



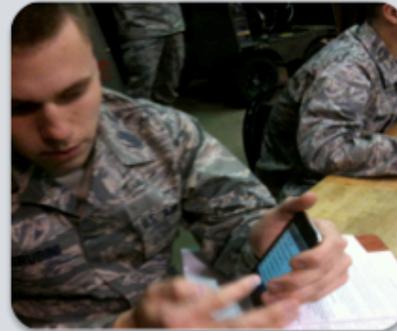
# From eLearning to mLearning: The Effectiveness of Mobile Course Delivery

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Advanced Distributed Learning Initiative



# 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 Mobile Learning Defined

**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



# Merrill Lynch – Mobile Compliance Training

- Learn when can
- 7 week pilot “GoLearn”
- Results 12% higher completion rate
- 45% less time
- 100% want more
- 99% felt format supports learning

**Mandated Training Now On Your BlackBerry!**

You spoke. We listened.  
Introducing ML GoLearn™ Training anytime, anywhere.  
Look for the ML GoLearn icon on your BlackBerry. And take your training with you.  
Questions? Contact GHI Learning & Development.

**Situation 1**

Hey Bill, how was your weekend?

Great weekend. I had a date with that girl who I was telling you about on Saturday night...and all I can say is

# 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:**
  - <http://www.adlnet.gov/survey-report-on-the-mobile-learning-landscape-within-dod>

# Course Selection: Background

## ***Trafficking In Persons (TIP) General Awareness Training***



- **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®

The screenshot shows a desktop eLearning interface for a module titled "Trafficking in Persons". At the top right, there are navigation buttons for "Home", "Save & Exit", and a help icon. The main content area is titled "Locations Victims May be Found" and contains the following text: "Some locations that military personnel, civilian personnel, and contractors may likely come across victims while serving abroad or in the U.S. can include:". Below this text are two sections: "Sex Trafficking:" and "Labor Trafficking:". The "Sex Trafficking:" section lists: "Dance clubs, strip clubs or bars", "Massage parlors or spas", "Street-based prostitution", and "Escort services". The "Labor Trafficking:" section lists: "Food services", "Domestic services", "Construction", "Factories", and "Hotels". To the right of the text is a photograph of a young boy in a red shirt and yellow pants, sitting on the ground and working with mud at a brick kiln. Below the photo is a caption: "A Pakistani boy works as a bonded laborer in a brick kiln on the outskirts of Lahore in Pakistan. His parents owe the brick kiln owner 5,000 Pakistani rupees (less than US \$100).". At the bottom of the content area, there is a "play slideshow" button and a set of navigation icons. At the bottom of the entire interface, there are icons for "Glossary", "Resources", and "Audio".

**Trafficking in Persons**

Home Save & Exit ?

### Locations Victims May be Found

Some locations that military personnel, civilian personnel, and contractors may likely come across victims while serving abroad or in the U.S. can include:

**Sex Trafficking:**

- Dance clubs, strip clubs or bars
- Massage parlors or spas
- Street-based prostitution
- Escort services

**Labor Trafficking:**

- Food services
- Domestic services
- Construction
- Factories
- Hotels



A Pakistani boy works as a bonded laborer in a brick kiln on the outskirts of Lahore in Pakistan. His parents owe the brick kiln owner 5,000 Pakistani rupees (less than US \$100).

