The logo of National Taiwan Normal University is a circular emblem with a stylized design. It features a central figure that resembles a traditional Chinese scholar's cap or a similar symbol, surrounded by a circular border. The characters '師大' (Shi Da) are visible within the emblem.

Certification of e-Learning Courseware : A Case Study on Taiwan

Yao-Ting Sung and Kuo-En Chang
National Taiwan Normal University

Natioal Taiwan Normal University

Outline



National Taiwan Normal University

- Background
- Current certification system of e-learning courseware in Taiwan
- Empirical results of running the system
- Implications

Background

- Popularity of e-learning
- Monitoring e-learning quality
 - International Standard Organization (ISO), branch SC36, 2002
 - American Society of Training and Development (ASTD)
 - European Quality Observatory



Certification System of e-Learning Quality in Taiwan

- 2002, National Science & Technology Program for e-Learning
- e-Learning Quality Certification Center (eLQCC)

http://www.elq.org.tw/en/index_en.php



Functions and Roles of eLQCC



National Taiwan Normal University

- Goals:
 - Promoting e-learning courseware
 - Constructing criteria & certification system of e-learning quality
- Serves as:
 - information & certification provider
 - criteria formulator & promoter

Standards Announced



National Taiwan Normal University

- Version 1.0 (2004)
- Version 1.04 (2005)
- Version 2.0 (2006)
- Version 3.0 (2007)

Certification Standards

- 4 dimensions, 15 standards (required or optional), 45 criteria



National Taiwan Normal University

Dimension 1. Content

Content is the most important part of e-learning. e-Learning courseware must provide correct content that is clearly expressed and manifested with appropriate organization in order to help learners achieve the expected goals.

- Standard 1.1(required) : Accuracy
- Standard 1.2(required) : Organization & completeness
- Standard 1.3(required) : Clarity & appropriateness



Dimension 2. Navigation



National Taiwan Normal University

The navigation interface of e-learning courseware is the key in ensuring smooth learning activities. Through good learning navigation, learners can easily stay on top of their learning activities and better organize and understand the learning materials. E-learning courseware should provide learners with relevant navigation mechanisms that help them conduct learning activities smoothly so they can effectively grasp their learning progress.

- Standard 2.1(required) : Navigation
- Standard 2.2(optional) : Orientation & operational helper
- Standard 2.3(optional) : Learner tracking

Dimension 3. Instructional Design



National Taiwan Normal University

E-learning courseware's instructional design should be consistent and should provide learners with clear learning goals and content. It also should utilize appropriate learning strategies in order to promote understanding, interactions, appropriate assessments, and feedbacks.

- Standard 3.1(required) : Instructional goal and objectives
- Standard 3.2(required) : Presentation & demonstration
- Standard 3.3(required) : Practice & feedback
- Standard 3.4(optional) : Assessing learning progress
- Standard 3.5(optional) : Learning facilitation strategies
- Standard 3.6(required) : Congruence

Dimension 4. Instructional Media



National Taiwan Normal University

Instructional media is the vehicle that passes the content of e-learning. Appropriate interface design, effective application of instructional media, and high-quality media production significantly help learners stay interested, understand the material better, and stay on top of their learning progress.

- Standard 4-1 (required) : Media design & use
- Standard 4-2 (optional) : Interface design
- Standard 4-3 (optional) : Multimedia elements

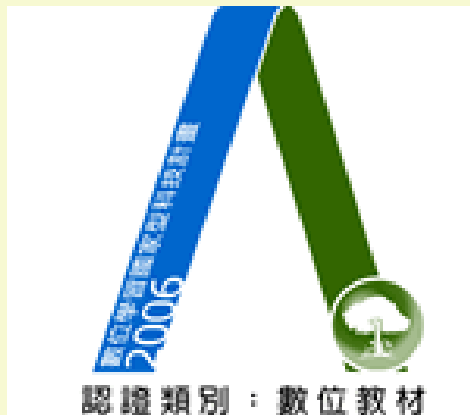
Scoring



		Points Rewarded			
Items		3 met	2 met	1 met	None met
Standard					
Required		7	5	3	0
Optional		6	4	2	0

