

# Video Applications

Lecture 23: CSE 490c



# Announcement

- Office hours for PA 3
  - Clarice Larson, CSE 332
    - Monday, 3:30-4:30 pm

# Topics

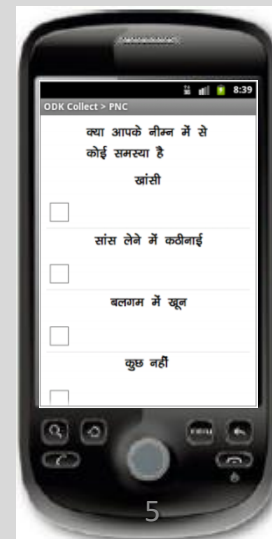
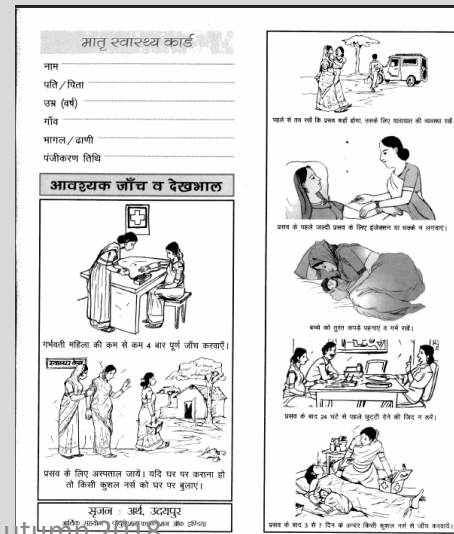
- Mobile Videos



# Mobile video for patient education: The midwives' perspective

# Mobile Midwife Platform

- Study in India with an organization focusing on maternal and child health
- Mobile devices to support post natal care visits
  - Data collection
  - Protocol support
  - Educational videos
- Android phones deployed with nurse midwives



# Health videos

- Three videos created
  - Maternal nutrition
  - Breast feeding
  - Thermal care
- Videos shown during PNC
  - Launched from ODK form at specific points in visit
- Nurse midwives were already expected to address these topics



# Mobile device use

- One year pilot for data collection and visit support
- Nurse midwives had difficulty with data collection and continued to use paper forms
- Device logging showed that the videos were shown regularly
- Midwives identified video the most successful component of the project

	Nutrition	Breast-feeding	Thermal care	Total
Video played entirely	554 (77.1 %)	497 (77.7 %)	288 (62.5 %)	1339 (73.4 %)
Video partially played	46 (6.4 %)	52 (8.1 %)	26 (5.6 %)	124 (6.8 %)
Video stopped	110 (15.3 %)	89 (13.9 %)	146 (32.7 %)	345 (19.0 %)
Video play extended	9 (1.2 %)	2 (0.3 %)	1 (0.2 %)	12 (0.7 %)



# Study methodology for evaluating video

- Ethnographic observations of 22 PNC visits
- Semi-structured interviews with the 8 nurse midwives
- Iterative coding scheme of qualitative data using Atlas.ti
- Triangulation with quantitative data from deployment





# Summary of results

- The use of video is feasible in PNC visits
- The PNC environment is complicated
  - Patient education occurs throughout visits with various levels of effort
  - Multiple settings and participants
- Authority and trust
  - Nurses viewed video as being authoritative and enhancing their communication



# Feasibility

- Video used consistently on PNC visits
- Midwives reported a favorable reaction and identified this as the best feature of the mobile device
- Minor difficulties in using videos in the mobile app

***“The video that we show is very good – it becomes very easy for the people to understand. There is a big difference between telling something and showing it. On watching the video people understand that yes, this is how it is to be done.”***

# Complexity

- Multiple people might be present for home and clinic PNCs
- Process of doing an examination did not fully align with the protocol on the device
- Introduction of videos made educational component more explicit

***“When we do PNC before, only the patient and I are present . . . Now I am showing the video, now others too come on hearing the sound from the video, so they too remember that yes, we have to do this, so more people come inside, we tell the patient, and everyone hears.”***

# Multitasking

- Nurses used time while video played for other activities
- Multiple ways of showing the video
- Video was rarely stopped for discussion
- Time for playing the video was an issue

***“[The good thing about the video] is that the video explains how to feed the baby and gives advice, so we don’t have to talk much. So while they watch the video, we can continue with our work”***

# Authority

- Videos extended nurses ability to deliver complete messages
- Some nurses felt that by featuring older nurses the videos had additional authority
- No conflicts with the video messaging

***“We explained that this too is showing how to feed the baby, the things that you should eat, is it necessary for you to have the tablets or not. We are telling you through the mobile. It is just like the nurse used to tell you. You should take it the same way. We show the video and they feel it is right”***