play slideshow

Glossary Resources Audio

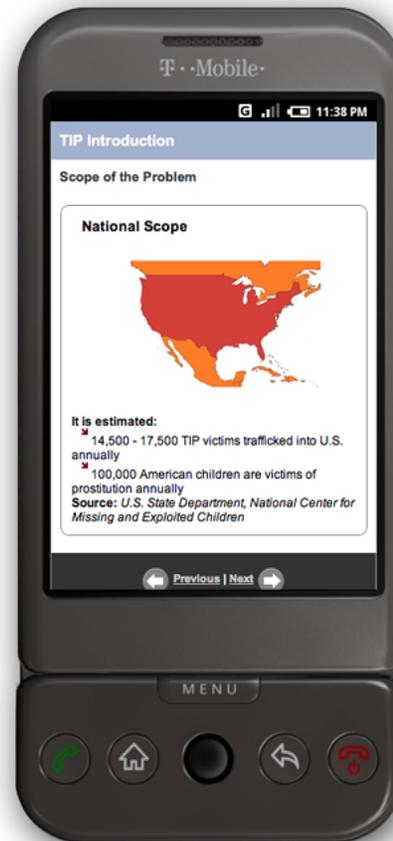
# Phased Approach

- **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>**

# Using XHTML 1.0 Basic



# 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?

# Slideshows and Animations



**Trafficking in Persons**

## 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.



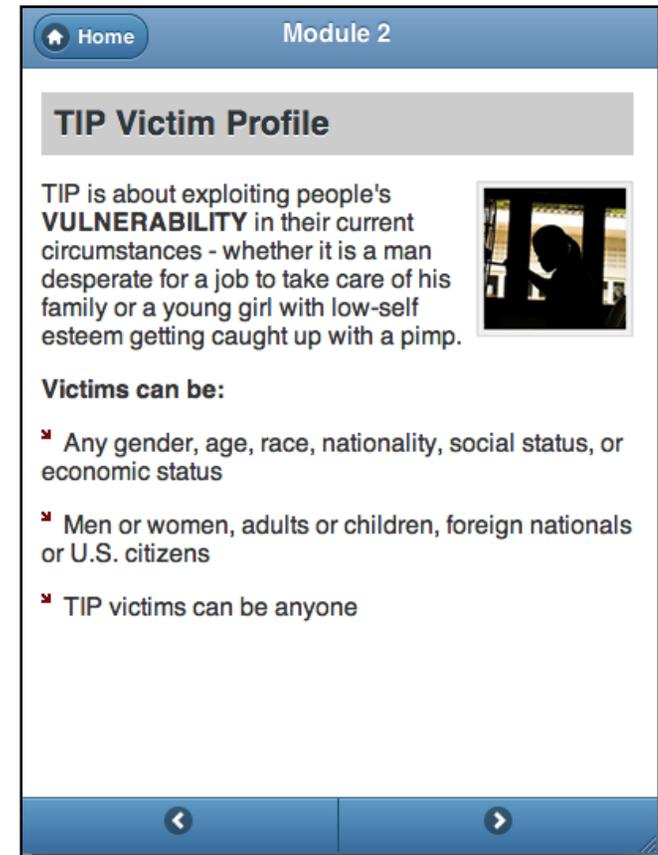
**Victims can be:**

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

Click to view the next bullet point.

Glossary Resources Audio

eLearning version



Home Module 2

## 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
- Men or women, adults or children, foreign nationals or U.S. citizens
- TIP victims can be anyone

Mobile version

# Video conversion for mobile

**Trafficking in Persons**

## Sex Trafficking Public Service Announcement

**Public Service Announcement**

**Video Summary**

DoD has a zero tolerance policy for prostitution. Evidence shows that prostitution is inherently harmful and dehumanizing, and fuels trafficking in persons, a form of modern-day slavery.

