

**Know Thy Learner: User Characteristics Underlying Effective
Videogame-Based Training**

by

Karin A. Orvis

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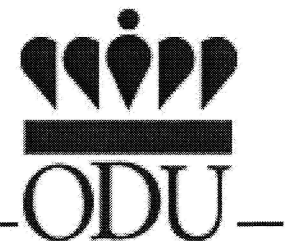
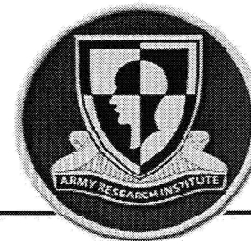
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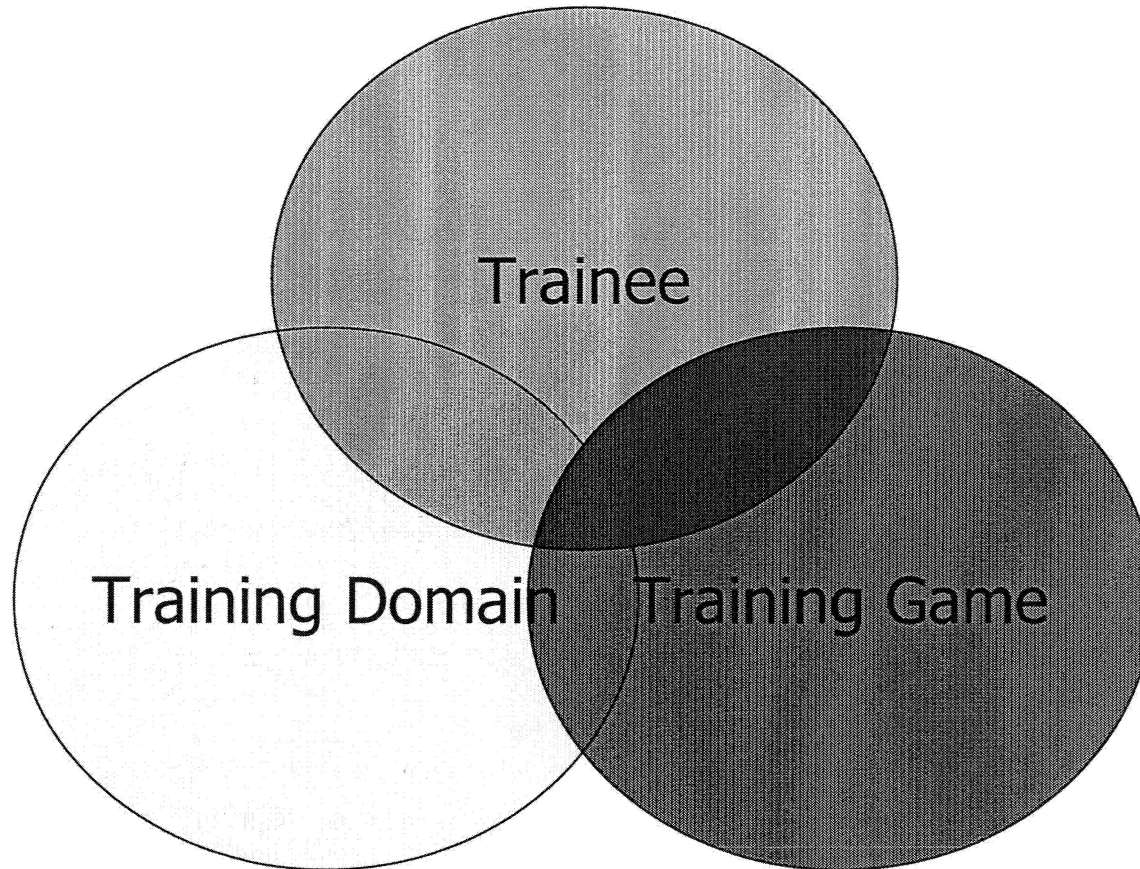
Games and the Army: More than FPS Games!



