

Raising the Awareness of Standards in Higher Education

– A Panel Discussion –

Presented by

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Premise



- *“The international language of commerce is standards”*
 - Donald Evans, U.S. Secretary of Commerce
May 18, 2004
*Report on Standards and Competitiveness –
Removing Standards-Related Trade Barriers Through Effective
Collaboration*

- The impact of standardization is pervasive
 - Standards have a direct impact on the workforce in all industrial sectors
 - Standardization must become more fully integrated into the curriculum of engineering, technology, public policy and business schools

Standards are pervasive

- Current cross-industry examples
 - Homeland Security issues such as biometrics, “Safe Harbors” and others
 - ANSI Homeland Security Standards Panel working with the Department of Homeland Security, 9-11 Commission, and more
 - Federal election reform
 - ANSI is referenced in the Help America Vote Act (HAVA)
 - ANSI is represented on the Technical Guidelines Development Committee (TGDC) of the Election Assistance Commission
 - Nanotechnology
 - ANSI recently responded to a request from the Executive Office of the President – Office Science and Technology Policy to help coordinate standards related to nanotechnology



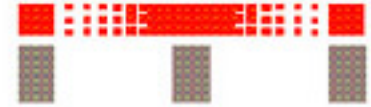
Minimum Standards Literacy Needed for Faculty and Students

- At present, institutions of higher education have no required or formal reliance upon standards
 - Integrating standards and conformity assessment training into the university curriculum will better prepare the future workforce
 - Surveys indicate that most standards-related training is provided “on the job”
- Developing and implementing standards can play a key role in building a global education network





*Mission: To enhance the global competitiveness of U.S. business and the American quality of life by **promoting and facilitating** voluntary consensus standards and conformity assessment systems and ensuring their integrity.*





- **Goal** *To broaden outreach to make higher education aware of standards in business, trade, and educational services*

- **Why** National Standards Strategy for the United States (NSS)
 - *Goal 11 – Make the value of standards development both **apparent and real** by educating private- and public-sector decision-makers about the value of standards and how to take advantage of the process.*

- **How** University faculty outreach activities
 - Committees are also working to develop standards for learning technologies and distance learning

- **Leadership** ANSI Committee on Education



ANSI and NSS Implementation

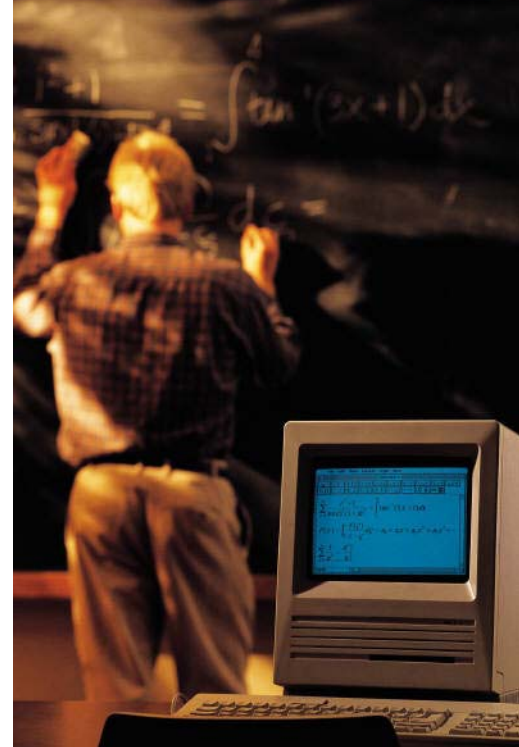
ANSI Education and Training Services

Instructor-led Training	Public and Member Information	University Outreach
<ul style="list-style-type: none">■ Traditional classroom■ Web-based■ Virtual workshops	<ul style="list-style-type: none">■ E-learning programs www.StandardsLearn.org■ Conferences and Symposia	<ul style="list-style-type: none">■ Committee on Education■ <i>Outreach programs to universities, high schools and other students</i>

