# *Forging Adaptive Leaders: Revolutionizing Leader Development with Interactive Technology*

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# Why technology and leader development





- High operations pace
- Rapid leader turnover
- Resource constraints

# An evolving view of leader development

- "The US military must overcome the way it has trained and educated leaders. Defense officials are moving ahead to overcome Cold-War era training to create a new generation of leaders who aren't constrained by what the doctrine says."

**GEN Richard B. Myers, CJCS (2004)**

- "Future battlefields require a more liberally educated, mentally adaptable leadership to coexist in a culture with high standards of cohesion and discipline."

**COL (Ret.) Robert B. Killebrew (2002)**

# The goal:  building adaptable leaders

- Ability to transition from
  - Stability and Support Operations to
  - Asymmetric combat, and back again

- Demands very different skill sets
  - Decision making is <u>critical</u>
  - Creative thinking
  - Experimentation with doctrine
  - Prudent risk-taking
  - Self-awareness
  - Focus on human understanding

# The ideal training situation would offer



- Low cost of repetition
- Ease of changing complexity
- Requires decision-making
- Involves leading a team and communication
- Feedback on adaptability and outcome

## Current technology can meet these goals!

# "Two roads converged in a yellow wood . . ."

**Business & Education Path**
- Application
- Theory

**Leader Development Process**
- Army Conclusions
- Other Applications

**Technology Path**
- Gaming
- Virtual Reality

# Business is starting to take advantage



Qwaq, Inc

- Holding meetings
- Training employees
- Increased workspace
- Marketing the brand
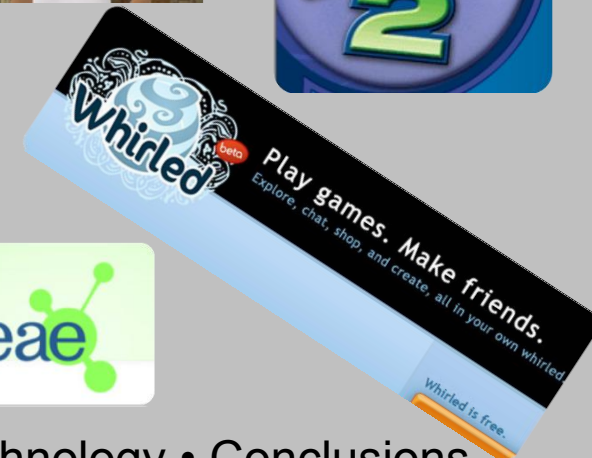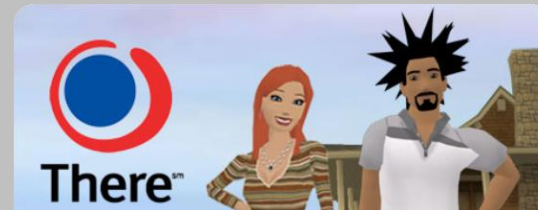
# Business thought change driving adoption


Frederick Taylor

From:

- Taylorism and the Progressive Era
- Protocol and schedule
- Production lines

W. Edwards Deming



To:

- Improve quality & lower cost
- Toyota's revolution of operations management
- Employee empowerment
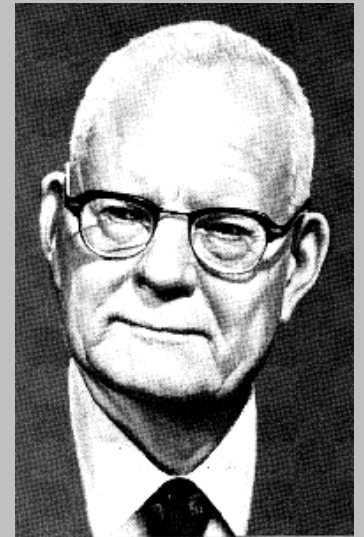
# Education is at different points

- Information visualization
- Experiential learning
- Research discovery
- Behavior challenge


