

Serious Game Mechanics, Workshop on the Ludo-Pedagogical Mechanism

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Abstract. Research in Serious Games (SG), as a whole, faces two main challenges in understanding the transition between the instructional design and actual game design implementation [1] and documenting an evidence-based mapping of game design patterns onto relevant pedagogical patterns [2]. From a practical perspective, this transition lacks methodology and requires a leap of faith from a prospective customer in the ability of a SG developer to deliver a game that will achieve the desired learning outcomes. This workshop aims to present and apply a preliminary exposition though a purpose-processing methodology to probe, from various SG design aspects, how serious game design patterns map with pedagogical practices

1 Organisers

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2 Length

The proposed workshop will last a day and will run as follow:

1. Invited talk on Serious Games Design - (45mn)

A short introduction to the main elements in SG design from a technical perspective will be given by Damian Brown (SGI, Denmark), whereas Dr Sylvester Arnab (Serious Game Institute, UK) will explain different pedagogical methods which support the game design process.

2. Short Introduction to Serious Games Mechanics (SGMs) - (15mn)

SGMs are seen as the relationship between pedagogical patterns and game design patterns [3]. The process of investigating the links between the two lies between the instructional design requirements and the actual game/game-play design. This is not obvious and direct links between the low-level game implementation aspects and high-level instructional design aspects of SGs remain obscure. This session will provide a definition of SGM and suggest a purpose-processing methodology (PPSM) to identify the link. This talk will also introduce the use of the PPSM towards identifying the role of narrative as a motivational and reflection tool in SG design. The PPSM could then be used as a design tool or an evaluation tool for SG design.

3. Game play session - (1 hour 30min)

During this session the participants will try out the presented methodological approach and framework. Participants will be divided in groups working with two different aims: 1) to analyse (and provide suggestions to improve) existing games; 2) to design new gameplays. The organizers will provide a set of state of the art SGs to be played and analysed. Participants, who would like to apply the framework to a specific game, must provide the organizer access to the game before March, 1. 2014

4. Game SGM analysis – (1 hour)

This is a two-step approach – 45mn for identifying SGMs from the game perspective and 15mn to generalize these SGMs away from a particular topic or game.

5. Mapping SGMs (45 min)

Groups exchange their set of SGMs and are provided with the SGMs identified in the Year 3 case study. Groups are then asked to comment on the sets provided to them. We will need a good questionnaire there. At the end of the exercise, the groups will be asked to link, map, SGMs collectively on a board.

6. SGM card game (1 hour)

This activity is based on the board game “cards against humanity”.

7. Filling questionnaire (40 min)

8. Expert panel (Games and Pedagogy) – (45 min)

Based upon the result of game play session, the expert panel will analyse, discuss and show how different aspects of the proposed methodological approach and framework can effectively support the design process, increasing the quality of the outcome and decreasing the time to market. The panel will also discuss typical challenges in the design process as well as challenges in finding the right SGMs for specific purposes.

3 The SGM Approach

Serious Games, like games in general represent a complex system of intertwined experiences influencing on one another so as to motivate a player not only to play and engage with a proposed experience, but also to express and reflect on a gaming activity during and after experiencing it. In this context, game activities, various levels of Game Mechanics, motivational elements, competition, challenge etc.. are all inter-related elements through which a gaming experience can be defined. Purposeful learning is in itself an aspect specific to Serious Games. The methodological approach towards identifying SGMs is a simple approach which focuses on the nature of Game Mechanics associated with the specific aspect of purposeful learning. All of these elements can be described in terms of Purpose, Process and Structure, in the sense that SGMs elements are designed for a reason and have a purpose with regards to a gaming and learning experience. This purpose is generally achieved through a process in which activities, information or events represent the structural tangible elements of the overall element described (Figure 1).

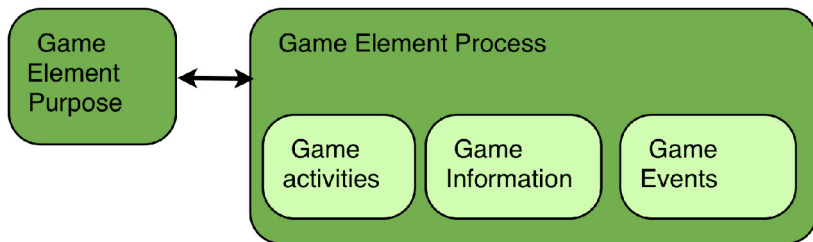


Fig. 1. SG element methodological approach

Example

The element of competition for instance could be defined at an abstract level as a process into which a player is provided with a task (score goals, collect things), presented with a challenge (score more goal than an opponent, collect things in a defined period of time) and ultimately made to review his/her performance (leader board, final score results). From a structural perspective, there are many elements determining the actual nature of the challenge and specific GMs can be identified as clear patterns for defining competition. For instance, a player Vs player competition will require specific elements that are not necessarily present in other types of

competitions related games. For instance a player vs player approach could be looking at mechanics related to a duel or a direct competition. A massively on-line multiplayer game will, however, implement different elements such as a leaderboard for instance. A leaderboard would serve no purpose in the player Vs player approach but would act as an essential mechanic in a multiplayer game. Finally each game or SG element has to have a purpose bounding the actual gaming system framework and set of activities to the player experience. In the case of a player Vs player approach, the purpose would be to provide a safe competitive environment for friends to interact or a framework to support social connection (i.e. the concept of party games etc.).

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