From eLearning to mLearning:
The Effectiveness of Mobile Course Delivery

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ADL Mobile Team Focus

Vision
- To be the source of information and support for DoD mobile learning initiatives.

Knowledge
- Track initiatives and share
- Remain current and provide weekly newsletter
- Deliver presentations
- Collect use cases

Deliverables
- Develop samples
- Identify tools
- Conduct workshops and webinars
- Write papers
- Facilitate working group

Research
- Collect literature and review
- Share best practices
- Support BAAs
What I’ll Cover…

- Mobile Learning Defined
- Research Need & Applicability
- Preliminary Survey
- Phased Approach
- Research Results
- Lessons Learned
- Future Research
ADL defines mobile learning as the use of handheld or wearable computing devices to provide access to learning content and information resources.
Much More than Just Courses: Mobile Learning Opportunities

Modules, Courses, What Else?

- Evaluation
- Geo-exploration
- Audio recordings
- Video recordings
- Quiz
- Test
- Feedback
- Geotagging
- Location specific
- Review/remember
- Survey
- Just-in-time
- Micro learning
- On-demand access
- Assignment
- Alerts
- Field guide
- Note taking
- Job aid/check list
- Reporting
- Conferencing
- Procedures
- Reminder
- Transcription
- Organization
- Decision support
- Presentations
- Coaching/mentoring
- Game-based learning
- Augmented reality
- E-books
- Contextualized learning
- Translations
• Learn when can
• 7 week pilot “GoLearn”
• Results 12% higher completion rate
• 45% less time
• 100% want more
• 99% felt format supports learning
Applicability

• Mandatory vs. compliance training
• Equal applicability for military training?
• Users of DoD eLearning systems are also challenged with balancing mandatory training requirements with mission-critical work
Preliminary Survey

• Used to help drive the conversion, development, and deployment decisions
• Distributed to 115 recipients, 50 responded (43%)
• Representation from the following:
  – Air Force
  – Army
  – Navy
  – Defense Agencies
  – Joint Staff
  – Combatant Command
  – OSD
Preliminary Survey Results

• Three Specific Areas:
  – Smartphone proliferation in the DoD
  – Mobile friendly LMS
  – Mandatory Training on Mobile vs. Desktop

• The survey results helped us to determine:
  – Target Population & Platforms
  – Course Conversion Approach
  – Strategy for Testing & Measurement

• Mobile Learning Landscape:
Course Selection: Background

- Trafficking in Persons (TIP) is a general awareness course mandated by DoD Instruction 2200.01 Combating Trafficking in Persons
  - Commercial sex trade industry
  - Labor trafficking
- Online e-learning course since 2005
- Mandatory for ALL DoD
- Online course created by Academic ADL Co-Lab
Desktop eLearning Version

- HTML and Flash
- Intro plus 6 modules
- Pretest & Posttest
- Glossary
- Resources
- SCORM®
Phased Approach

• Phase I: Analyze, Convert, and Prototype
• Phase II: Determine Requirements & Refine
• Phase III: Field Testing
• Phase IV: Measurement & Evaluation
Phase I: Analyze, Convert, and Prototype

- Phase I Conversion: 30-40 hour effort
- Initially used (basic XHTML 1.0 / Mobile Profile) for older mobile devices and provided enhanced version for smartphones
- Phase I Demo URL:
  - Basic Version: http://tip.adlnet.mobi/menu.html
  - Enhanced Version: http://tip.adlnet.mobi
Mobile TIP Conversion Issues to Address

- Overall UI
- Template design
- Screen content size
- Graphics (size and learning value)
- Interactions and animations
- Time per module
- Video conversion for mobile (most common formats)

- Glossary functionality
- Unable to alter instructional objectives, course size, assessments
- Platform(s) supported – device detection vs progressive enhancement
  - For valid measurement, a consistent experience must be provided
Phase II: Determine Requirements & Refine

- Target touch mobile devices only
  - jQuery mobile framework (HTML5, CSS, JavaScript)
  - Address issues
  - Explore native app alternatives (using PhoneGap)

- LMS Integration?
  - No DoD LMS options at the time – open source options?
    - SCORM Cloud + WordPress
    - SCORM Cloud + Moodle
  - What is the requirement? SCORM? Assessment?
TIP Victim Profile

TIP is about exploiting people’s **VULNERABILITY** in their current circumstances—whether it is a man desperate for a job to take care of his family or a young girl with low-self esteem getting caught up with a pimp.