**Navigation:** Glossary, Resources, Audio, and a series of circular progress indicators.

eLearning version

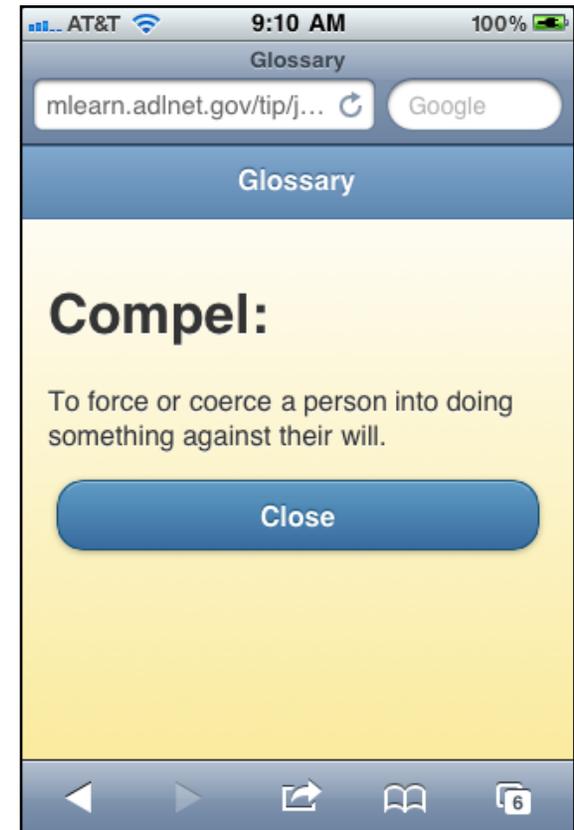
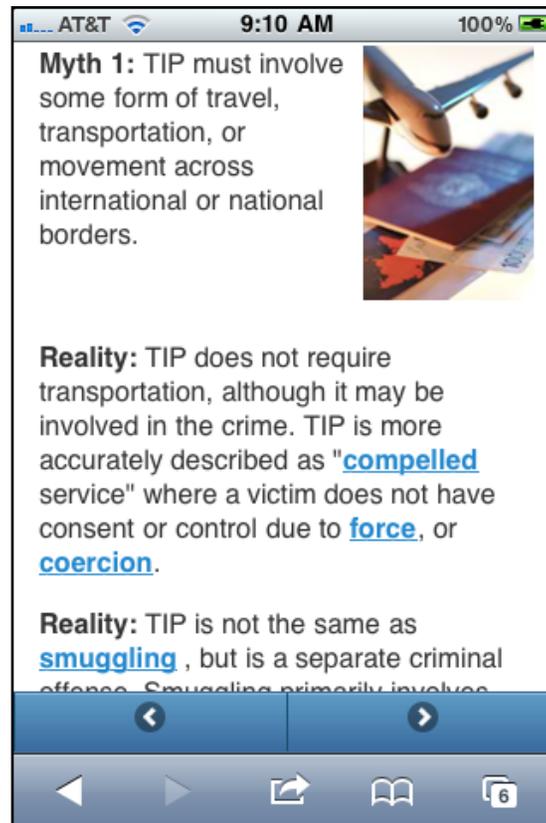
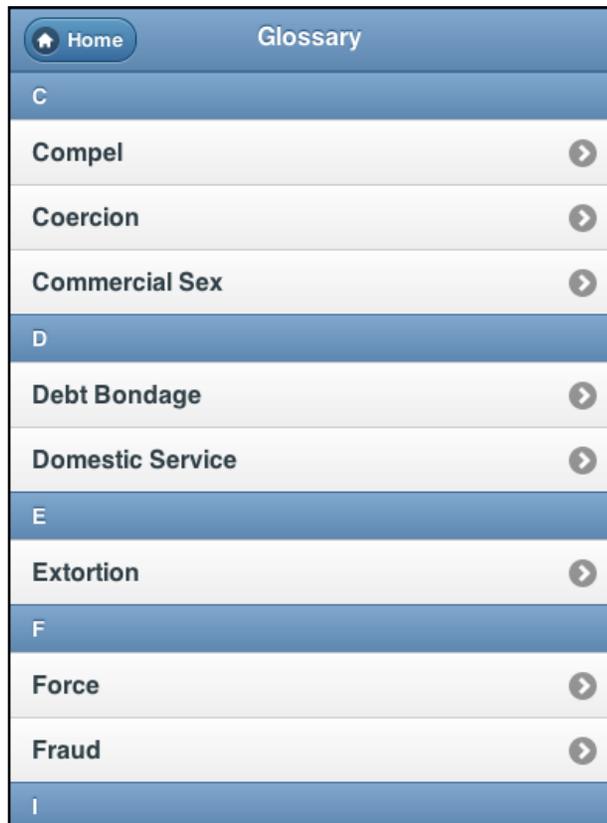
**Public Service Announcem...**

