

Technology with Purpose: Ignatian Pedagogy and Transversal Learning Outcomes to Promote the SDGs in Engineering and Health.

Susana Romero-Yesa*, Ane Gutiérrez-Aguirregabiria, Rodrigo Damián García

Universidad de Deusto, Bilbao.

Tecnología con Propósito: Pedagogía Ignaciana y Competencias Transversales para promover los ODS en Ingeniería y Salud.

Tecnologia amb Propòsit: Pedagogia Ignasiana i Competències Transversals per promoure els ODS en Enginyeria i Salut.

RECEIVED: 5 NOVEMBER 2025; ACCEPTED: 5 FEBRUARY 2026 [HTTPS://DOI.ORG/10.55815/980000016911](https://doi.org/10.55815/980000016911)

ABSTRACT

This paper presents a teaching experience in Biomedical Engineering based on Ignatian Pedagogy, seeking deep learning committed to the Sustainable Development Goals (SDGs). The project integrates the development of Embedded Systems (using Arduino) with training in key transversal learning outcomes (teamwork, communication, and critical learning).

The use of an active methodology and the focus on real challenges in the field of health have proven to be effective, motivating students to apply technical knowledge and principles of responsibility. The results confirm that by aligning technology with social commitment, a comprehensive education is achieved that prepares future professionals to address complex problems in a sustainable manner.

Keywords: Embedded Systems, Ignatian Pedagogy, Sustainable Development Goals, Transversal Competencies, Transversal Learning Outcomes

RESUMEN

Este artículo presenta una experiencia docente en Ingeniería Biomédica basada en la Pedagogía Ignaciana, que busca un aprendizaje profundo comprometido con los Objetivos de Desarrollo Sostenible (ODS).

El proyecto integra el desarrollo de Sistemas Empotrados (utilizando Arduino) con la formación en competencias transversales clave: Trabajo en equipo, Comunicación y Aprendizaje crítico.

El uso de una metodología activa y el enfoque en desafíos reales del sector de la salud han demostrado ser efectivos, motivando a los estudiantes a aplicar conocimientos técnicos y principios de responsabilidad. Los resultados confirman que, al alinear la tecnología con el compromiso social, se logra una educación integral que prepara a los futuros profesionales para abordar problemas complejos de manera sostenible.

Palabra clave: Sistemas Empotrados, Pedagogía Ignaciana, Objetivos de Desarrollo Sostenible, Competencias Transversales, Resultados de Aprendizaje Transversales.

RESUM

Aquest article presenta una experiència docent en Enginyeria Biomèdica basada en la Pedagogia Ignasiana, que busca un aprenentatge profund compromès amb els Objectius de Desenvolupament Sostenible (ODS). El projecte integra el desenvolupament de sistemes encastats (utilitzant Arduino) amb la formació en competències transversals clau (treball en equip, comunicació i aprenentatge crític).



*Corresponding author: sromeroyesa@deusto.es

L'ús d'una metodologia activa i l'enfocament en reptes reals de l'àmbit de la salut han demostrat ser eficaços, motivant l'alumnat a aplicar coneixements tècnics i principis de responsabilitat. Els resultats confirmen que, en alinear la tecnologia amb el compromís social, s'aconsegueix una educació integral que prepara els futurs professionals per abordar problemes complexos de manera sostenible.

Paraules clau: Sistemes encastats, Pedagogia ignasiana, Objectius de Desenvolupament Sostenible, Competències transversals, Resultats d'aprenentatge transversals.

1. INTRODUCTION:

The University of Deusto, a Jesuit institution with a renowned educational track record, bases its educational model on the principles of Ignatian Pedagogy, which focuses on the comprehensive development of the individual. This pedagogical approach is distinguished by personalised attention to students, the promotion of critical thinking, reflection and discernment, as well as the pursuit of the *magis*, understood as the aspiration to excellence and commitment to 'more' in all dimensions of life.¹

Unlike traditional models focused on memorisation or the mere acquisition of information, Ignatian pedagogy emphasises the development of analytical, synthetic and evaluative skills, with the aim of training professionals capable of facing complex challenges and making informed decisions in changing contexts.²

This approach is embodied in the Ledesma-Kolvenbach paradigm, which integrates four fundamental principles expressed in Latin: *utilitas* (utility), *iustitia* (justice), *humanitas* (humanity) and *fides* (faith). These components guide education towards academic and ethical excellence, social responsibility and a commitment to human values.

