

From Digital StudyHall to Digital PublicHealth

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Tutored Video Instruction

- Video of expert teacher
- Presented with the aid of the facilitator
 - Theory: Interaction with the video better than 'just watching TV'
- Initial work: Gibbons, Stanford, 1977.
 - Tutored Videotape Instruction
- University of Washington
 - Introductory programming offerings to Community Colleges
 - Recorded UW lectures used by existing community college instructors

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Digital StudyHall

- Founded by Randy Wang, ex-Princeton
- Collaboration with Urvashi Sahni, Studyhall School
 - Top private school in Lucknow
- DSH Methodology
 - Create videos of classes taught by expert teachers to low-income students
 - Train teachers to facilitate videos
 - Target rural schools
- Randy Wang timeline
 - Start DSH independently
 - Join MSRI
 - Depart MSRI, continue DSH independently
 - Leave India for Intel Shanghai

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Digital StudyHall Hubs

- Lucknow
- Pune
- Calcutta
- Bangalore
- Bangladesh
- Pakistan
- Nepal

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Does facilitated video instruction work?



NSF
NSF Funded project conducted by University of Washington
2008-2011

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Digital StudyHall methodology

- Lesson videos recorded at hub school
 - Use of interactive pedagogy
 - Careful matching of students
 - Tie to regular curriculum
- Training of facilitators
- Facilitation model
 - Mix of video use and activities
- Cost realism in technology deployment






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Project domain: Primary education in rural India



- Study of eleven government schools in Uttar Pradesh, India
- Rural schools outside of large city
- Introduction of methodology of new schools

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Does it work?

- Does the use of Digital StudyHall improve learning outcomes?
 - Pre-test / Post-test performance of control and treatment classes
- Does Digital StudyHall lead to pedagogical change in the school?
 - Observe differences in classroom activities between DSH and non-DSH classes
- Does Digital StudyHall improve indicators such as attendance or hours of instruction?
- Is Digital StudyHall sustainable?
 - Do schools continue to use DSH on their own with modest supervision and support resources

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The main result

There are significant obstacles to scalability and sustainability of Digital StudyHall in Government primary schools in Uttar Pradesh, India

- We believe that the vast majority of government schools would not continue to use DSH without frequent monitoring visits
- Our outcome testing was inconclusive, yielding no meaningful results

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Caveats

- We are not claiming generality of the result
 - Other types of schools? Other geographies?
- Favorable evaluation from teachers and students
- Two of eleven schools wanted to continue after the end of the study
- Example of a successful DSH school from outside of the study area
 - Rural government school in Uttar Pradesh

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Study Design

- 11 schools (out of 20) selected from the block we had permission to work in
- Schools had not previously worked with DSH
- Introduction through principals and teacher training workshops
- Regular observation visits
- Interviews
- Year one:
 - Pre-test/Post-test with controls
- Year two:
 - No testing
 - Expanded observations





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Failure in testing

Even if the use of Digital StudyHall produced substantial improvements in learning, we would not have been able to measure it

- Study design
 - Alternate use of 3rd grade English and 5th grade Math as control or treatment class
- Why testing was inconclusive
 - No culture of evaluative testing in the classroom
 - Low attendance
 - Gradual start/end, holidays, missing tests
 - High variability in school performance and student performance



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Relationship with implementing organization

- Implementing organization: StudyHall, well regarded private school
 - Implementation team primarily Indian
- Adequate buy-in from principals
 - With official permission
- Teachers generally favorable to implementing organization
 - Trainings, involvement with StudyHall and other teachers a positive
- Students had a very positive view of implementing organization
 - Novelty
 - Disruption



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Student view of video students

- Content creation
 - Lessons by expert teachers
 - Poor, urban students
- Students identified with video students
 - The students said the video students were "just like them."
 - Validation of video creation strategy



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Facilitator understanding and use of methodology

- Interactive pedagogy
 - Activities
 - Poems, songs, drama
- Intervention had goal of changing teaching
- Training of facilitators and monitoring visits
- Observations confirmed use of interactive techniques
- Unexpected
 - Teachers viewing lessons in advance at home



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Facilitator buy in to methodology