# Trust

- Video considered to be trustworthy
- Nurses had a theory that people understand by seeing
- Advantages identified: clarity of message, use of local language, and local participants

***“What will the mother think? She thinks the video is correct. A movie has been made, so it is right because there is a lady in it, a patient and a nurse, so she understands. . . She understands on seeing the patient. If there had been only two nurses, she wouldn’t have understood”***



# ARTH

Action Research and Training for Health

11/19/2018

University of Washington, Autumn 2018



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# Community Led Video Education

- Low cost, locally created, educational videos
- Series of projects:
  - Digital StudyHall
  - Digital Green
  - Digital Public Health (now Projecting Health)
- Tenets of CLVE
  - Local creation of educational content
  - Group showings of videos with a moderator
  - Keep costs low through consumer digital technologies



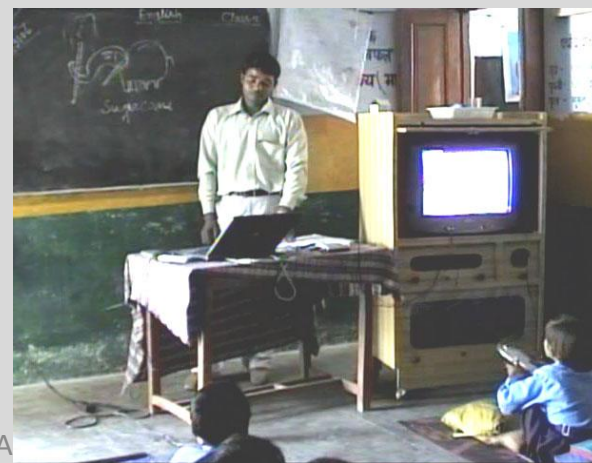
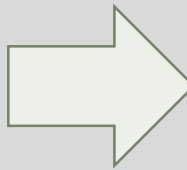
# From Digital StudyHall to Digital PublicHealth

# 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

# 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



# Digital StudyHall methodology

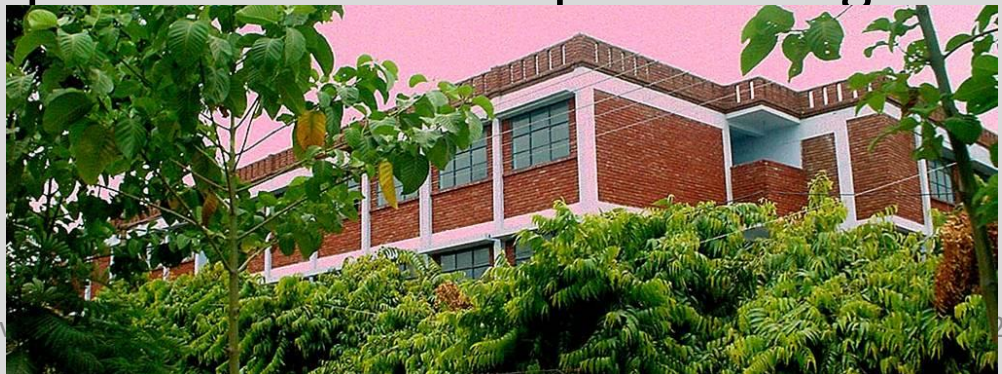
- Lesson videos recorded at hub school
  - Use of interactive pedagogy
  - Careful matching of students
  - Tie to regular curriculum
- Training of facilitators
- Facilitation model
  - Mix of video use and activities
- Cost realism in technology deployment





# 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



# 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





# 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



# 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
- Digital Livelihood – Calcutta, Paul Javid



# digitalGREEN

- Developed community video education for Agriculture
  - Started as a project at Microsoft Research
  - Formed NGO
  - Taken to scale in several states of India
- 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





# Digital Public Health

- PATH / UW / Digital Green collaboration
- Application of Digital Green methodology to maternal health
- One year pilot starting August 2012
- Expanded projects in Uttar Pradesh since 2013
- Renamed Projecting Health



