

8. Toolkit module: Students co-designing courses and curricula

8.1. Overview

The educational offer of each technical university evolves with the development of science and technology. For newly created courses to be valuable to students, they should be involved in the design process, both as course co-developers and also as members of review committees. This toolkit discusses this process.

8.2. Objectives

This toolkit aims to present tips and advice for organising events where students participate in co-designing courses and curricula. The purpose of this material is to empower students as participants in this process.

8.3. Analysis of workshop conclusions

The following issues were discussed during the "Workshop for modular training toolkit for students engaged in ENHANCE activities" organised at the Warsaw University of Technology on 5th November 2021.

8.3.1. Encouraging students

To discuss the issue of encouraging students to participate in co-designing courses and curricula, the following questions should be addressed.

- What are potential **incentives** for a student to participate in the co-creation activities?
- How to **encourage** the students to co-create university activities?
- What can **discourage** students from participating in the co-creation process?

The following ideas can serve as incentives for students to participate in the co-creation of courses and programs: gaining experience in course design, improving education and being drivers for change, developing transferable skills such as communication and management, etc. Students can also gain the understanding of education as a whole, get to know university employees not only as lecturers but as managers and creators of education programmes. It can be an example that students can influence university education and their opinions matter. They can report back to the whole student body on the progress based on students' feedback, suggestions and criticisms. It is also possible to offer students financial remuneration for their work in this process (if the university decides to allocate the funds to such activities or if the creation of programs is financed from projects). Other forms of rewards offered to students are also possible, e.g. a voucher for the university campus store.

The fear of lack of experience and self-confidence may discourage students from participating in this activity. Students will be discouraged if they are not taken seriously and if their opinions do not matter.

8.3.2. Costs and benefits

To address the problem of costs and benefits of the students' participation in co-assessing courses and curricula, the following questions should be addressed.

- **Do we need** co-creation at a university?
- What are the **costs** (not necessarily financial) of co-creation?
- What are the **benefits** (for whom) of co-creation?

Students can play an essential and non-negligible role in the course and curricula development. Their point of view should not be neglected or disregarded. Courses should be developed on the basis of cooperation between students and professors, with the participation of people who will participate in teaching, i.e. tutors, assistants, etc. The participation of students will allow them to focus on the most

important elements of the course because only students are fully aware of their limitations, gaps in knowledge and they will primarily apply knowledge into practice.

8.3.3. The organisation of the co-creation process

Analysing the organisation of the students' participation in co-assessing courses and curricula incurs the need to answer the following question.

- How to organise the co-creation process to engage a small selection of participants and /or the whole community?

The co-creation organization process regarding courses and curricula design should include designing and creating videos explaining the purpose of the curricula, courses, and co-creation and publishing such videos in media popular with students (e.g. social media).

The big challenge is to encourage students to participate in the design of educational programmes. Apart from students, employers and other relevant stakeholders should be involved in the development of new programs and courses.

The potential cost is primarily the time that should be spent when participating in the process.

8.4. The examples

8.4.1. Students co-designing new degree program at WUT

For the last several years students have played an essential role in the development of new educational programmes (and updating the existing ones) at the Faculty of Electronics and Information Technology, Warsaw University of Technology.

Students were particularly active when the first-cycle degree programme in Cybersecurity was being developed in 2018 (the programme was first offered in the 2019/2020 academic year). During the whole 10-month development time, student members of the team established to design the curriculum (besides members of academic community, the team included also – as consultants – external experts representing employers) shared their experience resulting from Erasmus+ exchange as well as their professional experience (most Faculty students work when studying), expressed their expectations regarding both the contents and the teaching methods. As a result, a very student-friendly curriculum was created. Its distinctive feature is an innovative concept of the first semester, designed to reduce the stress of new students, facilitate their integration and adaptation to the new learning environment, give them some relevant hands-on engineering experience (team work on designing and implementing simple robots). At the same time, it reduces the workload and stress associated with fundamental science courses by moving a significant part of teaching Maths from lecture halls to laboratories where students play with Mathematica and similar tools.

This new degree programme has been very well received by the candidates for studies (attracting each year more than 20 applicants for each study place), students and other stakeholders. The Ministry of Digital Affairs recommended this programme as a model to be followed by other Polish universities.

The team that developed the programme received a prestigious award of the Polish Minister of Education and Science for outstanding achievements in education. An unprecedented fact related to this award was that among its recipients there were two students (Minister's awards are intended for academic staff). It is also worth mentioning that the application for this award received very favourable recommendations from, inter alia, the President of the Polish Students' Parliament – the body representing all Polish students.

Following the success of the programme in Cybersecurity, the first-cycle degree programme in Internet of Things Engineering was developed and offered first time in the 2020/2021 academic year. A similar approach, characterised by very active participation of students in the curriculum development process, was adopted and even more innovative solutions were introduced. In each semester starting from the first one, the curriculum includes a large project-based learning (PBL) module (10-12 ECTS

points) where students work in teams on IoT solutions of real-life problems submitted mostly by external institutions – a solution unique for Polish universities. The programme attracted the largest number of candidates (over 30 applicants for each study place) among all first-cycle degree programmes offered by Polish universities, demonstrating again the benefits of co-designing of a curriculum by students.

8.5. Suggested scenario

The scenario of a **single meeting** of a team developing a new educational programme is presented below.

8.5.1. Overview

This material provides a scenario of a single meeting of a team developing a new educational programme. The meeting involves different stakeholders of the university (e.g. teachers, researchers, administration, students) and possibly industry partners (employees). It is assumed that there is a person (most often an experienced professor) who is the team leader. The team secretary (e.g. doctoral student or student) is responsible, inter alia, for organizing the team's work, prepares the agenda and the minutes.

8.5.2. Objectives

The objective of the meeting is to discuss the current issues of composing a new educational programme (e.g. discussion of the selection of courses) and distribute tasks among participants. Before the meeting, the agenda is sent to the participants.

8.5.3. Target participants

For the team designing a new programme to be able to design a solution that is good for both academic and research staff of the university, students and future employers, this team should include people representing each of these groups. In addition, a person who is familiar with the regulations and conditions of the department should be part of this team.

8.5.4. Format

Discussion on the topics included in the agenda. In particular, each group of stakeholders should address important issues.

8.5.5. Duration

Suggested duration: 60-90 minutes.

8.5.6. Resources

The agenda, a whiteboard, markers, a projector (if necessary)

8.5.7. Description

The single meeting focus on the following aspects:

- what is the status of work on individual issues (e.g. selection of the courses, discussion of opinions on syllabuses)?
- who is responsible for each issue (if agreed)?
- the agenda of the meeting - what needs to be discussed and agreed on?

During the meeting, the coordinator starts a discussion on each topic on the agenda. During the debate, each meeting participant may comment on the discussed topic. In particular, student representatives should participate in the work on the shape of the future educational programme and give opinions on its elements (syllabuses: loading, practical and substantive value, student workload for subsequent semesters, etc.).

During each meeting, the coordinator should ask about problems in implementing specific issues. After the meeting, the coordinator sends the account of the meeting (the minutes) to the participants.