- Mixed level of adoption by teachers
- Issues
 - Urban/Rural split
 - Lack of incentives to teach
- Alternate usage models
 - Video lessons for review
 - Facilitated by students
- Difference between regular teachers and para-teachers
 - Education levels



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Sustainability challenges

- Evidence of non-sustainability
 - In year one, level of use was strongly correlated with monitoring visits
 - Long interruptions of electrical supplies to schools, where schools did little to restore power
 - Some schools did not want replacement equipment after theft
 - General problems with teacher absenteeism



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Counterpoint: Bhal Vidyalaya

- School has been using DSH for six years
 - Limited monitoring
 - School purchased second set of equipment
 - Regular use of DSH in many classes
 - Full buy in from school
- Struggled with DSH introduction
- Eventually, championed by principal
- Rural school



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Evaluating technology interventions

- Study took an intervention to “next level” of scale
 - New deployment in eleven schools over two years
 - Challenging environment, but with very high impact if successful
- We were naïve to think we could measure educational outcomes
 - Randomized trials are out of reach for this type of intervention
- There were conflicts between the research project and teaching the kids
 - Example – study staff would give lessons to the kids when the teachers were absent
- Recognition of a complex system where a technology intervention is a modest part

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DSH Update

- Randy Wang’s involvement severely limited
- External support from MONA Foundation
- Existing assets for DSH
 - Lucknow based organizations (~6 people)
 - Technical capacity in video production, distribution, and use
 - Base in StudyHall school
 - Content library
 - Several sustained DSH deployments
- Hired Lucknow based manager
- Shift in strategy
 - DIETs – teacher training colleges
 - Girls residential school

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DStar

- Original vision – Apply Digital StudyHall methodology to multiple domains
- DSH Methodology
 - Locally created video
 - Facilitated use
 - Hub and spoke model
 - Content archive
- Digital Green – MSRI project by Rikin Gandhi
- Digital Polyclinic – DSH Lucknow efforts in health



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digitalGREEN

- Developed community video education for Agriculture
 - Started as a project at Microsoft Research
 - Formed NGO, currently reaching 1200 villages
 - Scaling with NRLM to reach 10000 villages
- Digital Green model
 - Livelihood education conducted by community facing organizations
 - Agricultural messaging developed by experts
 - Members of the community filmed demonstrating or talking about the techniques
 - Videos reviewed for content and quality
 - Videos shown by facilitators in community group meetings



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Digital Public Health

- PATH / UW / Digital Green collaboration
- Application of Digital Green methodology to maternal health
- One year pilot starting August 2012
- Goal: demonstrate feasibility

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PATH

- Seattle based NGO working in health technologies
- Founded 1977
 - Now working in 70 countries
- Program for Appropriate Technology in Health
- Approximately 1000 employees world wide, 400 in Seattle
- Five offices in India




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Key aspects of Digital Green

- Digital Green supports field based organizations using community video in their agricultural programs
- Key innovations of Digital Green
 - Model for community creation of video content
 - Model for facilitated uses of videos in the community
- Refined video production pipeline and associated technology
- Emphasis on measuring performance
- Platform for community education in multiple domains

State	Partner	Village	Health Personnel	Dissemination	Partner Activities	Operational Period
India	1690	48.96 %	71.00	13.99	883	
Andhra Pradesh	2077	100	1000	21000	10000	2008
Madhya Pradesh	4705	51	204	14000	10000	2009
Uttar Pradesh	18000	330	330	100000	200000	2010
Uttarakhand	20000	100	100	100000	100000	2010
India	1690	58	14	100	100	2011
Andhra Pradesh	4000	75	14	100	1	2011
India	40000	100	100	10000	10000	2012



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SureStart: Improving maternal and child health in India

- Community engagement to support maternal and newborn health
 - Governance and public health interventions
 - Mentoring support for accredited social health activists (ASHAs)
- Bill & Melinda Gates Foundation supported
 - Maharashtra and Uttar Pradesh, India
 - 2006-2011
- Focus
 - Raising awareness around essential maternal and newborn care
 - Scaling up efforts to cover the entire rural and peri-urban populations of the designated districts
 - Supporting household and community actions to complement other initiatives focused on clinical services and health systems



Village ASHA at a mothers' group meeting


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Platform for low-cost community video education

