Development Seminar @
Brookings India
The Industrial Organization of Online Education

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Time Savings, Better Teaching
Time Chunking

- Typical Class: 1 hour to 2 hours, 50 min
- TED Talk: 18 minutes
- Television Drama Segment: 12 Minutes
- Popular YouTube Videos: 3-4 minutes

- Optimal Human Attention Span: 3-18 minutes
Online Education Does for Education What Tivo Has Done For Television

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ONLINE ECONOMICS COURSES

Learn, Teach, and Share

Development Economics
Why are some countries rich and others

Great Economists: Classical Economics and Its Forerunners
Why is Adam Smith the greatest economist

International Trade
Trade shapes the fortunes of nations. What
Online Education Trumps the Cost Disease

- In a large, randomized experiment Bowen et al. found that students enrolled in an online/hybrid statistics course learned just as much as those taking a traditional class.

- The online model was 36% to 57% less costly to run than a course using a traditional lecture format.
  - In other words, since outcomes were the same, online education increased productivity by 56% to 133%! Online education trumps the cost disease!

- Hybrid-format students took about one-quarter less time to achieve essentially the same learning outcomes as traditional-format students.
A Top Ten Computer Science Program in the United States
Annual Admittance Online ~1,700, traditional ~120
Largest Masters in Computer Science in the World (~7% of all MS CS grads)
No Distinction between Online and Residential Students
Grading was Blind: Online Students Performed Better
Cost $7,000<$45,000
Lifetime Learning

Online Students in the GA Tech Program Were Older but Less Well Educated

Online students often have children of their own!

Online learning is the only credible lifetime learning.
Computer-adaptive learning
The adaptive textbook will read you as you read it.
MINDSPARK

- Online learning system
- 45,000 Test Questions
- Used by 400,000 students in centers, schools and homes.
- Dynamically customizes the material shown to students according to the level and rate of progress of the individual student.
- Identifies student errors and targets material designed to address those errors.
A RCT of voucher winners (free 4.5 month, in center program) versus losers found that voucher winners increased by .36sd in Math and by .22sd in Hindi.

Very large effects especially given these are ITT effects reflecting an average attendance rate of 58%.

Greater learning at lower financial and time cost than default public spending.

Personalization was one key to Mindspark’s success.

Personalization is especially important in the Indian context where there is a very wide difference in abilities within the same classroom.

Creative Destruction

- Superstar teachers in winner-take-most markets.

Kim Ki-Hoon
Superstar

©Wall Street Journal
Low Marginal Cost, **High (Endogenous) Fixed Cost**

- Low marginal costs – low cost of additional student and low cost of teaching the course the second, third and fourth time.
- Price will be low. Competition will be in quality.
  - The fixed costs will be *endogenous*, they will grow by competition.
  - Competition ala newspapers rather than ala restaurants.
The Textbook Market and the Market for Courses

Courses: ~8000
Textbooks: Top 4 share 50% of the market.

Prediction: Courses will be produced much more like textbooks.
The Future of Education

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