

Joint ITU-IEICE-CTIF-GISFI Workshop on Education about Standardization

Kyoto, Japan, 25 April 2013

Teaching Standards: Experiences in Korea and APEC

**Donggeun Choi (PhD),
Chief Researcher,
Korean Standards Association
(stannovation@gmail.com)**

Donggeun Choi (PhD in Technology Innovation Management)

- Work, Education, Activities

■ Works

- ▶ Chief Manager, Korean Standards Association (KSA) (2000-present)
- ▶ Guest Researcher, Standards Coordination Office, NIST (2012.3-2013.2)
- ▶ Researcher, Korea Development Institute (KDI) (1999-2000)

■ Education

- ▶ PhD in Technology Innovation and Management at Sungkyunkwan University
- ▶ Master in transportation management from Seoul National University (Feb 2000)
- ▶ Bachelor in transport engineering from Hanyang University

■ Major Professional Activities

- ▶ Vice-Chair, International Cooperation for Education about Standardization (2012 – 2015)
- ▶ Project Editor/Initiator of Education Initiative, APEC Sub-Committee on Standards and Conformance (2007-2011)
- ▶ Korean Delegates, APEC Sub-Committee on Standards and Conformance (SCSC) (2004-)
- ▶ Secretariat, ISO TC204 Ad hoc workgroup on Ubiquitous-City Standards (2008-2009)
- ▶ Liaison, ISO TC204 Intelligent Transport Systems to APEC Transport Workgroup (2004 -2009)
- ▶ Project Editor, ISO 28682:2008 World Report for ITS Standards (2005-2007)
- ▶ Korean Delegates, ASEM Standards and Conformity Assessment (SCA) (2004-2008)
- ▶ Director, International Cooperation Committee, Society for Standards and Standardization (2011-)
- ▶ Advisory/Program committee, SIIT (Standards and Innovation on Information Technology) Conference 2011, 2013



Eagles' View in APEC region

APEC
MM 2007
PJ 2007~11
PJ 2013~14(5)

Korea
±50
(KSA 2003~)

China
±30
(CJLU, CNIS..)

Japan
±8
(JISC, JSA)

Indonesia
8 (28 MOU)
(BSN 2005~)

Malaysia
n/a
(DSM 2011~)

Peru
a few
(INDECOPI 2012~)

U.S.
a few
(ANSI, NIST)

