



The future is already here. It's
just not very evenly distributed.

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Overview

Two examples.

The roless of psychometricians.



AP Studio Art Portfolio Assessment

- Not a “test” but work through the year in local course.
- Broad choice in media, styles, subjects.
- Formative, tailored assessment in each class;
Specs enable common evaluation across classes.
- Concentration: 12 pieces on student-chosen theme.
For example,
 - Angularity in wheel-thrown pottery
 - A series of works that begins with representational interpretations and evolves into abstraction.





AP Studio Art Portfolio Assessment

The role of psychometrics:

- NOT “measuring artistic skill” in common way.

Rather,

- Summarize students’ unique accomplishments in shared framework of understanding (which is key learning goal).
- Characterize, design, & monitor the consistency, variation, & weight of evidence.
 - Manage information across millions of evaluations -- pieces, students, readers, & multiple ratings.
 - Quality control: Call attention to unusual patterns
- Feedback at individual, classroom, & system levels



AP Studio Art Portfolio Assessment

The role of psychometrics:

in shared framework of understanding

Characterize

evidence.



Cisco Networking Academy

- Local classes (“academies”) in 60,000+ sites.
- CNA provides curriculum, instructional materials, and assessment resources, via internet.
- Simulation!
 - John Behrens, Dennis Frezzo.
 - Evidence-Centered Design for coherent view of learning.
 - NetPass → Packet Tracer -- learning, assessment, & games.
- Psychometrics grounded in coherent view of learning to
 - characterize evidence in complex, interactive situations,
 - ground feedback to students
 - empower instructor community



CNA Aspire game

The screenshot displays the Falcon Game interface within a Windows window titled "Falcon Game - C:\Documents and Settings\11005303\NetworkCity\Hiro\c_hospital.pkz".

Top Left Panel: Shows the player's name "Hiro", a score of "902.00", and the date "Sun May 2 2010".

Proficiencies Panel: A table showing skill levels in Business and Networking.

Business		Networking	
Money Management	██████	Configuration	██████
Business Sense	██████	Troubleshooting	██████
Ethics	██████	Grunt Work	██████

Instruction Window: A dialog box titled "Falcon Game Instructions: 00:00:58" featuring a doctor character and the following text: "One of our office PCs cannot access a web server that contains critical information about drug interactions. We need to know that information as soon as possible. Unfortunately, I do not know much about computers and I may not be able to help you. Before he went on vacation, our technician left a task list, maybe that will help you. Please come get me when you've solve the problem!". Buttons for "Tasks List", "Talk to Friend", and "Leave" are visible.

Bottom Panel: Includes a "Connections" section with icons for network types, a "Copper Straight-Through" connection type selected, and a network console with a table header: "Scenario 0 | Fire | Last Status | Source | Destination | Type | Color | Time (sec) | Period".

Cisco Networking Academy

- **Psychometrics** grounded in **coherent view of learning** to
 - characterize evidence



Whither Psychometrics?

- Historically, psychometrics evolved as an inextricable mix of psychology, methods, inferential reasoning, and uses.
- What's been happening? Deconstruction → Reconstruction.
 - Modern statistics (~1960s - present).
 - Unbundling the psychology
 - Trait/behaviorist → information processing → sociocognitive.
 - Extending to new forms of evidence (e.g., simulations)
 - Extending to new uses (ITS's, assessment for learning)



Whither Psychometrics?

- Psychometrics is some science, but mainly client-driven.
- Projects where I've seen biggest changes are at the margins...
 - like AP Studio Art and Cisco Networking Academy
 - and Nat'l Board Medical Examiners, Defense Community, community colleges, assessing 1%.
- Psychometricians are key members of the interdisciplinary teams making these advances.



Whither Psychometrics?

Psychometricians, and testing companies ...

- have concepts and tools to help address practical problems in new forms & conceptions of assessment.
- are already working on these things, in collaboration with learning scientists, domain researchers, technology innovators, etc., in their research and in ground-breaking projects on the margins.
- can adapt to new kinds of assessments fairly quickly, using underlying evidentiary-reasoning and modeling capabilities...

...if clients want them to.

