Introducing the "Serious Games Mechanics":
A Theoretical Framework to Analyse Relationships Between "Game" and "Pedagogical Aspects" of Serious Games

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From a pedagogical perspective it is difficult to disassociate Game Mechanics (GMs) from educational components at implementation level. A Serious Game (SG) forms an entity for which its function is to educate and entertain through a single engaging experience. If, as we suggest, Serious Games Mechanics (SGMs) are represented at a higher-level of abstraction than GMs, crossovers between game and learning strategies that combine to form SGMs should be indistinguishable. Therefore, we propose that through dissecting a wide range of successful SGs and examining their individual learning and play components through the theoretical framework below, we can identify SGMs that have proven successful and advance towards a practical conceptual design tool for effectively implementing educational mechanisms for future SGs.

Instructural Design
The domain of pedagogy heavily fragmented and comprises a variety of different learning theories, each focusing on a particular view on learning and each focusing on a subset of variables, such as individual motivation, affect or social aspects of learning.

Learning Theories
Among the number of conflicting and often contradictory pedagogical theories, it was decided to structure our framework around Bloom’s Taxonomy of learning objectives \cite{1}, as Bloom’s provides an established scaffolding structure for learning objectives that often mirrors the learning found in game-play, and has previously been employed for the analysis of both Serious Game \cite{2} and entertainment game design. More appropriate structures may become apparent as we progress.

Serious Game Analysis towards a Serious Games Mechanic
We propose the concept of a Serious Game Mechanic, as the mechanisms linking pedagogy and gameplay. Through the analysis of existing Serious Games with the proposed framework, we aim to identify appropriate combinations of Learning and Game Mechanics that form successful SGMs.

References: