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ENGINEERING LITERACY –
TEACHERS AS A MEDIUM
FOR CHANGE



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THE ELIC PROJECT

- ▶ Erasmus+ Strategic Partnership for School Education
- ▶ MOOC (massive open online course) for natural sciences teachers¹ to improve engineering literacy among secondary school pupils
- ▶ Project duration: October 2017 – September 2019

AIMS

ELIC aims to provide a didactical and content toolbox for teachers to increase engineering skills among secondary school pupils to enlarge their interest in technical occupations. A MOOC will equip natural sciences teachers with examples and experiments they can apply directly in class.

Located within the objectives of the EC Strategy 2020, ELIC addresses European-wide shortages of qualified professionals and technical job-specific skills. More specifically ELIC deals with skill mismatches, which are causing a shortage of engineering professionals in Austria, the Czech Republic, Germany and Italy.

MAIN OUTPUTS

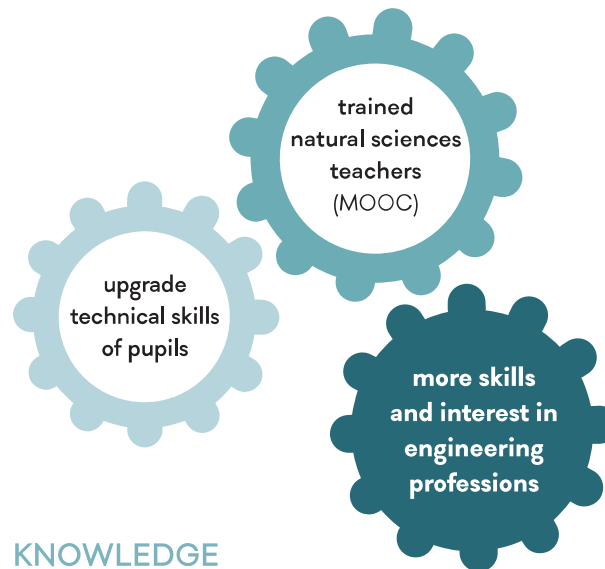
The **ELIC MOOC** unites input from different perspectives, and will consist of 6 training modules to be developed and implemented for secondary school teachers of natural sciences.

The **ELIC Transferability and Evaluation Handbook** ensures that the MOOC and the materials created will be circumspectly implemented for other regions to create a sustainable impact.

¹ biology, chemistry, computer sciences, mathematics and physics (selected STEM subjects)
STEM = science, technology, engineering and mathematics

ENGINEERING LITERACY in ELIC stands for interdisciplinary teaching using practical examples that combines natural sciences subjects AND technical sciences² input. By applying consequently knowledge to solve technical challenges in different fields will increase the interest in engineering among secondary school pupils.

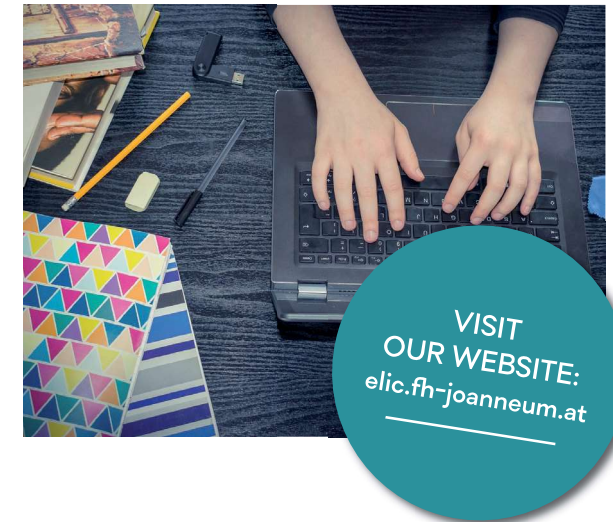
FOR EXAMPLE: Engineering literacy is transferred through practical examples, involving at least two different areas (one example from natural and one from technical sciences). E.g.: physics/ chemistry in combination with mechanics/ renewable energy using the setup and functionality of an e-car as a basis for discussion.



KNOWLEDGE TRANSFER AT 2 LEVELS

- 1 implementation of a MOOC with natural sciences teachers, based on desk research, expert interviews and practical inputs from industry
- 2 skill transfer of gathered technical knowledge from teachers to secondary school pupils

² e.g. biochemistry, mechanics, electronics, software, renewable energy



MAIN OBJECTIVES

- ▶ ELIC seeks to improve and transfer technical skills of natural sciences teachers through the implementation of a MOOC
- ▶ ELIC intends to motivate pupils to engage with engineering – thereby their engineering literacy will improve intrinsically
- ▶ ELIC plans to impact the trainees' competences directly and it is assumed that 50% of teachers who complete the training will implement more technical science aspects immediately thereafter
- ▶ ELIC aims to adapt secondary school education to the requirements of the modern labour market and lead to a change in thinking

TARGET GROUPS

- ▶ natural sciences **TEACHERS** at secondary schools
- ▶ secondary school **MANAGERS**
- ▶ **PUPILS** of secondary schools
- ▶ **REPRESENTATIVES** of educational institutions
- ▶ school **AUTHORITIES**