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Transforming Project Management Education: Sustainability and Stakeholder Engagement in Practice

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Abstract

This paper presents a course design aimed at integrating the Sustainable Development Goals (SDGs) through hands-on, project-based learning. The model offers a replicable blueprint for educators seeking to align higher education with global sustainability goals and foster applied, inclusive, and socially relevant learning environments. Moving beyond traditional textbook instruction, the course empowers students to develop practical project proposals that address real-world sustainability challenges on the university campus and in the city of Lund. Students work in diverse, international teams to design solutions aligned with specific SDGs, applying project management tools such as Gantt charts, stakeholder analysis, and risk matrices. The course emphasizes collaboration with sustainability-oriented actors from industry and public institutions to simulate real-life project environments and enhance relevance. The course's assessment framework includes peer reviews, reflective practices, and structured rubrics, supporting a holistic evaluation of both process and outcomes. While the course has proven effective in boosting student engagement and learning outcomes, it also presents challenges—particularly for international students navigating language barriers, cultural differences, and unfamiliar local contexts. Despite these hurdles, students consistently report that the experience is more impactful and meaningful than traditional classroom teaching.

Introduction

Universities have traditionally focused on two core missions: teaching and research. In recent decades, a third mission—societal and industrial engagement—has gained

prominence as higher education institutions are increasingly called upon to address complex global challenges (Etzkowitz & Leydesdorff, 2000). While university-industry collaboration is well-documented in research contexts, its integration into teaching remains underdeveloped. Even with the rise of new pedagogical models like flipped classrooms, teaching practices often lag behind the evolving needs of society and industry (Chankseliani & McCowan, 2021).

In response, educators are turning to more collaborative, applied methods that prepare students to engage with real-world problems (Owens, 2017). Drawing on two decades of research on university-industry collaboration—and informed by emerging literature on sustainability in higher education—I sought to explore whether embedding practical challenges engagement into teaching could enhance learning, increase relevance, and foster more inclusive, impactful education.

This paper presents the implementation of a new pedagogical model introduced in 2020 in the Project Management course at Lund University. The approach integrates the Sustainable Development Goals (SDGs), project-based learning, and collaboration with sustainability-oriented actors. It offers a replicable model for educators aiming to align their teaching with global sustainability goals and the changing demands of society.

Introducing SDGs into a Project Management Course

education is increasingly seen as essential for aligning academic programs with global sustainability challenges (Owens, 2017; Leal Filho et al., 2019; Gamage, Ekanayake, & Dehideniya, 2022).

Responding to this need, I redesigned the FEKH13 Project Management course at Lund University to embed SDGs within a project-based learning framework.[1] This approach enables students to tackle sustainability issues within their local

[1] This paper presents the implementation of a new pedagogical approach in the FEKH13 Project Management course at the School of Economics and Management, Lund University. FEKH13 is a third-year elective course taught in English and primarily attended by international students. The redesigned course emphasizes hands-on learning, stakeholder engagement, and interdisciplinary collaboration. Although a similar model was later adopted in the IBUG11 Cross-Cultural Teams and Project Management course, this paper focuses exclusively on the FEKH13 implementation.

environment—typically on campus or in the city of Lund—while applying project management tools in a practical context and a problem they want to address.

Rather than relying on traditional textbook-based instruction, the course emphasizes hands-on, project-based learning and applied problem-solving rooted in real societal challenges. Students work in teams to develop project proposals aligned with specific SDGs, fostering both technical competencies—such as the use of project management tools including Gantt charts, project charters, budgeting, scope definition, SWOT analysis, and risk and uncertainty management—and a deeper understanding of sustainability. This model also supports the development of key competencies in sustainability, such as systems thinking, collaboration, and strategic problem-solving (Birdman, Wiek, & Lang, 2022). By engaging with external stakeholders—including industry professionals, public sector actors and occasionally non-governmental organizations (NGOs) as stakeholders in their project proposals, students gain exposure to diverse perspectives and enhance their ability to co-create solutions that are both innovative and socially relevant.