Educational Partnerships

- ANSI Committee on Education
 - Chairman, Dr. William E. Kelly
The Catholic University
 - Became a permanent committee in May
 - Supersedes the Ad Hoc Committee on Standards Awareness and Education

- Goals: Develop a long term strategy to . . .
 - include standards in engineering and business school curricula
 - educate the next generation of business leaders on the strategic impact of standards and conformity assessment



Standards for Continuing and Higher Education

- Develop **strategies** to maximize the use of standards in building a global education network
 - Standards-related “on the job” training
 - Standards for use *in* higher education
 - Standards for use *by* higher education



“On-the-job” Training

- Standards training and education is generally provided by industry and/or standards organizations
 - Two recent surveys of higher education confirm that standards education is not a priority issue in schools in the U.S. and Europe
 - It is important to develop long term strategies to educate the next generation of standards professionals



“On-the-job” Training (continued)

- ANSI has been providing standards-related education services since it was founded in 1918
- Instructor-led courses are delivered in a classroom or via the web
 - Designed to facilitate real-time interaction, in-depth information sharing, and interaction and interface between instructors, other students, staff and more
- Courses are targeted to meet the needs of:
 - Corporate, manufacturing or engineering managers
 - Government and public administration representatives
 - Consumers
 - Engineering, technical and design personnel
 - Others



“On-the-job” Training (continued)

- E-learning (www.StandardsLearn.org)
 - No-fee, public service programs
 - Each course is self-paced and includes assignments, links, exercises and exams
 - Current courses include
 - *Why Standards Matter*
 - *U.S. Standards – Today and Tomorrow*
 - Under development
 - *International Standards Development (expected in late 2004)*
 - More than 1,450 participants have taken courses on the ANSI education portal since its launch in 2002



www.StandardsLearn.org

Standards for Use In Higher Education



- Standards have a direct impact on the future workforce (current students) and play a key role in building a global education network
- It is logical that standards should become a more integral component of curriculum
 - Raise awareness in engineering, technology, public policy and business schools

Standards for Use In Higher Education (continued)

- Identified curriculum needs (business issues)
 - Manufacturing and design
 - Sustainable development
 - Manufacturing (faster, better, and cheaper)
 - Health and safety requirements
 - Occupational health and safety
 - Economic, social and political considerations
 - Personnel and product certification systems
 - Corporate and social responsibility; business ethics
 - Quality and environmental management
 - e.g., ISO 9000 and 14000



Standards for Use By Higher Education



- Voluntary consensus standards are being developed to support the technical infrastructure for the distributed learning infrastructure and educational functions, technology specifications, components and services
- Consideration now underway for the development of international standards for education services

Standards for Use By Higher Education (continued)



International Organization
for Standardization

- **ISO/ International Workshop Agreement (IWA) 2:
Quality Management System Guidelines for the Application of ISO
9001/2000 in Education**
 - While ISO 9000 already included educational organizations, ISO/IWA 2 guidelines will facilitate implementation by education sector:
 - elementary, medium and higher; special and adult education; distance and e-learning.
 - Assesses the ability to meet customer, regulatory and quality requirements
 - IWA's are an alternative to International Standards when swift development and publication takes priority.

Standards for Use By Higher Education (continued)



- Identified technical needs
 - INCITS Committee V36
 - formed to support national and international standards efforts for learning, education and training
 - Includes topics such as vocabulary, collaborative technology, learner information, and management and delivery
 - INCITS/V36 also serves as the U.S. Technical Advisory Group to ISO/IEC JTC1 SC36, *Information Technology for Learning, Education, and Training (LET)*
 - Others
 - SCORM (Sharable Content Object Reference Model)
 - Common specification for instructional software – “SCORM compliance” requirement for e-learning programs



ISO/IEC JTC1 SC36 Home Page - Microsoft Internet Explorer

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Address http://jtc1sc36.org/

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ISO JTC1 IEC Welcome to ISO/IEC JTC1 SC36 jtc1sc36.org
Standards for: Information Technology for Learning, Education, and Training (ITLET)