**If Autoplay not supported, Download Video:**  
[3GP](#) | [You Tube](#)

**Close**

Mobile version

# Glossary



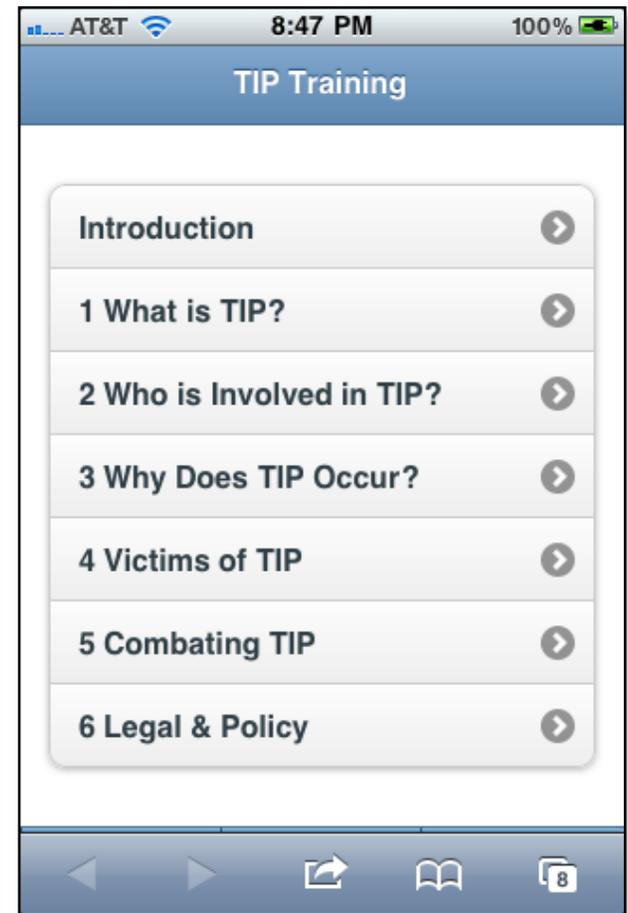
# Three Output Formats Tested



iPhone App



Android App



HTML5 Web Browser

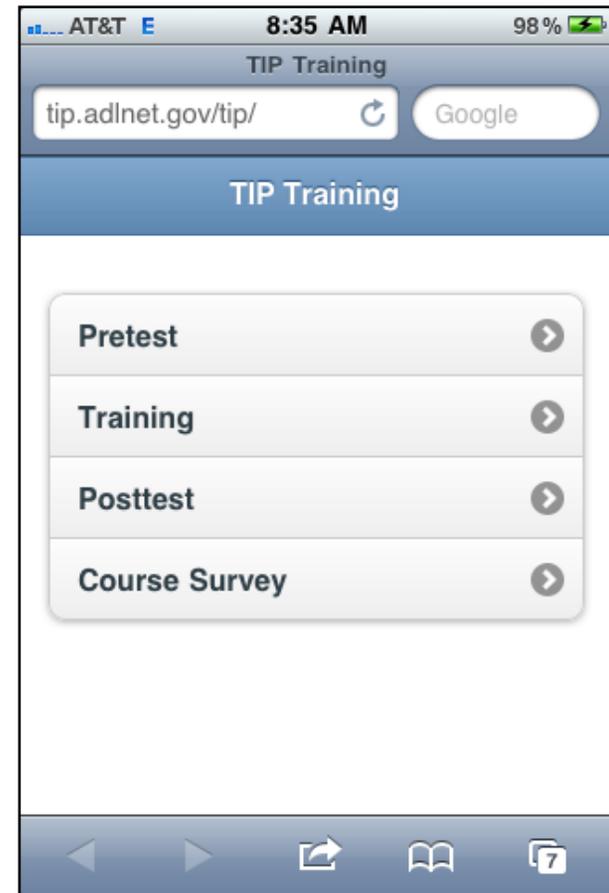
# jQuery Mobile + PhoneGap =

- 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!

