Designing Wiimprovisation for Mediation in Group Music Therapy with Children Suffering from Behavioral Disorders

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New interfaces for a new audience

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ACM SIGCHI IDC’09, June 3-5, Como

Designing Wiimprovisation for Mediation in Group Music Therapy with Children Suffering from Behavioral Disorders
Outline

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Health and Computer Music

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Health and Computer Games

Marble Mania, PDWii, Remission, Ico
Serious games, Games for Health

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Research Directions

Therapeutic instrument design:
• Iterative process (Action Research)
• Customization

Game-like motivational strategies:
• Fun
• Cultural background

Data collection and analysis:
• Sound and movement
• Visualization and segmentation
• Logistics
Technologies

WiiMote:
- Accelerometers
- Buttons and stick

Sound generation:
- MIDI
- Battery, Kontakt

Software:
- Glovepie
- MTTB, MT Logbook
- Reaper
Interaction Design

Objectives:
- Instinctive
- Robust
- Rich (exploration)

Triggering:
- Percussion gesture
- Two Wiimotes per patient
- Three volumes (acceleration)

Two button groups:
- Sound choice (A,B,D)
- Instrument choice (+,H,-)
Sound Palette

Broad spectrum:
• 16 instruments
• Melodic and percussive

Cultural diversity:
• Traditional or mainstream
• Organic or synthetic
Population and Protocol

Day care hospital:
• Children up to 12 years old
• Behavioral disorders
• “Roaming” therapeutic activities

Music therapy groups:
• Planned beforehand
• Focus on rhythm

Adapted Sonorous Communication:
• Playing together Vs communicating
• Specific timeline

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Results

Aura of fun:
• Referred to as “the Wii”
• From excitement to motivation
• Consistently chosen
• Same status as a normal instrument

Cultural levers:
• Attraction to mainstream, melodic instruments
• Curiosity for ethnic instruments
• Social value of musicianship
Results

Usability/robustness:
• 5 months of testing
• Intuitive triggering
• Sound navigation increasingly mastered

Participative design (Action Research):
• Feedback integration (patients and therapists)
• Self-esteem

Positive behavioral impact:
• Increased motivation
• Planning
• Focus (system failures)
Results

Corporality:
- No obvious lack
- Compensation with gestures and symbols
- Mediation is possible

Identity:
- Anxiety
- Importance of individuation
- Group solutions

Sonorous history:
- Larger sound palette
- New sounds => new responses
Viable approach:
• Feasibility proven
• Action Research efficient
• Motivation through fun and cultural levers

Promising psychodynamic observations:
• Mediation clearly possible
• Treatment acceptance (planning)
• New responses (identity, new sounds, etc.)

Permanent evolution:
• Motivation renewed via progressive empowerment
• Creation of a full-fledged treatment protocol
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Audio excerpts available at:

www.cri.ensmp.fr/mawii
Future Work

Personalization:
• Choice of a new instrument
• Recording of personal samples

Data collection and analysis:
• Synchrony
• Movement (motion capture at Paris Descartes)
• Group MT Logbook

Controlled experiment:
• Closed group, Wiimotes only
• Comparison with usual instruments
• Test of a full process