

Action plan for more STEM experts

POLICY DEVELOPMENT

STRATEGY/ACTION PLAN

 AUSTRIA

Timeline

2023 Approved/Agreed

2024 Implementation

ID number 46998

Background

The majority of significant contemporary challenges, including digitalisation, climate change and energy transition, require proficiency in science, technology, engineering, and mathematics (STEM). It is therefore not surprising that the Austrian labour market is experiencing a higher demand for STEM experts than ever before. A study commissioned by the Federation of Austrian Industries (IV) predicts that an additional 58 000 jobs requiring STEM skills will be created in Austria by 2029.

Consequently, Austria is dependent on committed, highly trained specialists in this field. It is crucial to cultivate interest in STEM among young people, particularly women, and to ensure they pursue and complete STEM education programmes successfully. In Austria, fewer women than men graduate from STEM programmes, with the percentage below the EU average. Furthermore, a higher level of STEM education in a society will result in a reduced likelihood of a naive belief in science and technology, or an uninformed and unreflective rejection of it. A fundamental level of 'science and technology literacy' is also a prerequisite for engagement in public discourse.

In order to increase the interest in STEM and thereby the number of STEM experts, several initiatives were launched in the past. In 2015, the Austrian Agency for Education and Internationalisation (OeAD) launched the Young science ambassadors initiative, in which researchers from a range of disciplines visited school classes to discuss their research and professional careers. In 2020, the federal government adopted then a Strategy for research, technology and innovation (RTI-Strategy 2030). One of the strategy's core objectives is to focus on knowledge, talent and skills by developing and promoting human resources. To further the achievement of this objective, the Ministry of Education, Science and Research (BMBWF) developed the Join in STEM action plan in 2023.

Objectives

The aim of the federal government's Strategy for research, technology and innovation is to increase the proportion of graduates in STEM subjects by 20% and the proportion of women amongst graduates in technical subjects by 5% by 2030. The Join in STEM action plan is designed to facilitate the achievement of these ambitious goals, while also pursuing the following objectives, to:

- (a) foster greater interest in science, technology, engineering, and mathematics (STEM) among young people,

- (b) showcase the significant opportunities that a STEM education and career path offers,
- (c) enhance 'science and technology literacy',
- (d) address the shortage of skilled labour, and
- (e) reinforce economic competitiveness and prosperity in Austria.

Description

The Join in STEM action plan represents the Ministry of Education's STEM skilled labour initiative. The plan consolidates the ministry's existing STEM initiatives with new measures and addresses the entire education sector, from early childhood education to vocational training, secondary education, and higher education.

The action plan strengthens STEM capabilities and advances the aforementioned objectives through the following eight action lines:

- (a) intensification of regional networking through the umbrella brand STEM regions, enabling continuous STEM experiences from kindergartens to higher education institutions;
- (b) establishing an online platform to link and highlight STEM activities at all levels (federal, provincial, regional), making them more visible and easier to find;
- (c) presenting and promoting STEM careers in an attractive and up-to-date manner through all channels (e.g. social media, student fairs, apps) for educational and career guidance, information and counselling;
- (d) supporting STEM talents along their educational pathways through cooperation between educational institutions;
- (e) promoting STEM learning through well-trained teachers and curricula/study programmes;
- (f) experiencing and exploring STEM through science ambassadors and teaching gadgets (e.g. digi.case);
- (g) educating STEM experts in Austria through interdisciplinary STEM studies at universities and universities of applied sciences, a new technical university, and new re-skilling and up-skilling opportunities;
- (h) raising awareness that STEM is accessible to everyone through (i) school-based educational and vocational orientation, (ii) STEM teachers boosting young women's confidence in their maths and technology skills, (iii) more STEM content in female-dominated school types, and (iv) inclusive admission procedures.

2023 Approved/Agreed

In 2023, the Ministry of Education adopted the Join in STEM action plan. As part of this action plan, the Young science ambassadors initiative was significantly expanded and in 2023, researchers from a range of disciplines conducted a total of 309 school visits in 191 schools of all types. They reached around 7 750 children and young people across Austria, which represents an increase of 90% compared to 2022.

Further, in February 2023, the Ministry of Education introduced the Science ambassadors, who do not only share their expertise with learners, but also inspire them and aim to break down the barrier between science and society. The number of registered science ambassadors almost doubled to over 460 individuals within the year.

In June, the Ministry of Education, the Federation of Austrian Industries (IV), the University college of teacher education Vienna, and the Knowledge factory Austria presented the STEM seal of quality for the 7th time. The seal is awarded to kindergartens and schools of all types that provide learners with innovative and diverse STEM learning approaches.

In September 2023, the STEM regions quality label was awarded for the first time to 14 regions. The initiative is carried out by the Ministry of Education, the Federation of Austrian Industries (IV), Austria's Agency for Education and Internationalisation (OeAD), the Austria Wirtschaftsservice GmbH, and the MINTality Foundation. The

Austria Wirtschaftsservice GmbH (AWS) is the promotional bank of the Austrian federal government and serves as the STEM service point at a regional level.

2024 Implementation

In April 2024, the second nationwide call for STEM regions began. Submissions are accepted until January 2025.

In June, the STEM seal of quality was awarded to another 117 kindergartens and schools. This means that around one in ten schools in Austria is a STEM engine for the future.

In October, the first doctoral students started their studies in Digital transformation in learning at the newly founded Interdisciplinary Transformation University (IT:U).

Bodies responsible

- Federal Ministry of Education, Science and Research (BMBWF)

Target group

Learners

Young people (15-29 years old)

Education professionals

Teachers

Thematic categories

Governance of VET and lifelong learning

Engaging VET stakeholders and strengthening partnerships in VET

Modernising VET offer and delivery

Developing and updating learning resources and materials

Teachers, trainers and school leaders competences

Systematic approaches to and opportunities for initial and continuous professional development of school leaders, teachers and trainers

Supporting lifelong learning culture and increasing participation

Promotion strategies and campaigns for VET and lifelong learning

Subsystem

IVET

Further reading

[Join in STEM - Action plan for more STEM experts of the Federal Ministry of Education, Science and Research \(BMBWF\)](#)

[RTI Strategy 2030 - Strategy for Research, Technology and Innovation of the Austrian Federal Government](#)

[Website of the initiative STEM regions](#)

[Website of the initiative STEM seal of quality \(only in German\)](#)

[Website of the initiative Trust in science and democracy \(only in German\)](#)

[Website of the Interdisciplinary Transformation University](#)

[Study commissioned by the Federation of Austrian Industries \(IV\) on Employment potential through key technologies \(only in German\)](#)

[Information on the initiative on basic digital education at primary and lower secondary schools](#)

Cite as

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