- Approximately 200 different jobs in the U.S. Army
 - Combat and non-combat skills

- One of the largest training organizations in the world
 - 1,714 courses, 451,000 seats
 - Targets various skill areas, such as physical, vocational, cognitive, and leadership skills

- PC videogame-based training tools
 - Immersive, motivational, economical, effective(?)
 - When are they appropriate?



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To build effective training games, you have to understand the role of three parts of the training system: training game, training domain, and trainee.

- Are (young) adults gamers?

- Does gaming experience impact a trainee's:

- Performance?
- Motivation?
- Satisfaction?



*"GameBoy: A Memoir of Addiction,"
by Ronald Markowitz."*

- Some proponents of training games argue that younger adults (Soldiers) are part of the “digital” or “twitch” generation, having grown up using computers and playing videogames (e.g., Prensky, 2001).
- The Entertainment Software Association (ESA) reports that 69% of American heads of households play computer and/or videogames.
- “65% of college students reported being regular or occasional game players” (Jones, 2003).

Are most young Soldiers “gamers”?



Participants and Procedure

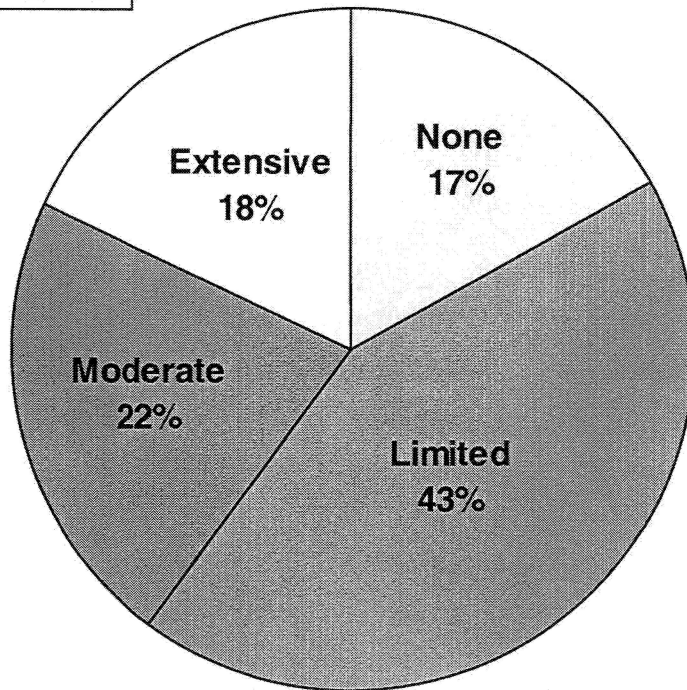
- * First-year U.S. Military Academy cadets across a two-year period
- * Participants used an online, FPP game as part of a tactics training exercise – *America’s Army (AA)*
- * Includes both single- and multi-player sections
 - Single-player: Introduces game-specific tasks (e.g., character movement)
 - Multi-player: Form small teams and play a series of collaborative missions