Ben Shneiderman
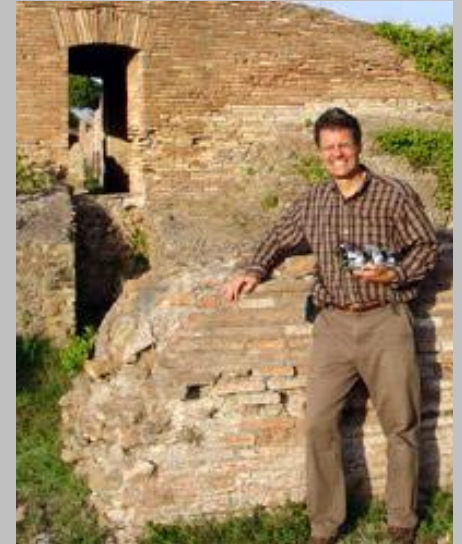

Roger Ulrich

# Lessons from educational theory

- ## How people learn
  - Active
  - Visual
  - Construction

- ## Challenge objectives

**EVALUATION**

**SYNTHESIS**

**ANALYSIS**

**APPLICATION**

**COMPREHENSION**

**KNOWLEDGE**
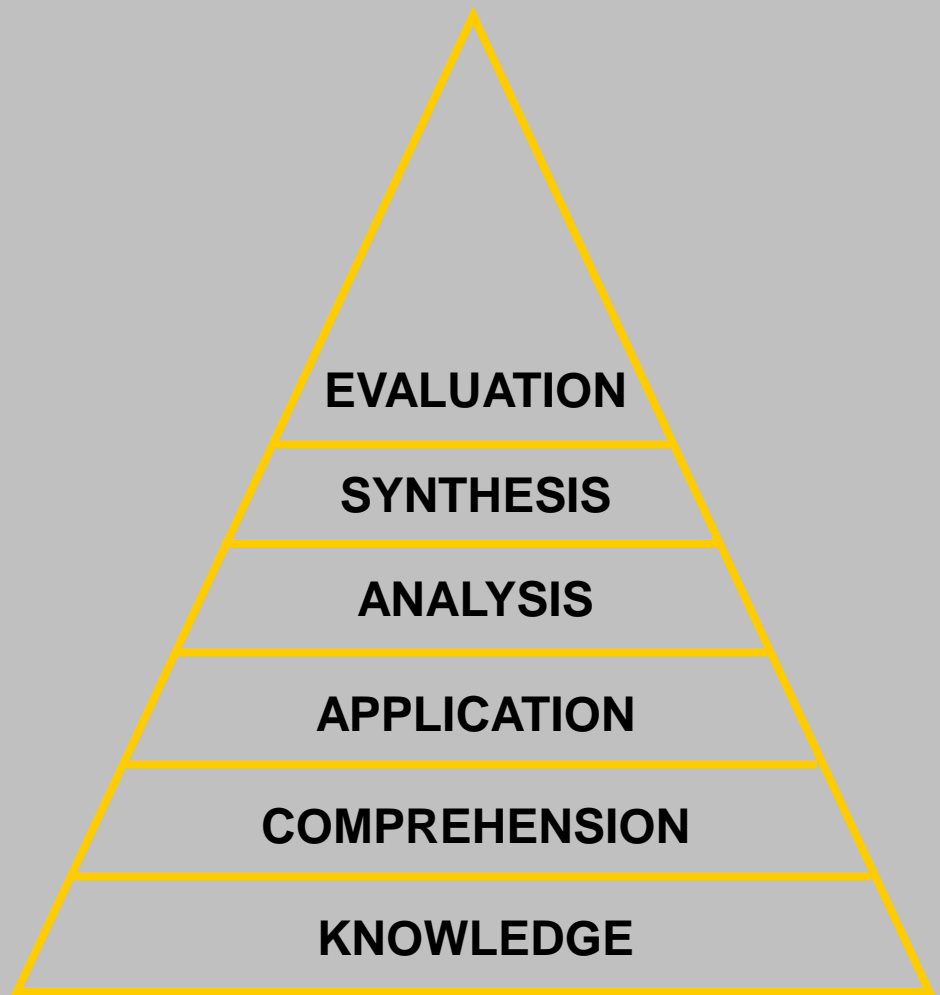
Bloom's cognitive hierarchy

# Just two of many tech companies





- Started in 2002
- Army project
- Recruiting base
- Semi-Immersion
- State of art graphics
- Biofeedback integration

- Started in 1999
- Independent
- Prototype only
- Educational research base
- Semi & Full Immersion
- Pushing limits of AI & CGI

# A marketing tool with scale & scope potential



- Recruiting support
- Story telling
- Basic Soldier skills
- Vehicle & weapon simulators
- Educator resources

# Beginning to build adaptive leader tools

- Cultural Awareness Trainer
- Instructor Controlled Scenarios
- AAR Capability

# ICT has many leader development projects

- Army Excellence in Leadership
- Web based, film case studies
- Adaptable to the classroom
- Ability to connect users
- Instructor modified