Canada
a few

Korea's Experience

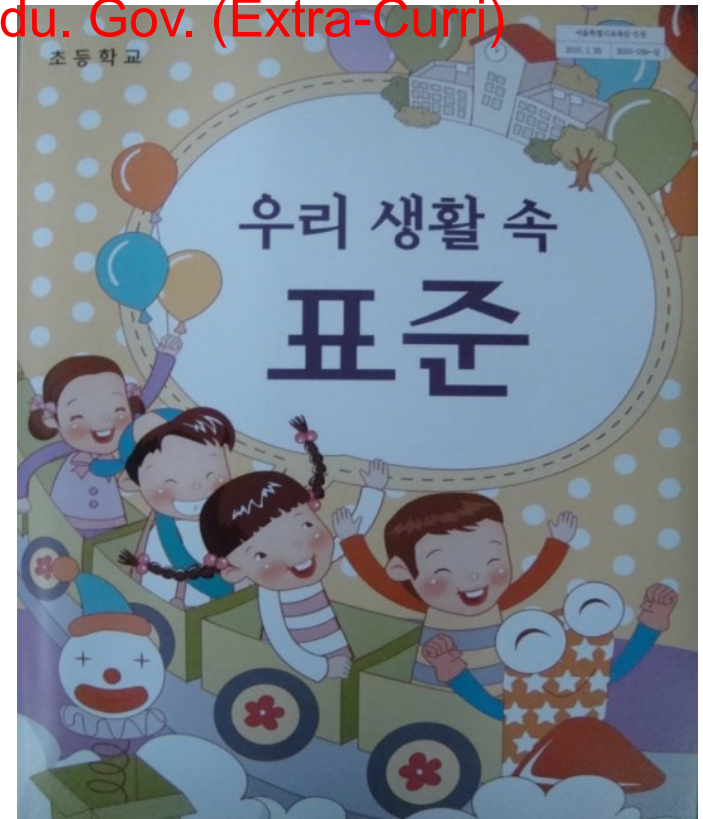
- Overview -

ITEM/YEAR	2003	04	05	06	07	08	09	10	11	12
Higher - classroom	-	982 (11-11)	4,830 (35-64)	6,681 (46-87)	6,160 (49-91)	5,948 (48-96)	5,613 (49-90)	3,957 (43-80) Adv.	3,883 (41-81) Adv/Gr	2,594 (62) Adv/Gr
- textbook	Common				Common -Revision	Elect. ICT	Mechanic Environ.	Electro(2)	Three Cases	
Secondary - Olympiad				217	240	639 →240	534 →240	888 →300	774 →240	
- textbook, ToT					Ver 0.5	(30)	Ver1.0 (36)			
Primary - classroom						970 (11) visit	4,318 (43) visit	4381 (43) visit	7443 (9) model	6,549 (9) model
- textbook							Text (37)	TOT. Anim.		

Korea's Experience

- Primary School : Meet Standards

- **Program started in the second half of 2008**
 - 2008~2010: Invited Lecturer Visited for 40-80min class
 - 2011~2012: Model Schools Selected by Local Edu. Gov.
 - Textbook was accredited by Seoul Edu. Gov. (Extra-Curri)
- **Guest teachers of standards experts**
 - To show that standards are a part of everyday life
 - To share standard-experience with students
- **Textbook for Elementary School**
 - “Standards in Dairy Life”
 - Chapter 1. Why standards?
 - Chapter 2. Our lives with standards
 - Chapter 3. Daily standards
 - Chapter 4. Our promise, standards



Korea's Experience

- Secondary School : Explore Standards

● Purpose

- To bring standards to the real life
- To explore the standards world
- To recognize outstanding achievement using standards

● Strategy

- To encourage students to participate in standardization activities
- To develop the standards education course into the regular curriculum
- To compete for the “Standards Olympiad”

● Regular curriculum incorporated in 2011

- “Technology & Housework” for middle School
- “Engineering & Technology” for high School