Gaming Experience: West Point Cadets

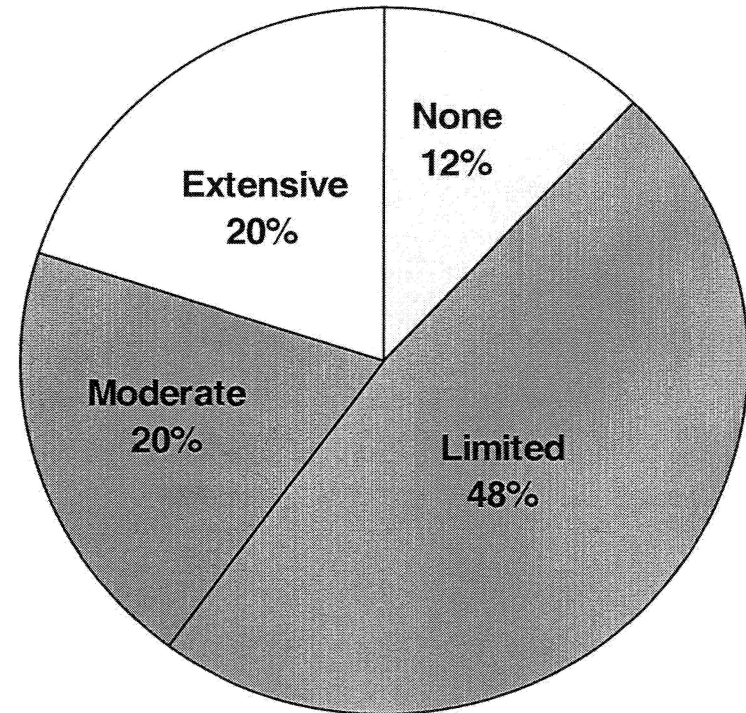


Percentage of responses in each category

Year 1



Year 2



Some cadets had extensive videogame experience. However, a majority had little or no experience in the prior year.

Participants

- Over 10,000 (non-deployed) U.S. Army Soldiers
 - 5,248 enlisted
 - 4,796 officers

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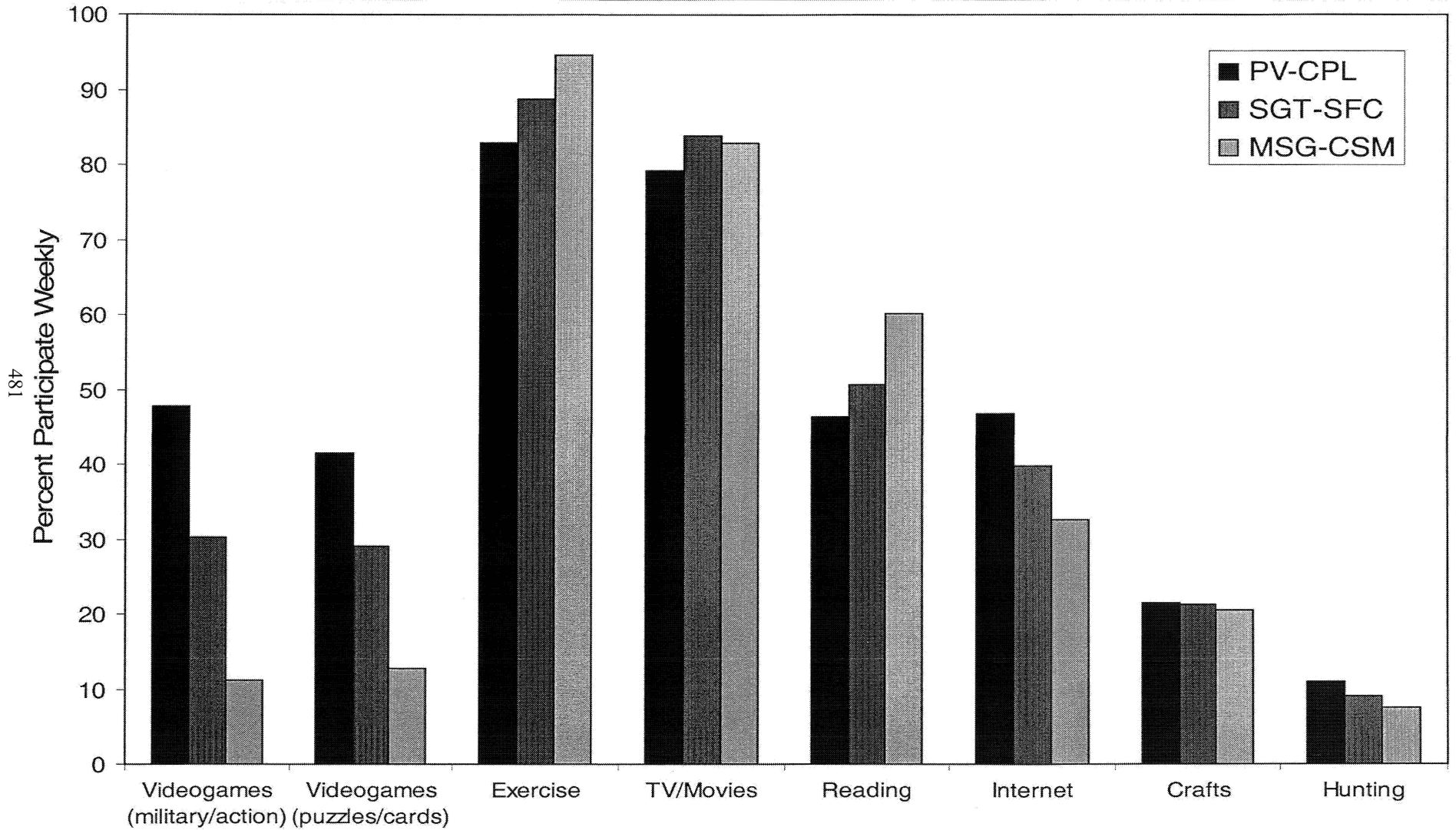
Survey - Sample Survey of Military Personnel

