

A Review of the Types of Simulations and their Effectiveness for Training

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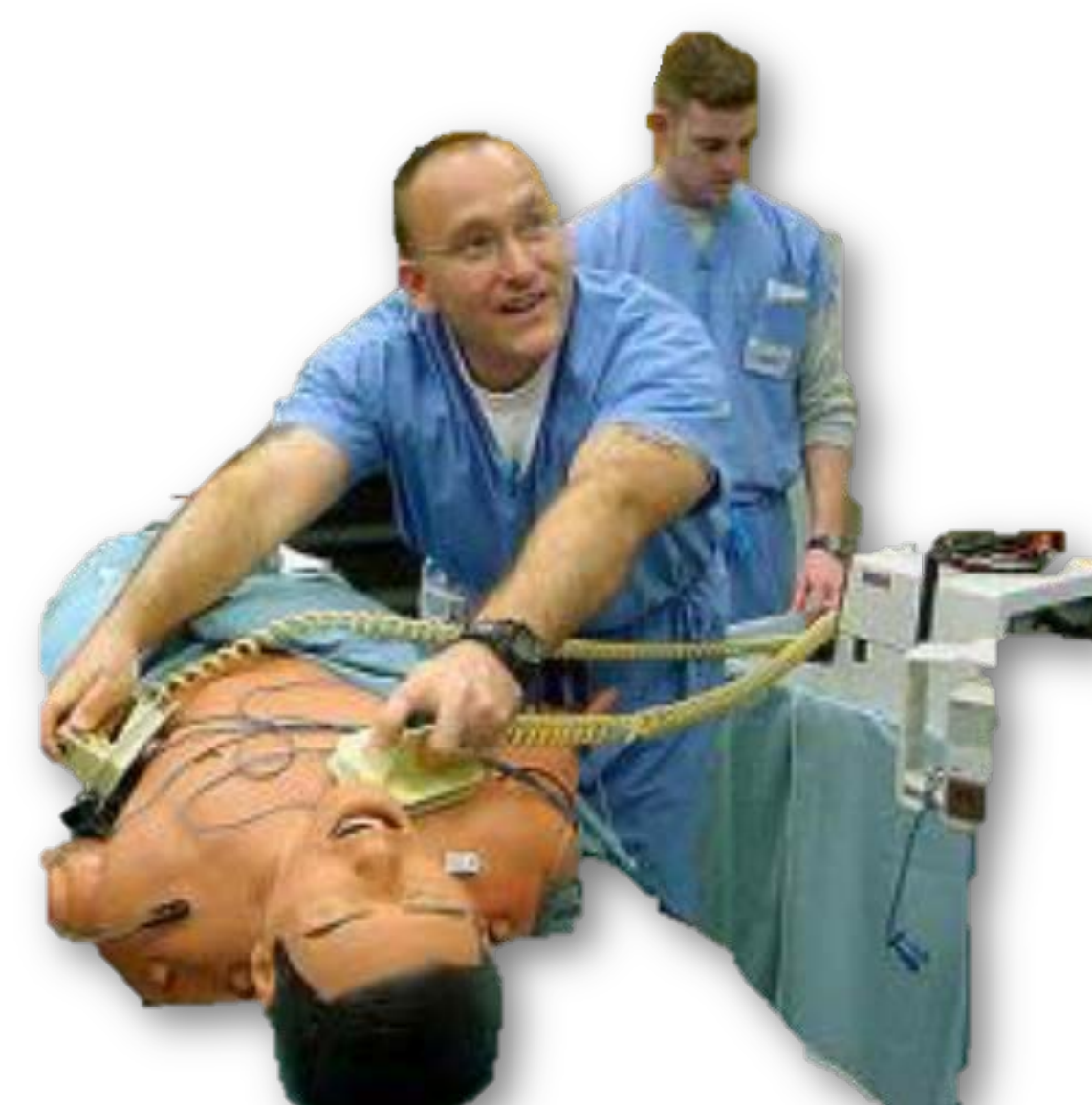


INTRODUCTION

- Advancements in technology have made interactive simulators feasible for training & assessment in other professions.
- Multiple advantages using simulators:
 - Minimize harm
 - Controlled environment
 - Consistency
 - Cost effective
- Few Behavior Analysts have taken advantage of using simulators.
 - Fewer have used technology-based simulations
- Our objective was to conduct a systematic review to determine:
 - How Behavior Analysts used simulations
 - Did they find it effective?

