heads prepare a plan for and ensure ongoing upgrading of the teachers' PBL competencies and IT competencies
	IE	Not mandatory for staff. 1 hours courses *etc* available Specific Centre for Teaching and Learning "They have a formal post graduate diploma in teaching and scholarship". "When we set this programme up from scratch, we were relatively new to teaching ourselves so we ran a whole series of activities on PBL and a lot of self-driven activities too"
	IE	There is no mandatory training. There is a Centre for Online Learning in the University which help support teachers with pedagogical training (short courses or seminars) for lecturing staff. They also organise a yearly conference where lecturers share best practice New staff induction training, pedagogical training in teaching and learning through short courses and seminars
	IE	All new lecturers joining the University must undertake the Post Graduate Certificate in Third Level Learning and Teaching within their first three years. (30 ECTS) Activities: Peer observation, microteaching activity etc. Staff Development also offer 2 Masters courses (MSc in elearning and MA in Higher Education). This is to allow other members of staff (not on the masters) to take these as standalone modules

4.6 The organisation of students

Again, the division into lectures; laboratories exercises/practical curses and project work appears to influence the organisation of the students. The students are typically divided into large groups of about 35 and up to 700 students for the lectures. These large groups are then divided into groups of 20 – 38 students for the classes and laboratories and finally, some students are also divided into teams of 5 -7 students for studio or project work.

	FI	Student group sizes are very diverse in teaching; a typical group size is difficult to tell. In engineering education, there are typically 20-700. There are usually 200 students in bachelor level courses.
	FI	The number of students vary a lot among different degree programmes, a group of 20 students is typical.
	FR	25% amphitheatres (for the whole students cohort = appr. 200 students/year). - 10-15 % resolution of exercises related to theoretical courses (mainly calculations) in group (limited to 22 students) - 60% practical courses (1) TP (Travaux Pratiques): relatively court applicative exercises with close guidance. (2) BE (Bureau d'Etudes): longer exercises, like a little project (4-8 hours) but with the same subject for every students requesting more reflexion, (3) Projects: very often with and industrial partners, requiring the problem definition and lots of autonomy and proactivity from students
	HU	In case of a promotion of 120 students, we have lecturers for the whole promotion but for other courses, we have a maximum limit of 32 students. In laboratories and computer rooms, we have limitation between 18-24 students in function of the rooms' equipped
	B	Good shared infrastructure for physical learning environment: Lecture halls, seminar rooms, project rooms, collaborative working spaces (see citations) individual learning spaces, learning centre (called Agora), research labs (only with supervision
	DK	Education teams of 15-180 students
	DK	Project groups 5-6 students DK students more used to working in project groups and better at it
	DK	Semester groups (cohort) of 30 – 150 students. All students are organised in project groups of 7 – 2. Students.
	IE	38 students per year after first year (common first year in engineering) Split into groups of 3-5students in the studio sessions Sometimes there are cross cutting projects, but the marks for that project are allocated within each individual module.
	IE	Online it tends to be live lectures using breakout rooms, flipped classroom etc. Similar mix in physical classes. Most prevalent is large lectures.
	IE	A large group would be 70-80 students in a lecture. In other traditional universities where I've worked, that would be a tutorial and they might have 400-500 students in a lecture" "In lab spaces it depends on the equipment, but a large group would be 30, but tutorials are typically 15-20 students". "That's the nature and history of the Institution, how things are done – small classes.

4.7 Looking into the future of STEM Education

In light of the current Covid-19 pandemic, it is not surprising that there is a very large focus on digitization and online teaching which one respondent mention as 'the move to online teaching is here to stay.' But still, there is a need for the development of didactics regarding online teaching, specific activation of students'. But, some mention sustainability and equal opportunities to study as aims for the future, where education also should be more interdisciplinary and have more flexibility between work and learning'. One hopes to see a move towards student-centred approaches such as PBL or CDIO and another would like to see a conscious awareness and CPD around pedagogical approaches. However, some point to the competing demands of research and teaching such as a commitment is required to achieve engaged learning and it can be difficult to marry that to a strong research portfolio because they both take a significant amount of time and there are very few metrics on the teaching side.

In general, flexibility is needed in the future. 'We have to become more flexible and 'students are much more discerning. If you are going to bring them in for classes, it has got to be a really rich experience, it can't be death by PowerPoint.'
'It's going to come from a push from the students.'

Examples of looking into the future of EE	FI	The development of teachers' pedagogical skills becomes even more important in the changing world. Sustainability is the spearhead of the [REDACTED UNIVERSITY] strategy, which brings action to educational development as well.
	FI	Students must have equal opportunities to study, which is important to be ensured for all the students. Adequate guidance for all is highlighted. In the future, we need to consider how do we make more use of learning analytics. The role of the teacher is in a huge change The co-creative process of pedagogical development with the pedagogical experts of the departments aims to have the pedagogical alignments of [REDACTED UNIVERSITY] ready in 2022. The aim of the process is not a top-down way of creating pedagogical alignments but to create new pedagogical alignments through this co-creative group work process
	FR	There will be probably an important change into digital learning because of the current pandemic situation
	HU	situation that would probably generate important changes in the near future probably toward a partial online teaching The pandemic situation will generate important changes into the digital teaching.
	B	Corona, will give a boost on more hybrid online and offline education and will keep some innovation from it. Foreseeing biggest changes in our programs and how we are teaching and that is because people requirements in industry is changing.
	DK	There is a need for the development of didactics regarding online teaching, specific activation of students to break the one-sidedness on the part of the teacher.
	DK	We will definitely see more digitalization within EE education. At the moment [REDACTED UNIVERSITY] is implementing digitalization in all curriculums. More interdisciplinary educations/ more flexibility between work and learning.
	IE	"The competing demands of research and teaching are always there and the promotional drivers within a majority of universities use metrics which are very difficult to achieve unless you have a strong research competencies. Culture eats strategy for breakfast." "You can talk about these things, but there is certainly a commitment required to achieve engaged learning and it can be difficult to marry that to a strong