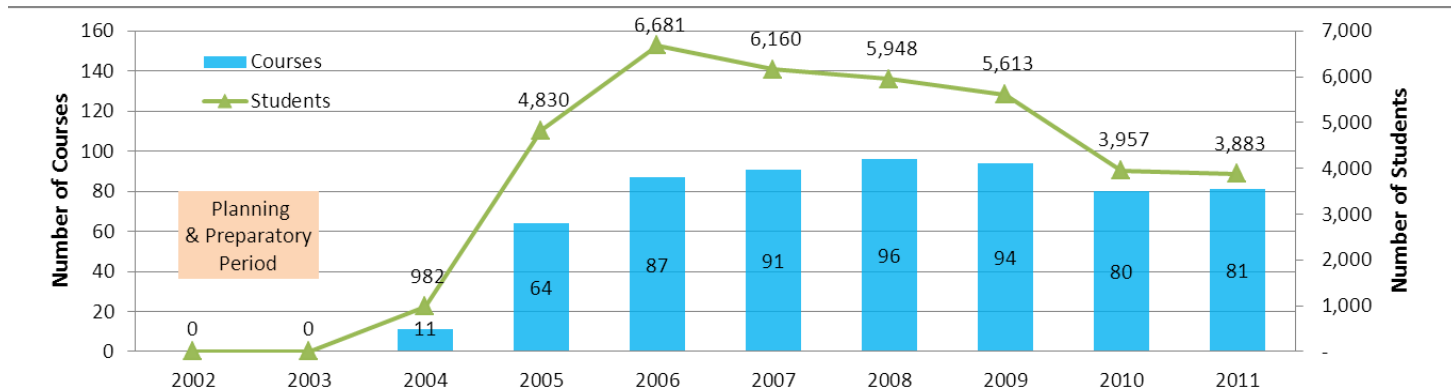
● “Standards Olympiad” since 2006

- Around 1,000 students apply each year

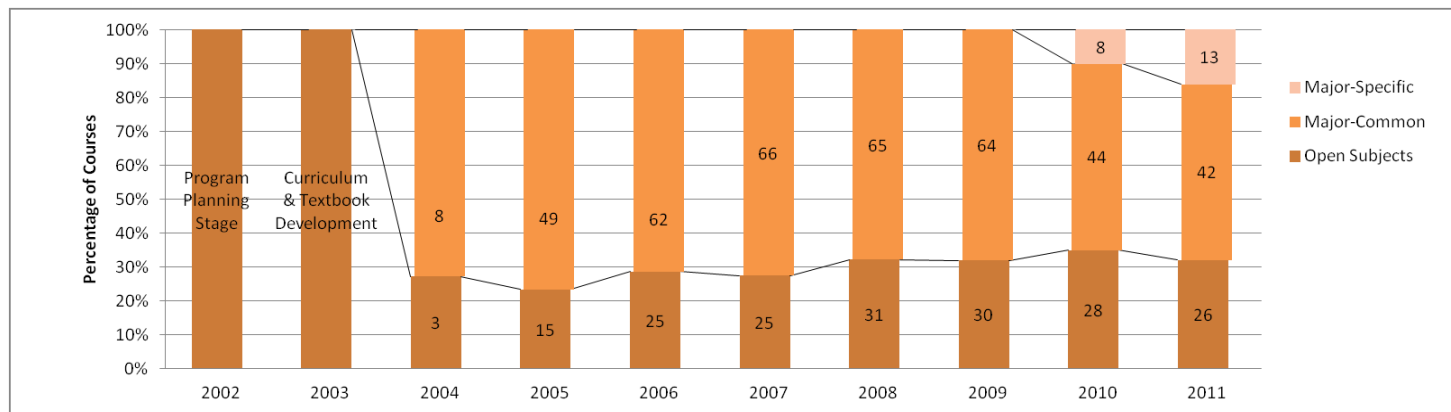


Korea's Experience - University – Evolutions (1)