Course Structure

four core pillars: project-based learning, integration of SDGs, external stakeholder engagement and collaborating in diverse teams. These elements are embedded throughout the course to create an applied, dynamic, inclusive learning environment.

❧ Introduction and Orientation

Students begin with an overview of project management principles, tools, and practice-based insights relevant to contemporary challenges. Lectures and seminars are complemented by guest speakers from companies such as IKEA, Tetra Pak, and Sony, who share their experiences and perspectives on current project management practices. The SDGs are introduced early in the course to frame the broader societal relevance of the students' work and to encourage a sustainability-oriented mindset throughout the project development process.

☙ Project Proposal Development

Working in teams, students identify sustainability challenges within the university or local community. These challenges are mapped to specific SDGs, and students pitch their initial ideas during supervision sessions. Feedback from peers and instructors helps refine their proposals, which include objectives, methodologies, and expected outcomes.

⚘. Project Planning and Stakeholder Engagement

Students apply project management tools such as Gantt charts, risk matrices, and organizational charts to develop detailed project plans. They are encouraged to engage with sustainability-oriented actors from industry and the public sector to validate their ideas and gather support. This approach reflects the broader goals of the Third Mission in higher education, which emphasizes the co-creation of knowledge through collaboration between academia, industry, and public actors (Etzkowitz & Leydesdorff, 2000), and aligns with efforts to embed sustainability into teaching practices and make university education more responsive to societal needs and challenges (Owens, 2017).

⁓. Presentation and Reflection

Final presentations are delivered to a panel of peers, instructors, and external stakeholders, including representatives from Future by Lund, LU Innovation, and the LU Project Office. Students reflect on their learning journey, the challenges they faced, and the potential impact of their projects. This reflective practice reinforces metacognitive skills and supports continuous improvement.

Examples of Student Projects

The core group assignment in FEKH13 is framed around a fictitious but contextually grounded challenge (or the so-called project call): *Transforming Lund University Campus for Sustainable Excellence*. Students are tasked with designing innovative, feasible, and sustainability-driven project proposals that address real challenges on campus or in the city of Lund. The assignment emphasizes both environmental and social sustainability, encouraging students to align their projects with specific SDGs such as Goal 4 (Quality

Education), Goal 10 (Reduced Inequality), and Goal 12 (Responsible Consumption and Production).

Working in diverse, international teams, students develop comprehensive proposals that include a project charter, stakeholder analysis, Gantt charts, risk matrices, and budget plans. They are also expected to engage with external stakeholders and consider international collaboration—reflecting the global nature of sustainability challenges and the importance of university-industry-society interaction (Bolstad et al., 2021; Chankseliani & McCowan, 2021).

Below are examples of student project proposals developed within this framework:

- **Inclusive Campus Environment**: A team proposed a mentorship and awareness program to foster diversity and inclusion. Their plan included workshops, physical meeting hubs, and a peer-support network for underrepresented students.
- **Reusable Beverage Cups**: This group addressed waste reduction by promoting reusable hot beverage cups. They conducted surveys, partnered with campus vendors, and proposed a cost-benefit model for implementation.
- **Water Fountains Initiative**: A project aimed at reducing plastic bottle use by installing water fountains in high-traffic areas. Students conducted interviews, mapped locations, and identified commercial partners for implementation.
- **Sustainable Food Practices**: Several teams collaborated with dining services to propose composting programs, local sourcing, and awareness campaigns on sustainable eating.
- **Circular Economy Projects**: Many groups pointed out the importance of sharing and proposed initiatives such as book-sharing platforms, clothing banks, and furniture reuse networks, developed in partnership with local businesses and other actors.

Although these projects have not been implemented in real life, they were presented to external stakeholders such as Future by Lund, LU Innovation, and the LU Project Office. Students also conducted real market research and applied core project management tools—including budgeting, scheduling, and risk assessment—to develop their proposals. The process allowed students to apply project management tools in a meaningful context, develop leadership and teamwork skills, and engage with sustainability in a practical and impactful way (Birdman, Wiek, & Lang, 2022).