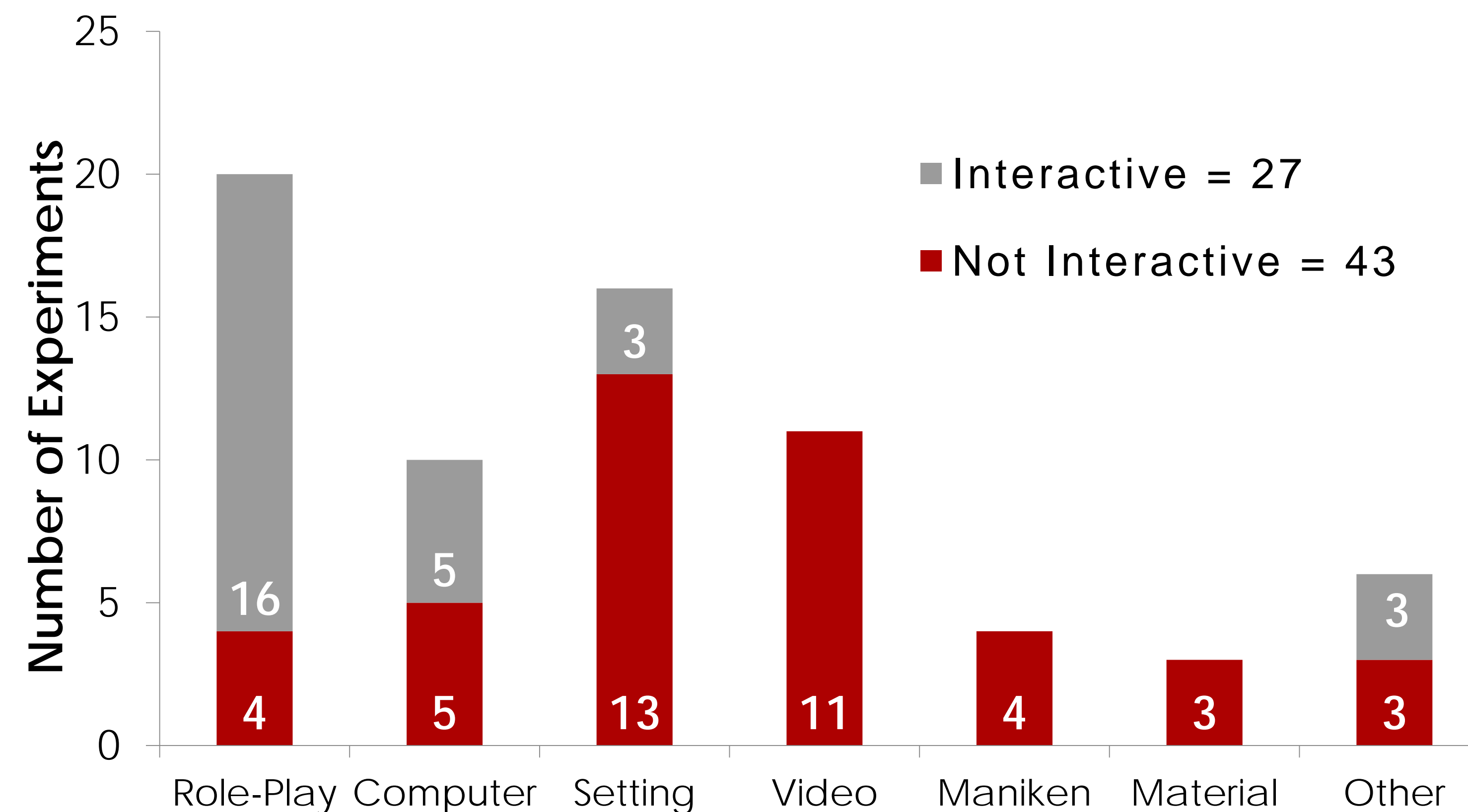
METHOD

- PsychINFO from January, 1968 – November, 2014
 - Journal of Applied Behavior Analysis, - field= publication name (SO)
 - AND simulat*
 - **Total of 71 articles**
- Exclusionary criteria
 - Data simulations
 - Articles with misidentified keyword
 - Articles retracted due to error (erratum)
 - **Total of 64 articles**
- Considered each experiment separately:
 - 4 articles had multiple experiments
 - **Total of 70 experiments**
- Categorized the simulations
 - Mediums
 - Interactive
 - Assessment
 - Training
 - Effective
 - Generalization



RESULTS

▼ **Figure 1. The mediums authors used for simulation**



▼ **Table 1. Simulations used for assessment only (Exp= 8)**

Authors	Simulated	Participants (N)	Area
Role Play			
Miller et al., (2010)	Student with disability	College students (7)	Caregiver's use of reprimands
Welch & Hoborn (1988)	Youth with delinquency	Child Care Workers (4)	Staff training
Miltenberger & Fuqua (1985)	Interview with clients	College Students (4)	Staff training
Setting			
Weatherly et al., (2009)	Casino environment	Woman (6)	Choice behavior and gambling
Other			
Thompson et al., (2011)	Infant	College students (11)	Caregiver behavior
Loeber (1971)	Patient head banging	Nursing staff (28)	Staff behavior
Loeber & Weisman (1975)	Client	Therapists	Staff behavior

▼ **Table 2. Simulations used for training & assessment. Of the 17 Experiments, 16 found the training effective.**

Authors	Simulated	Participants (N)	Area	Gen probe
Role Play				