WebSite
[SC36 Home Page](#)
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Current
[Document Library](#)
 last: [SC36/N0779, 2004-05-10](#)
[For-Action Tickler](#)
[What's New](#)
 updated: 2003-09-05

Organization
[JTC1 Org Chart](#)
[SC36 Org Chart](#)
[National Body Membership](#)
[Committees](#)
[WG1 Vocabulary](#)
[WG2 Collaborative Technology](#)
[WG3 Participant Information](#)
[WG4 Management & Delivery](#)
[WG5 QA & Desc. Frameworks](#)
[WG6 Int'l Standardized Profiles](#)
[WG7 Culture, Language, and Human Functioning Activities](#)
[RG1 Marketing](#)
[Related Activities](#)

Work
[Work Programme](#)
[Meetings / Resolutions](#)
[How To Participate](#)
[Acronym Summary](#)
[Extranet \(coming soon\)](#)

— Information Technology JTC1

Subcommittee 36 — Information Technology for Learning, Education, and Training (ITLET)

Other JTC1 Subcommittees (SCs)

SC36

National Body Members Of SC36

Working Groups

WG1: Vocabulary
 WG2: Collaborative Technology
 WG3: Participant Information
 WG4: Management and Delivery
 WG5: QA & Frameworks

SC36 Rapporteur Groups

Marketing Rapporteur Group
 International Standardized Profiles RG
 Culture, Language, Function Accommodation RG

Web site last updated on 2004-05-01. [SC36 Contact Information](#), including web administration. The JTC1/SC36 Secretariat is administered under American National Standards Institute (ANSI). A [text-only, no-frames version](#) of the web site is available.

Done Internet

Distance Learning Standards/Groups

■ Standards Organizations

- ISO/IEC JTC1 SC 36 Standards for: IT for Learning, Education and Training
- IEEE Learning Standards Committee
- W3C World Wide Web Consortium

■ Educational Organizations

- Carnegie Mellon Learning Systems Architecture Lab

■ Corporations

- Microsoft
- Web Based Training Information Center
- Prometheus

■ Other

- Advanced Distributed Learning
- Aviation Industry CBT Committee
- Blackboard "Leading the way on standards-based e learning"
- Educause National Learning Infrastructure Initiative
- IMS Global Learning Consortium
- International Society for Technology in Education
- WebCT Standards



Meetings & Events

Upcoming Meetings

Working Groups

Architecture & Reference

Model

2001 LTSA

Intellectual Property Rights Expression

Program

2004 DREL

Computer Managed

Production

2001 CMI

Learning Object

Metadata

2002 LOM

Competency Definitions

2002 RCD

Working Groups

Modeling & Simulation

Training & Learning

2002 TAL

Publications

Previous Website Files &

Other Materials

Other

IEEE Computer Society Sponsor Executive

Committee

IEEE Standards

Association

Membership

Joining The LTSC

Announcements, News & Press Releases

- Slides from the LOM Presentation, 27 January 2004 [[PowerPoint file](#)].
- [Invitation](#) to the International Open Forum "Standards in E-Learning: Towards Enriching and Sharing Our Educational Heritage," Montreal, 4-5 March 2004 (hotel information [here](#))
- Want to know what is happening when? The [Learning Technology Events Matrix](#) is now available (23 January 2004).
- Posted to the Competency Definitions WG20: [Draft Standard for Information Technology - Learning Technology - Competency Definitions](#)
- [Past Announcements...](#)

The IEEE Learning Technology Standards Committee (LTSC) is chartered by the IEEE Computer Society Standards Activity Board to develop accredited technical standards, recommended practices, and guides for learning technology.

The LTSC coordinates formally and informally with other organizations that produce specifications and standards for similar purposes. Standards development is done in working groups via a combination of face-to-face meetings, teleconferences, and exchanges on discussion groups. The LTSC is governed by a Sponsor Executive Committee (SEC) consisting of working group chairs and elected officers.

