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## E4E EVENT 6.4 AECEF - Part 1

Report made on 2Nov23 by AECEF SG

### 1. Description

Session took place at 2ND JOINT INTERNATIONAL CONFERENCE OF EUCEET AND AECEF (<https://euceetaecef2023.unipi.it/>). It was held on 19/20Oct23 at the University of Pisa, Italy at the Le Benedittine Conference Center.

The International Conference on “The role of interactive teaching/learning approaches in the development of soft skills for Civil Engineering Education” was organized under the joint auspices of the Association of European Civil Engineering Faculties (AECEF - [www.aecef.net](http://www.aecef.net)) and the European Civil Engineering Education and Training Association (EUCEET - [www.euceet.com](http://www.euceet.com)).

Since the Bologna Declaration the Student-Centred Approach has involved the development of Interactive Teaching/Learning methodologies. Actually, the need for a Green and Digital transition during COVID-years requires the development of appropriate soft skills and sensibility of future Civil Engineers with respect to so-called SDGs such as: Clean water and sanitation, Affordable and clean energy, Industry, Innovation, and infrastructures, Sustainable cities and communities, Climate change.

The Conference offered a scientific base for discussing and comparing traditional and innovative Teaching/Learning approaches with special concern on soft skill development in the field of Civil Engineering. The topics addressed at the Conference were:

- Future-oriented educational concepts in engineering
- Non-traditional laboratories for engineering education
- Impact of climate change in engineering education
- Student-centred learning environments
- The role of education for woman leadership in engineering

## Diversity and inclusion in engineering education

The Organising Committee was composed by Prof. Francesco Leccese - Conference Chair, School of Engineering, University of Pisa, Italy, Prof. Jose Turmo - EUCEET President, UPC Barcelona Tech, Barcelona, Spain, Prof. Nicolaos Theodossiou - AECEF President, Aristotle University, Thessaloniki, Greece, Prof. Diego Carlo Lo Presti - EUCEET Secretary-General, University of Pisa, Italy and Prof. Alfredo Soeiro - AECEF Secretary-General, University of Porto, Portugal.

### 2. Participants

There were 31 registered participants listed below. A photo of the major group was taken at Room 1 of the congress center.



AECEF EUCEET 2nd Joint Event Group Photo

1. Prof. Alfredo Soeiro, University of Porto, Porto, Portugal
2. Prof. Nicolaos Theodossiou, Aristotle University, Thessaloniki, Greece
3. Prof. Niko Gentile, Lund University, Lund, Sweden
4. Prof. Roode Liias, Tallinn University of Technology, Tallinn, Estonia
5. Prof. Prof. Jose Antonio Lozano-Galant, University of Castilla-La Mancha, Ciudad Real, Spain
6. Prof. José Turmo, Universidad Politecnica de Cataluna, Spain
7. Prof. Massimiliano Martino, University of Pisa, Italy

8. Prof. Tamás Lovas, Budapest University of Technology and Economics, Hungary
9. Prof. Paola Pulella, University of Pisa, Pisa, Italy
10. Prof. Diego Lo Presti, University of Pisa, Pisa, Italy
11. Prof. Juan José Jorquera-Lucerga, Universidad Politécnica de Cartagena, Cartagena, Spain
12. Prof. Euan Lindsay, Aalborg University, Aalborg, Denmark
13. Prof. Piotr Berkowski, Wrocław University of Science and Technology, Poland
14. Prof. Carsten Ahrens, Technical University of Denmark, Denmark
15. Prof. Michelle Rocca, University of Pisa, Pisa, Italy
16. Mr. Dirk Bochar, Engineers Europe, Brussels, Belgium
17. Prof. Filippo Chiarello, University of Pisa, Pisa, Italy
18. Prof. Henrik Davidsson, Lund University, Lund, Sweden
19. Prof. Andrea Kindinis, Ecole Supérieure de Travaux Publiques, Paris, France
20. Prof. Chiara Burattini, University La Sapienza, Roma, Italy
21. Prof. Francesco Leccese, University of Pisa, Pisa, Italy
22. Prof. Giacomo Salvadori, University of Pisa, Pisa, Italy
23. Prof. Ivica Zavrski, University of Zagreb, Croatia
24. Prof. Cedric D ´ Mello, City University, United Kingdom
25. Prof. Alan Kwan, Cardiff University, United Kingdom
26. Prof. Remigijus Šalna, Vilnius Gediminas Technical University, Lithuania
27. Prof. Juris Smirnov, Riga Technical University, Latvia
28. Prof. Francesca Paola Magagnini, University of Pisa, Pisa, Italy
29. Prof. Jaak Monbaliu, Katholieke Universiteit Leuven, Leuven, Belgium
30. Prof. Thibaut Skrzypek, Ecole des Ponts ParisTech, Paris, France
31. Prof. Paola Foladori, University of Trento, Trento, Italy
32. Prof. Martins Vilnitis, Riga Technical University, Latvia