# A unique collaborative learning approach



Source: Andrew S. Gordon, ICT

# Start with semi-immersive negotiations
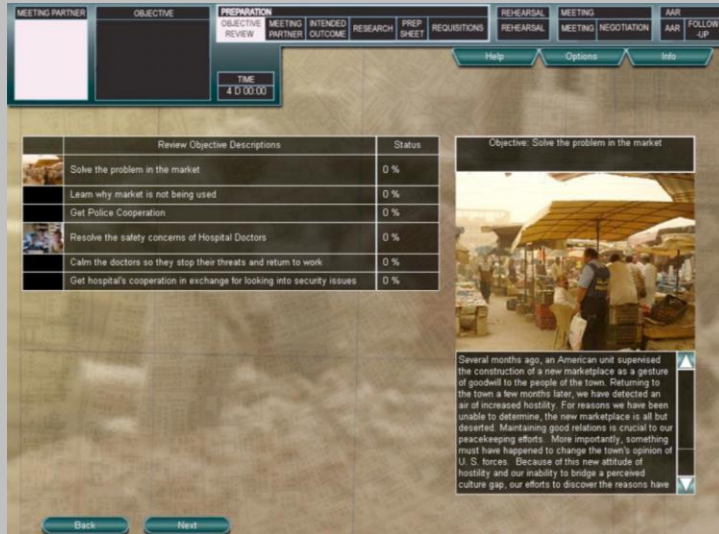


- Real problem based
- Preparation focused
- AI component
- Computer prompt
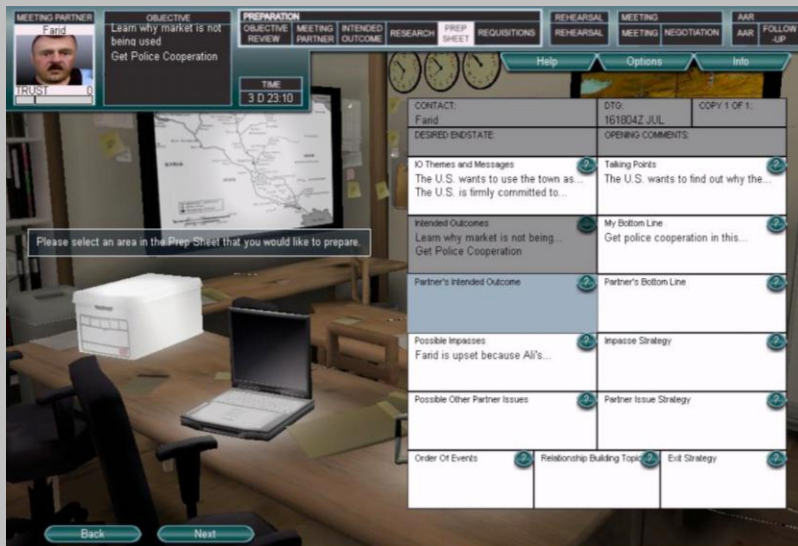
# With the possibility for fully immersive
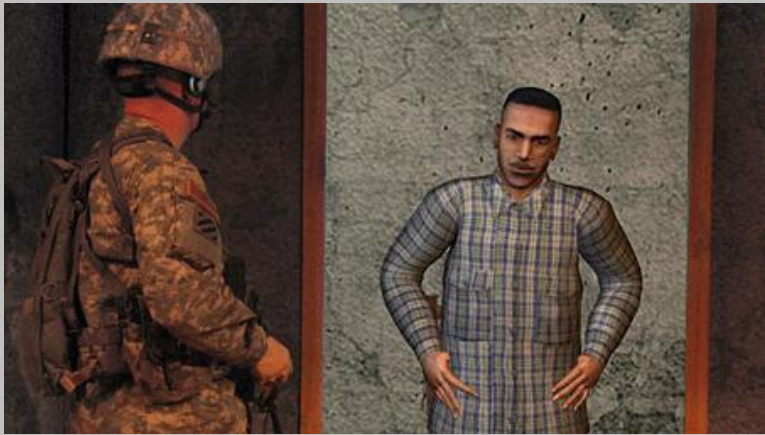




- Separate parties, different motivations
- Increased complexity
- Cognitive building AI
- Hope to start testing soon

# Mixed reality enhances full immersion


System Awareness

- Sounds, smells, effects
- Ability to change situation
- Requires quick decision making

# Technology incorporates adaptability

Army Schoolhouse
& Field Training

**Triad
of
leader development**

Formal Education

Experienced-based
Learning

Source:  Briefing by MAJ (Ret.) Donald E. Vandergriff
Author of Raising the Bar:  Creating and Nurturing Adaptability to Deal with the Changing Face of War