- 85 total questions
- 15 of which applied directly to our interests– investigating demographics, videogame and/or computer usage

When you are not deployed, how often to you participate in the following activities?

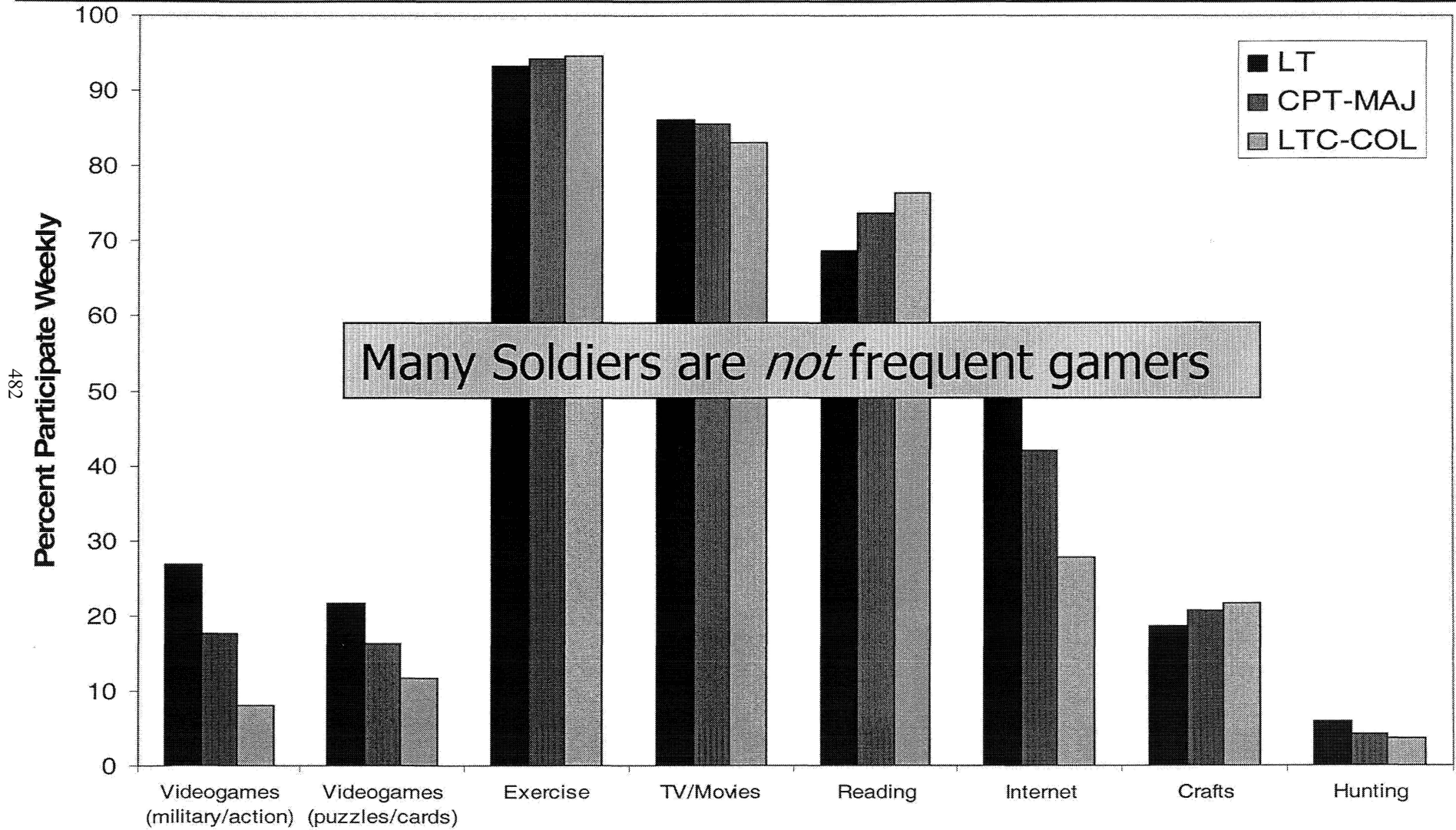