# 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



# 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

# Technology

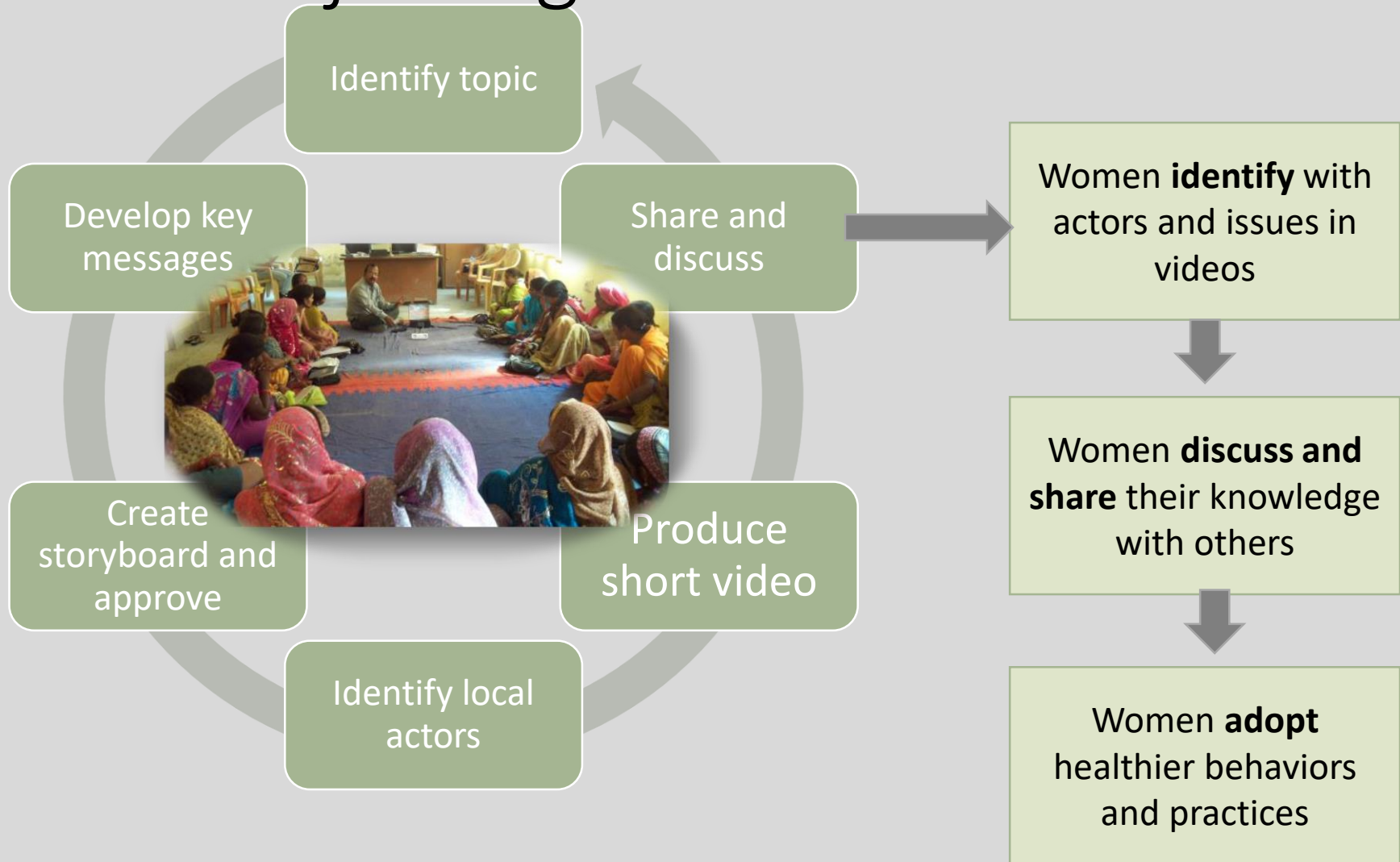


- Direct implementation of Digital Green digital video approach
- Goal: no technology innovation
- Basic components:
  - Kodak video cameras
  - Microsoft MovieMaker for editing
  - Pico projectors for screenings
  - Youtube for content distribution

