



THE USE OF ICT AND THE FLIPPED LEARNING METHODOLOGY TO CLOSE THE SUBJECT'S PRACTICES TO THE LABOUR MARKET

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Learning innovation Project INVIERTE-PRACTIC financially supported by University of Leon

Background

The starting point

- Agenda for the Higher Education Modernization, 2014 (EACEA, 2014)

PRIORITY: to adjust the higher education studies to the labour market promoting the entrepreneurial spirit and enhancing the links between education, research and enterprise

- Spanish National Agency for the Higher Education Quality (2016)

ADVICE: to reinforce the actions to close the studies to the professional sectors in order to support the students in their access to the labour market



Background

The problem

The student's satisfaction report (Quality Office of Spanish Public Universities) highlight the following needs:

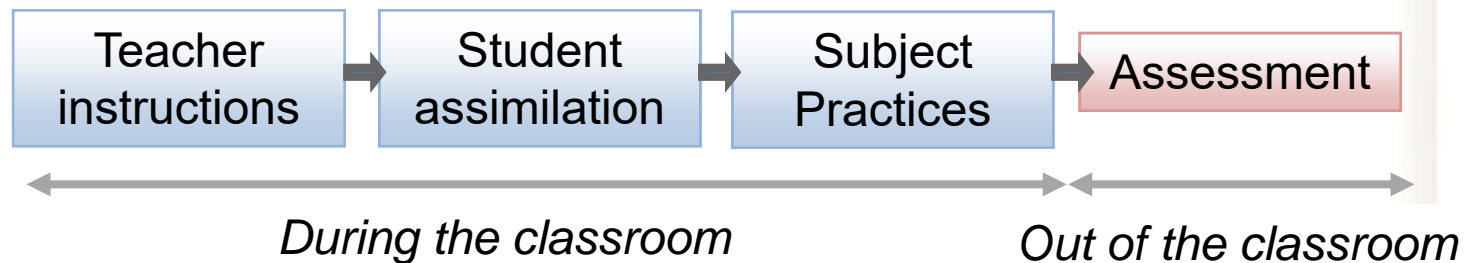
- ➔ To improve the practical activities included in the face-to-face teaching hours “subject practices”
- ➔ To adapt the subject practices to the learning competences and to the professional profile



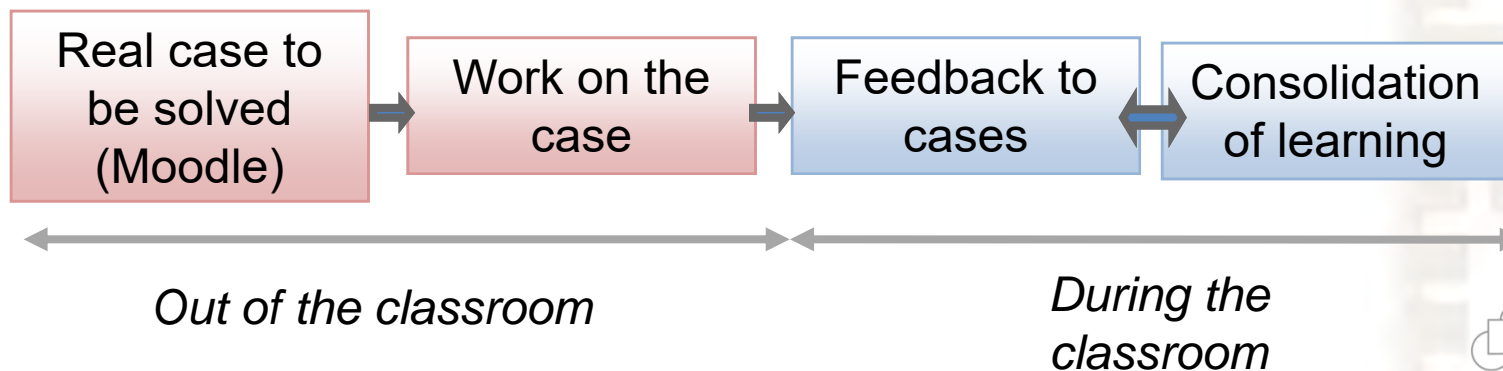
Background

The proposed innovation: **flipped learning** in **real cases** of the **engineering** sector