Assessment Methods

The assessment strategy in the FEKH13 Project Management course is designed to reflect the dynamic, collaborative, and applied nature of the students' work. Rather than relying solely on traditional exams or written reports, the course employs a multi-dimensional assessment framework that evaluates both the process and the outcomes of student learning. A key component of the assessment is the peer-reviewed final seminar, where each group presents their project proposal to fellow students and external guests. Students are required to actively engage with at least two other group presentations, providing structured feedback based on a set of clearly defined criteria. This peer evaluation process fosters critical thinking, mutual learning, and accountability.

The assessment criteria include:

- **Clarity**: Is the project scope well-defined and clearly articulated?
- **Creativity**: Is the idea unique, innovative, and aligned with the project call?
- **Feasibility**: Is the project realistic and well-planned? Has the group effectively used project management tools?
- **E₡ ciency**: Is there a logical relationship between the resources used and the expected outcomes?
- **Relevance**: Does the project address the goals of the assignment and provide value to the university and its stakeholders?
- **Impact**: Are the benefits to students, staff, and external stakeholders clearly demonstrated?
- **Sustainability**: Does the project have a long-term vision and a clear, strategic closure plan?

Each project is assessed using a detailed rubric shared with students in advance. Criteria are rated on a scale from 1 (very weak) to 5 (excellent) and cover seven dimensions: clarity, creativity, feasibility, efficiency, relevance, impact, and sustainability. For example, a score of 3 in "feasibility" might indicate a moderately realistic project lacking detail, while a 5 reflects a well-developed, actionable plan. The rubric serves both summative and formative purposes. It guides final evaluations and is also used throughout the course during supervision meetings. I regularly prompted students to reflect on their progress using the rubric—for instance, by asking, "Is your proposal feasible and realistic?"—to help them internalize expectations and refine their work.

This approach ensures transparent and consistent grading while encouraging critical reflection on the broader impact of projects. Alongside peer assessments, students engage in self-reflection, progress reviews, and feedback with instructors and external stakeholders, reinforcing continuous learning.

Focusing on learning by doing, the course assesses not only final deliverables but also teamwork, leadership, and engagement with complex, real-life challenges. This formative model aligns with best practices in sustainability education and project-based learning, supporting key competencies like collaboration, systems thinking, and strategic planning, and supports the development of key competencies such as collaboration, systems thinking, and strategic planning (see Birdman, Wiek, & Lang, 2022; Gamage, Ekanayake, & Dehideniya, 2022).

In addition to the group project and peer evaluations, students complete an individual written exam at the end of the course. Rather than testing memorization, the exam focuses on critical reflection and personal learning outcomes. Students are asked to identify two soft skills and two hard skills they developed through the group assignment, and to explain how these will benefit their future academic or professional paths. They also reflect on the benefits and challenges of working in international teams, drawing on specific examples from their project experience. This reflective exam component reinforces metacognitive learning and ensures individual accountability within a collaborative course structure. It also provides a structured opportunity for students to articulate the transferable skills they have gained—such as communication, leadership, stakeholder analysis, and project planning—and to connect their learning to future goals.

Challenges Faced in Implementing the Pedagogical Framework

While the integration of project-based learning, stakeholder engagement, and the Sustainable Development Goals (SDGs) into the FEKH13 Project Management course has yielded significant pedagogical benefits, it has also presented a range of challenges. These can be broadly categorized into logistical, pedagogical, and stakeholder-related issues, and partly due to the challenges associated with being an "exchange student."

❧ Logistical Challenges

- **Time Constraints**: Students often underestimated the time required to complete a comprehensive project proposal, including stakeholder engagement, budgeting, and risk analysis. Despite the structured timeline, some groups struggled to meet deadlines, especially when coordinating with external actors.
- **Tool Familiarity**: While students were encouraged to use project management tools such as Gantt charts, risk matrices, and RACI charts, many had limited prior experience. This required additional instruction and support, which placed demands on both students and instructors.
- **Group Dynamics**: Forming diverse teams was intentional to simulate the team-based project environments common in professional practice, but it also led to challenges in communication, conflict resolution, and workload distribution.