Raising (1993)	Peer interaction	Children (20)	Soc. Skills	Y
Kohr et al., (1988)	Parent-Professional Interaction	Mothers (8)	Staff / Parent Training	Y
Neef et al., (1986)	Child- and parent- staff interactions	Respite Care Staff (6)	Staff Training	Y
		Respite Care Staff (18)		Y
		College Staff (9)		N
		Respite Care Staff (10)		N
Van den Pol et al., (1983)	Emergency situations	Direct Care Staff (13)	Staff Training	N
Iwata et al., (1982)	Clients during Interview	College Students (8)	Staff Training	Y
		College Students (7)		Y
Kifer et al., (1974)	Parent-Youth Interaction	Parent-Child Pairs (3)	Parent Training	Y
Iwata et al., (2000)	Clients; Functional Analysis	College Students (11)	Staff Training	N
Computer				
Johnson & Dixon (2009)	Board game	Children (7)	Conditional Discrimination	Y
Van den Pol et al., (1981)	Ordering Counter	Adults with Developmental Disabilities (3)	Self-Care & Adaptive Skills	Y
Arnold & Van Houten (2011)	Driving	College Students (4)	Assessment of Training Methods	N
Rantz & Van Houten (2011)	Aircraft	Pilots (6)	Aviation	N
Setting				
Slifer et al., (1993)	MRI machine	Children (4)	Adaptive Skills	N

DISCUSSION

- Few Behavior Analysts used technology-based simulations
 - Fewer used it to assess effects of client (or child) behavior on caregiver(s) behavior
- Experimenters who used simulations for training
 - Were effective
 - Skills generalized to real settings or situations
- Future researchers could examine
 - The verisimilitude required of simulators for generalization of skills.

