

Applied video game research

Jeffrey Goldstein

J.Goldstein@fss.uu.nl

Utrecht University

10 April 2006

Some uses of video games

- 1. VGs as performance measure, assessment (VGs as DV)**
- 2. Training, practice (VGs as IV)**
 - . cognitive & perceptual skills**
 - . biological & physiological functioning**
 - . social cohesion**
- 3. Entertainment (VGs as play)**

Job performance factors associated with play

- **perceived control**
- **positive emotions**
- **reduced stress**
- **incubation ('down time')**

Computer games at work

Job satisfaction

Computer game

Control group

pretest

2.10

2.33

posttest

2.47

2.41

change + 0.37

+ 0.08

$t = 2.10, df 21, p < .05$

From S. Bogers, et al. (2003). Computer games at work.

<http://www.gamesconference.org>

Video games and the elderly

	<u>Experimental</u>		<u>Control</u>	
	<u>Before</u>	<u>After</u>	<u>Before</u>	<u>After</u>
Reaction time* (msec)	1287	940	1269	1158
Stroop test (interference,secs.)	52	38	48	42
Well-being* (-5 to +5. Higher scores = more positive well-being)	2.1	1.9	2.2	0.6

*statistically significant difference between groups in change scores.

Source: J. Goldstein, et al. (1997). *Social Behavior & Personality*, 25, 345-352.

Types of learning from games

Content

facts

skills

judgment

reasoning

systems

Examples

laws, formulae, specs.

*interviewing, teaching,
project leader*

management, ethics

tactical thinking

*health care, complex
systems*

Games

memory

RPGs, adventure,
detective

RPGs,
multiplayer,
strategy

puzzles

simulation games

from Prensky 2005

Mind-operated devices

A person can learn to control a video game, the lighting in a room, or move a cursor on a computer monitor by controlling his or her physiology:

- brain wave patterns

- GSR

- HR

- body temperature

Entertainment

When freely chosen, entertainment can produce desired states such as relaxation or arousal, and can induce the range of human emotions that enrich daily life.

Multi-player games

Multiplayer games satisfy **socio-emotional needs** (e.g., affiliation, self-presentation). Even competitive games foster cooperation among participants, who play as equals and cooperate in sticking to the rules.

Virtual pets and robots require caretaking on a regular schedule, helping to maintain a daily routine and providing some of the comforts of social interaction.