



ATS STEM

Assessment of Transversal Skills

Enhancing Digital Assessment of School Students' Transversal Skills in STEM



Core
STEM
Competences

Key Features
of Digital
Assessment
Tools

**Integrated
STEM Topics**
(Learning Outcomes)

STEM
Learning
Design
Principles

Key Features
of Formative
Assessment
Tasks





WHAT IS ATS STEM

Assessment of Transversal Skills in STEM is an innovative policy experimentation project being conducted across 8 EU countries and involving a partner network of 12 educational institutions and government organisations. It aims to enhance digital assessment of students' transversal skills in STEM (Science, Technology, Engineering and Mathematics). The project aims to provide teachers with efficient and necessary digital assessment approaches in development of students' transversal skills in STEM education.



PILOT IMPLEMENTATION

120 pilot schools in seven countries
(Belgium, Cyprus, Finland, Ireland, Slovenia, Spain, Sweden):

- design STEM learning tasks, which are cross-curricular, giving students opportunities to develop a range of STEM competencies
 - develop and test assessment strategies by using data to enhance student learning supported by digital technology as well as design STEM formative assessment strategies to better meet the students' needs
 - ensure that assessments are appropriate to learning outcomes and that they support an active student-centered pedagogical approach
 - organize and develop flexible learning approaches supported also by school leadership.
- TARGET GROUP:** STEM students aged 10 to 15 years old.

→ EVALUATION



SEPT-OCT 2020 to inform ATS STEM project

CASE STUDY (2 per country)

SEPT 2020

2 learning cycles

JUN 2021

STUDENT INITIAL EVALUATION
(electronic questionnaire)
first application

QUALITATIVE EVALUATION PROCESS



STUDENT FINAL EVALUATION
(electronic questionnaire)
second application

OBSERVATIONS

artefacts
(student's production)

interviews

per learning cycle

per centre

student group
teacher team

Monitor individual questionnaire

→ THE EXPANDED ATS STEM CONCEPTUAL FRAMEWORK



As per the objectives of the ATS STEM project, the expanded ATS STEM conceptual framework provides a conceptual tool to help European educators reach a common understanding of what integrated STEM education is and how it can be assessed using a range of digital tools in schools. The aim is to draw on the framework to design learning experiences, digitally assess students, and ultimately enable them to develop the transversal skills* to engage and interact as curious and STEM literate citizens.



* Transversal skills refer to a broad set of key skills that are known to be critically important to success in school, further education and the world of work. They include the ability to think critically, take initiative, use digital tools, solve problems and work collaboratively (Source: www.ats2020.eu).



PROJECT BENEFITS

STUDENTS

- Engage in interdisciplinary learning process to solve real-world problems
- Continuously improve/develop their learning through formative assessment
- Experience how real-world problems are being addressed
- Contribute in improving living conditions for sustainable development

TEACHERS

- Access to professional development training and a repository of pedagogical resources
- Develop and share best practices in integrated STEM curricula
- Use digital technologies to support innovative assessment
- Training on the effective use of formative assessment to support student learning in STEM

POLICY MAKERS

- Validated comprehensive model for digital assessment in STEM
- Development of integrated STEM curricula in innovative learning environments
- Impact evaluation and subsequent policy recommendations at national level and EU level

PROJECT PARTNERS

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Other



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