

Polytechnic Education



Czech
Republic
The Country
For Technology

Institution Responsible: Ministry of Education, Youth and Sports/Ministry of Industry and Trade/Ministry of Agriculture

Managerial responsibility: Ministry of Education, Youth and Sports representative

Opening position

Although the Czech Republic has a high-quality education system, the area of polytechnic education has been undervalued over the long term. A properly developed STEM (Science, Technology, Engineering and Mathematics) system is missing, which is one of the key competences in the new curriculum concept from nursery schools through elementary to secondary education.

At elementary schools there is a clear absence of a compulsory subject focused on technology (development of technical thinking, practically applicable skills, fine motor skills and technical creativity) with a link to new technologies, while not only the training of teachers in these fields but also the involvement of practical specialists in teaching is standing still.

The situation at secondary vocational schools is characterised by insufficient interconnection of teaching with both practice and with elementary schools. Furthermore, there is a lack of teaching with elements of the dual system of education, systemic and managed cooperation between schools and employers in relation to regional infrastructure, and familiarisation of pupils and teaching staff with the latest technologies.

Polytechnic-oriented universities lack a system to incentivise spin-offs, start-ups, and the creation of natural cooperation between students and companies in advanced technologies, including the establishment of their own companies (the so-called entrepreneurial university). In the case of further education, there are few possibilities for retraining in the use of new technologies, associated with changes in workload.

Czech society is also not sufficiently ready for the use of disruptive models in education. This may in turn lead to a further shortage of skilled staff in new technologies, both in business practice and in the research sphere.

Goals

- Changing the polytechnic education system: emphasis on creativity, research approaches, technical imagination, logical and critical thinking, problem solving, information evaluation, project-based teaching based on a knowledge base of natural sciences and mathematics.
- Elementary education: at the level of the Framework Educational Programmes (FEPs) the integration of a „People and Technology“ education area with the aim of implementing a compulsory subject „Technology“ at the 2nd level of elementary school, in line with the existing background study on revisions to the FEP; at the 1st elementary school level, implementation of a technology curriculum into a relatively separate educational area and at the same time implementation of technical skills across the board in all relevant subjects.
- Secondary Vocational Education: innovation and consolidation of a coherent national system with dual education elements, managed by the government with the involvement of the regions and employers.
- University education: support for study programmes focusing on advanced technologies and incentives to involve top personalities in collaboration with domestic universities in all areas.
- Promoting lifelong learning and re-skilling - preparing for the use of breakthrough technologies.
- Analysis of the impact of Industry 4.0 on the labour market in order to appropriately transform the education system.
- Targeted support for strategic alliances of our domestic universities with Europe's top universities and the synchronisation of their curricula in relation to the mobility of students and academics.

Tools

- Updating the Digital Education Strategy with the introduction of breakthrough technologies.
- Revision of the FEP for elementary schools (application of the National Institute for Education working group concept – Technology), implementation of the area „People and Technology“ with the subject „Technology“ and implementation of new technologies in other relevant subjects within the FEP.
- Strengthening undergraduate teacher training with a focus on the use of new technologies as teaching tools.
- Introducing conceptual support for the innovation potential of pupils and students.
- Increasing the digital competence of teachers in line with the Teacher Digital Competence Standard.
- Changing legal standards in initial and continuing education using the elements of the dual education system with the involvement of employers, the regions, unions and critical departments.
- Creating a system at national and regional level to coordinate the cooperation of schools with employers based on dual education in order to provide firms with methodological support in professional training and preparation.
- Preparation of a support system for staff retraining at national and regional level to respond to current market demand.
- Establishment of university methodological support centres for current and future teaching staff, with the aim of sufficient preparation for the implementation of new technologies in elementary and secondary education.

- Creating a system of ongoing assessment of the impact of the industrial revolution on the innovation ecosystem, labour market, education and citizens' lives.
- Creation of a Fast Track for the employment of advanced technology scientists and academics.
- Incentivisation of universities to introduce Masters and PhD programmes in English and targeted state activity in the winning foreign students for Czech universities and their interconnection with public research institutions.

Notes