Enlisted Soldier Activity Frequency



High frequencies in Exercising and TV/Movies.

Officer Activity Frequency



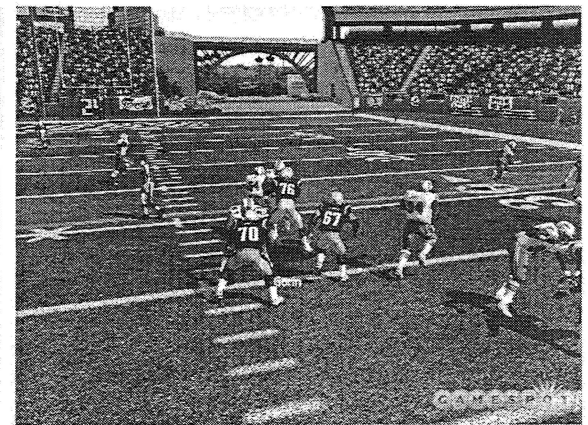
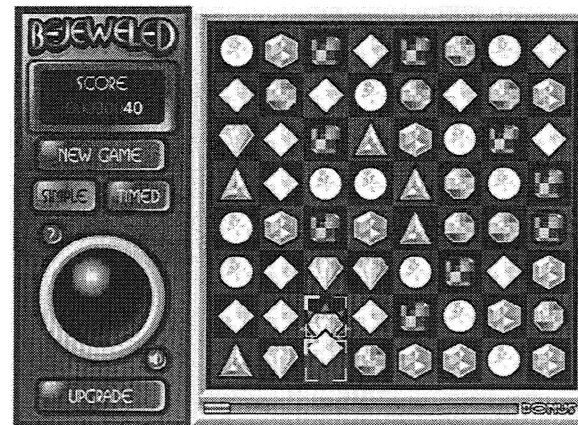
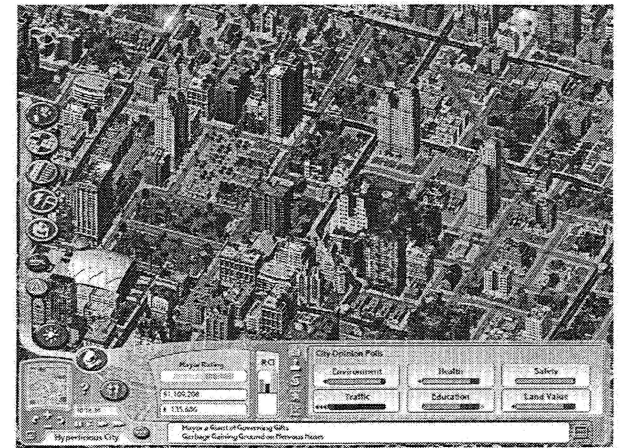
High frequencies in Exercising, TV/Movies, & Reading.