Furthermore, the University of Deusto, as part of its 2023-26³ strategic plan, envisages five 'main strategic options' with 29 'strategic projects'. Strategic option 1, 'Training through Values', includes the implementation of transversal learning outcomes as one of its projects. Meanwhile, in option 4, 'Promoting Networking and its Social Impact,' one of the projects includes the Development of the University's Social Impact Model and its contribution to the Sustainable Development Goals (SDGs).

1.1 Implementation of the Transversal Learning Outcomes (TLOs)

With the aim of promoting autonomous, in-depth and socially relevant learning, the University of Deusto goes beyond the development of technical or specific skills for each degree, incorporating a set of transversal learning outcomes into its curricula that are considered essential for professional performance and interdisciplinary collaboration.

Based on a thorough analysis of the learning outcomes required for each academic and professional profile, the

University of Deusto selected those that best represent its educational mission and identity as a university of the Society of Jesus. This process resulted in the definition of six transversal learning outcomes that form a central pillar of the comprehensive education promoted by the institution. These learning outcomes, along with their respective definitions, are presented in Table 1 below.

Table 1. *Transversal learning outcomes of the University of Deusto.*

<p>TLO.1: Self-knowledge, ethics, social and environmental responsibility and openness to transcendence</p> <p>Act in an ethical, egalitarian, inclusive, responsible and sustainable way, with oneself, with others (men and women for others), with society (social justice) and with the planet as a whole (environment), asking the big questions of life.</p>
<p>TLO.2: Teamwork and leadership</p> <p>Work collaboratively towards common goals by exchanging constructive feedback, mediating conflicts, sharing knowledge and assuming commitments and responsibilities; carrying out the role of team leader when required by the situation or context.</p>
<p>TLO.3: Entrepreneurship, innovation and creativity</p> <p>Develop new ideas, actions and projects with a positive impact on the environment, turning ideas into actions, making decisions and taking risks.</p>
<p>TLO.4: Oral and written communication in multicultural environments</p> <p>Communicate orally and in writing in order to interact effectively with others; expressing and conveying feelings, knowledge, ideas and arguments in a clear, rigorous and convincing manner; using a variety of expressive resources both orally and in writing; using appropriate linguistic resources and formats and adapting to circumstances, types of audience and diverse cultural contexts, using different languages. Multilingual communication also requires intercultural understanding, appreciation of cultural diversity and an interest and curiosity in languages and intercultural communication.</p>
<p>TLO.5: Deep, autonomous and critical learning</p> <p>Update one's own learning, by questioning usual ways of acting and looking at issues from a critical perspective, reflecting on one's own knowledge and way of learning.</p>
<p>TLO.6: Digital skills</p> <p>Use ICTs effectively and efficiently to handle information and to communicate in the digital world in a critical and responsible manner.</p>

1.2 Development of the University's Social Impact Model and its contribution to the Sustainable Development Goals (SDGs)

On the other hand, the University of Deusto has chosen to develop and implement its own social impact model, prioritising that academic and scientific activity translates into real progress towards the fulfilment of the SDGs.

The SDGs are a global benchmark that gives meaning and direction to the current university education. The SDGs, also known as Global Goals, were established by the United Nations in 2015 as a global commitment to eradicate poverty, protect the environment and

promote peace and well-being for all people by 2030. To achieve these goals, it is essential to mobilise the creativity, knowledge, technological innovation and financial resources of different sectors of society, promoting global collaboration and shared responsibility in building a sustainable future.⁴

1.3 Implementation of transversal learning outcomes and SDGs with students

One of the most efficient ways to develop transversal learning outcomes among university students is through the use of active learning methodologies and tools.

Active methodologies are based on the principle that students learn through action, promoting a form of teaching centred on their role as protagonists and builders of their own knowledge. Numerous studies have documented the effectiveness of these strategies in different fields of knowledge.⁵

Ignatian Pedagogy, by promoting comprehensive education oriented towards service, justice and commitment to others, naturally converges with the SDGs. This is achieved through the development of transversal learning outcomes, such as critical thinking, ethics, communication, teamwork and social responsibility, as these prepare students to face the challenges posed by the SDGs in the social, economic and environmental spheres. In this process, active methodologies play a key role by allowing students to learn by doing and transforming reality through projects, experiences and actions linked to real problems in their environment. Thus, the integration of Ignatian Pedagogy, transversal learning outcomes and active methodologies not only responds to the educational objectives of a committed university, but also contributes directly to the formation of citizens capable of leading change towards a more just, supportive and sustainable world, in line with the principles of the SDGs.

This article aims to present a teaching experience developed in the Bachelor's Degree in Biomedical Engineering at the University of Deusto, which articulates the development of specific competencies and transversal learning outcomes through active methodologies, with the aim of contributing to education committed to the challenges of the SDGs.

2. MATERIALS AND METHODS:

The study presented here is developed in the first-year course 'Digital Electronics,' part of the Bachelor's Degree in Biomedical Engineering, with approximately 45 students. It develops the specific competence defined as 'Coding, analysing, designing and implementing digital electronic systems and circuits using techniques specific to Digital Electronics in the field of health'. As it is a first-semester, first-year course, it is the students' first introduction to electronics, as they have not previously taken any related courses.

2.1 Project phases

The course runs for 14 weeks, with two two-hour face-to-face sessions per week (Figure 1). In the first four weeks, students are introduced to digital electronics by exploring combinational, functional and sequential systems in a theoretical and practical context, as well as a brief introduction to analogue electronics. These first weeks provide the necessary foundation for the development of a group project in which transversal learning outcomes will also be worked on.

Thus, during week five, students are divided into three different groups, each of which works on a different transversal learning outcome, searching for information and discussing within the group the significance of that learning outcome for each of them in relation to car-

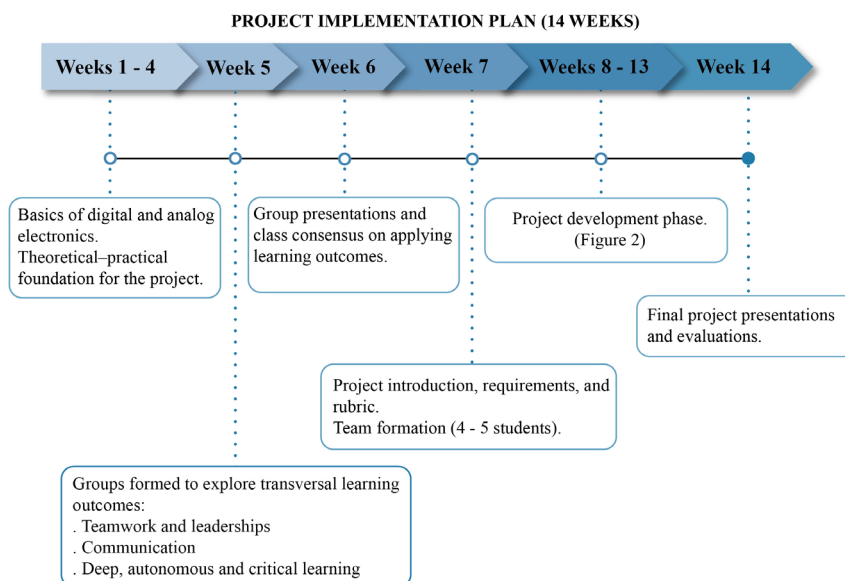


Figure 1. Phases followed in the course.

rying out an electronics project. The three transversal learning outcomes worked on are (Table 1):

TLO.2: Teamwork and leadership

TLO.4: Oral and written communication in multicultural environments

TLO.5: Deep, autonomous and critical learning

In week six, each group shares its conclusions on each learning outcome with the rest of the class. The teacher clarifies what has been presented and a consensus is reached among all students on how each of the transversal learning outcomes will be worked on in the specific project. This allows the teams to choose the rules that will govern their work, including how they will organise themselves and how the final project grade will be distributed among its members. This organisation, while promoting autonomy, deepens learning based on collaboration, the exchange of ideas and commitment, and shared satisfaction.

Week seven is used to explain what the project will consist of, what the minimum requirements are for passing it, what the common theme is for all projects, and how each team will have to define its own project from there. All of this is included in the supporting documentation and in the assessment rubric. Students are then divided into teams of 4 or 5 members.

Between weeks 8 and 13, each team carries out its project (Figure 2). Class hours are used for this purpose, which students must supplement with hours of personal work outside the classroom. During classes, the teacher goes around the teams, answering questions and ensuring that the minimum requirements are being met and that all team members are collaborating on the project.

During the last week of the course, each team presents their project to the rest of the class. After the presentations, the students carry out various assessments: self-assessment of the work done within the team and the final result, peer assessment of their teammates' work, and peer assessment of the final results of the other teams. The teacher evaluates the work presented by the teams (system, presentation, and technical report), and the peer evaluations are used to adjust the grades.

2.2 The project

The combination of specific competencies and transversal learning outcomes enables students to acquire the ability to work as a team to implement a small programmed system that can control a series of actuators based on information captured by sensors, and to present their work to the other teams.

The project aims to promote deep learning, so the project methodology has been designed to include the factors that, according to Paricio, Fernández and Fernández in chapter 4⁶, can be associated with this: relevance of the project, autonomy to decide and plan, academic challenge, opportunities for collaborative learning and practical application of theory.

The study was based on previous research by S. Romero-Yesa et al.⁷ conducted in a similar course, which used a qualitative approach to identify and evaluate the main proposals to reinforce or change in the course, so that they were introduced from the beginning in this course.

As for the project topic, during the first year of teaching, 2022-23, it was freely chosen by the student teams, as a test to assess the knowledge acquired and their predisposition to this type of project in a new profile at the faculty. Given the good results and after listening to the teams' opinions, in the second year, 2023-24, the project topic was more focused and unique for the whole class, with greater emphasis on the develop-

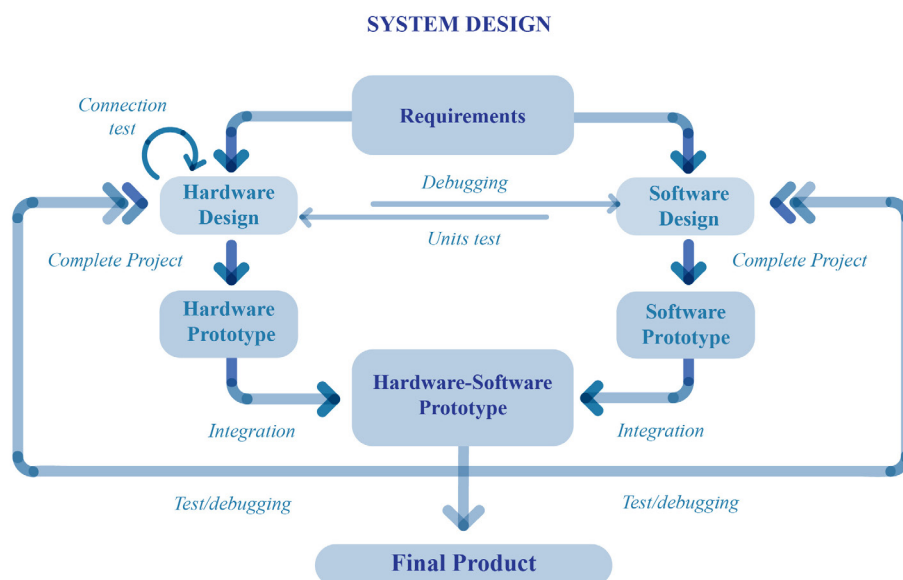


Figure 2. Phases in the implementation of the Digital Electronics project.

ment of transversal learning outcomes. During the first semester of the final year, 2024-25, the aim was to go further and it was proposed that the projects should focus on one of the goals set out in the SDGs. The basic intention was to prepare students to design sustainable, economical and socially responsible technical solutions in the area of health, but at the same time to see if they perceived the importance of what they were learning and their responsibility in society. However, in order to promote relevance as well as autonomy, each team was allowed to choose the specific topic of their project. This allowed them to choose the situation within this topic where they believed they could help through an electronic system. The focus on the SDGs promotes experiential and practical learning, which is distinctive of the Company's approach to teaching, as the 'Ledema-Kolvenbach university paradigm' takes an integrated approach: *Utilitas*, with multidisciplinary learning and the promotion of critical thinking; *Iustitia*, through collaborative learning; *Humanitas*, working on motivation, self-knowledge and interpersonal relationships; and *Fides*, with problems that promote a search for interdisciplinary and holistic solutions and service to society.

The project had to be planned in terms of timelines and responsibilities by the students themselves, as another aspect of autonomy, although examples of the tasks to be carried out and recommended dates were provided to help them develop this autonomy, bearing in mind that they were first-year students tackling a university project for the first time.

To achieve the objectives, it was decided to use an Arduino-based educational kit containing both the microcontroller board to be programmed and various sensors and actuators that would allow the groups to implement their ideas creatively. Arduino was chosen because it is an open-source prototyping platform with a free development environment and a community for sharing code and ideas, which is very appropriate for the purposes of this course. Among its advantages are the fact that it is multi-platform, with a programming language (similar to C/C++) that is familiar to students, and that it is inexpensive. Although it may seem very simple for a university degree and its low cost limits the resources available, the aim of this course is to of-

fer a first approach to the design and programming of embedded systems, and for some students it will be the only course they will take in this area of knowledge, so these limitations are not a major drawback. The kit chosen was the Crowtail Starter Kit for Arduino from Elecrow (<https://www.elecrow.com>) (Figure 3).

Likewise, students were encouraged to voluntarily build a prototype model incorporating electronic components, with the aim of integrating the knowledge acquired in other subjects. Although this was optional and only accounted for 5% of the final grade, the aim was to stimulate intrinsic motivation and the practical application of knowledge. In this way, the project was a challenge, with a certain degree of complexity to promote deep learning and motivation, but with the support of the teacher as a guide.

The last of the factors proposed by Paricio et al., the tension between theory and experience, is undoubtedly intrinsic to any project: teams must implement in a comprehensive manner what until now have been isolated, abstract practices or very specific cases. They must even use knowledge from other fields such as mathematics or physics to adjust the behaviour of a component or algorithm using their formulas. Added to this is the gap created when software is combined with hardware, inherent in embedded systems, such as the dreaded 'bouncing' of buttons or LEDs that are always on instead of flashing. Support in difficult situations will not always come from the teacher; students will have to learn to consult materials, perform simulations and/or carry out tests in laboratories (in person and remotely), as appropriate. This aspect is key to the development of autonomy and is an essential skill in a profession such as engineering, in which students, in their professional careers, will have to solve problems that do not yet exist and with technology that has not yet been invented.

3. RESULTS

Once the project has been completed and presented, it is assessed using a specific to check the performance of all the competencies and learning outcomes put into practice in the project rubric (the indicators evaluated

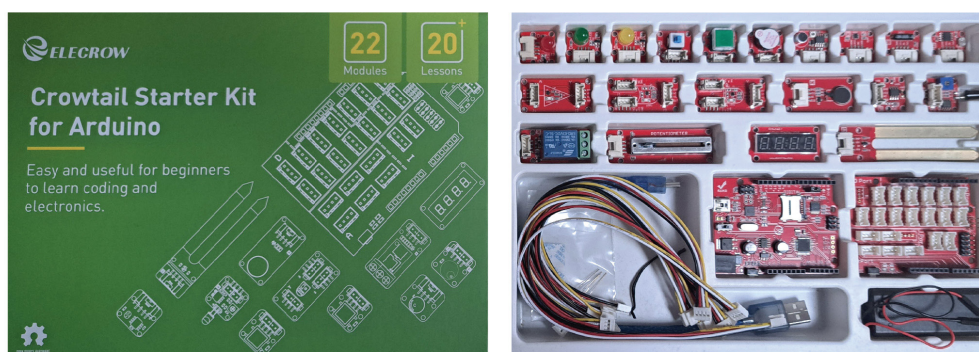


Figure 3. Kit chosen for the development of the project.

in the rubric can be seen in table 2). All teams attend the presentation of the projects and also carry out a double assessment: on the one hand, a self-assessment as a team, and on the other, an assessment of the other teams. In the case of self-assessment, this serves to refine the teacher's perception of whether any team members have performed above or below average, which may lead to an adjustment in the grade of some individuals. Similarly, through the co-evaluation of the rest of the class, the teams give feedback on the results to their classmates, while also 'voting' for the best project, whose team sees their grade increase by one point out of 10.

Table 2. Evaluation indicators used in the rubric to evaluate the transversal learning outcomes.

Transversal learning outcome	Evaluation indicator
TLO.2: Teamwork and leadership	TLO.2.1: Identify the roles and rules to form and operate a working team oriented towards the achievement of common objectives
	TLO.2.2: Plan and coordinate actions to achieve the team's objectives
	TLO.2.3: Perform the duties and tasks assigned within the team to contribute to its smooth running and to achieving the agreed objectives.
	TLO.2.4: Manage conflicts and resolve differences that may arise between individuals and/or teams through negotiation, mediation and consensus strategies, among others, accepting the potential of diversity as a learning opportunity.
	TLO.2.5: Develop social communication skills to build trust and ensure the smooth functioning of the team.
TLO.4: Oral and written communication in multicultural environments	TLO.4.2: Communicate correctly, clearly and effectively, through all types of oral discourse and according to its communicative purpose, using the necessary rhetorical strategies to adapt it to the situation and the target audience
TLO.5: Deep, autonomous and critical learning	TLO.5.1: Show a responsible and active attitude towards their own learning.
	TLO.5.3: Manage the effort and time needed to achieve the proposed learning objectives in an autonomous manner.
	TLO.5.4: Develop complex tasks autonomously, self-regulating one's own actions as a result of a contrastive and reflective process
	TLO.5.5: Question the reality around them by analysing the principles, facts, attitudes and values involved in it.
	TLO.5.6: Produce individual work based on the learning materials worked on, demonstrating one's own way of reasoning and acting.

In the three editions in which this project has been carried out, the average overall rating for the projects has been a B, slightly higher with each edition, although there have also been cases where several groups have exceeded this rating, resulting in some teams receiving a lower than average score. In any case, all teams have successfully exceeded the minimum requirement.

If we analyse the results of the competencies and learning outcomes independently, the teams that stood out did so because of the complexity of their projects (specific competencies). In addition, the desired objec-

tive of motivating students to build a prototype model to demonstrate how their project works was achieved, with some even being built in a FabLab (Figure 4). Furthermore, most of the presentations were innovative and well-prepared, including, for example, 3D software designs or their own advertisements.

In terms of methodology, conclusions have been drawn from the open-ended responses in the questionnaire that each student completes at the end of the project, evaluating their own work, that of their teammates and that of other teams, as well as making suggestions for areas for improvement. In general, the feeling has been very positive regarding the projects carried out. Students have noted their relevance in relation to their studies and service to society and have felt capable of carrying them out despite initial doubts. The development of transversal learning outcomes (teamwork, oral communication, and deep, autonomous, and critical learning) and their relationship with motivation were also highly valued. In addition, the interdisciplinary nature of the project, which could be integrated with other areas, and the autonomy given to the teams in choosing the project topic were highlighted as very positive. They also appreciated that the project served to connect all the concepts of the course. Although the students did not mention this explicitly, the choice and defence of the project topic, components, algorithms, etc. undoubtedly also demonstrates the development of critical thinking.

One area for improvement is that more help was needed for the software part of the project, which may be because the students were taking the Programming course at the same time as the Electronics course and had not yet assimilated all the necessary procedures.



Figure 4. Examples of projects submitted. A) Wheelchair for the visually impaired. B) Fire and flood alarm. C) Environmental pollution meter. D) Smart watch for dependent persons.

4. DISCUSSION

Based on the above, it can be said that both the academic objectives and the awareness-raising aims intended for the students have been achieved, all in line with the Sustainable Development Goals. The quality of the projects has surpassed that of previous years, which were already good, even putting into practice competencies not covered during the course, such as the use of complex sensors and actuators, the creation of models designed with 3D printers or laser cutting, and highly innovative and elaborate presentations. Their evaluations highlight comments on creativity, teamwork, the real-world implementation of what they have learned, the relationship with other areas, and the contribution to society.

5. CONCLUSION

The development of the project in the course of 'Digital Electronics' has proven useful for integrating the learning of specific competencies as well as training in transversal learning outcomes and social commitment promoted by the University of Deusto. The implementation of active learning methodologies, inspired by Ignatian Pedagogy, has fostered deep, autonomous and critical learning, where the student is at the centre of the teaching, learning and development process. From the perspective of Paricio, Fernández and Fernández⁶, this deep learning is understood as a process of meaningful construction in which the student integrates knowledge, skills and values, relating what they have learned to their experience and context. It involves transformative learning that promotes understanding and reflection, while stimulating more complex forms of reasoning and the ability to transfer knowledge to diverse and real contexts.

