A Method to Turn Any Off-The-Shelf Game Into a Biofeedback Game

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Biofeedback Games

**Problem**
- Physiological Sensing of User State
- Alter Game

**Biofeedback helps** manage stress, relax and meditate, maintain focus, and manage anxiety

**Solution**
- Physiological Sensing of User State
- Alter Texture Overlay

Using off-the-shelf games with graphical overlays instead of custom solutions

Traditional Biofeedback Loop

Revised Biofeedback Loop

Using Graphical Overlays to Disrupt Screen

**Varies in real-time** according to physiological state
- **Can be customized** to the visual style of the game
- **Works with any AAA game** for a more engaging experience

**Evaluation**

12 week study with children with Fetal Alcohol Spectrum Disorder
- Participants played commercial games wearing Neurosky Mindset (EEG)
- Used theta/low beta to drive obfuscation

Motivation  | Control  | Challenge  | Fun  | System Efficacy
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Motivation Mechanism | Control | Challenge | Player Experience | System Efficacy

Theta / Low Beta

Obfuscation Range

http://hci.usask.ca