

The State of Standards Education in Europe

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European Council

Standardisation and Innovation, Brussels, 25 September 2008

Council Conclusion 27:

- *encourages the Member States to improve the position of standardisation in education programmes and academic curricula, in order to familiarise students with the strategic benefits and challenges of standardisation, drawing on the expertise of standardisation bodies*

European Commission

DG Enterprise Standardisation Unit

- Academic network in the field of standardisation
http://ec.europa.eu/enterprise/standards_policy/academic_network/index.htm
- Pilot to introduce Commission officers of research & development projects to standardisation
 - better assess benefit of disseminating R&D results through standardisation
 - facilitate effective transfer of these results

European Commission

DG Enterprise ICT Standardisation

ICT standardisation policy Steering Committee

- Active working group on standards education
- Recommendations for specific actions and initiatives in standards education with a ICT focus
- Fact-finding workshop on the standardisation education needs of specific target groups (tentative date: November 18, 2009, Brussels)

European Academy for Standardization

“Supporting development and professionalisation of standards education in Europe”

Examples initiatives EURAS members:

- **EU Asia-Link project**: Curriculum and Book on *Standardisation in Companies and Markets* (Hesser, Feilzer & de Vries, 2007)
- **E-learning platform** developed by prof. Hesser, Helmut Schmidt University, www.pro-norm.de
- **ICES Workshop 2007** organised by Egyedi (Delft) & de Vries (Rotterdam)
- **Special Journal Issue for Teaching Cases** by Egyedi (Delft) & de Vries (Rotterdam)
- **Setting Standards: a Simulation Exercise**, Delft University & United Knowledge

European and National Standards Bodies

- Informal Standards and Education Meeting, 10 February 2009, CEN, Brussels
 - **BSI education strategy: a European exemplar (see survey results)**
 - Introduction courses participants and specific courses for professionals
 - Training technical standards officers
 - A few cooperation agreements between standards bodies and universities e.g.
 - university libraries access to standards
 - incidental cooperation on content (e.g. lectures, organise contests)
 - CEN 'StandarDays'
- Continue exchange, repository for educational material, involvement in ICES 2010

Survey on European Standardization Education activities

1. Some remarks on the generated data
2. European standardization education (SE) activities – sorted by education level
3. Notable European standardization education activities
4. Persistent problems

Data gathering

Survey in 2009: EURAS, ICES and SIIT mailing lists

References used

- ICES workshops 2006-2008
- Françoise Bousquet's 2003 survey (Acyl & Borde)
- Wilfried Hesser's 2008 survey on SE in Germany
- EURAS Network and EU Academic Network
- Various papers and presentations e.g. Kurokawa (2005), de Vries (2005), de Vries & Egyedi (2007), Choi (2008), Choi, de Vries & Kim (2009)

Some remarks on the generated data

- Sources have turned out no less than 84 European entities active in SE (see next slide).
- Should be regarded as a sample that rather represents a “lower boundary” of SE activity level.
- Problem: Various different sources → different dataset structures → difficulties to consolidate data into one structure/file → difficult analysis.
- However: the state of things clearly emerges from the data/sources.

