Lessons from Asia

Bridging the gap between theory and practice

Standardization activities are carried out by people who may need specific knowledge and/or skills to do their job. Most participants in standardization committees have had very little, if any, training. They are usually not aware that they can take advantage of training and education.

At the management level, knowledge about standardization is needed, in particular, on the relevance of standards for business. John Hill, Standards Manager of Sun Microsystems and initiator of ICES, argues that "Companies as well as standards bodies need well-educated standardization experts. Standardization processes should keep up with the times. Who will progress the theory and practice of standardization ? Will universities provide us with such people ?"

The workshop participants identified an enormous gap between latent and manifest needs for standardization education. Countries like the Republic of Korea and Thailand show that to bridge this gap a national strategy is needed, as well as cooperation among government, industry, the national standards body, academia and educational institutions.

A cademics, business experts and people from standards bodies from Asia, Europe and the Americas met in February 2007 in Delft, The Netherlands, to share experiences on standardization education. The workshop was an initiative of the International Committee for Education about Standardization (ICES), and was organized by Tineke Egyedi (Delft University of Technology) and Henk de Vries (Erasmus University Rotterdam). Some findings of this workshop are presented below.[1]

Keeping up with the times

In 2006, 46 universities in the Republic of Korea offered courses on standardization, while in other countries the number of universities offering these was very limited. In the USA, only three universities offer a separate standardization course. In Europe, the number of universities with courses on offering ranges from 10 to 30. The major share of academic education on standardization can be found in Asia : mainly in China, Japan and the Republic of Korea, but also in Indonesia, Sri Lanka, Thailand and Vietnam.

Non-academic teaching is offered in many countries, mainly in the form of courses for technicians about specific standards. Though some courses attract many participants, the supply of education is very restricted compared to the number of people involved in standardization.

Another lesson learnt during the workshop is that it is easier to talk about educational content (i.e. in terms of there being a need for …) than identifying the source of educational needs (i.e. why should one have knowledge of standardization ?). Nevertheless, the latter should be the starting point of standardization education. It determines which audience should be targeted and what should be taught (learning objectives).
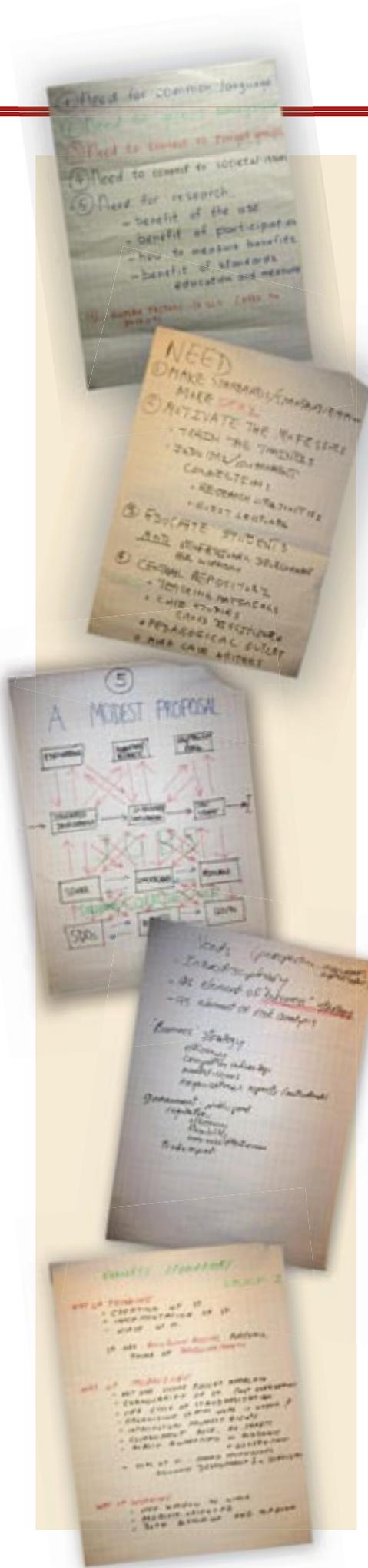
Audiences and learning objectives

Education in the Republic of Korea started off by targeting engineering students. However, there are many target groups for standardization education. In a brainstorm session, the workshop came up with a list of potential users who would benefit from standardization education, i.e.:

- from audiences in the regular educational system (e.g. primary school, secondary school, vocational training, university students including MBA students, PhD students and post-docs, teachers and university professors) to job training (e.g. for standards developers, implementers, corporate managers, managers of functional units such as purchasing departments, researchers, policy makers, public administration, lobbyists for an industry sector, and media people), and education for the wider public;

- within regular education, from audiences that require general education (e.g. cross-academic courses) to those who need specific education (e.g. students in engineering, business, medicine and law);

- from those who will make a full-time career out of standardization (which is an exception) to those who end up in this area at a later stage of their career.