Distance Learning Standards/Groups



IMS (Instructional Management System) Global Learning Consortium

Develops and promotes open specifications for facilitating online distributed learning activities such as locating and using educational content, tracking learner progress, reporting learner performance, and exchanging student records between administrative systems:

- defines technical standards for interoperability of applications and services in distributed learning
- supports the incorporation of IMS specifications into products and services worldwide



AICC (Aviation Industry CBT Committee)

Develops interoperability guidelines for the aviation industry in the development, delivery, and evaluation of CBT and related training technologies.



PROMETEUS project (funded by the European Union)

Promotes multimedia access to education and training throughout European society, technology-assisted learning, and application of IEEE standards:

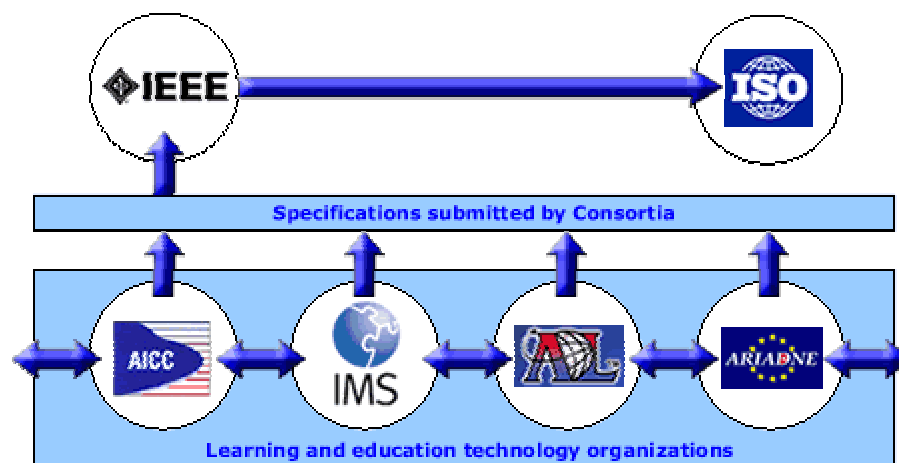
- optimal strategies for multicultural, multilingual learning solutions
- new instructional and training approaches and new learning environments
- affordable solutions and platforms based on open standards and best practices
- publicly accessible and interoperable knowledge repositories