● Number of UEPS courses and participating students



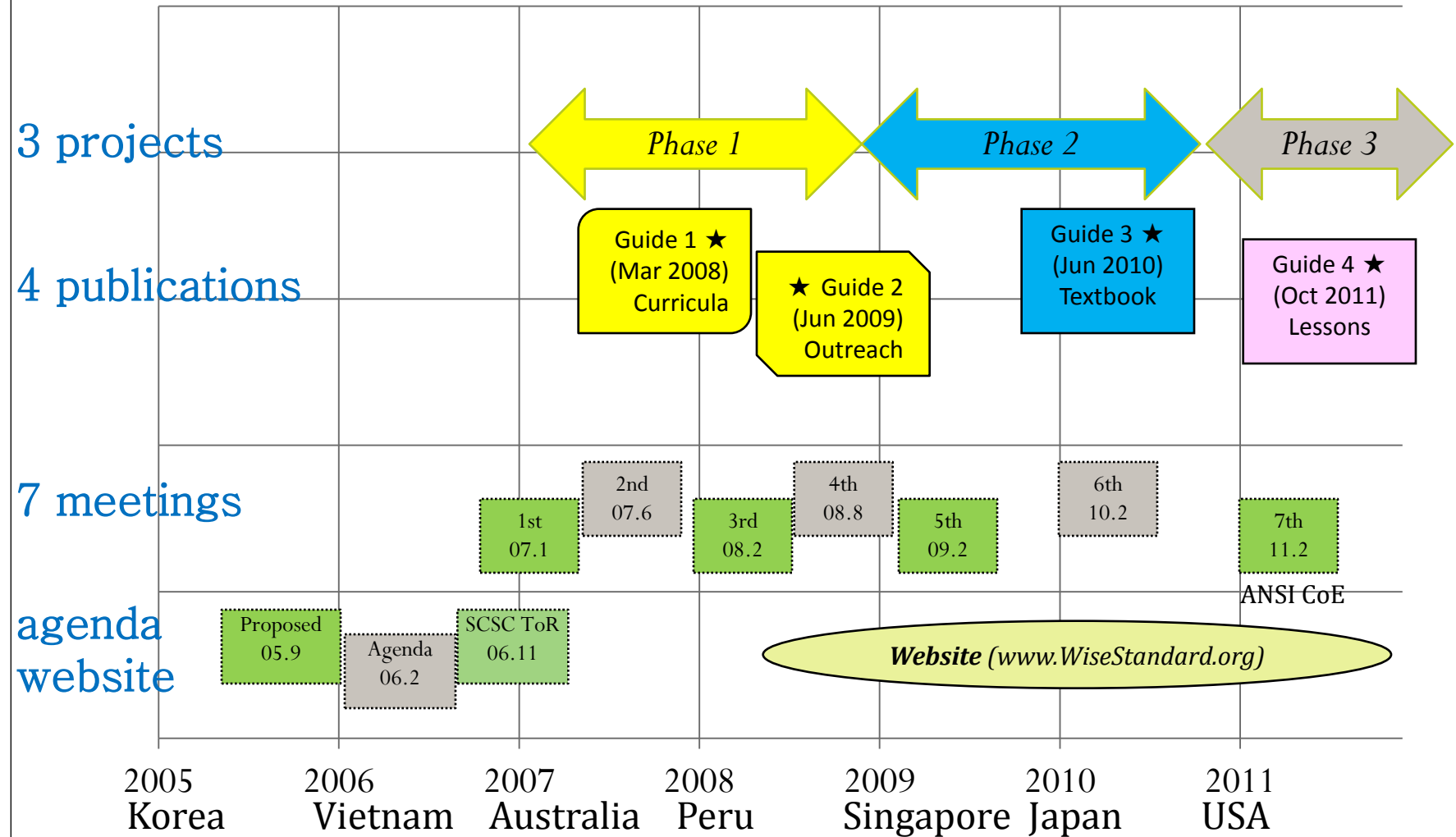
● Share of different categories of different UEPS courses



Korea's Experience - University – Evolutions (2)



APEC Education Initiative - Overview in 2005-2011



APEC Education Initiative

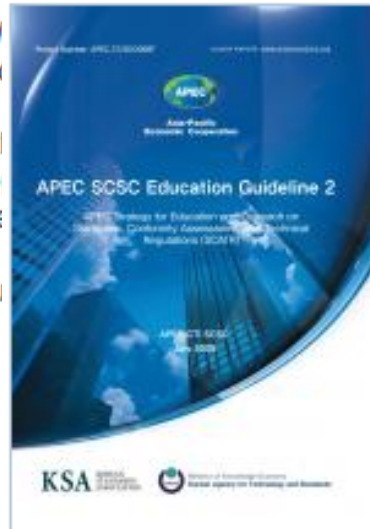
- Guide 1 Survey + Curri Model
- Guide 2 Outreach Strategy



APEC Sub-Committee on Standards & Conformance (SCSC) Education Guideline 1: Case Studies of How to Plan and Implement Standards Education Programs and Strategic Curriculum Model, March 2008

CTI Sub-Fora & Industry Dialogues, Sub-Committee on Standards and Conformance (SCSC)

The objective of this handbook is to support planning or implementation of standards education programs. This is the first kind of manual providing ...



Sub-Committee on Standards and Conformance (SCSC) Education Guideline 2: APEC Strategy for Education and Outreach on Standards, Conformity Assessment and Technical Regulations (SCATR), July 2009

CTI Sub-Fora & Industry Dialogues, Sub-Committee on Standards and Conformance (SCSC)

The "APEC Strategy for Education and Outreach on Standards, Conformity Assessment, and Technical Regulations" aims to expand and enhance general awareness of SCATR among professionals from a variety of backgrounds and, more specifically, to conduct education outreach among current public- ...

