Faculty and Researchers | Faculty and Researchers' Publications

2021

Mobile Learning Technology: Assessment of Distribution Options and Recommendations

Aten, Kathryn J.; Tick, Simona L.; Sadagic, Amela

Monterey, California: Naval Postgraduate School

http://hdl.handle.net/10945/69852

Mobile Learning Technology
Assessment of Distribution Options and Recommendations

NPS — PRAESTANTIA PER SCIENTIAM 1909

NAVAL POSTGRADUATE SCHOOL

Background

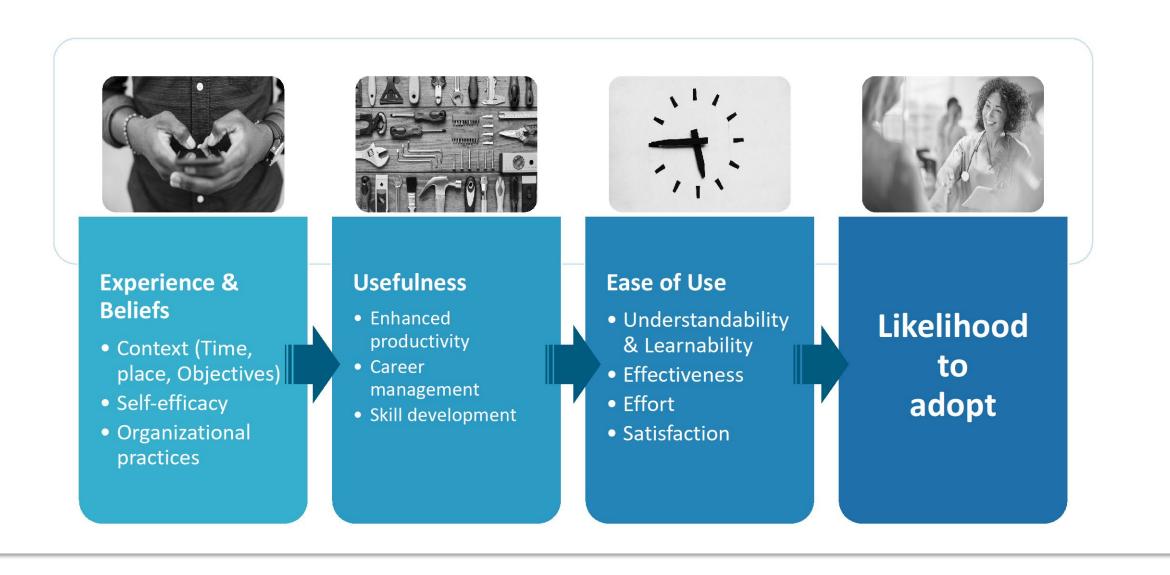- The transformative Ready Relevant Learning (RRL) effort is transitioning the Navy to a modern, science-of-learning approach.

- To deliver modern training capability anytime and anywhere, the Navy must be able to support mobile and distributed training.

- This requires that Sailors have access to hardware and software to access training resources outside the classrooms, at the point of need whenever they require it.

Research Objectives

This study conducted and analyzed semi-structured interview to answer the following questions:

- Under what conditions will implementing mobile learning technologies provide the most value?

- What are the requirements for delivering educational value to Navy users of mobile learning?

- What are the pros and cons for Navy users of personal vs. government-issued mobile learning devices?

Key Findings

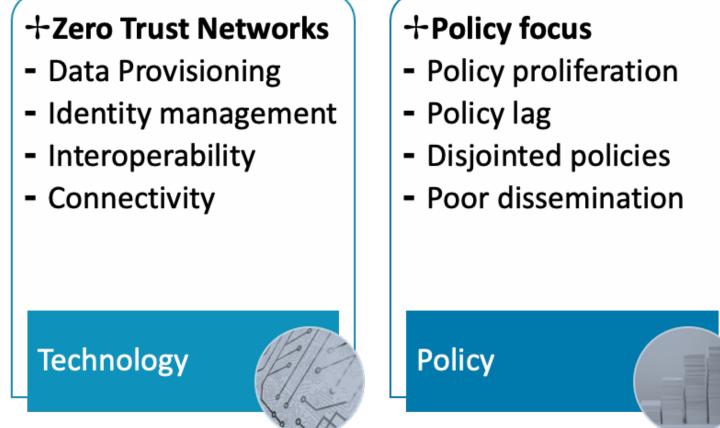| Experience & Beliefs	Usefulness	Ease of Use	Likelihood to adopt
• Context (Time, place, Objectives) • Self-efficacy • Organizational practices	• Enhanced productivity • Career management • Skill development	• Understandability & Learnability • Effectiveness • Effort • Satisfaction	

Factors impacting likelihood of adoption

Mobile learning technologies provide the most value when sailors can associate the training and the technology with improved performance and promotion. Perception of value depends on the perceived benefits of better performance and career advancement outweighing the costs of mobile technology use (i.e. great efforts to complete learning tasks).

Perception of ease of use are driven by perceptions of: effectiveness, efficiency, learnability, and satisfaction.

SME interviews and a policy review revealed cyber issues in using BYOD and highlighted four key areas of concern, geopolitical forces, technology, management, and policy.

+Ready Relevant Learning
- Covid
- Cyber attacks
- Budget/cost
- Acquisition process

Geopolitical forces

+Zero Trust Networks
- Data Provisioning
- Identity management
- Interoperability
- Connectivity

Technology

+Policy focus
- Policy proliferation
- Policy lag
- Disjointed policies
- Poor dissemination

Policy

+Individual excellence
- Siloing, Non-standard
- Attrition
- High responsibility, low control
- Change weariness

Management

Cyber Administrator Requirements

Recommendations and Future Work

We recommend that in the selection, application, and design of mobile learning technologies the designers create on an integrated design system to support technology adoption and follow the MLT guidelines when selecting and designing mobile learning systems. A design system manages the design across the enterprise and integrates key stakeholders into the development process. Design systems create standards and consistency across different modalities and are an emerging best practice in industry. The study provides a roadmap, MLT guideline checklist, and summary of relevant policies.