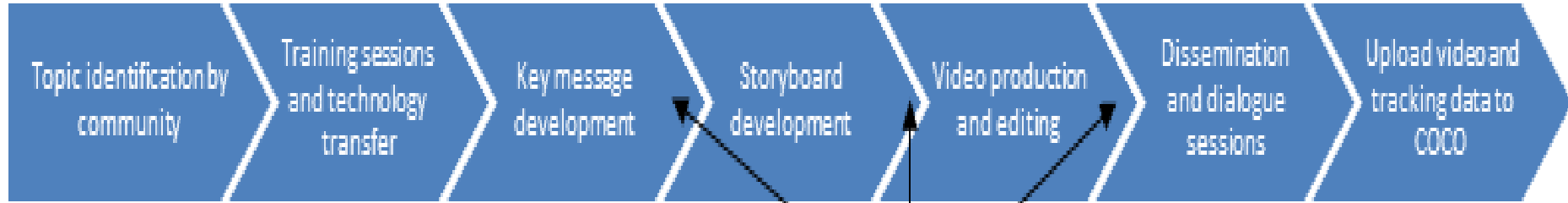




# The Projecting Health Process

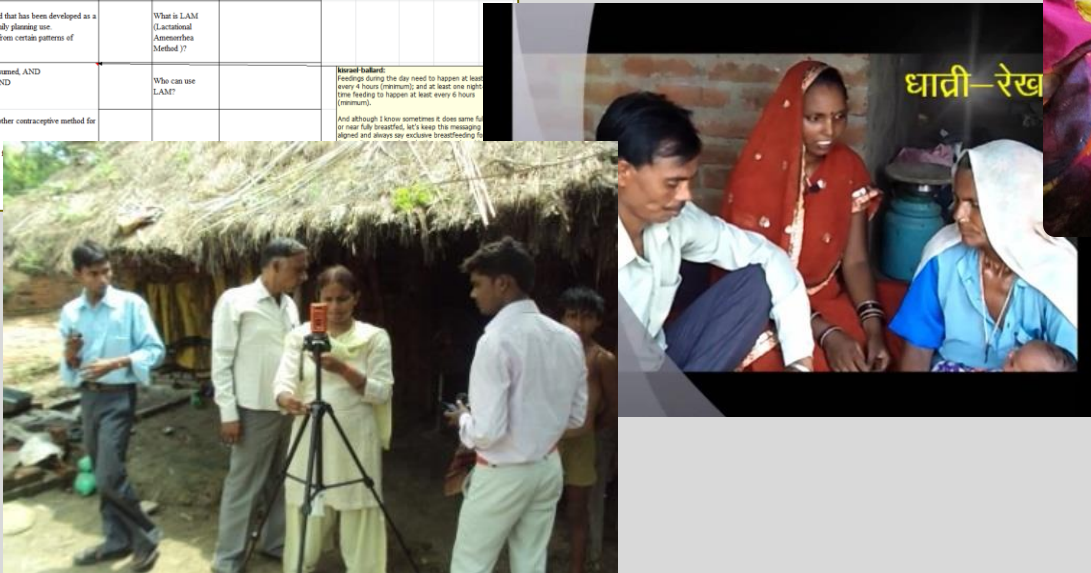


# Projecting Health Process



A		B		C		D		E		F		G		H		I		J	
1 Name of Writer: Kumar Vikram				2 Type of subject (Phase ticks): 1. Descriptive, 2. Survey, 3. Activity, 4. Discussion, 5. General Awareness				3 Title of Video: LAM (Lactational Amenorrhoea Method)				4 Introduction: 4. Discussion, 5. General Awareness							
4 Duration of Video: 8 minutes				Storyboard Preparation date: 18th September 2012															
5 Section		Contents of the section		Time		Facilitating Questions		Camera Focus											
6 Introduction (#ha?)																			
7 Subject & Objective (#ha?)(#ha?)																			
8 Materials (#ha?)(#ha?)																			
9 Process (#ha?)		<ul style="list-style-type: none"> <li>* A modern, temporary family planning method that has been developed as a tool to help support both breastfeeding and family planning use.</li> <li>* It is based on the natural infertility resulting from certain patterns of breastfeeding.</li> </ul>		What is LAM (Lactational Amenorrhoea Method)?															
10		<ol style="list-style-type: none"> <li>1. the woman's menstrual periods have not returned, AND</li> <li>2. the baby is fully or nearly fully breastfed, AND</li> <li>3. the baby is less than six months old.</li> </ol>		Who can use LAM?		<b>Moral ballad:</b> Feedings during the day need to happen at least every 4 hours (minimum), and at least one night time feeding to happen at least every 6 hours (minimum).  And although I know sometimes it does seem to or near fully breastfed, let's keep the messaging simple and always stay exclusive breastfeeding.													
11		The LAM user should be counseled to use another contraceptive method for continued protection when: <ol style="list-style-type: none"> <li>1. Her menstrual periods return.</li> <li>2. She begins feeding her baby other liquids or sleeps through the night.</li> <li>3. Her baby is older than six months.</li> </ol>																	

Review and approval



धात्री-रेख

# Sample topics

## Breastfeeding



- Optimal breastfeeding practices
- Exclusive breastfeeding
- LAM

## Thermal care



- Thermal care overview
- Delay bathing

## Family planning



- Permanent methods
- Temporary methods
- NSV-No scalpel vasectomy
- IUCD Copper-T

## Cord care



- Cord care overview
- Myths and misconceptions

## Birth preparedness



- Birth preparedness overview
- Maternal danger signs
- Maternal nutrition
- Newborn danger signs

## Other



- Immunization
- Community-based emergency transportation systems

# Project Timeline

Digital  
StudyHall  
started  
**2005**

PH Exploratory  
launch  
**2010**

Pilot launched in  
Ethiopia  
**2013**

Mobile phone  
exploration pilot  
**2015**



**2007**

Digital Green  
founded

**2012**

Feasibility  
study launch

**2014**

Endline  
evaluation data  
collected

**2015**

Expansion in India  
with 3IE/BMGF  
Award