Video based education where content is both created and presented by the community

- Localization of content and messaging
- Community engagement and empowerment

Enabled by low-cost consumer digital video technology




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Digital Green and PATH: Digital Public Health

Goal: To test the feasibility of adapting the Digital Green model to health

- PATH and Digital Green partnership developed
- Digital Green staff provided training to PATH staff in Bhopal, India in August 2011
- PATH transferred technology to ongoing project in Udaipur, India to support midwives in providing rural home-based healthcare
- Video training and dissemination taking place in August 2012


- Videos created locally within two days to accommodate the local language and specialize the treatment of the topics to the area videos



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Digital Public Health: Feedback from rural midwives

- More complete information
- Bridges language barriers
- Patients understanding by seeing rather than telling
- Education beyond patient/provider interaction
- Video extends/supports authority of provider
- Identification as powerful tool in video messaging



"In video when we show the patient, the patient understands that there is one more patient like me in the video ...so she feels that ok she is also a patient like me and how I need to take care of myself and my baby."

"If there is a nurse...who is very young, the mothers don't take her seriously... who is she telling us this... by showing the video, there is an elder woman in the video, and so they think ok, so there is some doctor telling us this."

"The best thing is the video. I don't explain by talking only I show the video to the patient and it is very helpful to let her understand."

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Piloting Digital Public Health

Pilot objectives

- Develop a strategy for implementation
- Assess and evaluate feasibility of integrating mobile videos into routine community-based support

Digital Green, PATH, Sure Start Partnership

- Community based partner, Gram Vikas Sansthan
- Bachhrawan Block, Raebareli District, Uttar Pradesh, India

Focus on maternal health messaging using SureStart materials

Develop methodology in 20 villages



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Digital Green and Digital Public Health

Program Component	Digital Green	Digital Public Health
Program structure	Field based organizations with agricultural mission	Field based organizations with health mission
Message creation	Agriculture experts	Health experts and governing bodies
Content creation	Videos produced by field organization and farmers	Videos produced by field organization, health workers and community
Content Delivery	Facilitated use of video in community groups; use of pico-projectors	Facilitated use of video in groups and one-on-one settings
Content Management	Central video repository	Central video repository
Quality control	Review videos for accuracy and content before use	Multilevel review including details of messaging
Reporting	Dissemination and adoption statistics	Metrics to be determined

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Technology Stack

- Direct implementation of Digital Green digital video approach
- Goal: no technology innovation
- Basic components:
 - Kodak video cameras
 - Microsoft MovieMaker for editing
 - Pico projectors for screenings
 - Youtube for content distribution

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Dissemination model

- Mothers' groups
 - Established in Surestart project
 - ASHA's meet monthly with women to teach key health messages
 - Women attend while pregnant and for a short time after baby is born
 - Add video screenings to existing group meetings
- May also use Self Help Groups and Village Health and Sanitation days
- Experiment with one-on-one showings using mobile phones
 - ASHAs on household visits

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Message creation

- Problem: balance community input with medical accuracy
- Current process:
 - Group of messages created by area by experts
 - Birth preparedness: Record phone numbers for emergency transport
 - Breast feeding: Begin feeding within one hour of birth
 - Community resource person creates storyboard
 - Storyboard reviewed
 - Video shot by community resource person

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Video review

- Need to ensure messages are accurate
 - Give correct health advice
 - Compatibility with official guidelines
- Health messaging may require stricter review than agricultural messaging
- Project has set up a Community Advisory Board to review videos
 - Multistage review with video check list
- Important component to get right:
 - Establish procedures that will give credibility to the project
 - Maintain efficiency in production of videos

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M&E Plan

- Can we adapt the DG model to support maternal health messaging
- Focus on process indicators
- Don't be too ambitious – we need to understand how the model works before looking for outcomes

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Measuring Impact

- Health outcomes would require large scale deployment over a long term
- Attributing adoption of specific practices to the intervention is difficult
- Working in a high functioning block (so indicators already good)

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Next steps

- Phase 1
 - Conduct pilot to develop model and demonstrate feasibility
 - 20 villages, one year
- Phase 2
 - Demonstrate impact
 - 80 villages, two years

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Thanks!

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