Conventional learning



Flipped learning



Objectives

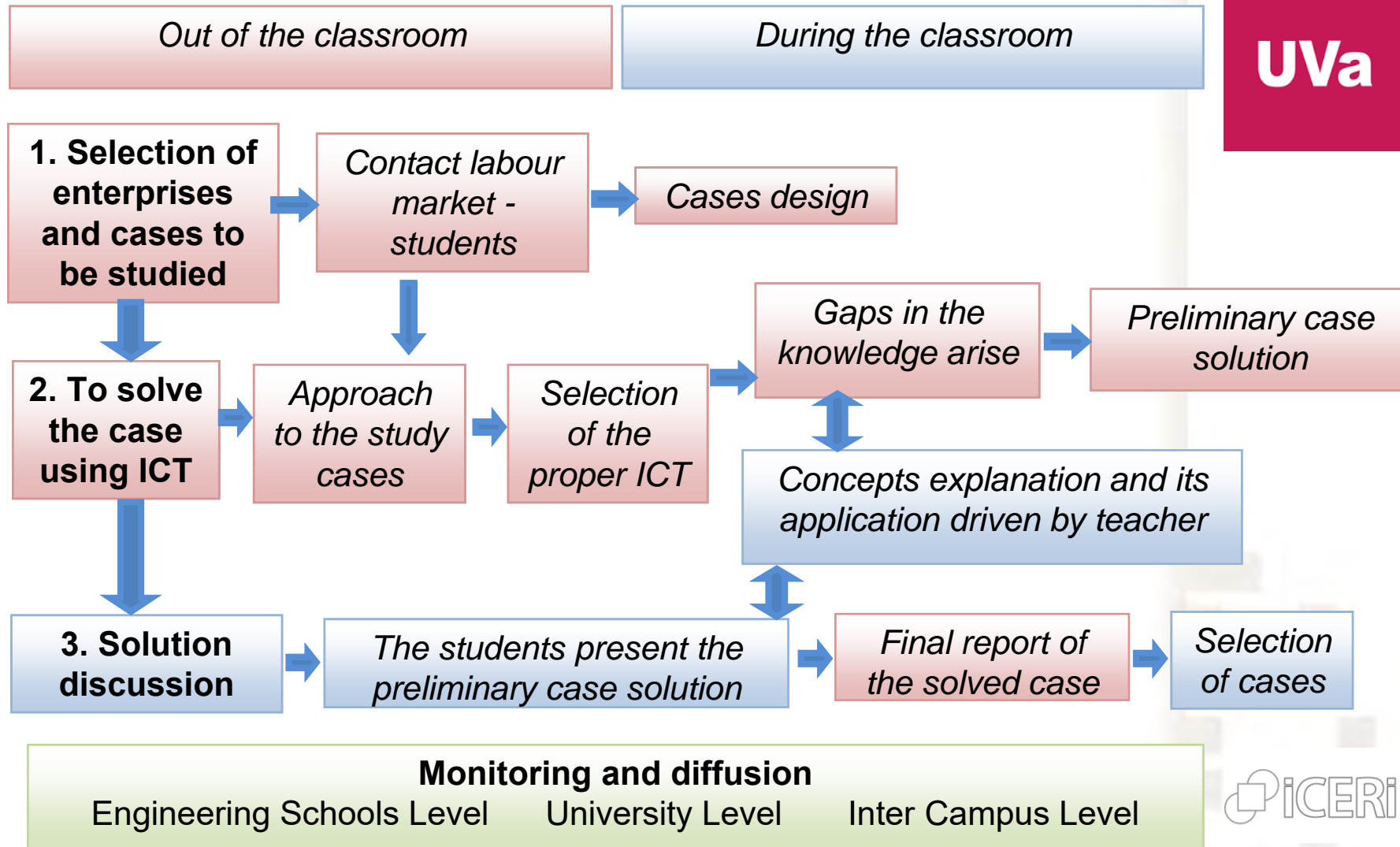
To adapt the subject practices of engineering studies to the learning competences and to the professional profile using flipped classroom, by the resolution of real study cases with ICT.

Specific objectives:

- To put in contact the students to the labour market through the subject practices
- To solve real cases from enterprises, in order to bring the subject concepts to the students, according to the flipped classroom methodology
- To facilitate the interaction between the students and enterprises giving solutions to problems by the use of ICTs



Methodology and structure of the action



Methodology and structure of the action

Subjects in which the methodology will be applied (engineering)

- Crop Production
- Agribusiness Marketing
- Bioenergy
- Biotechnological processes
- Biofuels
- Cropping Systems



Results

Indicators, evidences of the results according to the initial objectives of the innovation teaching project

Results	Indicators	Evidences
To get close the students to the labour market through the subject practices.	Real cases of the companies will be designed for the students	Publication of the case in Moodle platform
To solve real cases from enterprises, to bring the concepts to the students with the flipped classroom methodology	The assessment and solution of the case drives the student to the concepts of the subject	Report of the students about the case analyzed
Link the students to the enterprises, presenting solutions for real problems	A selected sample of students solutions are presented to the involved enterprises	The webpage of the University will present the solutions selected (providing company authorizes)

Main drawbacks and learned lessons



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- The lack of alignment between the problems that the companies need to solve and the curricula of the students in general and the subject's content in particular
- Technological companies are reluctant to share their problems with the University
- Difficult – but not imposible – for fundamental subjects
- Difficult with students of very different intelectual level
- Bolonia process and autonomous learning is in the papers but not in the classroom (15 years later!!)
- This activity must substitute another one

Main results and conclusions

- Higher motivation of the students that could drive to a higher students performance
 - ☞ Students actively participate in the process of design their own subject practices
- Better monitoring and assessment of the subject practices
- The use of ICTs, which are familiar technologies for the students, helps them to face the problems of the engineering
- The flipped methodology proposed promotes a collaborative and autonomous learning
 - ☞ The autonomous learning precedes the collaborative learning
 - ☞ There is a feedback between students regarding the solutions proposed to the cases
- The interaction between the teachers involved in the teaching innovation group, helped to improve the methodology
 - ☞ **Necessary to include a feedback from the rest of the academic community at the international level**



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