The Airman Learning Record and AMC’s Learning Services Ecosystem

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Agenda

- Motivation and Principles
- Airman Learning Record (ALR) Concept
- AMC Learning Ecosystem
- Examples
- Implications
Motivation: Operational Performance

“The speed, connectivity, and non-linear nature of the environment in which warfighters must operate fundamentally changes how one must think about objectives and the threats we face.”

- Nimble, effective learning systems translate into ready airmen -- current environment is frequently anything but
- Training decisions need to be linked to data and mission relevance and tirelessly improved
- Need to move learning measurement from who, what & where to how and why

Principles

- Air Force learning environment necessitates analytics tools that are:
  - Cloud Native; mobile first
  - Extensible across use cases without expensive customization
  - Scalable to hundreds of thousands of users
  - Capable of integrating complex, massive data across domains (biosensor, affective, etc.)
  - Non-proprietary
  - Standards-based
  - Interoperable with legacy systems
Airman Learning Record Concept

- Capture learning data from all learning experiences (wherever you can) with total flexibility to capture data at the right level of fidelity/detail
- Instrument and ‘sensorize’ all learning experiences
- Use standards to communicate in a structured way through an open API
- Store them all in an Airman Learning Record Store
- Perform dynamic analytics on that data
- Develop insights and feedback loops to:
  - The learner
  - Learning content owners, producers, designers, & instructors to continuously improve
  - The owners and stewards of learning programs to prioritize investments
Learning Services Ecosystem

EOSLearn
(Storefront)

AMCx
(Powered by OPENedX)
(MOOC)

Airpower 360
(Assessment)

Augmented Reality
(Practice)

Informal Learning
(Self-Directed Learning, Credentials)

Legacy LMSs

AMCgo
(Blended Learning / CMS)

LRS

Web Services
Technology Toolkit

- AWS
- edX
- Learning Locker
- Drupal
- Lime Survey
- Others as needed…
Inside the LRS

- AMCx Number of Courses: 11
- Number of Statements: 43.9k
- Number of AMCx Users: 72
- AMCx Number of Activities: 1.3k
Inside the LRS (continued)
Inside the LRS
Inside the LRS
Inside the LRS
Feedback Use Case: Test Item Analysis

- Point Bi-serial Correlation (PBC) relates observed item responses to a total test score (+1 to -1)
- A high coefficient means students selecting the correct response achieved higher total scores (coefficient closer to 1)
- A point bi-serial rating of .21 or less indicates that the test item should be revised

Point Bi-serial Correlation (PBC) scores can now be found under the Assessment Item Analysis section.

Click here for a detailed explanation on how PBC works.

Only students that have completed the exam will be scored for PBC.
PBC scores will be listed here for each respective question on the exam.
PBCs will now be recorded in the .CSV report.
Potential Applications and Extensions

- Targeted interventions based on observed or predicted learning gaps/decay
- Machine Learning to develop expected performance for early warning system
- Data-driven Learner “Personas”
- Big data analysis of sensorized data, e.g., Aircrew Training

Disney Sports Analytics
Questions?
AMCx

- Massive Online Open Course (MOOC) platform built on the open-source edX platform developed by MIT and Harvard.
- This platform supports self-paced online learning, instructor-led learning, and blended learning.
- Allows an instructor or curator to add courses from any source to the AMCx platform. This includes courses hosted outside of AMCx from sources like Treehouse, Youtube, and Udemy, among others.
AMCgo

- Designed to enhance ILT, primarily in a classroom setting but also has features to allow for access of learning resources any time
- AMCgo hosts the suite of Rapid Global Mobility Courses (RGMC) including two online courses and one classroom course.
- You can go there right now on your phone and learn about AMC’s mission:

https://amcgo.learning-transformation.com/
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AR Prototype Statements: Viewed

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AR Prototype Statements: Spent (10 minutes in it)

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Building Airpower... From the Ground Up!

Training and Education total force Airmen for a broad spectrum of expeditionary operations today and tomorrow.
AIRPOWER 360 AND AIRMAN DEVELOPMENT PLANS

AP360 is a best practice process and automated tool that furthers the learner-centered strategy at the core of the C of L

- Developed on the foundation of the Airman Competency model, including AF Institutional Competencies
- Provides targeted feedback (Individual Feedback Report) on strengths and developmental needs on individual 360 results; to know where to focus, Airmen need to know where they stand and then how to improve—can be combined with coaching
- Airman Development Plans (ADPs) (Individual Development Plans) provide a structured path for self-development to fill performance gaps
- Enhances expertise & engagement of Airmen learners
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Milestone: M5 - Self-Efficacy

Number of Learners

- High Self-Efficacy
- Medium Self-Efficacy
- Low Self-Efficacy

Continuous Variables
- Bold = Statistically Significant Variable

Categorical Variables
- Bold = Statistically Significant Variable
  - Gender

Select...
Learner Groups

Select one variable

Bold means it mathematically impacts performance (numerical data only)

Default
• Class View

Demographics
• Age
• Military Service
• Service Time

Psychomotor
• Bottom Pressure
• Breathing
• Cant
• Heart rate
• Perspiration (EDA)
• Posture
• Respiration Rate
• Temperature
• Trigger Pressure

Affective
• Self-Efficacy

Performance
• MPICZP
• Grouping Size
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