

ICT CONN^eCT 21

Collaborative Open Network
for New Educational Concepts with Technologies

CBT in Japan

- General Introduction -

ICT CONNECT 21 & Gakken
LIU, Dongyue Louis

2nd International FLIP+ Event in Rome

June 6-7, 2019



Outlines

- Typical Forms of Important Tests & Assessments in Japan
- CBT Application Examples in Japan
- Benefits of CBT
- Fairness Concepts
- Recent CBT Trends in Japan
- Organizations: ICT CONNECT 21 & Gakken



Typical Forms of Important Tests & Assessments in Japan

■ Specific Times and Locations

- Once a year at an assigned location
- Nationwide Synchronization (in seconds)

■ A Single Item Set

- Everyone has to solve the same set of test items.

■ Public Domain

- Once Test items are used, they have to be released to public so that they can be used as learning materials by next-year candidates.



Typical Forms of Important Tests & Assessments in Japan

- New items are required all the time and reusing items is not well-accepted.
- Classical Test Theory is widely trusted and Modern Test Theory (Item-Response Theory, IRT) is not popular at all.
- Fairness Concept: Everything is the same for everyone. Variability/diversity is not welcomed.



Typical Forms of Important Tests & Assessments in Japan

Japan is NOT CBT-friendly, *yet*.



CBT Application Examples in Japan

- CBT has been applied to tests and assessments for higher-education and beyond, including psychometric assessments for hiring decisions and technical/professional certification exams.
- Examples
 - CBT at Medical, Dental, Pharmacy Schools
 - Certification exams sponsored by corporations and associations for IT, financial, managerial, healthcare and other professions
 - Assessments for employment
 - Tests for studying abroad
- 800-900 CBT test centers operated throughout the year, 3,500,000-4,000,000 tests administered annually at those centers.



Benefits of CBT

■ Test Item Formats

- Sound, Video
- Simulation, Operation, Interactive Tasks
- Additional Information on the process of problem solving

■ From Assembly Algorithms

- Randomized Order
- LOFT - linear-on-the-fly (IRT, Item Banking)
- CAT - adaptive testing (IRT, Item Banking)

■ Flexible Delivery and Data Collection

- Continuous Delivery
- Delivery Window
- Immediate Scoring



What is Test?

■ Test as a measurement tool

- A Tool to measure latent traits of an individual person
- Theory and technology has been developed:
 - methodology to design and construct
 - quality control (ex. Validity and reliability)
 - efficacy and efficiency



What is Test?

■ Test as a social infrastructure

- Ways to judge one' s knowledge/proficiency/skill
 - learning history/academic achievement
 - past performance (outcome of application)
 - test scores (measurement result)
- Factors to be successful
 - legitimacy of underlying theory and technology
 - feasibility (operational and cost issues)
 - public interests, fairness, user satisfaction



Fairness Concepts

- Level 1: Everything is the Same
- Level 2: Equivalent Opportunity
 - Flexible delivery schedule
- Level 3: Appropriate Content
 - Adaptive testing to accommodate a wide range of learners



Recent CBT Trends in Japan

- 1) Where and When \Rightarrow What and Why
 - 2) Non-cognitive Assessment
 - new test item formats only available via CBT
 - 3) CBT application in K-12 education
- (1 and 2 are more like a personal vision...)



ICT CONNECT 21 & Gakken

■ ICT CONNECT 21

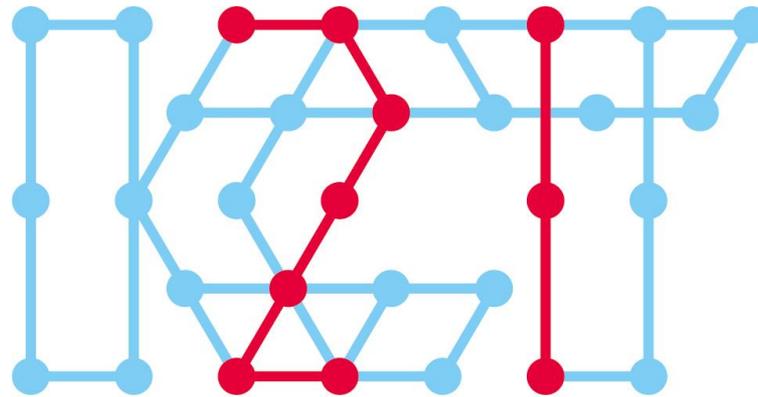
- NPO to promote effective use of ICT in education, and foster industry-wide cooperative environments
- Financially supported by education companies
- Closely working with government entities like MEXT, METI, and MIC.
- I lead CBT sub-working group under Technical Standard working group.

■ Gakken Research Institute (GRI)

- A think-tank division of Gakken Holdings
- Gakken - one of the major publishing firms in Japan, mainly focusing on educational materials
- Unfortunately, it does not have much CBT business.



Thank you!



ICT CONN^eCT 21

D. Louis Liu

DL.Liu@gakken.co.jp