Wisdom is not the product of schooling but the lifelong attempt to acquire it.
- Albert Einstein

Theoretical Frameworks, Models, and Socio-Technical Environments for Long-Tail Learning

Gerhard Fischer
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Theoretical Frameworks

- meta-design = design for designers

- social creativity = beyond transmission models for learning → learning when the answer is not known

- courses-as-seeds → http://l3d.cs.colorado.edu/~gerhard/courses

- fundamental transformation from a consumer culture to a *participation culture*
Models

- seeding, evolutionary growth and reseeding (SER)

- authoritative versus democratic models of knowledge accumulation, sharing, and dissemination
The Seeding, Evolutionary Growth, Reseeding (SER) Model
Model Authoritative underlying Consumer Cultures
Model Democratic underlying Participation Cultures
Example Environment based on a Participation Culture

- SketchUp/3D Warehouse/Google Earth → Castles in Northern Germany

- distributed communities
  - open source software
  - the SAP Developer Network community
  - research community in Creativity and IT
3D Warehouse

3D Building Collections
- Featured Google Earth Modelers
- Help Model a City
- Featured Google Earth Collections

Featured Collections
- Google Earth - Ocean Layer
- SketchUp Components
- Interior Furnishings

Popular Models
- Egg Chair by Mart
- Chair by Yeroc
- People by Graphic Sketchbook
Downtown Denver in 3D
A Tiny Percentage of a Huge Population → Large Number of Participants

http://sketchup.google.com/3dwarehouse/modelcycle?scoring=d
Castles in Northern Germany — One Example from the Long Tail

- **the current environment:**
  - 14 models (4 of them show below)
  - contributed by: 6 contributors
  - the owner of the collection serves as curator
A Real Story about Being Passionate about Learning  

— Computer-Generated Poetry (Tail) → Probability Theory (Head)

- course for gifted high-school students → student \( x \): no interest in math

- project: computer-generated poetry
  - sentence structure: \(<\text{article}> \ <\text{adj}> \ <\text{noun}> \ <\text{verb}> \ <\text{art}> \ <\text{noun}>\)
  - noun: = "house mouse spouse ........"
  - use of a random number generator which returns values between 0 and 9
  - noun list contains 18 objects ----> studentx uses: SUM RANDOM RANDOM
A Computer-Generated Poem — Der Dumme Student

Das dumme Stubenmaedchen verflucht die Schlampe
das lustige Kindermaedchen verbrennt keine Pampe
jedes kluge Maedchen ionisiert den Tresen
ein verschruempeltes Maedchen verbrennt das Wesen
kein ausgereifter Professor kocht den Wurm
kein aufgespiesster Student besteigt den Turm.

Der kleine Hausmeister elektrisiert einen Ball
jedes schweinslederne Maedchen seziert einen Knall
der gefriergetrocknete Bergsteiger erfreut das Bier
ejede erdrosselte Jungfrau untersucht einen Stier
ein kleiner Computer massakriert jede Flasche
ejeder erdrosselte Mann bearbeitet die Asche.
Random 0 to 9

frequency

0 1 2 3 4 5 6 7 8 9
Sum of Random and Random

frequency

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
0 20 40 60 80 100 120 140 160 180 200
Word of Random and Random
Lessons to Be Learned from the Story

- student_\textsubscript{x} learned some aspects of probability theory grounded in a self-directed learning activity

- provide opportunities which change people's lives
  - intrinsic motivation is crucial
  - “falling in love” with something → student_\textsubscript{x} ended up studying computer science

- “normal” learning experience: learners work hard because they \textit{have} to (extrinsic motivation)

- our goal: learners work hard because they \textit{want} to (intrinsic motivation)