- There may be an influence of a trainee's prior videogame experience on performance and motivation in game-based training
 - Gamer vs. non-gamer
 - Genre-specific effects

Why Should This Matter?

- Genre-specific effects

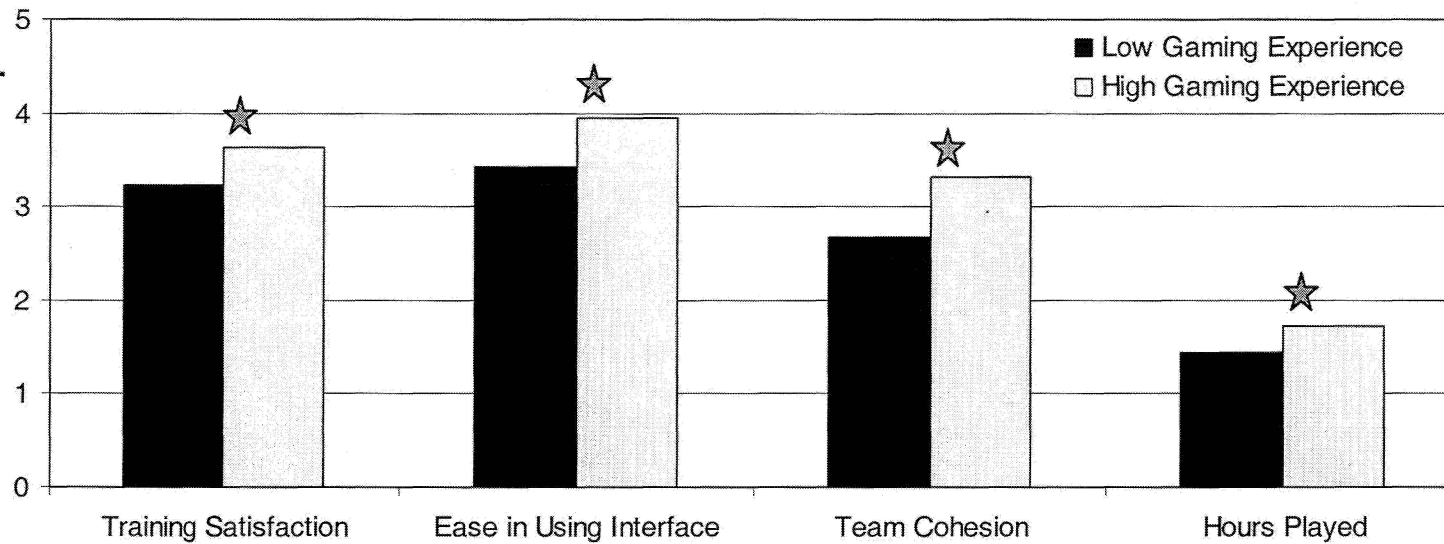
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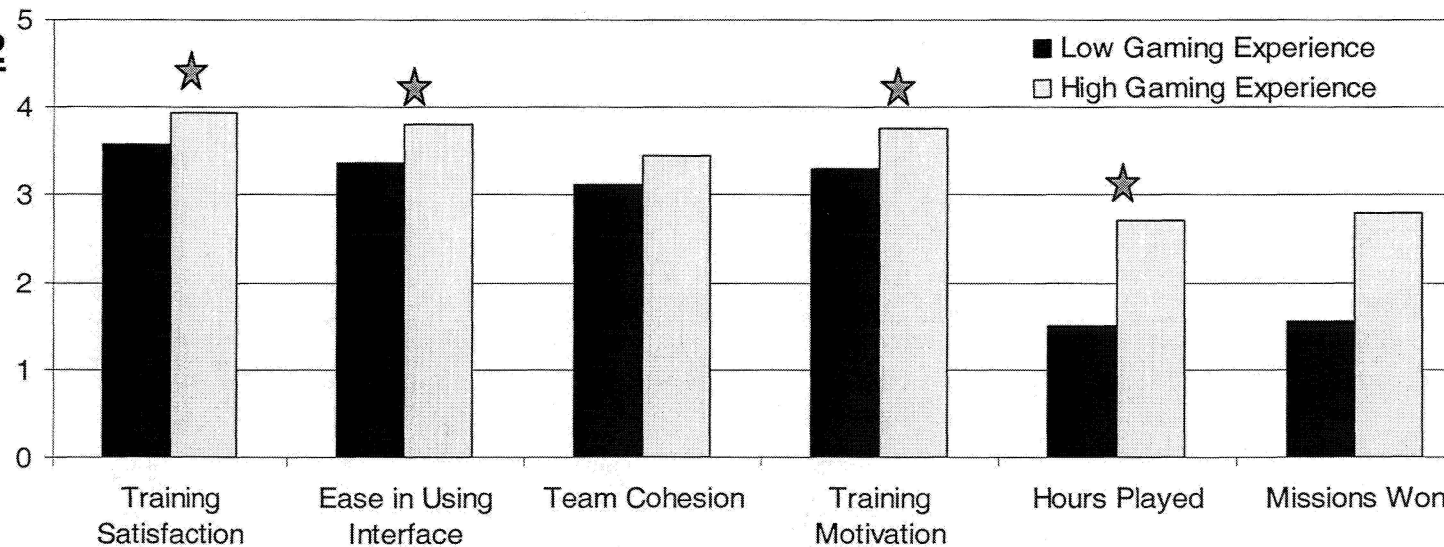
Research Findings on Prior Gaming Experience



