LLP Project: ATTRACT
"Enhance the Attractiveness of Studies in Science and Technology"

WP 7 - Attracting students to studies in science and technology/engineering education
Summary

- Goals
- Participant institutions
- Recruitment and access system: Places, Required qualifications, Selection criteria, Calendar of activities for the access
- Initiatives - inventory of actions or practices: institutional and national
- Involvement of stakeholders
- Field trials/questionnaires: secondary and entrant students
Goals

- Interest young people in Science & Technology and Engineering (S&T/E)
- Attract candidates to the higher education S&T/E programmes
- Balance gender representation in S&T/E programmes
Participant institutions

- Aalto/Finland
- IST/Portugal
- KTH, LiTH, Uppsala/Sweden
- KULeuven/Belgium
- TCD/Ireland
- Torino/Italy
Recruitment and access systems

Degrees of freedom that the partner institutions may have in shaping the recruitment system:

- Whether there is a *numerus clausus* and to what extent it is decided by the institution
  
  Typically, there is a *numerus clausus* defined by the Ministry with proposal from the institutions (Exceptions: Belgium, Italy) → few degrees of freedom

- What prior qualifications give access to the engineering programmes of the partner institutions
  
  There are no significant differences among the considered countries: secondary education diploma. Alternative procedures: little in common.

- To what extent the institution may define the selection criteria
  
  Several differences among the countries: students must pass an exam, whether an entrance exam or a state exam. Some universities have additional requirements for students who intend to pursue STE programmes.
Different calendars of access activities among the countries.
Initiatives

- Contributions on the basis of a report template
- Institutional initiatives (partners’ contributions)
  - By institution and associated organizations
    - Entity responsible for the action and partnerships
    - Aims
    - Target population, methodology and period of application
  - Results obtained
- Reports, studies and surveys
- Gender situation
**Initiatives: Institutional Level (transversal)**

Significant degree of similarity of institutional activities to attract students to S&T/E.

- Visits to secondary schools
- "Open Days" and/or visits of secondary schools to the institutions
- Participation in fairs of university education and dissemination of activities in S&T
- Internships and summer courses for secondary school students
- Website of the institution and materials/brochures about the programmes offered
Initiatives: Institutional Level (specific)

- Brief university experiences or internships to experience academic life (KTH, LiTH, TCD)
- 1st year students to visit school (UPPSALA) or teachers back to school (IST)
- Media Advertising (TCD and IST), presence in social networks (IST), and developing applications for mobile phones / IPHONE (TCD);
- Attracting students from social and ethnic minorities (TCD)
- Reinforcing the relationship secondary school / university (KTH, Uppsala)
- Promoting workshops on job career (KTH, TCD, LiTH) and exhibits on S & T (TCD)
- Mathematics coaching (LiTH)
**Initiatives: National Level**

In all countries there are activities at the national level to promote science and technology and to attract students to these areas.

Similar aims: promote the scientific and technological culture among younger population

- Experimental teaching of sciences and the promotion of science education at pre-university school
- Competitions, contests and awards in the area of science and technology
- Providing opportunities for observation and personal contact with experts in different fields of knowledge
**Initiatives: Gender breakdown**

**Low female attractiveness to the areas S & T**

- Summer school for girls (KTH); Girls week (UPPSALA)
- International Women's Week (TCD)
- Promoting access to training in engineering by women and development of interdisciplinary courses, where the ratio of women is higher (Aalto)
- Quintek days, inviting female students to experience academic life (LiTH)

Examples of activities to combat this trend:
Involvement of stakeholders

• **Why:**
  • Identification of opportunities to attract students to S&T/E
  • Participation in institutional activities
  • Institutional participation in other organizations’ activities to promote S&T/E

• **What:**
  • Secondary Schools
  • Professional associations
  • Student organizations
  • Business employing engineers
  • Organizations promoting S&T
Field Trials/Questionnaires

**Questionnaires:** entrant students and secondary students

- Adaptations by the partners of the section concerning the secondary education system structure

**Specific topics for entrant students:**

- Time of decision of the engineering programme

**Specific topics for secondary students:**

- Decision to follow tertiary studies and specifically engineering
- Area of study chosen
Field Trials/Questionnaires (cont.)

Common topics of questionnaires:

- Area of study in secondary education
- Parental background
- Perception of importance of engineers
- Perception of the difficulty of professional duties of engineers, compared with other professions
- Perception of the effort required by engineering programmes, compared with others
- Perception of pay level of engineers, compared with other professions
- Perception of importance given by employers to engineers, compared with other professionals
- Perception of ease of access to labour market
Field Trials/Questionnaires (cont.)

Preliminary results: secondary students (totals)
Field Trials/Questionnaires (cont.)

Preliminary results: secondary students (totals vs. female students)
Field Trials/Questionnaires (cont.)

Preliminary results: entrant students (totals)
Field Trials/Questionnaires (cont.)

Preliminary results: entrant students (totals vs. female students)
Degree of importance of each of the following factors to the decision to attend a university programme.

- Institution reputation: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Opinions from relatives & friends: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Information from universities: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Job opportunities: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Student life: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Access to a higher social level: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Complement Education: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Achieve a qualification: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Physics & Chemistry: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Mathematics: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
- Good results: % Very Important, % Important, % Of Little Importance, % Unimportant, % No Answer
Degree of importance of each of the following sources of information for the choice of programme/institution you are attending.

- Ministry of Education
- Visits to Universities
- In-school dissemination
- Course Guide or other leaflets
- Webpage
- Advertisements
- Higher education fairs
- Secondary Education teachers
- Former students’ opinions
- Friends’ opinions
- Relatives’ opinions
- Parents’ opinions

Bar chart showing the percentage of respondents rating each source as very important, important, of little importance, unimportant, or no answer.
Issues for discussion

For higher education institutions:

• Identification of a similar profile in terms of the factors underlying the choices?

• What are the strategies for attracting students and impact the choices?

For secondary education institutions:

• Mechanisms to support students' choices?

• Sources of information for teachers to support students?

For both:

• How to strengthen the bonds higher / secondary in this context
Thank You