People usually come into contact with standards via their profession (e.g. in a specific technical area). They may sometimes already be acquainted with specific standards, such as standards for technical drawing, or for safety of low voltage installations through regular edu-

cation at the lower, intermediate or higher vocational level. However, in the long run, this knowledge will not suffice as new standards emerge and existing standards are changed or withdrawn.

So, once people really get involved in developing or applying standards in their professional life, they will need continuous education, e.g. by means of a course offered by a national standards body. The course content should then meet a set of interrelated learning objectives about the required attitude, skills and knowledge. Workshop participants mentioned examples of such learning objectives.

Contents of an academic curriculum

Standardization courses differ in the topics they address. Most curricula seem to be composed in a rather pragmatic way, strongly depending on the specific knowledge of the designer. In academic education on standardization, there is a choice between developing a separate course on standardization and integrating the subject in another course.

The interdisciplinary nature of standardization and the amount of relevant topics would seem to make a separate course worthwhile. In a three-hour interactive workshop session, using the group decision room facilities of "group decision support software" and 30 interconnected computers, workshop participants managed to achieve rough consensus about the main elements of such an academic course.

Available teaching materials

For those who would like to set up standardization education, a fair amount of books, e-learning environments, digitally available lectures and Internet courses, bibliographies and other educational material are available. The vast majority, however, is written in Chinese, Dutch, Japanese, Korean, Turkish, etc., and, as such, is not easily accessible. Only a small proportion is available in English.

Moreover, the workshop participants emphasized the need and possibility to present course content in a more

"fun" and "sexy" way. For example, case studies are fun and very useful to illustrate standardization issues, and invited speakers, in particular from industry, may liven up courses. Unfortunately, overall teaching cases are lacking which involve role playing and help students "experience" standardization.

> ## "It is easier to talk about educational content than identify the source of educational needs."

A notable exception is the e-learning course developed by ISO *(see article by ISO Strategic Advisor, Dr. Daniele Gerundino, on* **page 39**) which uses a teaching case, a simulation, for educating standardizers. Courses like these would also be useful for academic teaching and vice versa, with teaching material developed for academic teaching applicable in other educational settings.

Conclusions and future developments

An enormous gap exists between manifest and latent needs for standardization education. A main lesson to be learnt from some of the Asian countries is that the gap can be bridged, first with a strong national policy which may be part of a regional policy, and secondly by cooperation among government, industry, the national standards body, academia and other educational institutions. New initiatives can build upon experiences in other countries and the material already developed.

The increasing number of initiatives and activities that have taken place in the last three years indicates that there is a momentum for education on standardization. The National Institute of Standards and Technology (Gaithersburg, MD, USA) is seizing this momentum and is organizing the next ICES workshop which is scheduled for 21-22 February 2008. ∎

For more information about ICES, see :
http://www.standards-education.org

Improved guidelines on implementing ISO 9001 in the education sector

by Rafael A. de Arrascaeta Farrando, Member of the group of experts which developed and edited IWA 2:2007

In May 2007, ISO published updated guidelines to facilitate the implementation of quality management systems in educational organizations: IWA 2:2007, *Quality management systems – Guidelines for the application of ISO 9001:2000 in education*.

A conventional view would describe education as the mere transmission of knowledge. But that concept is changing rapidly, as it must. A more appropriate 21st century credo would be: "Education is the construction of sustainable integration processes based on individual needs and capacities."

Failing to meet this need for a new mindset regarding education could make our communities unlivable within a generation, as vast sectors of the population find themselves excluded from full participation in civil society.

The alternative could be a future gravely undermined by failure to invest in the best available education. Police and fences will not be enough to protect us if our societies lack shared ethics built upon universal education. Effective implementation of ISO 9001 quality standards by educational institutions can play a key role in addressing this challenge.