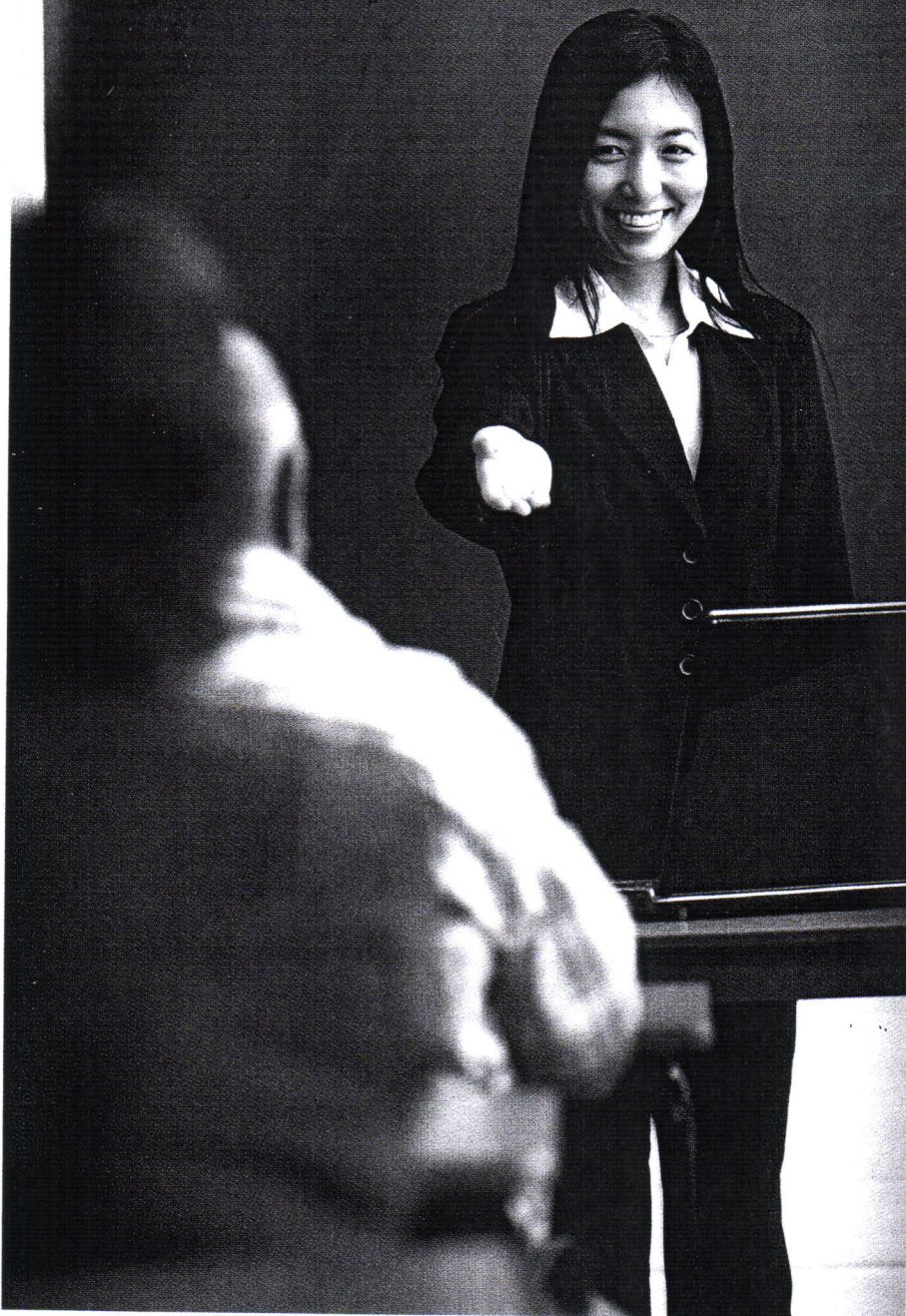


How to do it

Getting standardization into the classroom



by Henk J. de Vries

Despite recent improvements, in particular in Asia, standardization is a subject often overlooked in education. If the standardization community is to succeed in raising the field's status among educators, a combination of barriers must be overcome.

One problem is that students often perceive standardization to be a dull topic, leading them to choose other courses as electives. Meanwhile, teachers may be reluctant to cover standardization because they are unfamiliar with key issues or unaware of their importance. Instructors may focus on subjects perceived as more popular with students, and they may avoid standardization because curricula are already overloaded with other topics.