Distance Learning Standards/Groups

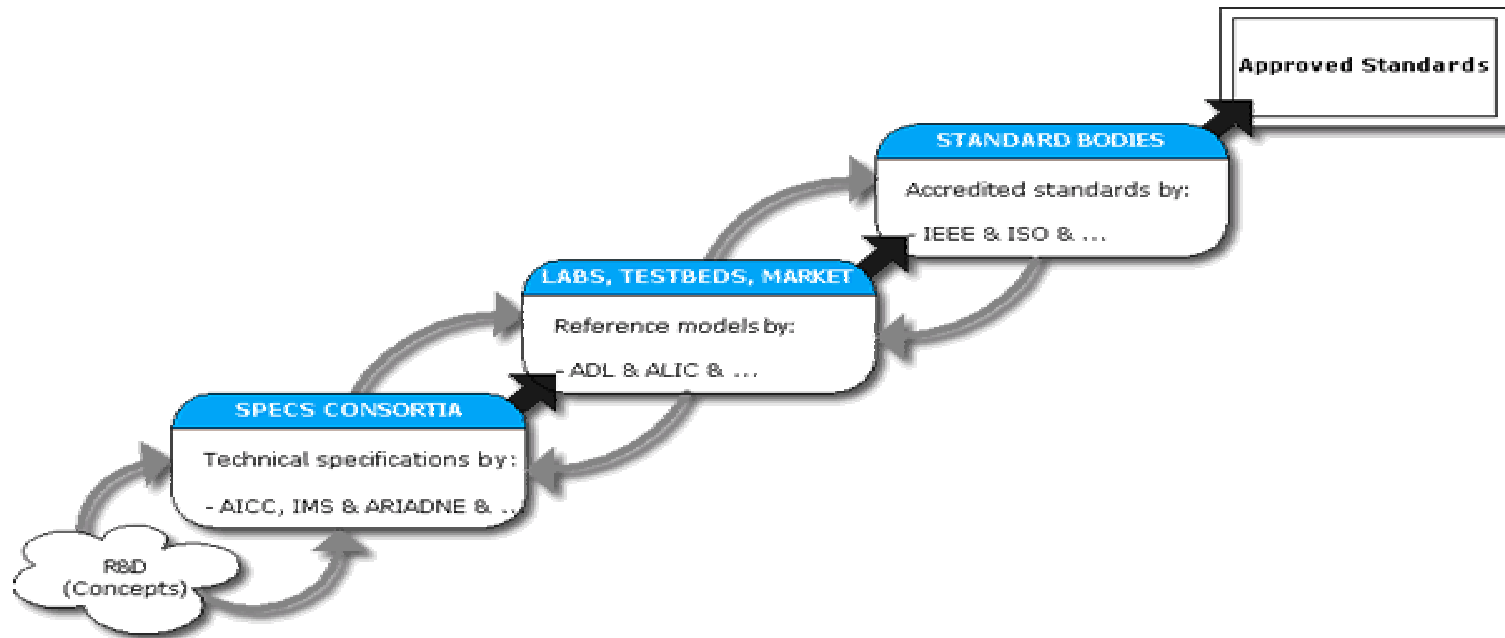
Relationships and processes

- Most projects, committees and working groups are related to each other



Road to Standardization

- The processes and players



ANSI University Outreach



- University outreach projects now underway
 - P3 Award – Partnership with U.S. standards developers and the U.S. Environmental Protection Agency
 - Design competition for sustainable environmental solutions
 - Real world relationship between design, standards, and conformity assessment
 - American Society of Engineering Educators (ASEE) Fall 2004 Conference
 - Faculty workshop: “Incorporating Standards into Capstone Design Courses”
 - Presentations and lectures to academic audiences around the globe

ANSI's E-Learning Strategy - Raising the Awareness of the Value of Standards



- *Public information (no-fee public service program)*
- Goal – Universities incorporate ANSI e-learning into curriculum

www.StandardsLearn.org

University Outreach (continued)



Engineering Standards Case Study

ABET Criterion 4

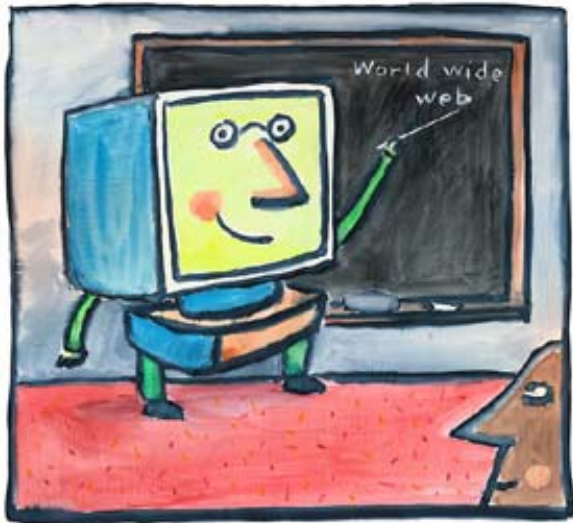
- Requirement that students consider realistic constraint considerations:
 - Economic – financial report standards
 - Environmental – environmental regulations
 - Sustainability – metrics for measuring and reporting
 - Manufacturability – Quality and interoperability
 - Health and safety – OSHA
 - Social-consumer and labor organizations
 - Political – World Trade Organization TBT Agreement Standards Code
 - Learning Technology Standards – SCORM

Call for Input

Help Us Help You



- Educate tomorrow's workforce on the value and use of standards
- Incorporate practical standards material into curriculum
- Meet ABET requirements to incorporate standards in design
- Interface with standards developers
- Develop content and identify resources



■ Summary

- Standards will play a role in the globalization of higher education
- Strategic thinking is needed to educate the next generation of standards professionals
- Partnering will help to advance the training of current and future generations of standards professionals
- Cross-discipline university outreach is essential
- ANSI has stepped forward to coordinate the development and adoption of “best practices” for standards-related education



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