APEC Education Initiative - Guide 3 Textbook (ToC)

Part I. FUNDAMENTALS

- Chapter 1 Definitions and Functions (Prof. Minabu Eto, JP)
- Chapter 2 Lifecycles, Organizations, and Development Procedures (Prof. Minabu Eto, JP)
- Chapter 3 Conformity Assessment (Prof. Mingshun Song, CN)

PART II. IMPACTS

- Chapter 4 Economic Impacts - Macro Perspective (Mr. John Henry, AU)
- Chapter 5 Economic Impacts - Micro Perspective (Mr. John Henry, AU)
- Chapter 6 Legal Impacts (Mr. John Henry, AU)

PART III. BUSINESS STRATEGY

- Chapter 7 Standardization and Innovation (Prof. Hee-Sang Lee, KR)
- Chapter 8 Competitive Strategy (Prof. Byung-Goo Kang, KR)
- Chapter 9 Collaborative Strategy (Prof. Hee-Dong Yang, KR)
- Chapter 10 Two Case Studies of ICT Standard (Prof. HeeJin Lee & Prof. Hee-Dong Yang, KR)

ANNEXES A. B

APEC Education Initiative - Guide 4: Pilot Implement

Ch. University (Economy)	Major/Dep.	Ba	Ma	PhD	Students
01.CJLU (China)	Biz Management	70			
02.Chungang (Korea)	Business		5	13	Work experienced
03.Diponegoro (Indonesia)	Industrial Eng.	32			
04.EWHA (Korea)	MBA		10		Work experienced
05.HUFS (Korea)	Industrial Eng	6	1		
06.Hanyang (Korea)	Business		4	6	
07.Kookmin (Korea)	Open for all	39			
08. KNU.Educ. (Korea)	Technology Educ.		12	4	
09.Korea Un. (Korea)	Elect. & ICT Eng	(3)	3	2	
10.NEU (Vietnam)	Business - Quality	47			
11.P.U.C.P(Peru)	Quality Institute		19	1	Work experienced
12.Trisakti (Indonesia)	Industrial Mgt		21		Work experienced
13.Waseda (Japan)	Global Biz School	54	98		Distance learning
14.Yeonsei (Korea)	International Mgt.		18		Multi-national
Total: 468 Students in 14 Universities		251	191	26	

Next Step: New APEC Proposal 2013~

- Submitted for approval of APEC in May 2013

Title

- Inspiring Next Generation of Standards Professional Development: Phase I. Identifying Stakeholder Requirements

Topics for Case Study Series

- This project is designed to define *next generation of standards professional*, future human resources in the area of standards and conformity assessment, so as to improve the competitiveness of the APEC Member economies.
- Even though standards education activities have increased during the last decade in the region, the concept of 'standards professional' has been hardly defined and the needs of stakeholders have not been clearly disclosed yet. APEC-wide survey, in-depth interviews with thought-leaders in various stakeholders, and a workshop will be held to shed light on identifying, first, the current and future workforce requirements and, second, the gap between demand and supply side for standards professionals collected from stakeholders.
- The project will identify the stakeholder requirements for standards professionals in public and private stakeholders, and provide recommendations on how best to meet these requirements .

Summary

- Education may involve pre-school to biz executives
 - Herein formal education level with a focus of university
- In Asia, Education about Standards are observed more active explicitly with mostly top-down approach
 - Korea, China, Indonesia, Japan are very active
 - All initiated by national policy based sponsorship initiated by governments or standards organizations
 - Korea proposed and lead APEC standards education initiative, and provided common ground and productive outreach
 - Malaysia, Peru started, and a few others to do national projects
 - Similar type of movements
- In North America and Europe, Less activities are observed with limited national level of projects or activities (some exceptions)

Observations

- I-SDOs, NSBs, SDOs leadership/partnership
 - Leadership to initiate or trigger standards education
 - Partnership with university, industry, and governments
- Government
 - Building linkage with STEM education initiative (Standards in/for Science, Technology, Education, Math)
 - Funding and national level program
 - Primary/Secondary/Higher education
 - Future employees in Industry, Governments, Standards organizations
 - Cooperation with Academia, and trade associations, consumer representatives as well as NSBs
 - Korea: Society for Standards and Standardization (SSS)
- Human Resources Development to improve competitiveness