84 European entities active in standards education

	A	B	C	D	E	F	G	H	I	J
13	Italian National Agency for New Technologies, Energy and the Environment (ENEA)	Regional Agency	Regional Agency	Italy	Dr. Sakkala	Pizza			Identification of the domain and business use cases	
14	European Agency for Standardization (ENEA)	National Agency	EU							
15	Union of British Scientists for Pedagogical and Standardization (UBS)	Business school	France	Zakariaoui	Reynier	Graduate	To build an education system and a general bibliography on standardization			ENEA members have initiated and assisted a number of standardization-related projects. Clearly, standardization is included in the business curriculum.
16	Business school	Business school	France			Undergraduate				Operational and Pedagogical Management (Management)
17	Business school/Comenius High School	Business school	France			Postgraduate				Specialized courses, Seminars, conferences, Life-long learning
18	Greek National Centre for Certification (KEKPEI)	Certification Body	France			Undergraduate	Clear structure and specific teachers, professors reports and publications			High Level Management/Operational Standards
19	EMIP Council	Council	France	Boissard	Francis					Economic impact of standardization/Standardization as a tool for Competence and Strategic Intelligence
20	ENEA	ENEA	EU				"ENEA Standard Day"			Coordination Standard and Education Meeting BRUSSELS on 2003-04
21	ENEA	ENEA	EU							
22	CEMELEC	ENEA	EU							
23	European Union	ENEA	EU							
24	Italian National Agency for New Technologies, Energy and the Environment (ENEA)	Regional Agency	Regional Agency	Italy	Dr. Sakkala	Pizza			September 2008 Council documents the Council Conclusion on standardization and innovation	
25	National Education System	National Education System	Slovakia							Identification of the domain and business use cases
26	Turkish Vocational High School and Universities	National Education System	Turkey				"Middle Schools"			Standardization and Quality Concepts //Standards
27	Realize Standards Institute	National Education System	Turkey				Undergraduate/Graduate			Various courses on Quality which also address Standardization.
28	OH	MSD	Austria				Higher Education (Academic Standards are not assessed but are included in the curriculum)			Open House of Realize Standards. Open House of Realize Standards. No demand on part of the university with regard to standards education. In cooperation with TU Braunschweig (BIB) and OH.
29	Lithuanian National Standards Body	MSD	Lithuania				Further Education			Standards in Lithuanian secondary schools, vocational institutions. No regular school curriculum.
30	Polish Council for Standardization (PKN)	MSD	Poland							PKM is involved in standardization education of university level, also at lower level (vocational schools) but in addition they organize open education. Several courses in the field of standards education are offered to the general public.
31	Romanian Institute for Management & Certification (ROMCOR)	MSD	Romania							Wide range of courses, especially in ISO 9000, ISO 14000 and ENCE 45000 EX related to quality management, environmental management and occupational health and safety.
32	Turkish Standards Institute (TSE)	MSD	Turkey							Higher education with universities and with institutes in high level standardization education.
33	Bulgarian Institute for Standardization (BDS)	MSD	Bulgaria							CVS cooperation with the Universities and the Ministry of Education.
34	Cyprus Organisation for Standardization (CYS)	MSD	Cyprus							ISO 9000 cooperation with Universities since 2000. Courses for all. Seminars mainly about ISO 9000 & ISO 14000; seminars on workplace.
35	French Standards Association (AFNOR)	MSD	France							Training courses on standardization for new experts in Standardization. The Committee for more than 18 years.
36	Italian Standardization Organization (UNI)	MSD	Italy							UNI focuses on all levels for standardization education, from primary to tertiary level.
37	Polish Standards Institute (PKN)	MSD	Poland							UNI focuses on all levels for standardization education, from primary to tertiary level. Many courses (general and specific) are published.
38	Teknopolis Educational Institute of Thessaloniki	Teknopolis Educational Institute of Thessaloniki	Department of SI	Greece	Koukoulidou		Undergraduate			Legislation/Quality Management, Standardization 2 courses/level
39	Teknopolis Educational Institute of Thessaloniki	Teknopolis Educational Institute of Thessaloniki	Department of SI	Greece	Koukoulidou		Higher Education			Legislation/Quality Management, Standardization 2 courses/level
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European SE activities – Primary and Secondary education (1/2)

- Primary level: no SE activities.
- Secondary level: no coordinated, systematic SE activities.
 - Standardization issues may occasionally become a subject-matter in secondary education, e.g. in homework essays

European SE activities – Primary and Secondary Education (2/2)

- Big exception: BSI Education actively approaches all ages and all educational levels
<http://www.bsieducation.org/Education/default.php>
- Austrian Standards Institute (ÖN) is developing a set of tools for secondary level teachers (CD-ROM)

European SE activities: Higher Education (1/2)

- About 70% of the respondents represent Higher Education Institutions (Universities, Business Schools, Technological Educational Institutes)
- Most European SE activities are taking place in Higher Education Institutions

European SE activities: Higher Education (2/2)

- Courses entirely devoted to standardization are still an exception
- Often standardization issues are addressed in passing in a broader context and/or for rather practical reasons
- Esp. undergraduate study programs with their strict curricula and timetables do not leave much room for “extravaganza” like standardization

European SE activities: Professional Education

Professional Education is in the first place done by

- Standards Bodies
- Academics specialized in standardization
- Consultants specialized in standardization

Professional Education is a lucrative source of income.