### 3. Outcomes

The E4E main dissemination event was the presentation by Mr. Dirk Bochar, Secretary General of Engineers Europe on Friday 20Oct23. Session was chaired by Prof. Šarūnas Skuodis, Vilnius Tech University, Vilnius, Lithuania and by Prof. Massimiliano Martino, University of Pisa, Pisa, Italy. It occurred between 9.30h and 10.30h.

The title of the E4E presentation was "The Importance of Developing and Validating the Hidden Credentials of Engineers". Content of slides is presented below. A series of questions from participants and chairs was placed discussing several issues like quality of micro-credentials, details about E4E project, its relevance for Engineering, the use by companies

and by faculties and the importance on employability. An E4E A4 flyer was distributed personally to each participant. A copy is attached below.

The role of interactive teaching/learning methodologies in the development of soft skills for Civil Engineering Education

**2nd Joint International Conference of EUCPEE & ACEE**  
14-15 October 2022  
Palacio de Congresos de Valencia

**The Importance of Developing and Validating the Hidden Credentials of Engineers**  
DIPLO. ESCUELA Superior de Ingenieros TECNICO INDUSTRIAL DE VALENCIA  
www.enr.univalencia.es

**INTRODUCTION. STRUCTURE**

- I. Hidden Credentials: What are they?**
  - Benefits
  - Examples
- II. Relevance of Europe (ERDF) project**
  - Goals and Objectives
  - European Engineering Skills Council
  - Research Results
- III. Questions**

**HIDDEN CREDENTIALS | WHAT ARE THEY?**

2nd EUCPEE and ACEE July 2022

**Hidden credentials relate to:**

- Skills, knowledge and abilities that are not easily observable or quantifiable
- Acquired through:
  - Practical experience
  - Informal learning
  - Personal qualities that are not captured by formal education or level of education attained

Hidden credentials are crucial in addressing real-world engineering challenges and **prepare engineers for competition and sustainability** in their professional careers. Examples of such credentials are:

- Problem-solving abilities
- Adaptability
- Creativity
- Communication skills

**HIDDEN CREDENTIALS | BENEFITS**

2nd EUCPEE and ACEE July 2022

- Validating hidden credentials helps in building **trust and credibility** within the profession.
- The principal engineers want to show their **expertise and capabilities**.
- They enhance the **confidence** of clients, employers and the general public in the abilities of the engineer.
- Recognizing hidden credentials promotes **diversity and inclusion** within the profession.

**HIDDEN CREDENTIALS | EXAMPLES**

2nd EUCPEE and ACEE July 2022

- 1. Learning Skills**
  - Teamwork and self-help
  - To set goals
  - To motivate team members
  - To make informed decisions
- 2. Problem-solving Abilities**
  - To think outside the box
  - To analyze data
  - To apply critical thinking skills to arrive at innovative solutions
- 3. Communication Skills**
  - To effectively convey complex ideas in a clear and concise manner
  - To bridge the gap between technical and non-technical individuals
- 4. Collaboration & Teamwork**
  - Actively work with others
  - Contribute to productive discussions
  - Build positive working relationships
- 5. Project Management Abilities**
  - Oversee planning, execution, completion of projects
  - Organization
  - Time management
  - Ability to coordinate resources and team



**I. ENGINEERS 4 EUROPE (E4E) PROJECT : RESEARCH** 2nd ECEET and ASEP Jobs Event  
20-21 OCTOBER 2021



4. **Integration of sustainability principles in formal engineering education** is paramount to train future engineers for the 21<sup>st</sup> century. Changes in education curricula and CQs to bring skills into everyday practice → make practical experience a core & appreciated topic.