**Victims can be:**

- Any gender, age, race, nationality, social status, or economic status

Mobile version

**Victims can be:**

- Any gender, age, race, nationality, social status, or economic status
- Men or women, adults or children, foreign nationals or U.S. citizens
- TIP victims can be anyone

Click to view the next bullet point.
Video conversion for mobile

eLearning version

Mobile version
Glossary

Myth 1: TIP must involve some form of travel, transportation, or movement across international or national borders.

Reality: TIP does not require transportation, although it may be involved in the crime. TIP is more accurately described as "compelled service" where a victim does not have consent or control due to force, or coercion.

Reality: TIP is not the same as smuggling, but is a separate criminal offense. Smuggling primarily involves

Compel:

To force or coerce a person into doing something against their will.
Three Output Formats Tested

- iPhone App
- Android App
- HTML5 Web Browser
jQuery Mobile + PhoneGap =

• Write once, deploy to multiple platforms & devices
Phase III: Field Testing

• Pretest
• Course
• Posttest
• End of course survey
• Focus Groups
  – Read I/ITSEC paper for more narrative!
Field Testing: Population

- **Asynchronous (over 2 week period):**
  - Wide range of DoD stakeholders in remote locations
- **Synchronous (over 2 hour period):**
  - 40 participants from Sheppard Air Force Base
- **71 total participants (Active duty & civilians):**
  - Air Force (59%)
  - Army (15%)
  - Marine Corps (7%)
  - Navy (4%)
  - Other DoD Orgs (13%)
Field Testing: Platforms

- **Direct Touch Smartphones**
  - HTML5 support
- **Android** (39)
- **iPhone** (23)
- **Other**
  - iPad (3)
  - iPad 2 (1)
  - Samsung Galaxy Tablet (1)
  - Acer Iconia Tablet (1)
Phase IV: Measurement & Evaluation

READ PAPER FOR MORE RESULTS!

• Time Spent Completing Course
• Benefits of Mobile Course Delivery
• Learner Performance
• Learner Satisfaction
• Mandatory Courses on Mobile
Results: Time Spent Completing Course

- eLearning version: 45 – 60 min.
- Mobile version: 49% 20 – 30 min.
Results: Benefits of Mobile Delivery

Which of the following aspects of mobile course delivery did you find to be most beneficial?

- Time management: 22%
- Convenience: 34%
- Training with no distractions: 11%
- More concise information: 10%
- Touch screen interactivity: 3%

Other:
Results: Learner Performance

Pre and Post Test Comparisons

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Results: Learner Satisfaction

After taking this course on a mobile device, do you prefer mobile or desktop version?

- 70% prefer the mobile version
- 26% prefer the desktop version
- 4% are undecided (not answered)
Results: Mandatory Courses on Mobile

Courses Available on Mobile

- Yes: 85%
- No: 12%
- Not answered: 3%
Lessons Learned

• **Create. Don’t convert!**
• **Scope:** You can support all device types. Narrow the scope and focus on consistent user experience
• **Mobile Apps and Web Apps** can be developed using HTML5 and support multiple platforms/operating systems
• **Mobile first approach:** potential for both a desktop and mobile deliverable from single code base
• **SCORM on mobile browsers** works, but provides a poor user experience today
  – What level of tracking is needed? Bookmarking, scoring?
• **Video fragmentation issues with Android**
Implications & Future Research

- Mobile courses can’t replace eLearning, but would make a nice option for mandatory training (85% said yes!)
- Need for new pedagogical models for mobile learning
- Demand for mobile SCORM profile
- Technical implementation challenges (security, commercial and .mil network connectivity, BYOD)
Questions / Discussion

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