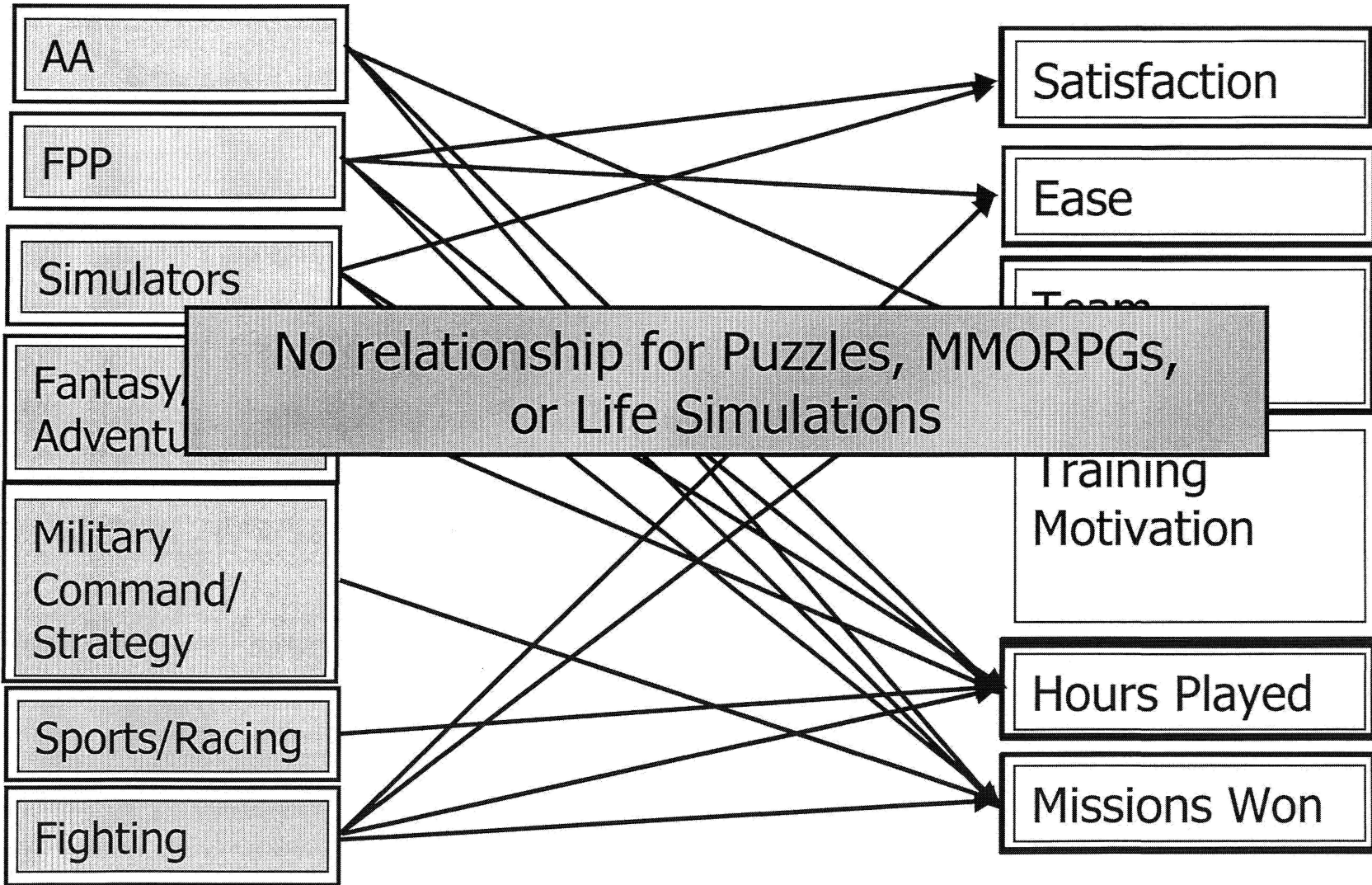
Year 1



Year 2



★ = $p < .05$



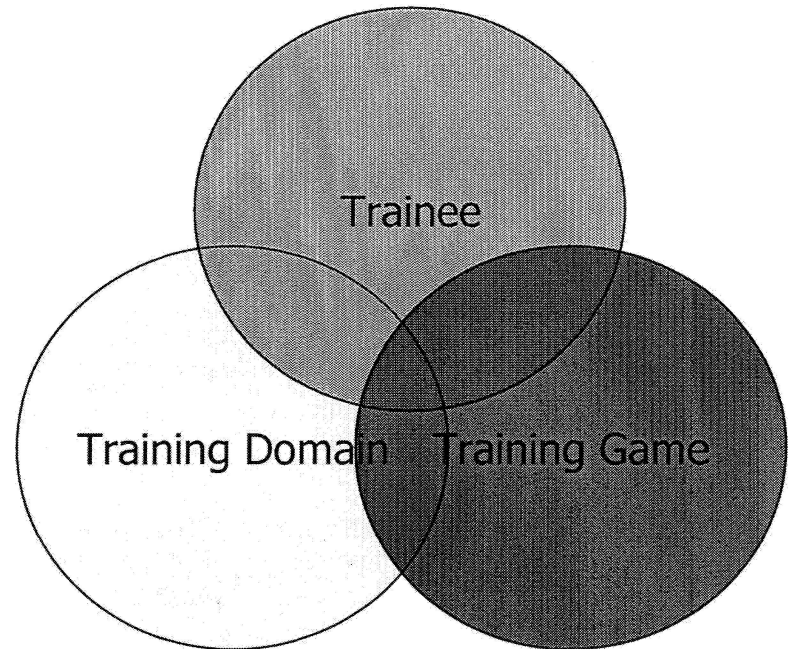
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- Not everyone is a gamer!
- Game 'literacy'
 - Affects outcomes in game-based training environments
 - *Specificity* of prior gaming experience matters
 - Use of pre-training interventions

**Learner success can be facilitated
if individual deficiencies
are identified and addressed before training.**

Questions?

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This document represents the opinions of the authors at the time of presentation. It does not necessarily represent the position of the U.S. Army Research Institute for the Behavioral and Social Sciences, Department of the Army or Department of Defense.

VI. Infrastructure, Integration, and Issues Session

From Infrastructure to Integration: Modeling, Simulation, and Game-Based Learning in the 21st Century Classroom