Total Learning Architecture (TLA)

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June 6, 2017 Medbiquitous Conference

This material is supported by the ADL Initiative under Contract Number W911QY-16-C-0019. Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the official views of the U.S. Government or Department of Defense.
xAPI: the Experience API
Current State of the Art: Training Apparatuses

• Med students have access to more realistic training simulations using non-live patients than ever before

• Part-task trainers, robotic trainers, surgical and patient room trainers…
  – Each have different capabilities and training objectives

• … but, most are standalone systems

• In 2003, the human genome was decoded and medicine became personalized – should medical training become personalized, too?

Air Force photo by Charles Haymond /Released
Adaptive Game-Based Training

• Damien Cosma would like to work trauma
• Being ahead in his class, he starts with a game-based simulation to work on his overall decision-making and prioritization in mass-casualty events
• Products such as ZeroHour, adaptive training such as SimMarkers, provide a custom experience
  – Wired, 2008
  – Wray & Stowers, in press
• Damien scores
  – Intermediate in scene assessment competencies
  – Beginner in triage prioritization competencies

SimMarkers perceptual-cognitive training for first responders
Adaptive GIFT

- Damien’s personalized profile suggests courses via the Generalized Intelligent Framework for Training (GIFT)
- GIFT adapts continually
  - Starts with acquired profile knowledge from previous trainings in other systems
  - Adapts and selects content as Damien progresses through course work
- GIFT shares progress and increases Damien’s competencies in the TLA

GIFT Course History; photo courtesy gifttutoring.org
Physical-Virtual Patient

- Damien has increased his proficiency to Intermediate and Advanced in trauma skills
- Prioritizes a team-based adaptive hands-on trainer, such as the physical-virtual patient
- Physical-virtual patient obtains trauma team competencies from the TLA and provides a scenario along the team ZPD
- Damien has higher self-efficacy and reached mastery faster

TLA-enabled tools drive a physical virtual patient
What is TLA?

- Open-source software specifications
- Being researched and developed
- To enable next-generation learning—personalized, data-driven, and lifelong.
What is TLA?

- Rich data sharing across systems
- Actionable learner analytics
- Useable learning system interoperation
Summary

• More efficient use of student time and training tool time
  – Focus on needed training to reduce wasted time
  – Decrease failure rate for students who need targeted remediation

• Supports self-efficacy of the student

• Increases capabilities of existing training technologies
  – More symbiotic experience in skills labs

For more information, see [www.tlacommunity.com](http://www.tlacommunity.com)
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