		research portfolio because they both take a significant amount of time and there are very few metric on the teaching side". Hopes to see a move towards student centred approaches such as PBL or CDIO. Doesn't like to put a name on it as people then say they don't like PBL, CDIO etc. "A process which involves students having a say in the outcome of their learning, where the task they undertake requires them to consider the path they are going on and what learning is required, in a group work setting
	IE	"The move to online teaching is here to stay…..the undergraduate experience is going to be really important" I also think that students, particularly part time students will be much more discerning. If you are going to bring them in for classes, it has got to be a really rich experience, it can't be death by Power Point. Otherwise they are going to say, why did you bring me in for this, why did I have to drive and park the car and so on….." "It's going to come from a push from the students"
	IE	"When I started 20 year ago, people were confidently predicting the end of the campus, but all I see are campus building projects. Not only are campuses surviving, they are thriving". "I don't think it means jumping to put all online, but I do think we will see changes in working practice, meeting structures and time management from the academic". We have to become more flexible. You know students don't need to come in to hear the expert speak for an hour. They do need to come in for other things and it's those other things that we need to focus on. "I would like to see a conscious awareness and CPD around pedagogical approaches. We see that people default to teach how they were taught and they have gone on to have successful career in academia. So becoming conscious about your teaching is the whole thing.

5.0 Conclusions

This task aimed to map the teaching approaches applied in different European Universities and to identify differences and similarities. What emerged was a diverse selection of different teaching pedagogies, structures, training requirements and opportunities and finally how students are organised in learning activities depending on the university and the type of teaching approaches used. Looking to the future, there was a focus on digitisation and online teaching, with an acknowledgement that the pandemic has created a situation where academics have moved very quickly to online teaching and that it is here to stay.

6.0 Acknowledgements

Appendix A: Interview guide for the A-STEP 2030 University interviews

Interviewees: Academic staff with responsibility for 'teaching' at the given university - or academic staff who has 'taught' at the university for several years and who know the educational (pedagogical) approach applied in the institution.

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Brief introduction to the A-Step project and info. in regards to GDPR.

Opening questions – background information on the interviewee:

- Subject …*but in this interview we are more interested in 'HOW' you teach then 'WHAT' you teach!!*
- Years of teaching experience in HE?
- Approx. percentage of your job spent on teaching students? (incl. preparation)
- Approx. percentage of your job spent on pedagogical research, development and/or planning?

Institution's educational approach or strategy:

- **Which educational (pedagogical) approach is the most prevalent at your Uni.? (lectures, projects, laboratories, etc.)** *Could be estimated in %*
  - How many teacher contact hours per. week?
  - Which assessment formats are used?

- **How is the physical learning environment?**
  - What rooms are available for teaching? (lectures rooms, seminar rooms, groups rooms etc.)
  - What rooms are available for students' individual/team-activities? *(group rooms)*

-
- **How is the online teaching learning / activities? (platform, software etc.)**
  - Support for teachers
  - Support for students

- **How are students organised during teaching-activities?**
  - Numbers of students: lectures, seminars, groups
  - Which is the most prevalent organisation? *Could be estimated in %*

- **How is the structure of a semester?**
  - How many semesters per year?
  - Duration in weeks? (incl. exams)
  - Approx. how many course-activities (lectures, labs, etc.) per week? – per day?
  - Distribution of courses/lectures over the semester?
  - Integrated or cross-cutting activities (labs, cases, projects)?

- **Which pedagogical training/activities offered academic staff?**
  - Mandatory or voluntary?
  - How is the structure of the pedagogical training?
  - Internal Uni. training or external provider?
  - How many ECTS?
  - What is the content of such course? (give examples)
  - Curriculum for the course?

o   Benefits of participating ?

Interviewee's view of the future regarding educational (pedagogical) approaches:

- **Looking into the future:**
    - o Do you see any changes in the near future concerning pedagogical approaches?
    - o How does you Uni. develop and maintain educational approaches?
    - o What will be the future of EU universities in regards to pedagogical approaches?

Appendix B: Reporting template for Interview results.

Results of Interview No. XX

Table 2: Results for Question Q1.

Background information on the interviewee:	
Which Subject is the interviewee teaching?	
Years of teaching experience in HE?	
Percentage of interviewee job spent on teaching students? + elaboration	
Percentage of interviewee job spent on pedagogical research, development and/or planning? + elaboration	
Added question of relevance:	

Institution's educational approach or strategy:	
Which educational (pedagogical) approach is the most prevalent at interviewee Uni.? + elaborate sub. questions	
How is the physical learning environment? + elaborate sub. questions	
How are students organised during teaching-activities? + elaborate sub. questions	
How is the structure of a semester? + elaborate sub. questions	

Which pedagogical training/activities offered academic staff? + elaborate sub. questions	
Added question of relevance:	

Institution's educational approach or strategy:	
Any changes in the near future concerning pedagogical approaches?	
How does interviewee Uni. develop and maintain educational approaches?	
What will be the future of EU universities in regards to pedagogical approaches? (*Interviewee own view or institution)*	
Added question of relevance:	

Other Interview Results:

Any interesting outcomes not applicable in the above matrix of results - and any interesting/relevant quotes please add them to this section:

Quotes and other relevant results: