PBL4TEA

PBL 4 TEAcher Training

Module Enhancement Plans
Book of Abstracts

Volume 1
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PBL4COLLABTT
PBL for Digital Collaborative Training

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TITLE

PBL4TEA Module Enhancement Plans Book of Abstracts
Volume 1 (2025)

EDITORS

Rui M. Lima, IDEA Centre, Algoritmi Centre, University of Minho, Braga, Portugal
Diana Mesquita, Research Centre for Human Development, Faculty of Education and Psychology, Universidade Católica Portuguesa, Porto, Portugal
Zuhal Zeybekoğlu, Koç University Office of Learning and Teaching (KOLT), Koç University, Istanbul, Turkey
Tom O'Mahony, Teaching and Learning Unit, Munster Technological University, Cork, Ireland
Andrius Uždanavičius, Studies Quality and Development Office, Vilnius University, Vilnius, Lithuania

PUBLISHER

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IDEA Centre, University of Minho, Braga/Guimarães, Portugal

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Preface

Higher Education calls for the continuous reinvention of methods, mindsets, and materials. Recognising this imperative, the KA220-HED PBL4COLLABTT Erasmus+ project convened dedicated teachers for several intensive 2.5-day face-to-face **training events (TEV)**, where learning was not a passive process, but a dynamic, collaborative endeavour. Guided by expert educators and trainers, participants adopted approaches grounded in **active learning**, problem **and project-based learning (PBL)**, **digital innovation**, and the strategic integration of **artificial intelligence**.

At the heart of the training stood the project of a **Module Enhancement Plan (MEP)**. Each plan, developed through iterative peer discussions and hands-on experiences, reflects bold steps to redesign modules, bringing pedagogical theory into actionable classroom practice. Teachers crafted solutions that elevate student participation, embed digital tools to enrich learning, harness the power of AI for personalised feedback, and push the boundaries of pedagogical innovation.

This **book of abstracts represents 56 of these MEPs**, 15 from the first TEV at Porto, 11 from the second TEV at Vilnius, and 30 from the third TEV at Braga. Moreover, the abstracts stand as a testament to the international spirit of educational collaboration, featuring contributions from educators across six countries: Belgium (1), Ireland (1), Lithuania (8), Portugal (40), Spain (1), and Turkey (5). The diversity of national perspectives enriches the collection, underscoring a global commitment to innovative and collaborative teacher training.

These **abstracts were prepared** with assistance from generative AI **analysis of each presentation** created by the participants, then reviewed by the authors. Each abstract reflects not only the aim for greater engagement and deeper learning but also the spirit of collegial reflection and growth fostered during the training. The proposals demonstrate the transformative power of facilitated, peer-driven inquiry, emphasising strategies suitable for adaptation and adoption elsewhere.

We encourage you to explore these abstracts and our website, drawing on the collective wisdom and aspirational energy within. May they inform, inspire, and empower your own journey of innovation, ensuring that our teaching practices remain as dynamic and forward-thinking as the world our students will shape.

Rui, Diana, Zuhal, Tom and Andrius

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EVT2: Teaching Event 2 – Porto, Portugal

Redefining Marketing Communication: Integrating Active Learning and AI for Real-World Campaigns

Alexandra Leandro, ESEC-IPC, Portugal

This project details a rapid transformation for the “Marketing Communication Techniques” Master's course, addressing the opportunity to implement new active learning methods within an already project-heavy curriculum. The course, for 40 first-year students, culminates in a group marketing communication campaign in response to a “client” briefing. The future vision embraces Project-Based Learning (PBL), starting with an open-ended question and leveraging AI for design tasks. Diverse active learning tools will be integrated, including Think-Pair-Share for discussion, the 1-Minute Paper for individual assessment, and Brainwriting for collaborative concept sharing. Existing strategies like brainstorming and role-play will be enhanced, and new techniques such as Quizzing and Jigsaw will be introduced. The action plan outlines a revised lesson plan and syllabus, detailing how these techniques will be applied across various topics, culminating in a pitch and feedback session for the integrated marketing communication campaign.

Innovating Discrete Mathematics: Blending Active Learning and Digital Tools for Enhanced Engagement

Amélia Caldeira, Instituto Superior de Engenharia do Porto (ISEP – P.Porto), Porto, Portugal

This project aims to improve student engagement and outcomes in the “Discrete Mathematics” course for 450 first-year Informatics Engineering students. The course currently employs traditional lectures and practical classes culminating in an integrative group work. The proposed transformation focuses on improving active learning strategies to solidify knowledge and develop reasoning. Future learning strategies will include Flipped Classroom, Correction, Test-Taking Teams, and Peer Assessment, supported by digital tools like Moodle and Kahoot. The assessment strategy will evolve to incorporate “During the Classes” evaluation (20%), comprising Kahoot quizzes after videos and Moodle tests with feedback. The Integrative Group Work will continue to contribute significantly (30%), while the global exam will be adjusted to 50%. The action plan involves implementing these changes in the next academic year and collaborating with teammates to brainstorm further innovative ideas.

Reimagining Graphic Design Management: A Project-Based Approach to Rebranding

Ângelo Gomes, Porto Accounting and Business School, Porto, Portugal

This proposal details the transformation of the “Graphic Design Management” course, catering to 50 second-year students at Porto Accounting and Business School. Currently, evaluation relies on portfolio work and oral presentations, combining theoretical and practical studio experiences, alongside field trips and real collaborative projects. The core of the future plan is “The Rebranding - Final Project,” a 16-session module immersing students in a comprehensive rebranding experience. It will integrate active learning, PBL, and DELT concepts, using real-world case studies for problem identification and strategy development. Students will refine strategies based on expert consultation and peer feedback, fostering design thinking, user-centric approaches, collaboration, critical thinking, and communication skills essential for real-world design challenges. Practical steps include contacting brands and ensuring software availability.

Modernising Principles of Computing: A Holistic Active Learning Framework

Bertil P. Marques, Instituto Superior de Engenharia do Porto (ISEP – P.Porto), Porto, Portugal

This project details the proposed enhancement of the “Principles of Computing” course for 322 first-year Informatics Engineering students. The course, which covers computer systems, hardware, software, and programming fundamentals, currently uses expository and interrogative methods along with some active learning techniques like brainstorming and case studies. The transformation aims to provide significant learning experiences, enhance understanding, critical thinking, and practical skills. The future plan will integrate comprehensive active learning strategies, including Problem-Based Learning (PBL) with scenario-based tasks, group discussions, and peer review. It will also incorporate Discovery and Experiential Learning Techniques (DELT) like lab exercises and simulation software. Assessment will be diversified to include formative, summative, and project-based approaches, along with collaborative learning via group projects and study circles. The action plan involves updating the course unit sheet, coordinating with colleagues, and providing training on these new methodologies for consistency across all student experiences.

Evolving Economics Education: Fostering Critical Debates and Problem-Based Learning

Carlos Seixas, Universidade Portucalense, Porto, Portugal

This project proposes advancements for an undergraduate “Project of Economics” course at Universidade Portucalense, involving 15-30 third-year students. Current objectives include critically assessing national/international economy and developing interpersonal skills through poster preparation, event organization, and debates. While the course already incorporates feedback and discussion, the future vision introduces methods to deepen engagement and critical thinking. Key proposals include setting up critical debates where students defend positions they don't believe in and implementing the Fishbowl strategy. Most significantly, the course will embrace a Problem-Based Learning (PBL) strategy, where students tackle open-ended problems related to societal needs and economics. The action plan involves defining the PBL problem and objectives, engaging stakeholders, establishing milestones, and utilizing peer-assessment and individual reflective reports while maintaining the poster exposition as a key outcome.

Inspiring Critical Thinking in Astrophysics: A Future-Oriented Learning Framework

Edita Stonkutė, Vilnius University, Vilnius, Lithuania

This project aims to transform the “Astrophysics” BA course for approximately 45 students by inspiring curiosity and critical thinking, addressing current challenges in student engagement. The course provides knowledge on research tools, astronomical objects, and the application of physics laws to the Universe. While currently using classical theory with some active learning like collaborative problem-solving and brainstorming, the future vision integrates a broader range of active learning strategies, Problem-Based Learning (PBL), and Discovery and Experiential Learning Techniques (DELT). New techniques include Think-Pair-Share, Test-taking Teams, and digital tools like Canva, Miro, Mentimeter, Padlet, Perusall, and OpenAI. Teaching methods will feature interactive lectures with multimedia/simulations, hands-on workshops for digital tools, virtual observatory sessions, and collaborative projects applying digital skills to research. Assessment will shift to emphasize Project Reports, Data Analysis Assignments, Participation, and Peer Evaluation, ensuring comprehensive feedback and reflection. The action plan involves a structured redesign of the course, focusing on motivation and robust assessment.

Challenging the Master: Iterative Improvement in Production Management Processes through Active Learning

Erik Lopes, University of Minho, Guimarães, Portugal

This project details an iterative improvement plan for the “Production Management Processes” Master's course, attended by approximately 35 students. The course already incorporates active learning techniques such as Flipped Classroom, PBL, Think-Pair-Share, and brainstorming, with assessment via written tests, project deliverables, and oral presentations. Inspired by a challenge to continuously improve, the future plan is structured in “Baby Steps,” “Challenging the Master,” and “Showtime” phases. Initial “Baby Steps” involve integrating new activities like Menti for process definition, a Bizagi tutorial, and chatbot simulations for process mapping interviews in BPMN classes, supported by Think-Pair-Share and exercises. Subsequent phases aim to discuss and implement methodological and assessment improvements with peers, focusing on enhanced project management, international collaboration, and active learning for Industry 4.0. The action plan outlines immediate, end-of-semester, and next-course-offer steps for continuous evaluation and refinement.

Innovating Food Product Development: Blended Learning and Real-World Collaboration for Enhanced Skills

Ivo Rodrigues, Escola Superior Agrária de Coimbra Instituto Politécnico de Coimbra, Coimbra, Portugal

This project aims to enhance the “Food Product Project” course for 40-50 first-year Master's students in Food Engineering, with a focus on increasing student involvement and deepening their technical and social skills. The course currently involves students developing a food product prototype with teacher support, assessed through project development and oral/written presentations. The future learning strategies will incorporate flipped classes, “teach back” sessions with alumni and stakeholders, and Think-Pair-Share/Brainstorming. Collaborative Problem-solving with peer feedback will be emphasised, culminating in a progress process video and final pitch. The integration of Blended Learning and AI tools, along with digital platforms such as Perusall, Canva, Lucidspark, Padlet, Xmind, Boardmix, Google Docs/Sheets, and various video editors, will support these activities. Assessment will prioritise “FOR Learning” cycles of test, feedback, and improvement. The action plan includes adapting the syllabus for the next semester, defining new active learning activities, and involving alumni, industry representatives, and other faculty to enrich project development.

Revitalising Molecular Genetics: Fostering Critical Analysis and Higher-Order Thinking through Active Learning

Maria Correia, Universidade Católica Portuguesa, Faculty of Dental Medicine, Portugal

This project addresses challenges in the “Molecular Genetics” course for 108 first-year students, including absenteeism, unproductive practical classes, content difficulty, and a lack of critical analysis by students using ChatGPT. The primary goal is to enhance learning effectiveness and make the course more engaging, focusing on students' ability to critically analyse and integrate information to achieve higher-order tasks. The future plan involves a redesigned syllabus with a new assessment paradigm incorporating “OF, FOR, and AS” learning elements. The first class will use Moodle polls for engagement and assessing prior knowledge. Practical classes will introduce and train students on Perusall and Padlet for collaborative work and syllabus analysis, fostering co-design of assessment rubrics with student input. Throughout the semester, active learning elements like minute papers, polls, and Team-Based Learning will be utilized. The semester will conclude with a Problem/Clinical Case-solving activity and a final group presentation supported by a graphical abstract, promoting the application of acquired knowledge and skills.

Engaging Large-Scale Programming Courses: A Shift to Active Learning Paradigms

Marílio Cardoso, Instituto Superior de Engenharia do Porto (ISEP – P.Porto), Porto, Portugal

This project aims to transform the “Algorithmic and Programming (APROG)” course for over 300 first-semester Informatics Engineering students, addressing the challenge of student engagement. Currently, the course utilizes expository methods, brainstorming, and case studies, with individual and group projects as assessment. The future vision is to integrate a range of active learning strategies to foster deeper understanding and participation. Proposed techniques include Think-Pair-Share, Peer Review, Correction activities, and Quizzing/Polling for immediate comprehension checks. The Jigsaw method will be introduced to facilitate in-depth study and collaborative sharing of complex topics. The action plan involves a meeting with the Program Director to discuss curriculum adjustments, promoting active learning sessions for other teachers, and experimenting with these methods in classes to capitalize on the boom in TI jobs and the use of AI tools to further motivate students.

Revitalising Financial Reporting: Boosting Engagement with Active Learning Techniques

Marta Guerreiro, Instituto Politécnico de Viana do Castelo, Viana do Castelo, Portugal

This project addresses the perception of “Financial Reporting” as a dull, technical subject for 60 second-year Management students. The aim is to increase student engagement and reconsider course content by implementing active learning strategies. Learning objectives include mastering year-end accounting procedures, preparing financial statements, understanding sustainability frameworks, and public reporting. Future strategies involve regular classroom techniques like Think-Pair-Share and Minute Papers, utilizing digital tools such as Padlet and Mentimeter. For higher autonomy, Jigsaw activities will encourage awareness about sustainability using documentaries and AI-powered image creators, while Structured Problem-solving will simulate real-world scenarios through financial statement elaboration and role-play (Accountant versus Auditor). The action plan focuses on summarizing, rethinking, and applying these active learning techniques and DELT tools to each course, highlighting the need to find dedicated time for implementation.

Enhancing Mental Health Nursing Education: Integrating Real Cases and Role-Play for Therapeutic Communication

Odete Araújo, School of Nursing, University of Minho, Braga, Portugal

This project proposes a transformation for the “Mental Health and Psychiatric Nursing” curricular unit, aimed at enriching the learning experience for 3rd-year Nursing students. Currently, theoretical classes are traditional, while theoretical-practical sessions involve analysing nursing care processes. The main challenge identified is the need to introduce more realistic practical lessons. In the future, laboratory practice classes will implement role-play strategies to develop communication, interview, and first aid skills in mental health for 25 students. Theoretical-practical classes (50 students) will extensively use real case studies, including those developed with ChatGPT, to monitor learning and stimulate autonomous work and self-learning. Assessment will continue to include a written test and a Scientific Poster pitch, with the latter utilising Padlet. The action plan focuses on motivating students and faculty, planning meticulously, and implementing these changes in the next academic year with collaborating professors.

Implementing Project-Based Learning in Computational Methods in Engineering

Raquel Faria, Polytechnic University of Coimbra, Coimbra, Portugal

This project proposes a significant transformation for the “Computational Methods in Engineering” Master's course, aimed at enhancing engagement and practical application for mechanical engineering students. Current teaching involves lectures and problem-solving, with assessment via final assignments. The proposal addresses challenges like staff training in PBL, student resistance, and time management, while leveraging opportunities such as promoting active learning and interdisciplinary collaboration. The future vision is to fully integrate Project-Based Learning (PBL), complemented by strategies like Flipped Learning (for Matlab), Structured Problem-solving, and Test-taking Teams. Assessment will be diversified to include low-stakes Moodle quizzes, an Escape Room (10%), a Poster/Infographic with peer-assessment (20%), and a final Matlab App development (40%) alongside a written report (20%) and oral presentation (10%). The action plan details steps from defining objectives and contacting companies for projects, to facilitating group formation in the beginning of the semester, conducting regular check-ins throughout the semester and wrap-up with final presentations, collect feedback to evaluate and improve and showcase success, like a “Wall of fame”, to inspire future students.

Enhancing Geotechnical Engineering: Integrating Active Learning and PBL for Practical Application

Sónia Pizarro, School of Engineering, Porto, Polytechnic Institute of Porto, Porto, Portugal

This project proposes a transformation for the “Geotechnical Engineering, Introduction to Geophysical Surveys” course for 100 students, addressing challenges related to the complexity of scientific principles, interdisciplinary nature, and the need for proficiency in specialized equipment. The course aims to introduce geophysical survey methods, principles, data acquisition, and interpretation for engineering applications. The future vision will integrate a variety of active learning strategies, including Fieldwork, Laboratory Demonstrations, Data Interpretation Activities, Case Studies, Problem-Solving Exercises, and Peer Teaching and Group Work. Notably, Problem-Based Learning (PBL) will be implemented via Trello. Course assessment will be diversified to include regular quizzes for theoretical understanding, data interpretation exercises based on real-world datasets, and a final project or presentation. The action plan involves seeking institutional support, engaging with experienced faculty, assessing infrastructure limitations, and preparing a new course outline for implementation.

Empowering Statistical Literacy in Sports: Adapting Tasks with Digital Tools for Student Engagement

Susana Rafaela Martins, Instituto Politécnico de Viana do Castelo, Viana do Castelo, Portugal

This project aims to transform the “Statistical Methods in Sports” course for 120 first-year students, focusing on motivating students, maintaining instructor motivation, and improving learning of statistical analysis and data interpretation. The course currently employs lectures, practical examples with software, case studies, and group work, assessed through theoretical tests, reports, and small in-class tasks. The main objective is to improve statistical literacy and help students recognise its importance in their scientific context. Future strategies will prioritise engagement, deep understanding, skill acquisition, and constructive feedback. This will be achieved by analysing results from small tasks (correction, quizzes, test-taking teams), observing student attitude in Fishbowl and Jigsaw activities, and collecting feedback via Minute Paper. The action plan involves designing new tasks and adapting existing ones for the current semester, incorporating new digital resources like Mentimeter, Padlet, and Miro, and sharing this methodology with colleagues.

EVT3: Teaching Event 3 – Vilnius, Lithuania

Igniting Student Interest and Participation in Organizational Behaviour

Eva Dias de Oliveira, Universidade Católica Portuguesa, Porto, Portugal

This project aims to transform the Organisational Behaviour course for 250 Management Degree students. The course objectives include identifying basic OB concepts, comparing determinants of behaviour, applying theoretical principles to practical problems, and presenting solutions to case studies. The main challenge is that the first classes often fail to capture student interest and promote active participation. The future plan is to restructure the class to be more engaging and interactive, fostering a more favourable disposition towards the course by connecting OB concepts to real-world scenarios and encouraging discussion. Strategies involve discussing the importance of student engagement, using Perusall for flipped classroom activities with short video clips to spark discussion, and incorporating interactive group activities (e.g., categorising workplace scenarios with Kahoot). The action plan includes discussing changes with colleagues, organising materials, and seeking training in Perusall and Kahoot to integrate them effectively with Blackboard.

Reforming Medical Physics Education for Enhanced Student Engagement and Interactivity

Fulya Dal Yöntem, Koç University, Istanbul, Turkey

This project outlines the transformation of the MEDI 120 - Medical Physics course for 60 students at Koç University. The course provides a comprehensive understanding of medical physics principles and their clinical applications. A current challenge is that students lose interest after presentations, and there is often unequal effort within groups. The future plan is to convert group presentations into a Project-based learning (PBL) approach, making it mandatory for students to engage with medical doctors at the university hospital to generate new ideas related to medical physics. Presentations will be uploaded to Perusall beforehand to collect questions and comments, fostering more effective classroom discussions by addressing students fears of grading. Peer assessment will be introduced to ensure equitable group contributions. The immediate action plan involves revising the syllabus with colleagues and contacting medical doctors to secure their support for student engagement.

Enhancing English Phonetics with Active Learning and Digital Tools

Lina Bikelienė, Vilnius University, Vilnius, Lithuania

This project aims to enhance the English Phonetics component of the English Phonetics and Morphology course, delivered to approximately 60 students in the autumn semester. The course seeks to develop both general and subject competencies, currently employing problem-oriented lectures, individual tasks, and mini-tests. A significant challenge identified is the lack of prior learning among students. To address this, future plans include implementing various Active Learning Techniques such as Learning Cell and Jigsaw. Problem-Based Learning (PBL) will be introduced through the use of Perusall and a practical speech sound perception experiment. Additionally, Digital Enhanced Learning Technologies (DELT), specifically the icSpeech Pronunciation Coach, will be integrated. The action plan outlines steps to incrementally try these active learning techniques and the project exercise with some students, familiarise with and then apply Perusall and icSpeech Pronunciation Coach, and gather student feedback.

Fostering Intercultural Communication Competence through Experiential Learning and Digital Tools

Loreta Chodzkienė, Vilnius University, Vilnius, Lithuania

This project focuses on the Intercultural Communication course for 7th-semester students in the English and another foreign language study programme, including a mix of local (15) and international (10 Erasmus+) students. The course aims to develop general competences (analytical/critical thinking, independent work, teamwork) and subject competences, particularly fostering intercultural communication competence (ICC). Current strategies include interactive lectures using tools like Quizzlet, Padlet, and Socrative. A main challenge is integrating international students and immersing them into the host country's socio-cultural context. Future plans involve applying active experiential learning, project-based learning (PBL), and reflection with a focus on ICC progress. A semi-structured diary method will be introduced, where pairs of local and international students explore and reflect upon individually chosen cultural assets. The action plan includes reviewing and choosing engaging teaching/learning methods, and a key first step is to revise and test active learning methods, along with integrating AI into the course syllabus.

Minimising Lectures and Enhancing Engagement in Strategic Management

Melike Mermercioglu, Koç University, Istanbul, Turkey

This project aims to revise the CMGM 501 - Strategic Management course for 20-30 MIM students at Koç University. The course objectives include understanding strategy, applying strategic management processes, analysing firm environments, developing competitive strategies, formulating/implementing corporate strategies, evaluating performance, and understanding sustainability. Currently, the course uses a mix of lectures, readings, group assignments, discussions, case analysis, quizzes, exams, and guest speakers. Future plans involve minimising lecture time by implementing flipped learning (students watch videos and read articles beforehand) and encouraging student-led creative presentations. The project will continue case studies and group projects, while incorporating Problem-Based Learning (PBL) insights such as entry tickets via Google Docs before case discussions and individual reflection papers with peer evaluation. The immediate action plan includes researching existing course materials on online platforms, learning digital tools like Canva, and rewriting the syllabus to integrate these changes.

Fostering Participatory Learning and Experiential Engagement in Storytelling and Trauma

Neringa Latvyte, Vilnius University, Vilnius, Lithuania

This project aims to improve the Storytelling and Trauma BA program course, delivered to up to 20 students. The course explores the relationship between storytelling and trauma, focusing on narratives' role in processing and healing traumatic experiences. Current learning strategies include active learning, participatory involvement, and experiential learning, with assessment through a research paper, presentations, and an exam. The main challenge and opportunity lie in increasing student involvement and testing new participatory strategies. The future plan is to introduce more active learning activities to enhance student participation. This includes short-term interactions like collaborative note-taking, minute papers, and discussions. For long-term engagement, the project will combine problem-based learning (PBL) through teamwork with experiential learning by exploring authentic places. The action plan outlines using Padlet/Moodle for readings, videos, comments, and tests, and integrating experiential learning with site visits, task sheets, reflections, and presentations.

Enhancing Student Engagement in Graphic Design English for Specific Purposes

Ruta, Vilnius College of Technologies and Design, Vilnius, Lithuania

This project focuses on the Graphic design, English for Specific Purposes course, delivered to 66 students across six sub-groups in the first semester. The learning objectives are to enhance students' critical thinking and deepen their knowledge of graphic design field terminology. Current learning strategies involve analysis of the course book and selection of relevant information, with assessment through discussions and individual presentations. A key challenge is that not all students participate actively and engage in discussion. The future plan involves implementing more active learning strategies and methods, such as Fishbowl discussions and analysing case studies. Students will also be encouraged to create diverse presentations, including Pecha Kucha and poster designs using tools like Canva. The action plan's first steps include selecting only the most relevant topics, providing more up-to-date and practical examples from both Lithuanian and international contexts, and suggesting more role-exchanging activities.

Applying Active Learning and Digital Tools to Enhance Nursing Leadership Education

Seda Sariköse, Nursing Management Department, School of Nursing, Koç University, Istanbul, Turkey

This project addresses the NURS 401 Nursing Management course for 32 senior nursing students. The unit aims to explore nursing leadership styles, analyse their impact on patient care, and evaluate their effectiveness. A core challenge is that students are unfamiliar with theoretical-based courses and struggle with sustained focus. Future plans include introducing various nursing leadership styles and understanding their real-life outcomes. To achieve this, active learning strategies like Brainwriting, interactive lectures, and case study-based group discussions will be implemented. Digital Enhanced Learning Technologies (DELT), such as Mentimeter, PPT, video clips, and Padlet for virtual feedback and gallery walks, will be used. The action plan focuses on gaining learner attention, providing guidance, and assessing learning. It specifically highlights integrating more active and digital learning tools (Brainwriting, Mentimeter, Padlet) and using fun, game-based digital tools like Kahoot and Socrative for assessing learning outcomes.

Enhancing Image Composition and Harmonization in Audiovisual Technologies through Active and Team-Based Learning

Simona Žalytė-Linkuvienė, Vilnius University Šiauliai Academy, Vilnius, Lithuania

This project aims to transform the “Image composition and harmonization tools” unit within the Audiovisual Technologies course for 14 Music Pedagogy (Bachelor) students. The learning objectives include defining image composition concepts, identifying tools for image harmonisation, and applying these principles in photography projects. Future active learning strategies involve lectures with visual examples, demonstrations of editing software, and case studies of famous photographs. Formative assessment measures will include a short quiz on composition principles, peer evaluation of practice assignments, and observation of in-class participation. The project will incorporate various “cue sets” (visual, discussion, activity) to engage students. Team-Based Activities will feature a composition challenge, a gallery walk showcasing different techniques, and a collaborative photography project emphasizing harmonisation of individual styles. The action plan's first step is to update and enrich Moodle learning material with digital assignments, focusing on finding the most suitable digital tools that meet student needs.

Integrating Teamwork and Active Learning in Biology of Pathogenic Microorganisms

Tatjana Kirtiklienė, Vilnius University, Vilnius, Lithuania

This project aims to transform the Biology of pathogenic microorganisms course for approximately 30 BA Microbiology students in their 7th semester. Students currently learn about diagnostic methods, pathogen-host interaction, and microbiome variety through literature analysis, self-preparation for seminars, consultation, and quizzing. A main challenge is that students predominantly work individually, missing teamwork opportunities. The future plan is to integrate active learning strategies into seminars. This includes the Case Study method, combined with Think-Pair-Share, where groups evaluate real clinical cases, suggest diagnostic methods, and prepare treatment schemes, culminating in a presentation. Additionally, Sequence Chains will be used, involving groups solving maps to evaluate pathogen diagnostic methods. Assessment for these activities will incorporate peer review/evaluation. The action plan details the time allocation for group preparation and presentation for both the case study and sequence chain methods.

Fostering Continuous Engagement in Integral Calculus through Flipped Learning and Collaborative Assessment

M. Teresa Malheiro, Mathematics, School of Sciences, University of Minho, Braga, Portugal

This project aims to transform the Integral Calculus course for 80 first-year bachelor engineering students. The course objectives include calculating function primitives and applying integral calculus to geometrical measures. Current learning strategies involve presenting concepts, exercises, and problems, with assessment based on two tests. The main challenge identified is maintaining continuous engagement from the students. Future plans include implementing a flipped classroom approach for some subjects, utilising Perusall for videos supplemented with questions. Collaborative structured problem solving will be introduced, where teams correct each other's answers. A crucial change in assessment involves introducing weekly or bi-weekly assignments, such as quizzes or video watching, linked with Perusall. The action plan's first steps involve creating a short video, possibly using Blackboard or Educast, and integrating it into Perusall with questions. Additionally, it involves creating short, easy homework questions for Blackboard.

EVT4: Teaching Event 4 – Braga, Portugal

Enhancing Mathematics II with Active Learning and Collaborative Problem-Solving

Alzira Faria Affiliation, Instituto Superior de Engenharia do Porto (ISEP – P.Porto), Porto, Portugal

This project focuses on transforming Mathematics II for Geotechnical and Geoenvironmental Engineering students, currently taught through expository lectures and problem-solving practical classes. The main objective is to develop students' ability to apply mathematical techniques to engineering problems and correctly identify solutions for differential equations. The proposed future implementation introduces active learning strategies into practical classes. Each 110-minute practical session will begin with a 60-minute segment of Think-Pair-Share and Collaborative Problem-Solving, where students work individually, then in pairs, and finally share solutions with the class. The session will conclude with a 50-minute segment dedicated to Correction and Brainstorming, encouraging students to examine mistakes and generate alternative approaches. Assessment will shift to include 20% for these active learning strategies during classes, alongside written tests and a partial exam. The action plan aims for implementation in the next semester, seeking to improve student engagement and deeper understanding.

Transforming Linear Algebra Teaching: A Collaborative PBL Framework for First-Year Engineering Students

Amélia Caldeira, Instituto Superior de Engenharia do Porto (ISEP – P.Porto), Porto, Portugal

This presentation outlines a comprehensive plan to transform the Linear Algebra course for first-year students in Telecommunication and Informatics Engineering at the University of Minho. The reform is driven by the need to enhance student engagement, foster deeper understanding, and develop practical problem-solving skills through Project-Based Learning (PBL) and collaborative approaches. The current course structure combines formal theoretical lectures with practical sessions focused on active learning, group work, and integrative projects. Assessment is based on knowledge, investigation, engineering practice, and teamwork, with a significant weight on collaborative group tasks and interdisciplinarity. The future vision incorporates further active learning strategies such as brainstorming, collaborative note-taking, case studies, and the use of digital tools like Kahoot to increase participation. Peer interaction and integration of real-world scenarios are emphasised to improve retention and prepare students for diverse engineering challenges. The transformation aims to shift from passive reception to active co-creation of knowledge, encouraging autonomy and critical thinking. Implementation steps include piloting new methodologies, gathering feedback, and refining strategies for broader adoption.

Flipped Classroom and Active Learning Strategies for Enhanced Engagement in Immunology Education

Mafalda Fonseca, Faculty of Health Sciences, University of Beira Interior, Portugal

This initiative targets the Immune System module within the second-year MSc in Pharmaceutical Sciences, aiming to increase student engagement, particularly in theoretical classes, through the use of flipped classroom and active learning strategies. The previous format relied on seminars and team-based problem-solving, supplemented by online quizzes. The new approach requires students to review provided materials (book chapters, videos, lab protocols) on the Padlet platform before class, adding comments to each resource and completing online quizzes with embedded feedback. In-class time is restructured: a brief lecture clarifies complex topics based on quiz responses, followed by think-pair-share activities and case study analysis in teams. Teams use Padlet to share outputs and present their findings orally, culminating in a final discussion to address remaining doubts. A “one-minute paper” is used to gauge understanding at the end of each session. Future steps include preparing detailed student guides, selecting high-quality pre-class materials, and designing quiz questions that provide immediate, formative feedback. The goal is to foster critical thinking, self-directed learning, and collaborative skills while making theoretical content more accessible and interactive. This transformation is expected to improve knowledge retention, classroom participation, and overall academic performance in immunology.

Boosting Student Engagement and Data Interpretation Skills in Ecophysiology

Bruno Castro, Universidade do Minho, Braga, Portugal

This project aims to address limited student engagement and data interpretation skills in the Ecophysiology / Environmental Physiology course, where passive learning is prevalent. Current theoretical classes are lecture-based, while practical classes involve laboratory work and theoretical-practical exercises using real datasets, often leading to student struggle. The proposed future involves a structured, replicable activity across the semester to stimulate data interpretation and critical thinking. This transformation seeks to increase engagement, peer interaction, and active involvement in data analysis. The action plan outlines a multi-step process: flipped learning with individual and peer analysis of data via Perusall and printed materials; digitally enhanced discussions using Perusall or polling; classical lectures exploring concepts from worked examples; and collaborative problem-solving on complex questions with groups merging and using digital tools like Google Search or ChatGPT. Assessment will involve collective class Padlet creation and peer evaluation.

Integrating Active Learning and AI for Ethical Data Science

Cláudio Carvalho, Faculdade de Filosofia e Ciências Sociais, Universidade Católica Portuguesa, Braga, Portugal

This project addresses the Ethics Applied to Data Science course, aiming to deepen students' understanding of the ethical dimensions of algorithms and their societal impact. Currently, the course utilises assigned readings, audiovisual materials, and case study discussions, which are assessed through an in-class essay. The proposed approach integrates active learning techniques like Socratic Seminars and Fishbowl Discussions, utilising Padlet for structured dialogue and collaborative problem-solving. Perusall will be introduced for formative assessment, enabling ongoing feedback and collaborative analysis of case studies, with the summative assessment shifting to a project report focused on chatbot design and its ethical implications. The action plan focuses on a Problem-Based Learning (PBL) approach to fostering self-reflection on programming ethics. This includes updating the curriculum with real-world case studies highlighting algorithm limitations and biases, engaging students in debates on privacy, fairness, bias, transparency, and accountability, and fostering ethical awareness through group problem-solving and self-reflection exercises on real-world outcomes.

From Proposal to Pitch: Enhancing Science Communication through PBL

Cristina Bajo Santos, Instituto de Investigación Biomedica de Salamanca (IBSAL), Spain

This project aims to transform the Science Communication MSc course, currently focused on acquiring skills in scientific writing and presentation through lectures and assignments. Challenges include a lack of real-world scenarios, focus on deliverables over delivery "how-to," poor student engagement, and limited popularisation practice. The goal is to produce "Effective Scientific Communicators". The proposed future implements a Problem-Based Learning (PBL) approach titled "From Proposal to Pitch". This involves four stages: 1) Team-based scientific proposal preparation (based on provided cases) with peer review. 2) Development and defence of a scientific poster in a walk-through session open to other students and teachers. 3) Project presentation to high-school students and a "project pitch" to a "scientific committee". 4) A proposal report following paper structure. The ideal action plan involves discussions with colleagues, writing and approving a new course proposal, and preparing clear instructions and cases for this PBL setting.

Problem-Based Learning and Digital Tools for Reinforced Concrete Structures

Eduardo Pereira, Civil Engineering, School of Engineering, University of Minho, Guimarães, Portugal

This project aims to transform the Reinforced Concrete Structures course for 40 Civil Engineering students, a demanding subject often feared by students. The current methodology involves theoretical presentations, practical exercises, and hand-written assignments, culminating in an exam. The proposed transformation seeks to involve students more in collaborative projects, shifting learning from fear to curiosity and instigating an engineering spirit of problem-solving and creativity. The core of the change is designing a Problem-Based Learning (PBL) project to be developed within the Perusall environment. Students will work in groups, each solving part of a larger problem, with three intermediate assessment stages based on videos published on Perusall to encourage peer comments and opinions. The action plan details these stages from problem description to calculation demonstration and results summary. It also includes incorporating polls/questions for feedback during theoretical classes and using ChatGPT to support workflow organisation, alongside a hands-on DELT project to fabricate an optimal RC beam.

Enriching International Banking Education through Continuous Assessment and Collaborative Projects

Eliana Guimarães Marcelino, Universidade do Minho, Braga, Portugal

This project targets the Master's in Monetary Economics, Banking, and Finance course on International Banking Operations (25–35 students). The course examines the evolving landscape of global banking, focusing on systemic risk, market analytics, and risk management within financial institutions. Enhancements centre on active participation and continuous learning. Frequent discussion of current events and blog articles, coupled with regular ungraded assignments and group case studies, cultivates deeper analytical skills. The instructor introduces quizzes and public policy debates to help students apply concepts to real-world scenarios. Two team projects provide hands-on exposure to data analysis (bank performance, value-at-risk, and stress testing). Writing assignments every two weeks encourage students to summarise, question, and critically analyse high-quality readings. Assessment becomes more dynamic, with daily in-class quizzes weighted into final grades, collaborative resource sharing via blogs and glossaries, and peer feedback mechanisms. These reforms aim to produce analytic, reflective graduates prepared for ongoing change in international banking.

Boosting Programming Engagement with PBL, Peer Learning, and Continuous Feedback

Filipa Ferraz, School of Engineering, University of Minho, Braga, Portugal

This project aims to address low student engagement and a perceived lack of purpose in the Introduction to Programming Paradigms course, which is taken by 60-80 Biomedical Engineering students and introduces object-oriented programming with Python. The current approach involves a combination of theory and practical classes, utilising a learn-apply strategy, which is assessed through an individual written test and group practical work. The proposed transformation seeks to increase student engagement and knowledge assimilation by integrating active learning, Problem-Based Learning (PBL), and other assessment strategies. The action plan includes designing lesson plans that incorporate coding challenges, peer programming, and a semester-long case study group project with deliverables. It also involves setting up free digital tools, such as Conda and Jupyter notebooks, for practical classes. Crucially, the plan prioritises implementing continuous feedback mechanisms through short in-class quizzes and reflective activities, alongside evaluating effectiveness via student feedback, peer feedback on group projects, and performance metrics.

Reimagining Reviewer Training for Enhanced Quality Assurance in Higher Education

Goran Dakovic, ENQA - European Network for Quality Assurance in Higher Education, Belgium

This project addresses the ENQA Training of Agency Reviewers, an annual course for 30-40 experts on applying European Standards for Quality Assurance (ESG). Current challenges include a need for a deeper understanding of key concepts, critical thinking, and enhanced peer evaluation. The proposed future training concept will be restructured into three weekly, one-day sessions to foster deeper engagement and reflection. Week one will introduce concept-mapping exercises and use Perusall for pre-reading comments and questions. Week two will focus on implementing established working groups, with participants preparing a Memory Matrix from review guidelines and example documents. Week three will enhance existing role-play activities by adding a Fishbowl approach for deeper reflection, where one group performs and another shadows to provide peer feedback. The action plan outlines a timeline for presenting outcomes, gaining approval, developing new materials, establishing an online learning repository, and implementing the new online format by October 2025.

PBL Framework for Digital Collaborative Teacher Training: Transforming the “Estradas” (Roads) Civil Engineering Course

Hugo Silva, Civil Engineering, School of Engineering, University of Minho, Guimarães, Portugal

The reimagined “Estradas” (Roads) course in Civil Engineering introduces a dynamic educational framework driven by active learning, formative assessment, and project-based digital collaboration tools such as AutoCAD, Google Earth, and the university’s Blackboard e-learning platform. The course moves away from traditional lectures and high-stakes final exams, adopting milestone-based projects as the centrepiece for evaluation and feedback. Students engage in hands-on group activities for collaborative work and self-assessment for reflective learning, simulating real engineering challenges, including road design, earthworks, and drainage, applied to real-world locations chosen to boost relevance and motivation. The phased project delivery structure provides multiple opportunities for feedback and revision, nurturing a process-oriented mindset. Emphasis is placed on integrating theoretical concepts with practical application, thereby enhancing motivation and deepening technical competencies. The module also develops essential soft skills such as teamwork, communication, and digital literacy, preparing students for modern engineering careers. The course follows an innovative pedagogical approach within the scope of the PBL4COLLAB project, embedding technology and collaborative assessment throughout to transform how engineering knowledge is acquired and applied.

Diversifying Active Learning and Peer Feedback for Personal Development Planning

Inês Monteiro, Universidade Católica Portuguesa, Porto, Portugal

This project focuses on the CARE - Centre for Educational Excellence e-learning course for 10-15 students, which guides them in analysing study methods, applying learning techniques, and constructing personal development plans, culminating in a “New Year Goals” final project with peer feedback. The main challenge is enhancing student participation in the 100% online environment. The proposed future aims to further intentionalize and diversify active learning strategies, specifically enhancing the use of case studies, minute papers, Think-Pair-Share, and collaborative problem-solving. While maintaining discussions of evaluation criteria, the project will introduce peer feedback with guiding questions designed to prompt critical reflection on whether peers will achieve objectives and what improvements are needed. Ultimately, the course will evolve from a focus on concepts and an individual final project to an integrated project-based approach. The action plan involves defining detailed evaluation criteria for the final project, including peer feedback, and restructuring sessions to diversify active learning strategies.

Integrating Flipped and Problem-Based Learning in Bioenergetics and Metabolism

Isabel Silva, Department of Biology, University of Minho, Braga, Portugal

This presentation discusses the transformation of the second-year Bioenergetics and Metabolism course for Biology, Biology-Geology, and Biochemistry students (60–100 students). The initial approach combined expository lectures with post-class quizzes, problem-based sessions, and hands-on laboratory work. Challenges included maintaining engagement and helping students navigate the complexity and interconnection of metabolic pathways. The proposed framework introduces flipped learning and enhanced PBL: students will access supplementary materials, such as videos and articles, before each class using digital platforms (e.g., Perusall), enabling deeper foundational understanding. In-class activities increase in frequency and focus not only on clinical case studies but also on diverse applications like biotechnology and agriculture. Final project-based learning connects metabolic concepts to real-world problems. Peer assessment is integrated, with students presenting final projects on collaborative platforms like Padlet or Miro to stimulate discussion and critical reflection. Continuous feedback and course adjustments, driven by student questionnaires and engagement analytics, aim to optimise learning outcomes and prepare students for advanced topics in biological sciences.

Redefining Socio-cultural Animation through Digital Active Learning

Isabel Sousa, Universidade Católica Portuguesa, Porto, Portugal

This project addresses the Socio-cultural and Educational Animation course for 28 Social Education students, focusing on designing, implementing, and evaluating intervention projects. Current learning strategies include debates, case studies, role-playing, and project portfolio creation. Challenges include ensuring applicability, motivation, and managing diverse skills, alongside opportunities for digital competences and collaborative learning. The proposed transformation aims to make the learning experience more engaging and participative by introducing more (small) active learning strategies. The future plan incorporates collaborative concept maps, the creation of digital content, and interactive digital simulations using tools like Kahoot! and Quizzes. The action plan explicitly states the intention to “Change ALL the planning of the course for the next semester”. This comprehensive overhaul seeks to leverage digital tools and collaborative methods to enhance student motivation and ensure practical relevance in addressing real-life challenges.

Integrating Active Learning and AI Tools for Research Methods Education

Jorge Cunha, Department of Production and Systems, Algoritmi Centre, School of Engineering, University of Minho, Guimarães, Portugal

This project addresses challenges in the Research Methods course for 50 Industrial Engineering and Management Master's students, specifically concerning student engagement, promoting independent work, and maintaining academic integrity in the context of AI-generated assignments. The course currently utilises lectures, article analysis, and practical sessions on reference management and statistical techniques, which are assessed through a research proposal and group work. The proposed transformation incorporates active learning strategies, including Concept Mapping and Collaborative Problem Solving. Digital Enhanced Learning Tools (DELT) will be incorporated by encouraging students to propose personalised prompts for Generative AI (GenAI) to generate initial research ideas. GenAI will also be used to support the development of presentations (PowerPoint or posters). Assessment will continue to focus on the research proposal. The action plan outlines the next steps, which include meeting and discussing the proposed changes with teaching staff, alongside a continued focus on critical thinking.

Structured PBL and Digital Tools for English for Academic Purposes and Research

Liudmila Arcimaviciene, Vilnius University, Vilnius, Lithuania

This project aims to transform the English for Academic Purposes and Research course for 20 Political Science and International Relations students, addressing challenges related to student autonomy, engagement, and interdisciplinary collaboration, especially in a digital environment. The current approach focuses on understanding research peculiarities and applying methods to real-life examples, emphasising the process. The proposed future involves a more structured Problem-Based Learning (PBL) approach, with an enhanced use of digitalisation (DELT) for deliverables and peer review. It will also adopt a more inter-disciplinary approach and consider an external project partner to highlight applicability to future studies and professions. The action plan includes structured planning of PBL, preparing a digital space (MS Teams Project planner) for ongoing student engagement and active learning. It also prioritises the effective and ethical use of generative AI tools, alongside traditional active learning techniques like Think-Pair-Share and One-Minute Papers, aiming for a comprehensive and engaging learning experience.

Active Learning in Psycholinguistics and Language Teaching: Fostering Critical Analysis for Future Educators

Maitê Gil, Universidade Católica Portuguesa, Porto, Portugal

This presentation discusses the redesign of the Psycholinguistics and Language Teaching course for a Master's program in Portuguese Language Teaching. The overarching goal is to cultivate a critical spirit in future teachers, enabling them to apply theoretical knowledge to real classroom challenges. The course is modular, with each unit employing active learning strategies such as quizzing, think-pair-share, and case analysis, culminating in a deliverable that demonstrates students' ability to critically evaluate teaching materials. For example, Module 1 begins with a quiz on core concepts (Linguistics, Language Neuroscience, Psycholinguistics), followed by active lecturing in short blocks with interactive questioning (e.g., Kahoot). Students then engage in think-pair-share exercises to create conceptual maps linking these fields to language acquisition and learning. Subsequent classes deepen understanding by contrasting L1 acquisition and L2 learning, using case analyses and collaborative mind-mapping. The course emphasises continuous assessment, peer interaction, and the practical application of theory to teaching scenarios. Future steps include refining case materials and detailing module planning to ensure alignment with learning outcomes. This approach aims to produce reflective, adaptable educators capable of integrating psycholinguistic insights into effective language teaching practices.

Active and Collaborative Strategies in Sports Communication, Conflict, and Negotiation Training

Marco Pereira, Universidade Católica Portuguesa, Porto, Portugal

This presentation outlines reforms to the Communication, Conflicts, and Negotiation for High Performance course, targeting groups of 10–15 students in sports contexts. The course aims to help professionals develop positive communication and conflict management skills essential for athletes, parents, caregivers, and team personnel. Key reforms focus on using active learning, including quizzes, roleplaying, the Fishbowl strategy, and critical debates. The course is delivered online via Zoom, with weekly sessions and frequent, interactive assessments. The learning path shifts from generic knowledge to practical application, with in-class observational assessments of body language, negotiation scenarios, and communication plan development. Future plans include adapting handbooks, engaging directly with sports organisations, and scheduling training sessions involving real teams. Assessment integrates online quizzes and structured observation within actual workshops. This blended approach seeks to bridge technical, functional, and relational competencies, fostering high performance, well-being, and resilient conflict management in the sports ecosystem.

Activating Engagement and Peer Feedback in Logistics Education

Manuela Azevedo, School of Economics and Management, University of Minho, Braga, Portugal

This project aims to transform the LOGISTICS course for 60 Marketing degree students, addressing low motivation in theoretical subjects and limited engagement during group presentations. Current learning strategies include two group case studies with presentations, alongside a final exam. The proposed future aims to motivate class interaction and curiosity by having each group actively evaluate and comment on the work of other groups. The action plan involves reorganising lesson plans to integrate these changes, learning more about new tools and techniques to support the diversified approach, and then implementing these changes. This transformation seeks to shift student focus beyond their own assignments, fostering broader understanding and active participation in the learning process across all course components, including theoretical subjects like Demand Management.

Enhancing Molecular Pathology Learning through Active Strategies and Diverse Deliverables

Mário Maia-Matos, Lisbon School of Health Technology, Polytechnic Institute in Lisbon, Lisbon, Portugal

This project aims to increase student engagement and learning in the Laboratory Molecular Pathology course for 80 Biomedical Laboratory Sciences students. Current challenges include transmissive theoretical classes, many concepts before case studies, quality issues in group assignments, and long practical videos. The proposed transformation focuses on implementing active learning strategies during theoretical classes, such as quiz polling and “learning cells” where students write questions and provide peer feedback. To address group assignment issues, more diverse deliverables will be introduced, including a 5-minute disease explanation video, a concept map of signalling pathways, and a technical diagnostics report. Assessment strategies will include monitoring quiz polling, oral questioning based on learning cell interactions, grading each group deliverable with split rubrics, and implementing peer assessment via Team Mate. The action plan includes creating Kahoot quizzes, Moodle Forum learning cells, splitting rubrics, and setting up Team Mate accounts.

Refocusing Ergonomics and Occupational Health on Critical Thinking with AI Support

Nélson Costa, Department of Production and Systems, Algoritmi Centre, School of Engineering, University of Minho, Guimarães, Portugal

This project addresses challenges in the Ergonomics and Occupational Health and Safety course, offered to about 50 Master's students. Specifically, it is intended to increase the student's engagement and to promoting genuine independent work. The current approach involves diagnosing misconceptions, expository methods supported by with visual tools, open debates, and reflection moments for problem-solving, and assessed through written tests and solving problems based scenarios. The proposed future approach aims to enhance critical thinking by exploring new active learning strategies. These strategies include “Case Study” analysis for independent work promotion, using “Minute Papers”, at the beginning of lessons to gauge pre-class engagement, and “Sequence Chains” for information organisation. The action plan's first step is to refocus on critical thinking by integrating Generative AI (GenAI) into the process. Students will be invited to use GenAI to create initial outputs and then make evaluative judgments about the quality of the AI-produced content, fostering a deeper analytical approach to the subject.

Fostering Collaborative Problem-Solving and AI Use in Energy & Environment

Paula Varandas Ferreira, Department of Production and Systems, Algoritmi Centre, School of Engineering, University of Minho, Guimarães, Portugal

This project addresses student engagement and academic integrity challenges in the Energy & Environment course for 45 students from diverse programs. The current course uses seminars, lectures, and analysis of energy/environment problems, assessed via teacher feedback and individual quizzes. The proposed transformation integrates active learning strategies focusing on collaborative problem-solving, where student groups will discuss and propose solutions for pressing energy and environment issues like access to energy, plastic waste, or clean transportation. Digital Enhanced Learning Tools (DELT) will be incorporated by encouraging students to propose personalised prompts for Generative AI (GenAI) to generate initial ideas for problems and to support the creation of presentations (PowerPoint or posters). Assessment will combine individual quizzes with peer feedback (intragroup and intergroup) and traditional teaching feedback. The action plan outlines immediate next steps, including meeting with teaching staff to define possible problems and testing prompt examples for GenAI.

Improving Immunology Engagement and Assessment through Peer Feedback

Raquel Silva, Faculdade de Medicina Dentária, Universidade Católica Portuguesa, Portugal

This project addresses the Immunology course for approximately 100 Dental Medicine and Biomedical Sciences students, aiming to improve student engagement and assessment. The course currently involves theoretical and theoretical-practical classes, with a final integrative activity, focusing on integrating distinct dimensions of immunology with pharmacology, microbiology pathophysiology, and related fields within disease contexts. Key challenges include the large student number and language barriers. The proposed transformation centres on implementing peer-feedback mechanisms to enhance students' understanding of assignments and assessment criteria, thereby improving their own work. The action plan involves using Padlet as a platform for groups to upload concept maps, allowing students time to comment on each other's work and refine their own before final presentation. The success of this proposal will be evaluated through a questionnaire. This initiative is slated for implementation in the next edition of the course in the 2025-2026 academic year, fostering a more interactive and self-regulated learning environment.

Fostering Curricular Integration in Dental Medicine Through Peer-Led Simulations

Rita Pereira, Universidade Católica Portuguesa, Porto, Portugal

This proposal addresses the lack of integration across the biomedical, pre-clinical, and clinical cycles for dental medicine students (2nd and 3rd years, 91 students) at the pre-clinical stage. Recognising the disconnection between theoretical principles and clinical practice, the project introduces rotational stations for hands-on practice and peer observation. Active learning takes shape through simulated clinical scenarios, roleplay, and constructive feedback cycles. Digital Enhanced Learning Tools (DELT) facilitate preparation and assessment, while peer feedback becomes an official component of the evaluation process. The revised model includes briefings on clinical cases, procedural simulations, real-time peer and instructor feedback, and integrated evaluation sessions. Future implementation involves collaborating with curricular leaders to schedule two sessions per semester for all students, with detailed activity guidelines and video resources provided in advance. The overarching goal is to smooth the pathway from fundamental concepts to complex clinical cases, enhance curricular alignment, and foster autonomous, team-based learning in dental education.

Problem-Based Learning Framework for Digital Collaborative Teacher Training: Redesigning the Applied Biology of the Cell Module through Innovative Pedagogical Strategies

Rose M. Fitzgerald V.N., Munster Technological University, Cork, Ireland

The redesign of the Applied Biology of the Cell module for first-year biomedical engineering students addresses key pedagogical challenges stemming from students' heterogeneous academic backgrounds, particularly those with limited prior exposure to biological sciences. This diversity creates substantial knowledge gaps between engineering-focused curricula and fundamental biological concepts, which hinder engagement with core content, necessitating innovative educational interventions to ensure academic success and professional competency. To support learning and skill development, the module was redesigned employing a comprehensive problem-based learning framework that integrates digital technologies and collaborative strategies through a phased approach. Key innovations include gamified match-card activities to stimulate cognitive engagement and promote peer interaction, real-time classroom response systems (Vevox) enabling immediate feedback and knowledge gap identification, while facilitating continuous formative assessment and provision of targeted support. Laboratory sessions are enhanced through the integration of quick response (QR) codes, providing on-demand procedural guidance and interactive learning resources. This pedagogical model employs a demonstration-based flipped classroom approach, leveraging collaborative platforms such as Padlet and Edpuzzle, delivering pre-recorded instructional content with embedded interactivity and engagement tracking. Students review theoretical concepts in advance, optimising practical session effectiveness. Assessment methods are diversified to include formative multiple-choice assessments, summative short-answer examinations, structured laboratory reports and direct observation of procedural skills (DOPS) to evaluate practical competencies. These strategies promote inclusive, evidence-based assessment and deeper learning. Future developments will explore the integration of immersive virtual cleanroom simulations, structured industry visits and wearable instructional technologies. This evidence-based pedagogical model creates inclusive, active-learning environments that strengthen knowledge retention and professional readiness. The framework demonstrates scalable solutions for bridging the biology-engineering divide, supporting successful student transitions into biomedical engineering and medical device careers while aligning with real-world industry demands and professional standards.

Engaging Principles of Economics through Collaborative Problem-Solving and AI Tutoring

Sinan Sarpça, Koç University, Istanbul, Turkey

This project seeks to transform Econ 100 – Principles of Economics for approximately 100 students, addressing the challenge that students often memorise without understanding logical reasoning. The current approach involves providing slides, homework, class discussions, and midterm/final exams. The proposed future aims to foster independent thinking by engaging students in Collaborative Problem-Solving. This will involve encouraging group discussions where students explain concepts to each other, promoting peer teaching for deeper understanding. A significant innovation is the intention to set up an AI tutor that provides instant feedback on exercises and quizzes. The action plan outlines forming small groups and creating structured activities where each member contributes to problem-solving. It also details strategies for encouraging peer teaching and facilitating group discussions, including Think-Pair-Share activities. For the AI tutor, the plan involves preparing content (question/exercise bank), integrating instant feedback features, encouraging usage, and tracking performance.

Developing Research Skills in Medical Education through Active and Collaborative Design

Sofia Meneres, Medical School, Universidade Católica Portuguesa, Portugal

This project outlines a transformation for the Research in Medical Education course's "Research on Faculty Development" module, designed for four Master's students without prior education or research background. Despite being a new course with active methodologies, challenges include a lack of prior knowledge, time constraints, and engagement. The proposed future session plan (one hour) incorporates guided brainstorming to activate prior knowledge, followed by Jigsaw collaborative learning with case studies to explore research questions, and finally, collaborative research design through "Research Mapping in Groups". This will guide students in outlining a basic study, identifying research questions, methods, participants, and potential outcomes. Assessment will be formative (active observation, guiding questions) and summative (each student sharing a key aspect, facilitator checklist, written reflection). The action plan focuses on sourcing real case study excerpts, exploring AI/digital tool integration, and considering flipped classroom elements.

Revitalizing Media Research Methods: Problem-Based Learning and Digital Peer Evaluation

Suncem Koçer, Koç University, Istanbul, Turkey

This presentation describes the redesign of the Media and Visual Arts Research Methods (MAVA307) course for third-year students, emphasizing application, interdisciplinarity, and digital integration. The course's learning objectives include mastering research design, understanding diverse methodological approaches, and cultivating ethical research practices. Innovative strategies include problem-based learning, hands-on case studies, brainstorming, and argumentation exercises. The instructor plans to expand active learning by adding fishbowl discussions, jigsaw methods, and enhanced fieldwork projects. Digital tools—such as Padlet and Perusal—will be used for collaborative annotation and resource sharing. Peer evaluation is woven throughout, with students leveraging GenAI for feedback on projects and presentations. The syllabus will focus on applying data collection and analysis techniques, with gradual integration of digital platforms and AI for formative assessment. These reforms seek to bridge theoretical and practical divides, boost engagement, and build research competence in media and visual arts.

PBL Framework for Digital Collaborative Teacher Training: Environmental Monitoring

Teresa Valente, Department of Earth Sciences, School of Sciences, University of Minho, Portugal

This project outlines a transformation in the Environmental Monitoring course offered to bachelor's students in Environmental Sciences. The revised curriculum is built upon Problem-Based Learning (PBL) principles coupled with the strategic use of artificial intelligence (AI) to promote applied skills and active engagement. Students are organised into teams and tasked with a real-life environmental challenge—assessing the water quality of an urban river. This multi-phase process includes fieldwork, laboratory analysis, data interpretation, and reporting. New digital platforms and AI tools, such as ChatGPT, support brainstorming, literature search, and data analysis, making the learning process more interactive and reflective of professional environmental assessment practices. The incorporation of regular quizzes, structured deliverables, and feedback sessions ensures ongoing formative evaluation and skill reinforcement. By simulating genuine scientific inquiry and employing modern technologies, the course intends to cultivate robust critical thinking, data literacy, and environmental stewardship required of future environmental specialists.

Engaging Minds: Revitalising Social Psychology with Active and Problem-Based Learning

Viviana Pinto, Universidade Católica Portuguesa, Braga, Portugal

This project addresses the challenge of keeping approximately 90 Social Psychology students attentive and involved, especially during lectures, where participation often dwindles after group dynamics. Current strategies combine theory and practice using expository methods, everyday examples, and group dynamics. The proposed transformation aims to increase overall student engagement through new active learning strategies. Future plans include implementing Minute Papers and Quizzes for immediate feedback and reflection. New group dynamics such as Test-Taking Teams and Jigsaw will promote interaction, practical, and reflective learning, and foster deeper understanding. Crucially, Problem-Based Learning (PBL) will be introduced by presenting real-life Social Psychology case studies for students to analyse and propose solutions, which research suggests increases engagement and knowledge retention. The action plan's initial steps involve developing a simple, context-tailored case study, piloting it in a class session, forming balanced groups, and providing constructive feedback to guide student development.