In this approach, students take an active role in managing their own learning, while teachers act as pedagogical mediators. This mediation consists of promoting and accompanying the learning process, facilitating students' knowledge construction and autonomy development through their relationships with others. This support reaches its full potential when the student has acquired the necessary competencies and learning outcomes to continue learning independently.⁸

The results obtained through self-assessments and co-assessments demonstrate the effectiveness of this approach, showing a high degree of student involvement, a progressive improvement in the quality of projects, and a real development of the competencies worked on.

On the other hand, the inclusion of projects linked to the SDGs has increased students' awareness of the social and ethical impact of engineering, promoting understanding of their professional responsibility in the search for sustainable solutions that have an impact on people's quality of life. This is even more relevant given that the students are enrolled in the Biomedical Engineering programme.

Currently, the authors of this paper are analysing the possibility of incorporating a new innovative element.

The proposal is to continue orienting the course towards a final project, but with a more realistic and collaborative approach. In this new phase, the student teams will not define the problem to be solved independently, but rather the challenges will be set by students from the Faculty of Health Sciences, which at the University of Deusto includes degrees in Psychology, Medicine, Nursing and Physiotherapy. This will foster a process of interdisciplinary co-creation, in which different groups work together to design technical solutions to real problems in the field of health. It is expected that this collaborative dynamic from the training stage will promote mutual enrichment, enhance interdisciplinarity and reinforce the perception of relevance, realism and social applicability of the learning.

In conclusion, the pedagogical approach presented is transferable to both undergraduate and postgraduate education, as it promotes the comprehensive development of professionals capable of critical thinking, creative action and an ethical commitment to sustainability and social justice.

ACKNOWLEDGEMENTS

This project originates from and expands upon previous funded research initiatives: "Improving social and collaborative competences of undergraduate students using active methodologies. A mixed assessment approach", granted at the VI Call of ACM (Aristos Campus Mundus) Research Projects—2020, with the grant number: ACM2020_02, and the project: "Autorregulación en el proceso de aprendizaje: Regulando el riesgo de abandono temprano", granted at the IX Call of ACM (Aristos Campus Mundus) Research Projects—2023, with the grant number: ACM2023_27.

REFERENCES:

1. "Ignatian Pedagogy a Practical Approach." Accessed: Sep. 01, 2025. [Online]. Available: https://www.sjweb.info/documents/education/pedagogy_en.pdf
2. E. M. P. Avellán, Ò. F. Nuño, and V. H. Franco, "Pedagogía ignaciana, una tradición inspiradora para los retos del presente", *Padres y Maestros / Journal of Parents and Teachers*, no. 394, pp. 55–59, Jun. 2023, doi: 10.14422/PYM.I394.Y2023.010.
3. "Plan Estratégico 2023-2026.pdf - Google Drive." Accessed: Oct. 20, 2025. [Online]. Available: https://drive.google.com/file/d/1li_NOaZjzmHVsYn9unEa-6S4sWsc3SrY/view
4. "Objetivos de Desarrollo Sostenible | Programa De Las Naciones Unidas Para El Desarrollo." Accessed: Oct. 20, 2025. [Online]. Available: <https://www.undp.org/es/sustainable-development-goals>
5. K. P. Rodríguez Serrano, M. A. Maya Restrepo, y J. S. Jaén Posada, "Educación en Ingenierías: de las clases magistrales a la pedagogía del aprendizaje activo," *Ingeniería y Desarrollo*, vol. 30, no. 1, pp. 125–142, 2012. [Online]. Available: <http://www.scielo.org>.

co/scielo.php?script=sci_arttext&pid=S0122-34612012000100008&lng=en&tlng=es. [Accesed: 20-oct-2025].

6. J. Paricio, A. Fernández, and I. Fernández, *Cartografía de la buena docencia universitaria: Un marco para el desarrollo del profesorado basado en la investigación*. Madrid, España: Narcea, 2019.
7. S. Romero-Yesa, D. Fonseca, M. Aláez, and D. Amofilva, "Qualitative assessment of a challenge-based learning and teamwork applied in electronics program," *Heliyon*, vol. 9, no. 12, p. e22739, Dec. 2023, doi: 10.1016/J.HELIYON.2023.E22739.
8. F. Gutiérrez Pérez y D. Prieto Castillo, *La mediación pedagógica: Apuntes para una educación a distancia alternativa*. Mendoza, Argentina: Universidad Nacional de Cuyo, Centro de Comunicación Educativa, 1994.