TITLE:

Real-life MST

KEY CONCEPTS: Cooperation, task-based learning, industry and school partnerships, connecting learners and industry, real-world and curriculum-related MST

NARRATIVE OVERVIEW:

Chrisline, a science teacher, considers her curriculum and selects a relevant task or problem from an online “problem bank" set up by various MST-related industries in consultation with teachers.

Chrisline involves her students in the selection process if possible and appropriate. On occasions Chrisline supports small groups of students to consider which relevant problem interests them the most, so that different groups of students may be tackling different problems.

Her students then get involved in research activities related to the business or industry problem they selected. This may involve creating videos from material collected on the internet and/or shot on location (and fed into a database for other schools to use).
If it is not a local industry's problem, they undertake a global search and link with distant industries or other classrooms for information collection and cooperation. For each problem or task in the online bank, a key contact in the relevant industry is given. Groups of students contact this person via email or video-conferencing in order to gain more information and seek support.

TREND/S

The challenges of fostering MST: connecting teachers and learners with industry
Employers are increasingly dissatisfied with how scientific and technological subjects are taught in schools, arguing that teachers and learners are disconnected from the reality of industry and lack real-world experience in those crucial subjects.
A growing MST (Mathematics, Science and Technology) skills gap
Although predictions of actual human resource requirements for the next 5-10 years are difficult, many employers in Europe believe that the potential demand for MST (Mathematics, Science and Technology) skills is likely to increase.
International MST competition
Many countries around the world are pursuing MST (Mathematics, Science and Technology) strategies in an attempt to attract more young people into MST subjects and ultimately MST careers. They believe that by doing this they will reap the benefits of sustained economic growth.

VISION (ASPIRATIONS & AIMS)

- to narrow the gap between MST in school and the MST industry by connecting MST industries with learners
- to develop students’ interest in MST careers by allowing them to experience real-life MST problems/tasks

ENVIRONMENT

- an online environment of tasks/problems with links to people in industry (could be CSR/education officers)
- physical spaces in school in which students can solve MST problems

PEOPLE & ROLES

- industry as a critical friend to schools/learners/teachers
- teacher = facilitator/guide
- learners problem solving

INTERACTIONS (INCL. PEDAGOGIES)

- industry provides the problems
- interactions between students and people involved in industry
- real-life problem solving

ACTIVITIES

- industry provides activities that can be mirrored in future classrooms: Teachers map these to curriculum, students undertake activities solve them
- problems are linked to real person in company - interaction

RESOURCES (INCL. TECHNOLOGIES

- a resource bank of problems/tasks defined by industry as the sorts of real-life problems they face
- a wiki of information around solving MST tasks (checked and verified source of information)
- video clips relating to the problems/tasks (created by industry, teachers or students who have previously worked on the problem