# Current challenges to implementation

- Adoption throughout is tough
- Perception of "gaming" not "training"
- Keeping tool focus general
- Realistic design
- Project ownership
  - Individual proponent
  - Prototype handoff
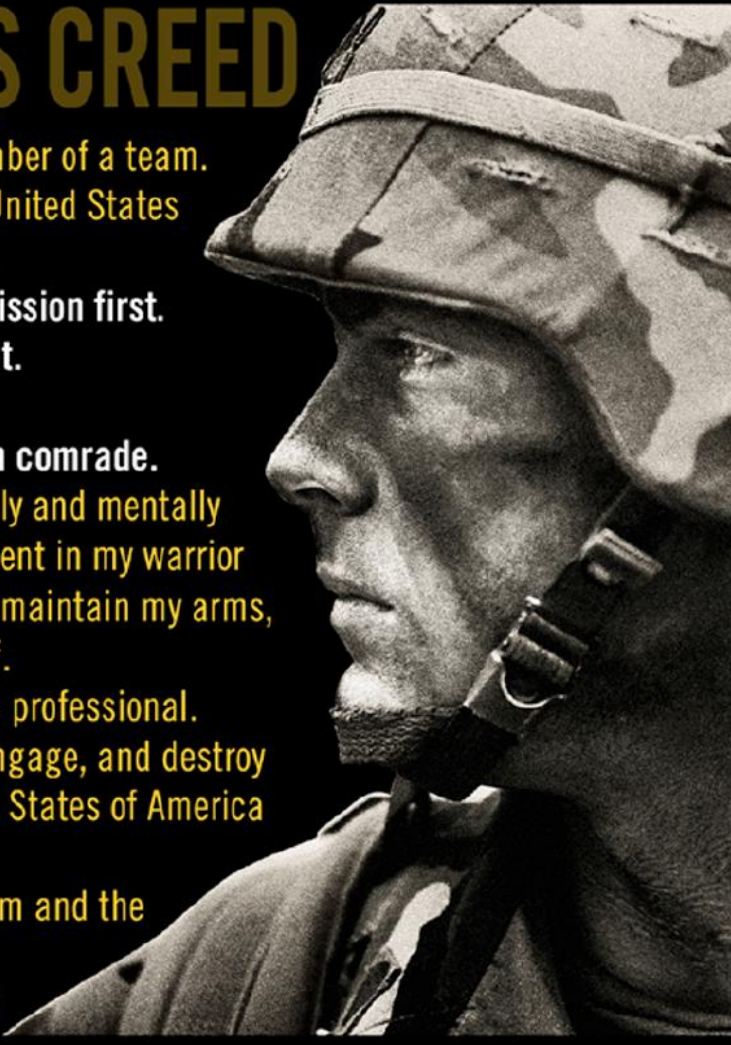- Success metrics hard to gather
- Development costs

# Opportunities for success



- Experiential learning demand
- Web 2.0 delivery
- Distribution to lowest level
- Consistency in training
- Systems truly teach "how to think"
- Competition pushes everyone
- Research collaboration
- Alternative to current training

# What thoughts or questions do you have?



SOLDIER'S CREED

I am an American Soldier.
I am a Warrior and a member of a team.
I serve the people of the United States
and live the Army Values.
I will always place the mission first.
I will never accept defeat.
I will never quit.
I will never leave a fallen comrade.
I am disciplined, physically and mentally
tough, trained and proficient in my warrior
tasks and drills. I always maintain my arms,
my equipment and myself.
I am an expert and I am a professional.
I stand ready to deploy, engage, and destroy
the enemies of the United States of America
in close combat.
I am a guardian of freedom and the
American way of life.
I am an American Soldier.

# Back Up Slides

# Ideas follow previous work

**Today's Culture**

Stress "process"
Forecasting
Risk aversion
Bureaucratic
Top-down
Rank equals success
Change is criticism
Adherence to process

**Evolving Army Culture**

Stress "innovation"
Experimentation
Prudent risk-taking
Agility
Feedback loops
Contribution valued
Change is evolutionary
Achieving the objective

Source:  Briefing by MAJ (Ret.) Donald E. Vandergriff
Author of Raising the Bar:  Creating and Nurturing Adaptability to Deal with the Changing Face of War

Research Approach • Education • Technology • **Leader Development** • Conclusions

