Health Education Audio Learning

BRAZIL

Mobile interactive audio learning for the developing world.
H.E.A.L. Brazil: Overview

- Mobile interactive audio learning for the developing world.
- Problem/Background
- Solution/Rationale
- Process/Partners
- Challenges
- Next steps
Challenge

Improve health education for the illiterate in the developing world

• Suffering from preventable and treatable illness in the developing world

• Accessibility, delivery, and quality of health education in developing countries
A Closer Look: Northeast Brazil

Societal challenges

- 170M Brazilians
- 50M live in poverty
- 35M earn < $40/month

Favelas - 25M

- Shanty towns
- lack infrastructure
- Limited access to social services
Favela Communities

- Chao de Estrella - Pop. 5200
  - Urban Community

- Camaragibe - Pop. 7200
  - Rural Community

- Unemployment 50%
- Illiteracy 50%
- Family Income $50 per-month
- Key Health concerns
  - AIDS, parasitic infection, scabies,
  - Ring worm, denge, leptospirosis
Learning problem

Illiterate Favela residents lack the basic health education necessary to avoid preventable and treatable illness.
PSF: Community Healthcare

- Programme de Saude da Familia
- Community Medical Centers
- Health workers from the community
- Door to door medical care
- Weekly educational workshops on health topics
- Challenges and success
  - Greatly expanded care - reach
  - Increase participation from community
  - Illiteracy - materials designed for literate population
Deepen and broaden impact of PSF health education efforts.

- Extend reach to broader segment of the community
- Ensure accessibility by a larger segment of the community - the illiterate
- Provide opportunities to engage with the material in new ways
- Deliver curriculum based on needs
- Improve the quality of formative and summative assessment
- Engage participants in educating the community
Solution

Introduce appropriate technology and redesign the learning environment

- Mobile interactive audio learning device.
- Integrated into the learning environment to achieve our learning objectives.

“Social design trumps technological design, but we know less about it” - Laura Resnick 5/03
The Technology

- Audio based
- Mobile/portable
- Private
- Diverse content
- Simple button/icon interface
- Interactive activities
- Recording
- Sync w/desktop applications
- Inexpensive
1. Pre-Assessment

PSFs conduct interviews during their home visits.

- Determine prior knowledge
- Collect demographic information for future tracking of impact.

Baseline data
2. Analysis

- PSF Downloads and analyzes data
  - Makes adjustments in curriculum content and workshop structure based on community data.
  - Establishes baseline data for workshop participants
3. PSF Workshop

PSF Deliver’s customized workshop

- Aligned to H.E.A.L. content
- Hands out device to participants
- Demonstrates how to use H.E.A.L.
4. Interactive Narrative

- Participants use device at home
  - Story content directly related to workshop content,
  - Re-enforces workshop material or presents new material
  - Provides reference and structure for future workshop discussions
5. Sharing H.E.A.L.

- Participants share H.E.A.L. with the community
  - Motivation to learn and share through earning points
  - Points earn new content: music, news, sports
  - Expand reach of PSF efforts
6. Follow Up

- HEAL supports future workshop discussion
  - Learners better prepared to participate
  - Distribution of additional content
  - Follow up interviews to track learning and behavior change.
Demonstration

- Curriculum Management System
- H.E.A.L.
Learning Theory

• Nass and Reeves  
  - Social response to technology
• Rogoff  
  - Community of learners
• Lepper and Malone  
  - Curiosity, control, challenge and fantasy
• Greeno et.al  
  - Situative, Cognitive, Behaviorist
Theory in practice

Content Selection
- Activity
  - Vol 1
  - Vol 2
  - Vol 3
- Character Selection
  - Jorge
  - Coach
- Story
- Questions
- Select Response
- Appropriate Feedback
- Reflection
  - Share Reflection?
    - Yes
      - Hear others reflect
    - No
      - Story continues

Behaviorist
- Individualization with technologies
- HEAL adapts based on responses and prior knowledge

Cognitive
- Interactive environments for construction of understanding.
- HEAL provides an interactive rather than passive learning environment

Situative
- Practices of solving realistic problems
- HEAL presents realistic situations for problem solving

Behaviorist
- Clear feedback and reinforcement
- HEAL provides immediate and supportive feedback based on learner responses

H.E.A.L. Brazil
Learning, Design, and Technology 2003

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Learner Study

- What can we assess?
  - Independent Variable
    - Use of H.E.A.L. vs no H.E.A.L.
  - Dependent Variable
    - PSF (Interviewer) ability to align interview to curriculum
      - Quality of interpretation of interviews
      - Ability to use responses to inform curriculum choices
  - Establish participants for each condition
  - Create Questions for participants
Process

Research and Analysis
- Understanding the problem
- Research current approaches

Idea Generation
- Brainstorming
- Scenario Development

Decision Making
- Narrow approach
- Check alignment w/R&A

Development
- Rapid prototyping
- User testing

Iteration

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Travel to Brazil

- Discussions with key informants
- Test prototypes and concepts
Challenges / Weakness

- Access to users
- Knowledge of cultural environment
- Significance of problem
- Interactive audio learning
- Depth of our implementation
Next Steps

- Perform learner studies
- Develop other content areas
  - Sanitation, Dengue Fever
- Further iterate design
  - Other possible platforms, phone based, palm, pocket pc
- User test in Brazil - Portuguese
- Refine understanding of capabilities of interactive audio learning
- Other countries?
- Fund Pilot
Conclusion

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