☙Pedagogical Challenges

- **Balancing Structure and Creativity**: Students were given a high degree of autonomy in defining their project scope and objectives. While this encouraged creativity, some students struggled with the open-ended nature of the assignment. Striking the right balance between freedom and structure was an ongoing challenge.
- **Learning Curve for Applied Methods**: Many students (especially exchange students) were accustomed to traditional, exam-based learning. Transitioning to a hands-on, collaborative model required a mindset shift. Some students initially resisted the ambiguity and open-ended nature of the assignment.
- **Assessment Complexity**: Evaluating diverse projects fairly required a multi-criteria rubric and peer review process. While this approach was more holistic, it also introduced subjectivity and required careful moderation to ensure consistency.

⚘. Stakeholder-Related Challenges

- **Engaging External Partners**: Identifying and motivating relevant external stakeholders (e.g., companies, municipal actors) to participate in a fictitious project scenario was difficult. Some stakeholders were enthusiastic, while others were hesitant due to time constraints or unclear benefits.

- **Simulated vs. Real-World Impact**: Since the project call was fictitious, students were occasionally disappointed not to be able to implement their proposals. Given the lack of time and resources for actual execution, the projects remained at the planning stage. However, in several cases, students proactively followed up with stakeholders to explore whether their proposals could be realized beyond the course. Bridging the gap between a classroom-based planning exercise and potential real-world application required continuous reinforcement of the course's learning objectives and the value of strategic project thinking.

Examples of Challenges Faced by Student Teams

A unique aspect of this course is that the majority of participants are international students. While this diversity enriches the learning environment, it also introduces specific challenges. Language barriers occasionally hindered communication within teams, particularly when discussing complex project management terminology or engaging with local stakeholders. Cultural differences in teamwork styles, expectations, and communication norms sometimes led to misunderstandings or uneven participation. Additionally, limited familiarity with the local context made it more difficult for some students to connect with the Lund University campus or identify relevant sustainability challenges and stakeholders. In response, I collaborated with Academic Skills Services at LUSEM to support students in navigating communication challenges within diverse teams.

Beyond these international student-specific issues, several project teams encountered broader difficulties related to project design, collaboration, and stakeholder engagement. These examples illustrate the kinds of practical complexities students had to navigate. One group proposed a campus-wide water fountain initiative to reduce plastic waste. While the idea was well-received, the team struggled to identify a realistic budget and secure a hypothetical co-sponsor, which affected the feasibility score. Another group, working on a diversity and inclusion mentorship program, faced internal disagreements about the project's scope and target audience. These conflicts delayed planning and required instructor intervention to mediate and refocus the team. A third team, proposing a food-sharing app, encountered difficulties in defining stakeholder roles and responsibilities, particularly when imagining partnerships with local businesses and NGOs. Their stakeholder map lacked clarity, which was highlighted during the final seminar.

These challenges, while sometimes frustrating, were also valuable learning opportunities. They reflected the complexities typical of professional project environments and helped students develop resilience, adaptability, and problem-solving skills—key competencies for sustainability professionals (Birdman, Wiek, & Lang, 2022; Bolstad et al., 2021). Despite these hurdles, the course remained feasible and effective. Most students reported that the experience was more engaging and useful than traditional classroom teaching, particularly because it allowed them to apply their knowledge in a professional context and develop practical skills.