# Increases training understanding
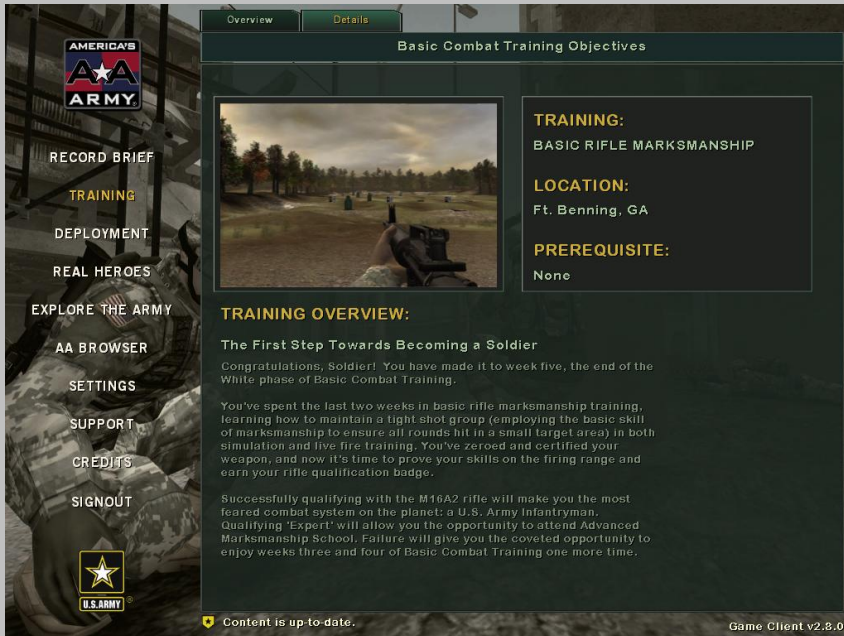




- Basic Soldier skills
- Unit missions

# Enhances recruiting & Soldier prep

- Future Soldier Trainer
- Virtual Army Experience
- Future Soldier Training System

# Tools to train the force



- Vehicle, weapon, & equipment trainers
- Simulators
  - Individual and Teams
- Biofeedback integration

# Leveraging game for an educator resource

- Activity Based, Hands-On Learning In:
  - Math & Science
  - Technology
  - Computer Science
  - Art, Animation, & Graphic Design
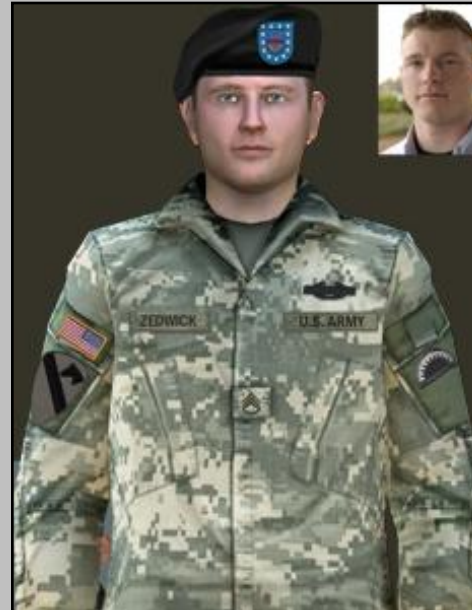  - Sports & Nutrition
- Real World Applications
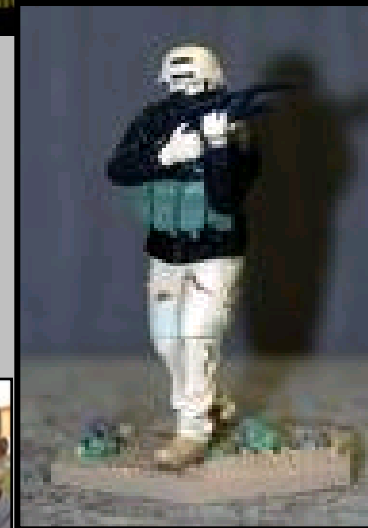- High-Tech Platforms

Real Heroes Program

Highlights the accomplishments of Soldiers who have distinguished themselves in combat.

They provide young adults with aspirational examples of how Soldiers from across America make profound contributions in the defense of freedom.

- **Program Features:**
  - *Videos*
  - *Web Content:*
    - *Photos*
    - *Biography*
    - *Ribbon Rack*
  - *In-Game Screen Characters*
  - *Action Figure*
  - *PR Campaign*

# Building awareness through stories

# ICT takes a different approach

- Discovery & research focus

- Pushing limits of AI and CGI

- Very strong education minded focus

- MANY projects



SGT Starr

# Gaming element still exists



Research Approach • Education • **Technology** • Leader Development • Conclusions

# Immersion to the next level

- Marines Immersive Infantry Trainer (Camp Pendleton)
- Shoothouse to another level
- Rapid decision making
- Unit level exercise

# What thoughts or questions do you have?



DUTY HONOR COUNTRY