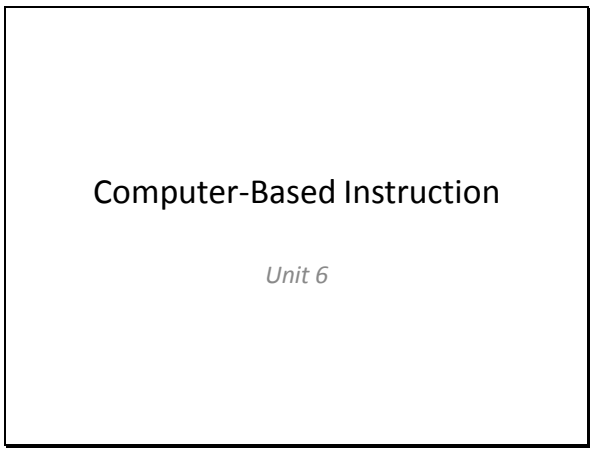
Slide 1



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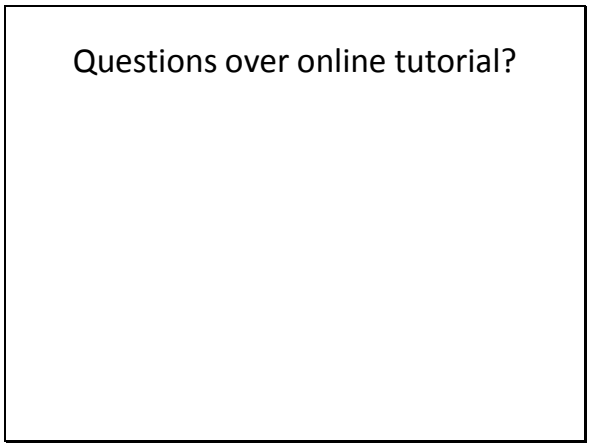

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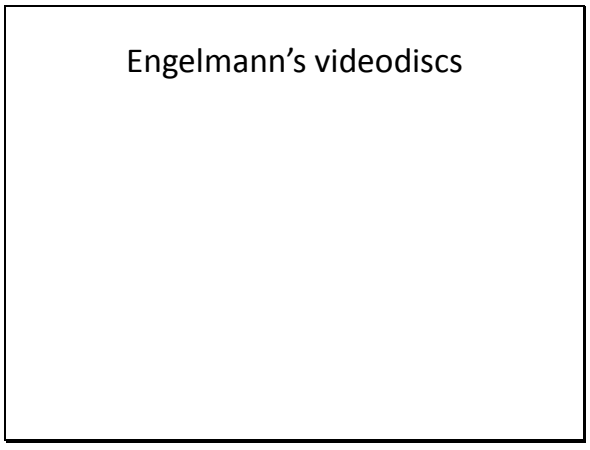

Slide 4

Problem with training teachers to be designers

Victimized by instructional material (kids/teacher to blame)
Fixing instruction: very careful unambiguous sequence
1. Train teachers to be curricular designers (years, intensive)
2. Control teacher say (script)

Slide 5

More on scripting

Seems restrictive
No hours plan lessons
Just fluent enough with script to: observe / respond (teacher role / Skinner); about month
Reduce prep time and assure clear presentation
Unfortunately, neither structure for supervision or training

Slide 6

Alternative to teacher scripts

Design program to relieve responsibility of most communication
From design standpoint, avoid years intense train and much of the supervision / training

Slide 7

Controlled script presentation

Objection: learning styles, “individual differences” etc
Very little evidence for need qualitatively different forms of instruction (aptitude, achievement level, sociometric status, ethnicity, learning style)
There will be some different needs (practice, time), but those easy to accommondate while keeping instruction essentially the same

Slide 8

“Funsy-cutesy” gimmicks

Without good instructional design, bells and whistles flop
Medium is not magic
90% / 4 months

Slide 9

Teacher's role in CBI environment

Behavior management / reinforcement delivery
Program handles rest (easy to see more objections of "entertainers")
Monitor, determine if more practice, enforce repetition
Circulate with remote
No "reteaching" or explaining (similar to supplementing / modifiying scripts)
Caution: children with history of helplessness (due to unclear instruction and dependence on teacher)
If do work for them, contagion of helplessness
Still need some supervision / enforcement:
4 teachers without monitoring / feedback: 90, 60, 70, 70 percent (overall 72.5%)
Teachers with monitoring / feedback: all in 80 percent range
Enforcement of rules / procedures correlated with kid performance

Slide 10

School's reaction

Ran counter to guidelines or stipulations.
"We don't teach improper fractions that way."
"We don't teach the skills in the same order as that way."
Circularity problem (methods, results, and acceptance)
Similar to Skinner's observation

Slide 11 Literacy Problems

Four in ten w/ problems
40% 4th graders below basic
Absence of explicit instruction in phonemic awareness: permanent educational disadvantage (end 3rd)
90% probability: end of 1st and end of 4th

Slide 12

Headsprout: Combining entertainment and behavioral teaching

Space World, Dinosaur World, Undersea World, Jungle World
Raise likelihood success in busy classroom or before formal

Slide 13

Episodes

40: 500
80: 5000

Slide 14

Phonemic Awareness

Need recognition words made up individual sounds
Learn phonics
Decoding fluency
Words have meaning, even if meaning unknown
Reading fluency
Comprehension
34 phonetic elements, consistent in 85% of words seen

Slide 15

Computer enforced fluency

Fluency-building starts with lesson 1
Time criteria for words, sentences, stories

Slide 16

Comprehension indicators

"Look at the ceiling"
Decode vs. comprehending
Headsprout's frequent comprehension indicators, start with lesson 5
Three pictures, which goes with sentence?

Slide 17

Mastery Learning

Cannot exit without achieving specific learning goal
Wrong answer → brief tutorial session
Must get five consecutive correct answers

Slide 18

Self-paced branching

Core of instruction is the same for everyone
Some quick detours (reminders and review sessions) downloaded in background

Slide 19

Development Time and Cost

3y 5m

Slide 20

Scientific Development

No Child Left Behind Act of 2001 mandated scientific evaluation
But, doesn't mean developed scientifically
We need more than incorporation of scientific research, we need scientific approach throughout development (recall ID steps from unit 5)
Every portion of Headsprout measured / evaluated: development, validation, and field testing

Slide 21

Lots of data

10m interactions recorded / analyzed to make revisions
10,000 data based program revisions

Slide 22

Every child

Better than average Headsprout beating average control
Collect data on every child, continuous revision / improvement
Over 90% learners average 90% correct responding

Slide 23

Data collect

For each individual learner, Headsprout knows:
-How many response were made
-How many of these response were correct and how many were errors
-The error response made, if any, which is used to determine error patterns or potential discrimination problems
-The latency (time between opportunity and response) of all response
-The screen position of all responses
-The amount of time the learner spent in each interaction, segment, and episode, which is used to determine skill, strategy and episode sequences

Slide 24

Scoring errors

Errors are teaching opportunities
Prolonged hesitation / self-corrections (fluency)

Slide 25

THE END

- Study session with Megan: March 19th at 5:30
- 30 point essay examination on March 20th
  - All study objectives from unit 6 may be covered
- 5 points come from completing online CBI

- Next unit: PSI
  - Quizzes on Mar 27th, Apr 1st, Apr 3rd, and Apr 8th
  - Unusual schedule, see syllabus for details