5. **Formal training** continues need to be developed to **better align with the needs of the job market** → ECEET for universities, technical schools and industry. Businesses have a role to play in programs of in- & upskilling.

6. **Key competences** that have not identified are **critical thinking, collaboration and communication skills**.

7. Focus on promotion of **"diversity and inclusion policies"** and measurement of professional and practice-based learning opportunities to develop critical thinking & problem-solving skills.

8. **Workshops** and diversity/inclusion training need to attract more skills from diverse and/or under-represented groups.

9. Engineers have a major role in **promoting sustainable practices**.

10. Every current job will evolve in completely new occupations or existing occupations will undergo **significant transformations in job content**.

11. Engineering disciplines with future increase are identified in **electrical/electronics, ICT and aerospace engineering**.

View online document [The need for diversity and sustainability in technical education](#)

**I. ENGINEERS 4 EUROPE (E4E) PROJECT : RESEARCH** 2nd ECEET and ASEP Jobs Event  
20-21 OCTOBER 2021



12. **Skills gaps** in the local labor markets are seen as a bigger barrier to business transformation, than a shortage of education signal.

13. **Partnerships between industry and educational institutions** together with businesses & vocational training in 2021 in emerging technologies, can serve as alternative ways to address digital, green, resilience and entrepreneurial skills shortages.

14. **Entrepreneurship** is a key competence in improving European competitiveness & focus of 2021 on development of a social and green economy. Professional Engineering Organizations can encourage this initiative and promote entrepreneurship through **interdisciplinary collaboration**.



View online document [The need for diversity and sustainability in technical education](#)

**III. QUESTIONS AND ANSWERS ?** 2nd ECEET and ASEP Jobs Event  
20-21 OCTOBER 2021



  
**ENGINEERS EUROPE**  
 THE EUROPEAN ASSOCIATION OF PROFESSIONAL ENGINEERING ORGANIZATIONS  
 European Federation of National Engineering Associations  
 EUROPEE VERENIGING VAN TECHNISCHE PROFESSIONEN

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## E4E Press Release AECEF

### AECEF in Brussels for the launch of the “Engineers for Europe” (E4E) project co-funded by the Erasmus+ Programme

AECEF, represented by the president Prof. Nicolaos Theodossiou,, Prof. Cédric D’Mello and Prof. Alfredo Soeiro, have been in Brussels for the meetings of the “Engineers for Europe” (E4E) project, co-funded by the Erasmus+ programme of the European Union.

E4E is an Alliance for Innovation bringing together 13 partners from eight European countries representing the different facets of the engineering profession. The E4E project has three main pillars of institution building, strategic foresight and training to sustain the competitiveness of the engineering profession.

Engineers Europe (ex-FEANI), is the coordinator of the E4E project and will work with partners for three years to establish and use the European Engineering Skills Council, identify future

trends and needs in skills and competences for engineers and develop innovative training on transversal competences and skills for the profession.

AECEF will play a crucial role in advising in up-skilling and re-skilling engineers, in cooperating in education and in training, mainly in the areas of Civil Engineering, while:

- Assessing the landscape of the engineering profession to identify challenges and opportunities in Continuing Professional Development;
- Contributing to the Skills Strategy of the European Engineering profession
- Improve Sustainability competences of engineers.

More information about “Engineers for Europe” and about AECEF are available at [www.aecef.net](http://www.aecef.net) and <https://engineers4europe.eu/>.