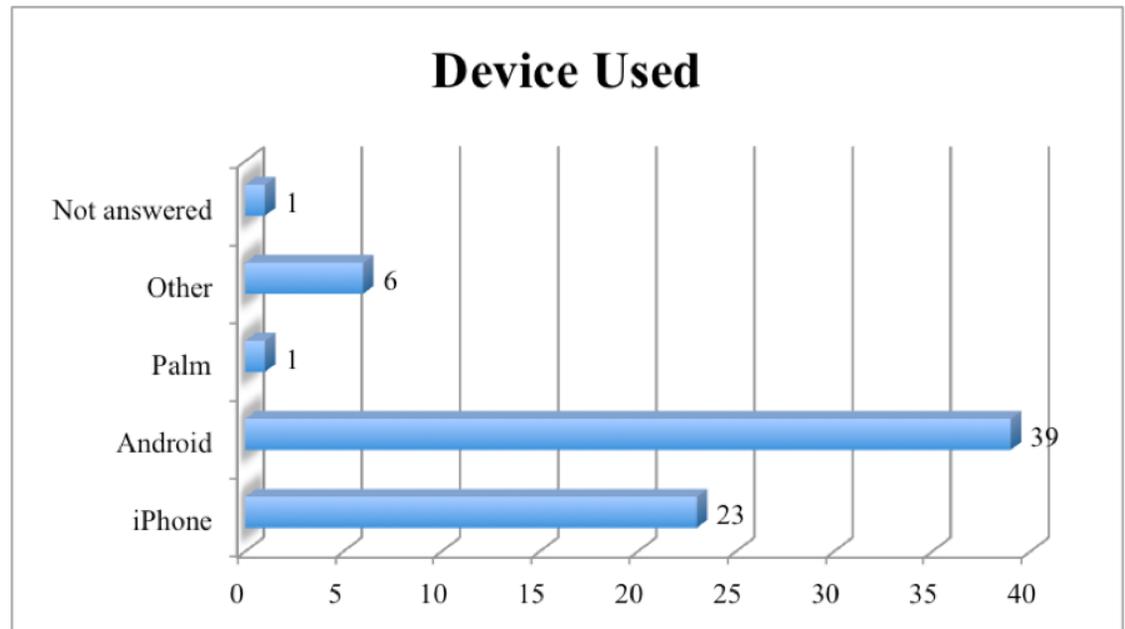


# Field Testing: Population

- **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)