Notable European SE activities: National SE Strategies

- Large European countries like United Kingdom, France and Germany explicitly address SE in strategy papers (see next slide).
 - However, words need not necessarily translate into immediate action
- Many smaller European countries do not have a SE strategy. SE activities hardly go beyond Professional Education provided by NSBs.
 - Notable exception: The Netherlands have no explicit SE strategy but play a significant role in Standardization research and SE.

Education Policies of Select European Countries

Source: Choi, de Vries & Kim (2009)

Country \ Question	1.	2	3	4	5	6	7
	Strategy	education	awareness	(P).edu	(F).edu	networking	database
1. France	Yes	Yes	Yes	Yes	No	No	No
2. Germany	Yes	Yes	Yes	Yes	Yes	Yes	No
3. Netherlands	Yes	No	No	No	No	No	No
4. UK	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- 1) National standardization strategy?
- 2) National strategy on standardization education?
- 3) Strategy on standardization awareness?
- 4) Strategy on standardization education programs for professionals?
- 5) Strategy to embed standardization in formal education?
- 6) Strategy on standardization networks?
- 7) Strategy on standardization (education) databases?

Notable European SE activities: Example of BSI

- BSI strategy most advanced in Europe
 - National Standardization Strategic Framework (NSSF)
 - www.bsieducation.org
 - teacher- and student-tailored content with background information, lesson plans, case studies, testing sheets and interactive games on a range of topics for 7-19 year olds
 - resources for engineering, manufacturing, applied science and design and technology courses
 - BSI encourages schools to apply British Standards, e.g. BS 8901:2007 on sustainable event management and the GetGreenGo-initiative www.getgreengo.com

Notable European SE activities: CEN, CENELEC and ETSI

- CEN
 - StandarDays twice a year for two-days
 - Technical Assistance Programmes: training sessions and material (CD-ROMs, brochures, booklets)
- CENELEC
 - Awareness courses for newcomers
 - Tailor-made training for professionals upon request
- ETSI
 - Regular seminars for newcomers and members to facilitate active participation

Notable European SE activities: Modern didactics

- Little use of modern didactical instruments. Notable exceptions:
 - Interactive games used by BSI
 - Full-scale online-curriculum www.pro-norm.de developed by prof. Hesser, Helmut Schmidt University
 - Students requested to write a **webblog** on standardization in mobile telecom course (prof. Jan Smits, University of Technology Eindhoven)
 - **Simulation Exercise** 'Setting Standards' for students, policy makers and standardisers (Delft University of Technology)

Persistent problems (1/2): Access to standards

- unrestricted access for scholars and teachers to standards is precondition for effective education
- remedies
 - access for university libraries (e.g. DIN, NEN-TU Delft)
 - online-provision with restricted user rights (e.g. AFNOR)
 - affordable handbooks on specific subjects (e.g. Finnish Standards Association SFS)

Persistent problems (2/2): Not yet a scientific discipline

- Standardization is not yet acknowledged as a scientific discipline in its own right
- With due appreciation of standardization missing in companies and society at large and given the absence of any “professional” profile of a standards expert, private and social investment in SE will remain suboptimal (Henk de Vries and Françoise Bousquet)
- An influential actor like the European Commission might provide the stimulus to overcome these obstacles

Concluding remarks

Does Europe need a coherent SE approach?

- Yes, say European standards experts: without adequate SE future demands and challenges in standardization will be difficult to meet

Europe is moving

- Preliminary policy (Council conclusion 27)
- Many initiatives and exemplars (e.g. EU fact-finding workshop, BSI's education strategy, standard setting game)
- Discussion platforms and good informal contacts between Commission units, standards bodies, industry and academia

Much depends on

- creativity and persuasive power of European standardization experts
- amount of policy support & backing from the EU & member-states