

# User Experience & User-Centered Design

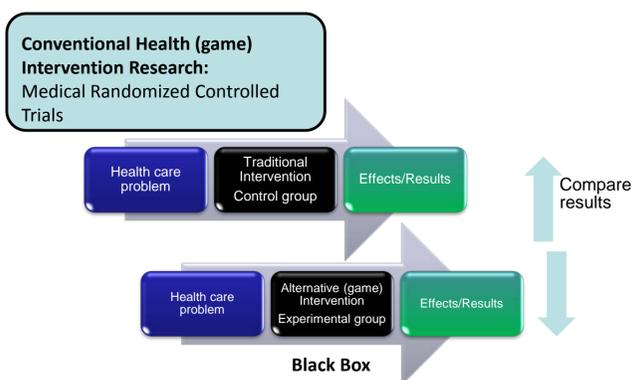
## Health Games User Research Model

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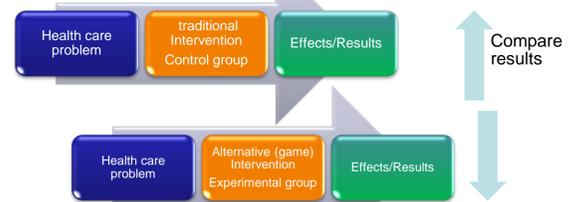


**Hanze University of Applied Sciences Groningen**

School of Communication, Media & IT



**Alternative Health (game) Intervention Research:**  
Medical Randomized Controlled Trials  
Plus additional construct validation research: to assess effectiveness and adequacy of the mapping of motivational and behavior change principles to game design principles



Phases	preproduction and prototype	implementation and testing
<b>Evaluation Methods</b>	focus groups	heuristic evaluation (including heuristics for playability)
	interviews	play testing (including biometrical measurements)
	informal play testing	observation
	questionnaires	(semi-structured) interviews
		quantitative comparisons of gamers' behaviors
		questionnaires focusing on users' attitudes & experiences

Theory/principle <i>Long term behavior change</i>	description/implementation	Theory/principle <i>Short term behavior change</i>	description/implementation
<b>Central route (ELM) (high elaboration, rational, meta-reflective)</b>	Medium to long term attitude, affective & cognitive change.	<b>Peripheral route ELM) (low elaboration, affective, superficial, impulsive)</b>	Short to medium term attitude & affective change
<b>Conditional for effective gameplay: optimal entertainment experience</b>			
Challenge, balancing complexity and competence: Flow. Rules, goals (concrete, achievable, rewarding)	Create game challenges that are not too complex, not too easy and gradually ascending in complexity. Render (meta) reflection	Challenge, balancing complexity and competence: Flow. Rules, goals: concrete, achievable, rewarding	Create game challenges that are not too complex, not too easy and gradually ascending in complexity. Stimulate flow
Fun (hard, serious) Immersion: sensory, challenge based, imaginative	hard fun: actions: goals, obstacles, strategy. Emotions: frustration, fiero, relief. Serious fun: actions: repetition, rhythm, collection; emotions: excitement, Zen focus,	Fun (easy, people) Immersion: sensory, challenge based, imaginative	Easy fun: actions: exploration, fantasy, creativity. Emotions: curiosity, surprise, wonder, awe. People fun: actions: communication, cooperation, competition;
<b>Persuasive principles</b>			
Narrative persuasion: narrative transportation, narrative identification, narrative perspective	Persuasive technique conceived to stimulate (meta-) reflection	Narrative persuasion: narrative transportation, narrative identification, narrative perspective	Persuasive technique conceived to avoid (meta-)reflection
Procedural rhetorics: arguments by goals & rules: stimulate (meta-) reflection	e.g. structurally allow bad behavior, suppress good		
Persuasive technology:	mechanics that stimulate tunneling, tailoring suggestion: self-monitoring: conditioning	Persuasive technology:	mechanics that stimulate reduction, tunneling, suggestion, tailoring, conditioning
Tools of Influence	Behavior is based on fixed action patterns Reciprocity, commitment and consistency, scarcity, authority	Tools of Influence	Behavior is based on fixed action patterns Social Proof, reciprocity, authority, liking
<b>Behavior change theories</b>			
Social Cognitive Theory	Stimulate (meta-)cognitive processes, symbolization, self-regulatory & self-reflective processes		
Self-Determination Theory	Stimulate intrinsic motivation (predicts initial and continued performance)	Self-Determination Theory	Stimulate extrinsic motivation: relies on external rewards and punishments
Theory of reasoned action/planned behavior	Inclination to behavior change depends on attitude towards new behavior & perception judgment of others, and on perceived control over behavior	Theory of reasoned action/planned behavior	Stimulate the perception that new behavior is easy to perform.
Transtheoretical Model of behavior change	Control and stimulate transition to next stage in behavior change process: stimulate user to think about (and reflect upon) making the move.	Protection motivation theory	Control persons perception towards threat severity, and perception towards protective behavior (self-efficacy).