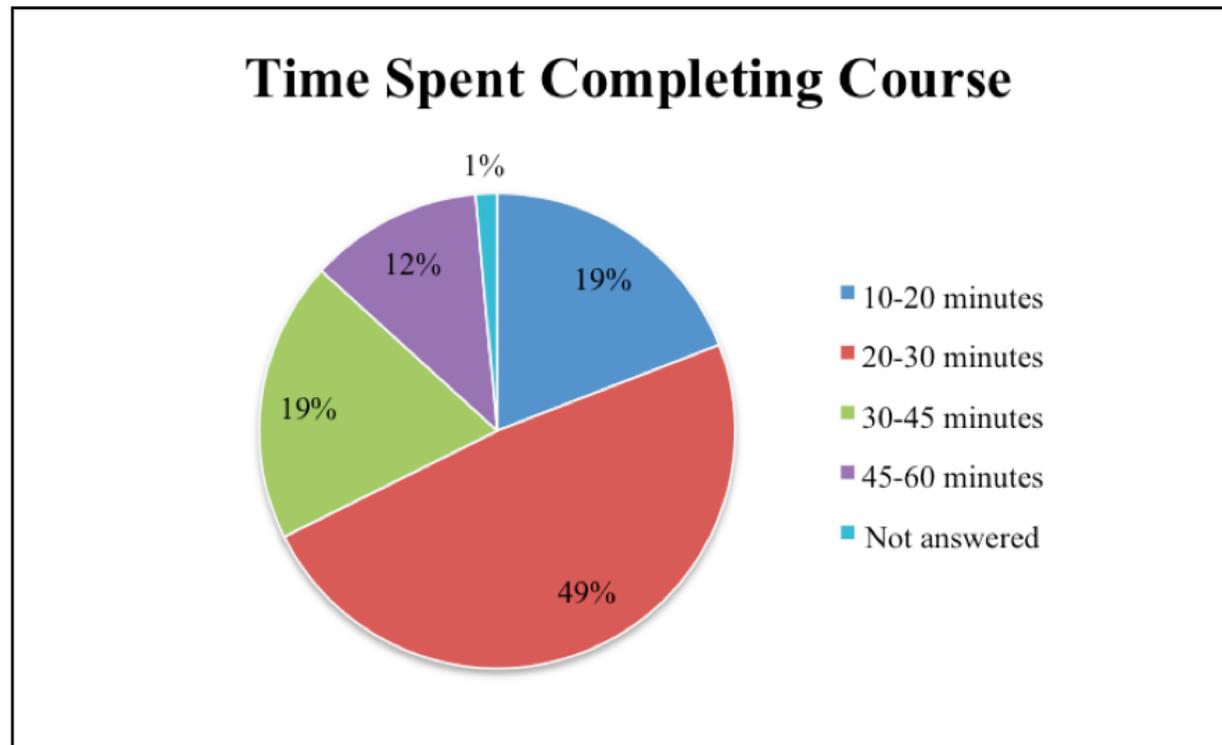


# Phase IV: Measurement & Evaluation

- ▶ **READ PAPER FOR MORE RESULTS!**
  - **Time Spent Completing Course**
  - **Benefits of Mobile Course Delivery**
  - **Learner Performance**
  - **Learner Satisfaction**
  - **Mandatory Courses on Mobile**

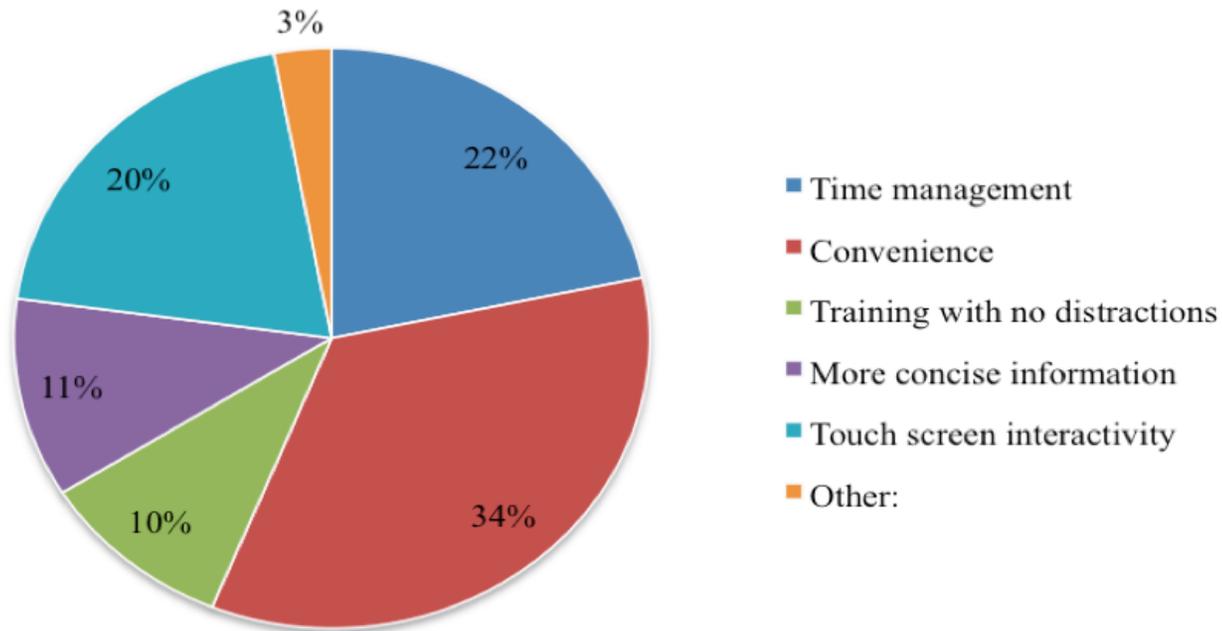
# Results: Time Spent Completing Course

- eLearning version: 45 – 60 min.
- Mobile version: 49% 20 – 30 min.