A workshop organized in 2006 by International Cooperation for Education about Standardization (ICES) concluded that improving standardization education is dependent upon three main factors:

- National policies
- Resource availability
- Close cooperation between industry, standards bodies, academia and other educational and governmental organizations.

Education is needed to empower people to improve current standardization systems.

Developing and deploying a national standardization education strategy and policy is a fundamental prerequisite for a systematic approach. This strategy may broadly address a range of educational areas, or it may be limited. It may specify in detail exactly what will be done and by whom, or take a global perspective. The more broad and detailed the strategy, the more standardization education activities are in place in a country.

Continuing support

Experience in the Republic of Korea and the Netherlands shows that long-term investments of time and money are required, as well as the efforts of dedicated individuals who actively seek out and support schools in developing, implementing and maintaining standardization education. Typical elements of a successful national approach include:

- An inventory of educational needs
- Formation of a steering group in which the most important stakeholders are represented (industry, standards bodies, governmental and educational organizations)
- An action plan



diplomas in standardization. Many standardization organizations provide education activities, primarily for business people but sometimes also as part of general education programmes.

Experience shows that long-term investments of time and money are required.

The number of universities that have included standardization in their curricula is limited, and the barriers mentioned above need to be addressed. Universities usually implement standardization education as a response to external stimuli, such as national policies. Only a handful of countries have genuine chairs in standardization or national networks of standardization researchers. Both are important: the more standardization is addressed in academic research, the more scientific researchers will be inclined to pay attention to it in their teaching activities.

Standardization education is relevant not only at the academic level; vocational education at different levels is important, as are secondary schools. Compared with universities, these schools have less flexibility to freely choose subject areas. It may be necessary to change the end terms as a path to implementing standardization. This requires addressing not only individual teachers and schools, but also associations and other organizations involved in education at the national level.

- One or more devoted staff members, able to make multi-year commitments (so funding is a prerequisite)
- Development of curricula and materials
- A train-the-teachers programme
- Promotional activities
- Performing education
- Evaluation.

Activities can start with one or a few teachers from a limited number of schools and then expand. A plan for teaching practitioners is also needed.

Bridging five worlds

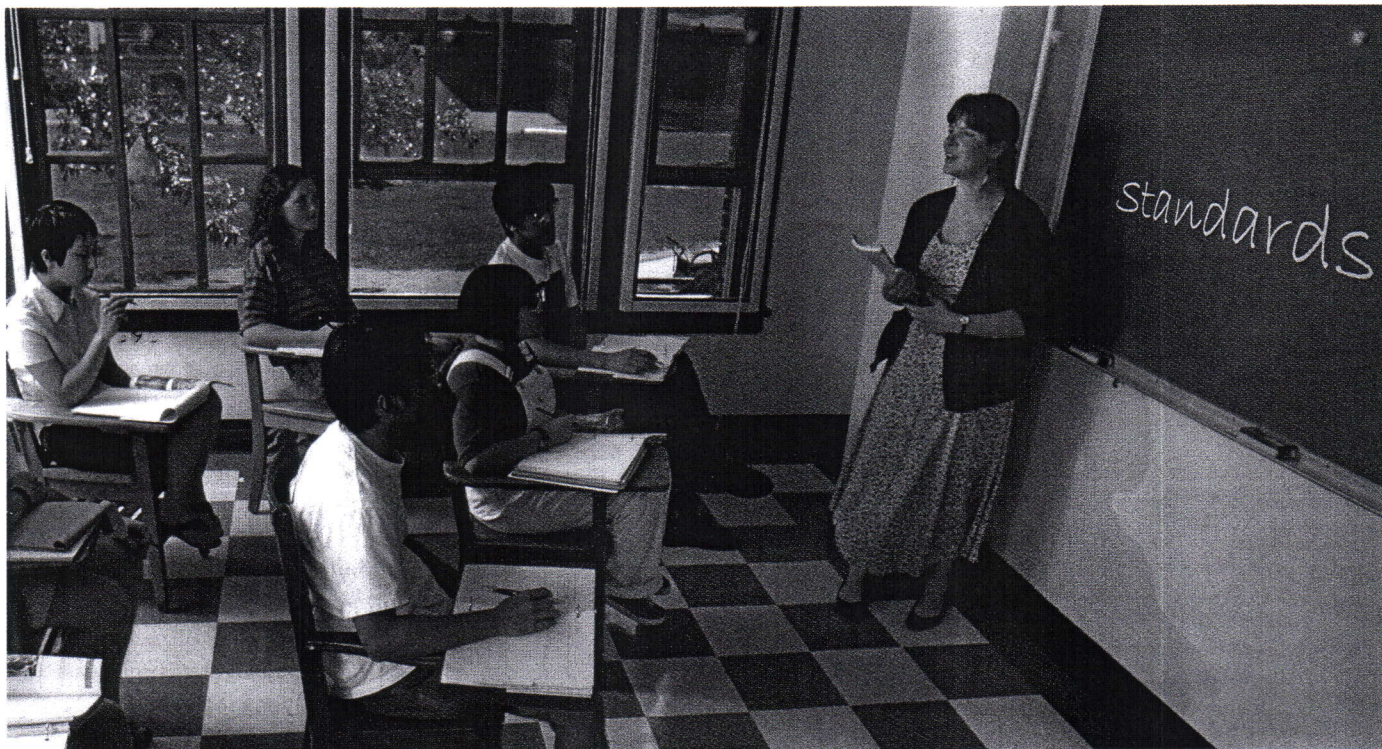
Another challenge is to bridge five worlds, all of which are associated with standardization but know sometimes little about each other's interests and capacities. These worlds include industry, standardization bodies, academia, other educational institutions, and government.

