



CISPEE 25

E4E - Open Debate about Engineers Future

Round Table II

17Jul25, Instituto Politécnico de Setúbal, Barreiro 12-13h, Sala A-101

Moderator: Prof. Jorge Barata, U. Beira Interior

Presenter and rapporteur: Alfredo Soeiro, AECEF Secretary General and UPorto

Summary

The session revolves around the AECEF participation on the E4E, a European engineering project focused on bridging the gap between academia and industry. Key points include:

- **Communication and Collaboration:** There's a pressing need for improved dialogue between universities, professional engineering associations, and industries. Too often, stakeholders operate in silos, limiting innovation and relevance in education.
- **Project Overview:** Coordinated by Engineers Europe (formerly the European Federation of National Professional Engineering Associations), the project involved establishing a **Skills Strategy Council** and **developing free online courses** for engineers, based on European frameworks.
- **Survey and Findings:** A stakeholder survey made during the first years of the project identified four main areas of focus:
 - Sustainability and renewable energy
 - Simplification of engineering standards
 - Integration of AI in engineering education
 - Enhanced Continuing Professional Development (CPD)
- **Online Courses:** While developed and freely available (with certificates), these courses were made and address: Sustainability, LLL, Digital and Entrepreneurship competences.
- **Challenges Identified:**

- Disconnection between what academia offers and what industry needs
- Universities' slow adaptation to digital learning and new trends like AI
- Lack of flexibility and incentives for professors to engage with CPD and online tools



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- Concerns over quality assurance and recognition of online learning
- **Case Study:** A company in Beijing was highlighted as an example of a successful online learning model, with strong content creation, marketing, and student facilitation strategies. The about 900 employees were distributed equally among these three departments.
- **Call for Integration:** The speaker emphasized the need to work with professional engineering bodies and with companies to ensure that educational outcomes are recognized and useful in the job market.

Conclusions

1. **Industry-Academia Collaboration is Essential:** Effective engineering education must be co-designed with industry to remain relevant and forward-looking.
2. **Online Learning Needs a Pedagogical Shift:** Courses should not merely be content repositories; they need engaging, interactive elements and strong facilitation to be effective.
3. **AI and Digital Tools Must Be Integrated:** Universities must train students in AI and digital competencies, not only for education but also for engineering practice.
4. **Quality and Recognition Matter:** Online courses must meet quality assurance standards and be formally recognized to be valuable alternatives to traditional education.
5. **Skills Council Should Be Sustained:** Despite current funding limitations, the Skills Strategy Council is a critical mechanism for shaping engineering education policy and should be supported long-term.
6. **Universities Must Adapt:** Traditional academic institutions need to become more agile, incentivize innovation in teaching, and embrace new learning models to avoid becoming obsolete.