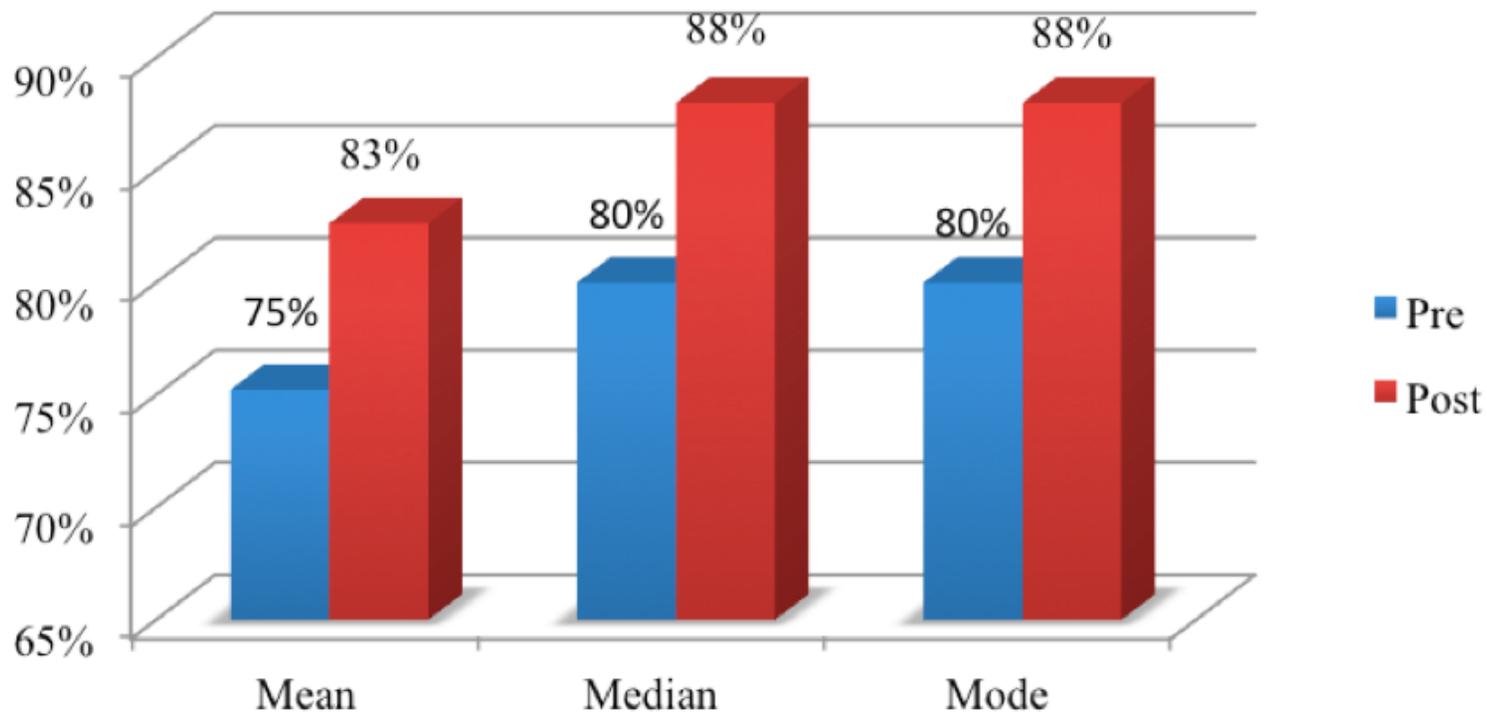
# Results: Benefits of Mobile Delivery

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



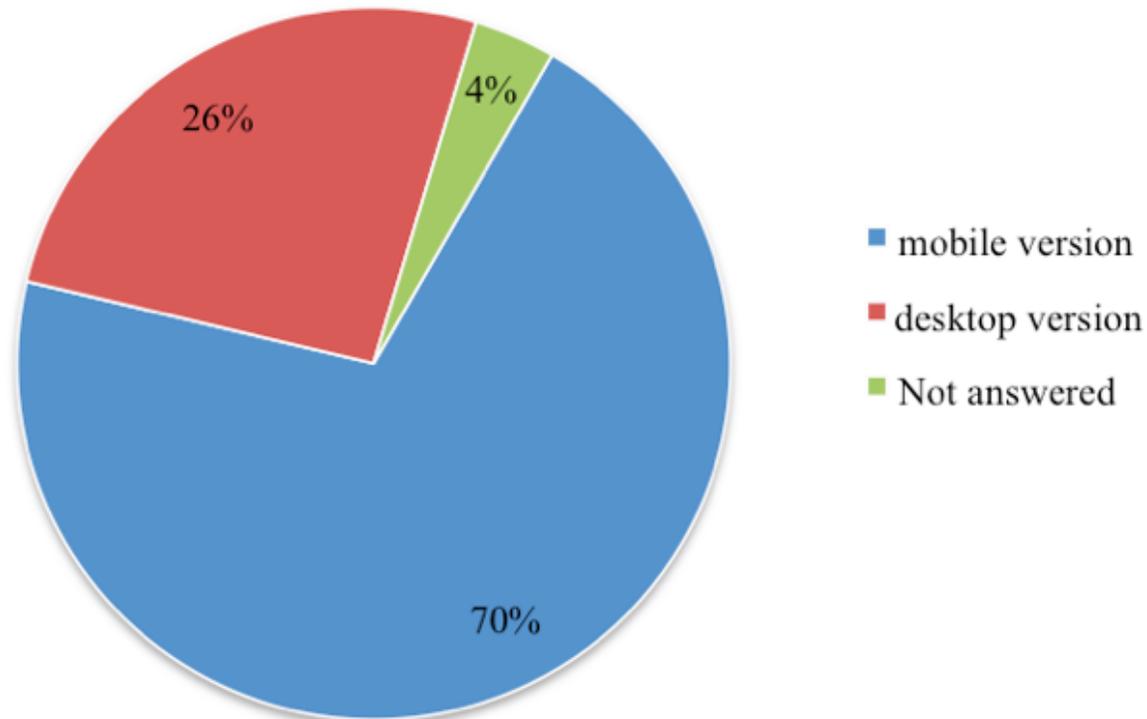
# Results: Learner Performance

## Pre and Post Test Comparisons



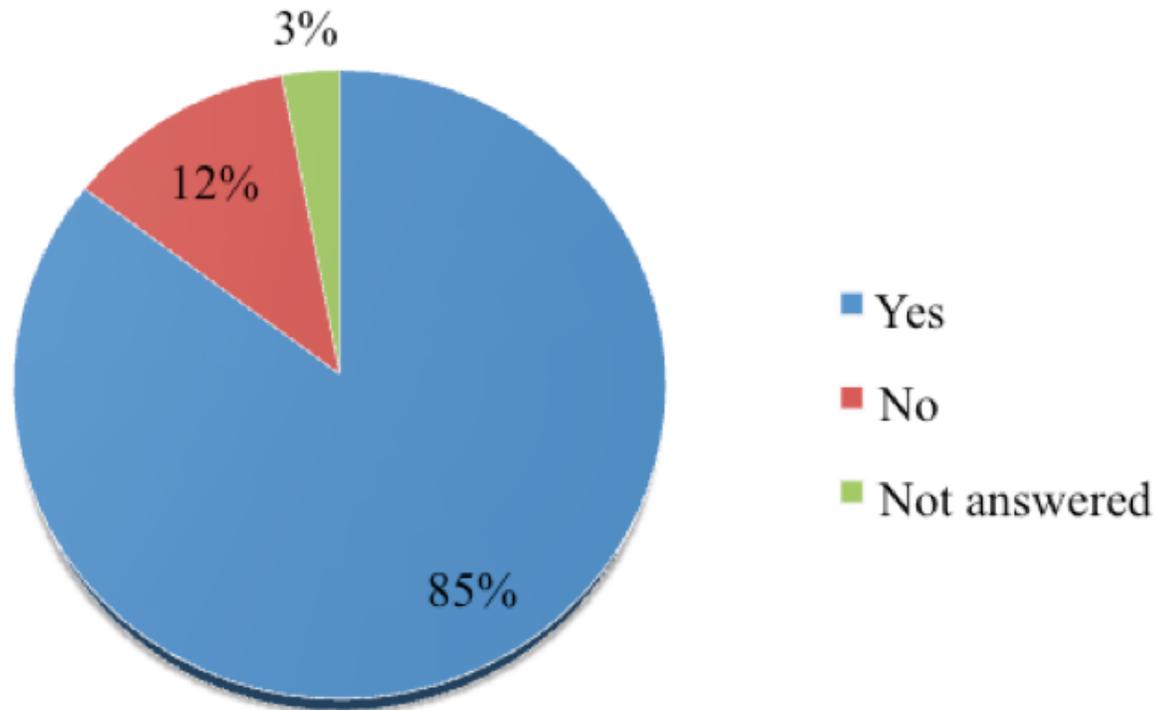
# Results: Learner Satisfaction

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



# Results: Mandatory Courses on Mobile

## Courses Available on Mobile



# 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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