Industry and other stakeholders need awareness of standards and standardization from employees. This insight should include the ability to recognize the need for further academic, vocational and other education in standards-related tasks. Finally, comprehensive academic education is needed to empower people to improve current

standardization systems and to further develop standardization as a discipline.

Standardization bodies should be centres of standardization expertise. Part of the professionalization of international standardization could be to better educate technical officers of standardization bodies. International standardization could be upgraded by moving in the direction of granting ISO and the International Electrotechnical Commission (IEC) secretariats only to technical officers with recognized





National governments would profit from better standardization education for administrators in various positions. Civil servants may also include standardization knowledge in the criteria for accreditation of educational programs.

Toward more standardization education

This article began with a list of barriers to the expansion of standardization education. The first of these, increasing the attractiveness of the field for students, might be the most difficult, but engaging teaching methods and materials may be a partial solution. Teachers' willingness to include the topic in their courses will grow when teachers and school administrators are convinced of the importance of standardization.

To this end, standardization education steering groups should be established at the national level with participation from industry, government, standards bodies and academia. These groups would have the side-effect of increasing awareness about the importance of standardization education for industry and government representatives, which would be a step toward addressing the third barrier.

Education steering groups would also stimulate the inclusion of standardization in formal requirements defining the topics to which students are exposed in school. This

may not apply to universities, but probably does for most other learning institutions. This will require substantial lobbying, which will be made easier if some educational programmes are already in place. Where applicable, reference should be made to the policies of the Asia-Pacific Economic Cooperation (APEC) and the European Union as well as to national standardization strategies.

Initiatives for more standardization education are underway around the world.

In the Republic of Korea, improved standardization education has been promoted by a trade union – perhaps not the messenger most of us would first expect, but showing that any stakeholder can take the initiative. Next, funding is required to employ one or more devoted people to develop educational materials, organize train-the-trainer programmes and other initial tasks. This money might come from industry, from the standards bodies' own resources, or from government.

Meanwhile, initiatives for more standardization education are underway around the world. Future research might make an inventory of initiatives and achievements and relate effects to measures taken. ■

A more complete paper, including references to underlying studies, may be found in: Vries, Henk J. de (2010) *Implementing Standardisation Education at the National Level*. Jean-Christophe Graz & Kai Jakobs (Eds) *EURAS Proceedings 2010 – Services Standardisation Conference*. Aachen: Wissenschaftsverlag Mainz, pp. 127-135. Versions of that paper in French and German will be published in *Enjeux* and *DIN-Mitteilungen*, respectively.

About the author



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His education and research focus on standardization from a business point of view, see www.rsm.nl/hdevries. RSM was winner of the ISO Award on Higher Education in Standardization 2009. Dr. Henk J. De Vries is Vice-President of the European Academy for Standardisation (EURAS), Vice-Chair of the International Cooperation for Education about Standardization (ICES), and Special Adviser to the International Federation of Standards Users (IFAN). His teaching activities include an executive course "International Standardisation – Achieving Business Goals", see www.rsm.nl/is.