Memorial Session Honoring Robert Glaser

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Knowing what Students Know
The Science and Design of Educational.
Contemporary Psychology, 1960

• A Christmas Carol
  – Invoked Christmas Past, Present, and Future as a way to describe progress in learning and instruction looking back 35 years to Pressey, contemporary analysis of Skinner’s work to apply learning, and a forward looking critique of Ramo’s work anticipating the future

• The message was the integration of the science of learning and the art of teaching

• And thinking about “machines”
In this work, Glaser says:

“Maybe Schools of Education are too concerned with giving teachers a broad understanding of education, ... (not) practice in the application of knowledge from the science of learning

“Maybe psychologists are too concerned...with ultra-careful experimentalists, (instead) of inventive applied scientists.

“Let us try to apply effectively as much as we know. It might be enough to make a difference”

Else we would wait another 35 years (1995) to make progress
1960s

• Teaching Machines and Programmed Instruction, Lumsdaine and Glaser
  – “A technology of instruction” – not hardware, although innovations will help, but principled content arranged for learning desired criteria

• Developing Instructional Products

• Behaviorally oriented teacher education (teacher quality based on tangible learning by students, using empirical principles)
Outcome-based Assessment
Formative and Effectiveness

• Lumsdaine’s Center for the Study of Evaluation of Instructional Programs (Ford Foundation)
  – CRESST’s grandparent
• Referenced performance to an explicit goal or performance level
  – Required different assessment design and psychometric approaches
• NAEP was an approximation, as were State Assessments
  – - using the criterion but not the domain definition
Adaptive Education: Individual Diversity and Learning (1977)

• Adaptivity
  – Five models of adaptivity presented in network form
  – Directly relevant to newest approaches to game design

• Different outcomes
  – choice, badges, qualifications

• Equity concerns

• Mapping students learning
  – Ontology-based learning
Cognitive Transformation

- LRDC R&D and students
- Atkinson
- Bandura
- Carroll
- Travers

- Cognitive demands first
- Rich content described
- Expert-Novice in assessment
- Economy for replication
- Keeping the art
Clarity & Generosity

• CSE and CRESST proposals
• Collaboration
• “What are you doing? Why are you doing it?
• What will you learn?”
• Encouragement to me and younger CRESST staff
• Harrison Ford