Certificate Levels & Marks

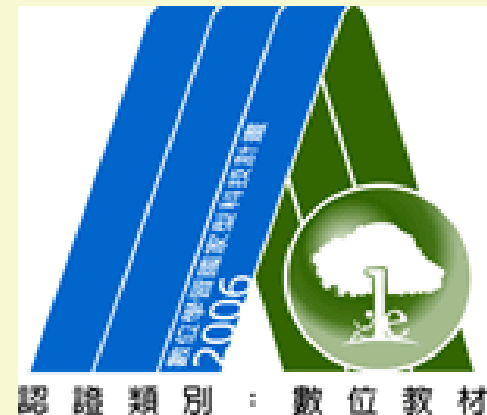
- Certificate
 - A: 60~74 points
 - AA: 75~89 points
 - AAA: above 90 points



A



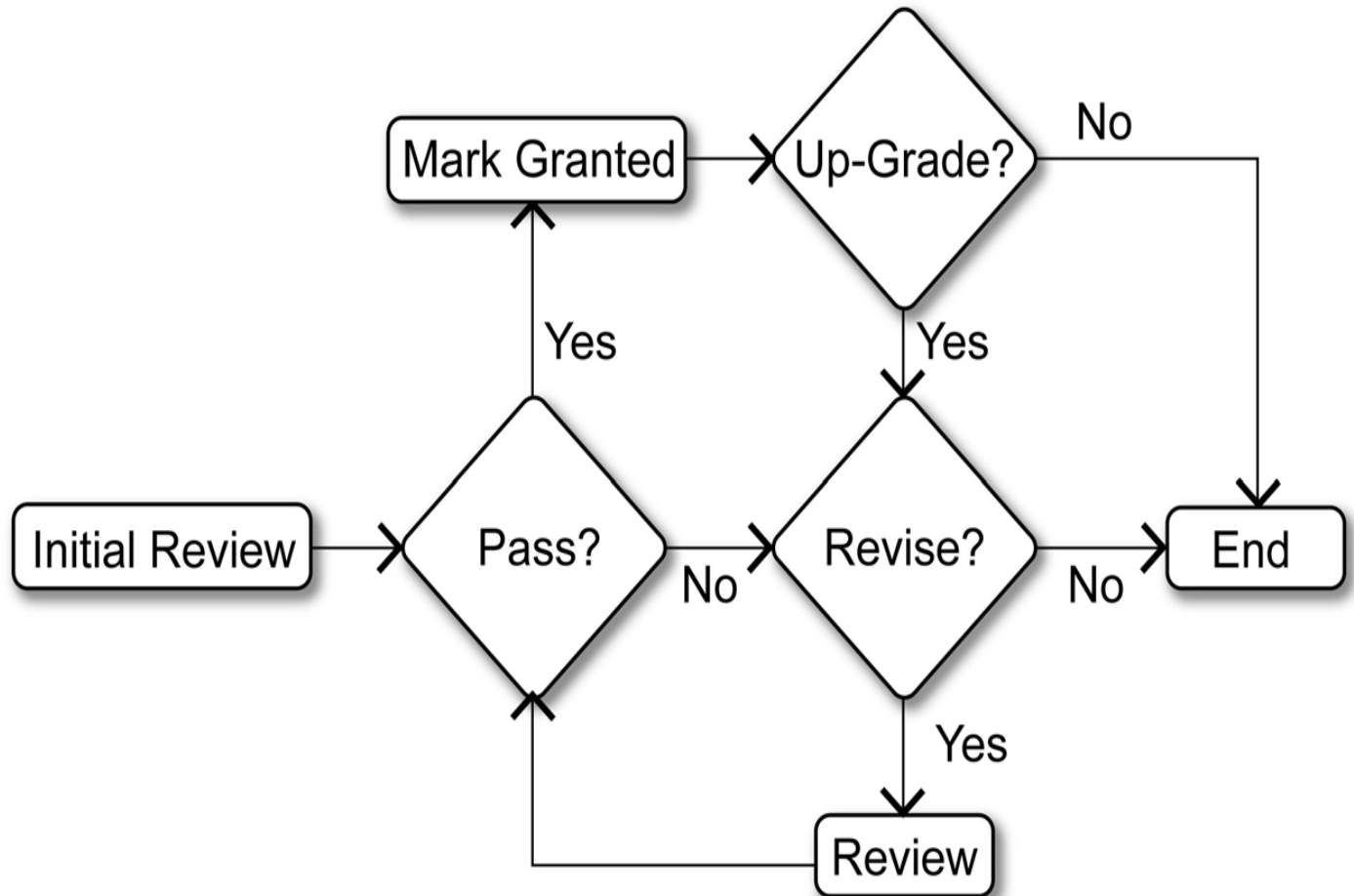
AA



AAA



Procedures



Participating Companies



National Taiwan Normal University

- Version 1.04: **34** coursewares
- Version 2.0: **24** coursewares
- **20** pieces did not pass the initial inspection or were not satisfied by the certificate levels granted at the initial inspection
 - > applied for re-examination
- **78** courseware in total

Results (1)



	1 st Review		2 nd Review		3 rd Review	
Class	No.	Passing Rate	No.	Passing Rate	No.	Passing Rate
Passed	25	43.10%	15	75%	2	100%
Failed	33	56.90%	5	25%	0	0%
A	9	15.52%	4	20%	1	50%
AA	14	24.14%	10	50%	0	0%
AAA	2	3.45%	1	5%	1	50%
Passed at 1 st Review			Passed at 2 nd Review		Passed at 3 rd Review	
25/58 = 43.1%			(25+15) / 58 = 68.96%		(25+15+2) / 58 = 72.4%	

Table 3: Passing Rate of Certified e-Learning Courseware

Results (2)



	Range of Improvement	No.	Percentage
Reviewed Twice	failed-> failed	3	15% No improvement
	failed ->A	4	20%
	failed ->AA	6	30%
	A->AA	4	20%
	AA->AAA	1	5%
Reviewed Three Times	failed -> failed ->A	1	5%
	failed -> failed ->AAA	1	5%

Table 4: Improvement between 2nd and 3rd Review

Item Difficulty Index (IDI)

- IDI is a measure of how difficult it is to pass a certain item
- The higher the passing rate, the higher the IDI will be
- Version 1.04
 - .32 -.1.00, average .68
- Version 2.0
 - .24-.98, average of .68



Most Difficult Items for e-Providers

- Learner tracking
- Summative assessment
- Learning strategies



Reliabilities

- Generalizability theory

	Version 1.04	Version 2.0
Generalizability coefficient	.72	.76
Index of Dependability	.67	.69



Implications of Certification System on Production Companies



National Taiwan Normal University