Suggestions for Other Teachers

The pedagogical approach implemented in the FEKH13 course offers several transferable lessons for educators seeking to integrate sustainability, stakeholder engagement, and applied learning into their own teaching. Based on this experience, the following suggestions may be helpful:

- **Start Small**: Begin by incorporating one or two elements of project-based or stakeholder-engaged learning. For example, a mini-assignment involving local sustainability issues can be a good entry point.
- **Leverage Institutional Goals**: Align student projects with your university's sustainability or internationalization strategies. This provides relevance and institutional support.
- **Build Local Partnerships**: Establish relationships with local businesses, NGOs, and public sector actors. These stakeholders can offer valuable insights and enhance the authenticity of student projects.
- **Support Diverse Teams**: Provide guidance on intercultural communication and teamwork. Encourage early team-building activities and offer tools for conflict resolution.
- **Use Structured Assessment**: Implement a clear, rubric-based assessment system that includes peer and self-evaluation. This promotes fairness and encourages reflective learning.
- **Integrate SDGs Meaningfully**: Rather than treating SDGs as an add-on, embed them into the core of the assignment. Encourage students to explore how their projects contribute to specific goals and indicators.

These suggestions offer a practical starting point for educators interested in embedding sustainability and applied learning into their teaching. For those looking to expand or

institutionalize such approaches, the following strategies outline how this model can be scaled or adapted across different courses, disciplines, and departments.

Scaling and Adapting the Approach - Strategies for Broader Implementation

Building on the success of the FEKH13 course, this pedagogical model—rooted in project-based learning, SDG integration, and real-world stakeholder engagement—can be adapted and scaled across disciplines and institutional contexts. Its flexibility allows for both small-scale experimentation and broader curricular transformation. One effective strategy is *modular integration,* where SDG-aligned project assignments are embedded into existing courses such as marketing, engineering, or public health. These can take the form of short-term "challenge sprints" or hackathons, enabling students to engage in applied problem-solving within a condensed timeframe. *Cross-disciplinary collaboration* is another powerful tool. Pairing courses from different faculties—such as business and environmental science—can foster interdisciplinary teamwork and mirror the complexity of real-world sustainability challenges. This not only broadens students' perspectives but also strengthens their systems thinking and collaborative skills. To maintain authenticity and relevance, institutions can invest in *stakeholder networks*. Creating a shared pool of local and regional partners—including NGOs, companies, and municipal actors—can support long-term engagement and continuity across community and industry partners with student projects remain grounded in real-world needs.

Faculty development is also key to scaling. Workshops, peer-learning sessions, and resource-sharing (e.g., templates, rubrics, case studies) can lower the barrier to adoption and encourage experimentation with applied, sustainability-focused teaching. Finally, *institutional alignment* is essential. Embedding these approaches within university-wide sustainability strategies or third mission goals provides legitimacy and strategic direction. Recognizing and supporting courses that demonstrate societal impact can further incentivize innovation in teaching and learning.

Together, these strategies offer a pathway for embedding sustainability-focused, project-based learning more deeply into higher education curricula—empowering students to become active contributors to societal transformation.

Concluding Remarks

The transformation of the FEKH13 Project Management course at Lund University demonstrates the potential of integrating project-based learning, external engagement, and the Sustainable Development Goals (SDGs) into higher education. By moving beyond traditional lectures and textbooks, the course empowers students to become active problem-solvers and changemakers within their academic and local communities. Despite the challenges—particularly those related to international student dynamics and stakeholder coordination—the course has proven to be both feasible and impactful. Students gained practical experience in project planning, stakeholder engagement, and sustainability thinking, while also developing essential soft skills such as teamwork, leadership, and communication.

A key factor in the course's success was the involvement of external stakeholders. Guest speakers from companies like IKEA, Tetra Pak, and Sony, along with feedback and engagement from innovation partners such as Future by Lund, LU Innovation, and the LU Project Office, significantly enhanced the authenticity and relevance of the learning experience. These collaborations helped bridge the gap between academic theory and real-world practice, offering students valuable exposure to professional perspectives and expectations. As higher education continues to evolve in response to global challenges and technological change, this model offers a compelling blueprint for educators seeking to make their teaching more applied, inclusive, and socially relevant. By sharing this experience, I hope to inspire colleagues to experiment with similar approaches and contribute to a more sustainable and engaged university education.

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