- What are the influences of the two-year long certification process on e-learning suppliers and producers?
- Interviews: 6 companies
- Four themes were extracted from the interview data

Theme 1



National Taiwan Normal University

Certification helps change the concepts & procedures of designing courseware

- Serves as a quality control standard that can be used as a reference for e-learning producers
- Helps production companies to examine their own insufficiencies and self-evaluate the e-learning materials during production

Theme 2



National Taiwan Normal University

Certification system has become a communication platform that is mutually trusted by the clients and the providers

- The announcement of quality standards gave an objectives definition to “what a good e-learning courseware should be”
- Help clients and suppliers communicate actively and effectively

Theme 3



National Taiwan Normal University

Certification system increases the confidence in marketing

- Granted marks are symbols of the professional capability to produce high-quality e-learning courseware
- Marks increase a company's competitiveness

Theme 4

The production company has not yet established appropriate quality control mechanisms.



National Taiwan Normal University

Conclusions

- The certification system can serve as a valid and reliable gate-keeper of e-learning courseware.
- Most e-learning courseware under the certification system demonstrated medium to high quality, especially after they revised the design and content according to the comments and suggestions of the reviewers.
- Further studies should focus on investigating the substantial impacts of the certification system on the merchandisers/producers of those courseware as well as the mechanism for their improvement through such a system.





National Taiwan Normal University

Thank you very much !

Questions & Comments?

