Toward Meta-Design to Enable Teachers Adapt Serious Games

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Meta-Design for Serious Games
The adoption of SGs remains scarce. Our investigations show that one of the reasons may be the reservations of teachers against SGs that cannot be adapted to a specific context or pedagogical needs. To enable teachers to co-design SGs during the use stage, we harness the approach of meta-design. Hence, we propose a model and an authoring tool that help teachers to adapt SGs to their specific teaching contexts.

MoPPLiq a Model for SG Scenarios
MoPPLiq (Modelisation des Parcours Pédago-Ludiques) is an explicit, visual and formal model meant to depict adaptable SG scenarios. It describes scenarios as a flow of activities (i.e. stages, levels, exercises) and relies on 3 main features:
- **output states** of activities that model choices and performances of the serious-players
- **input states** of activities that model activity behavior specific to the learner achievements
- **objectives** that label input and output states with prerequisites and achievements

APPLiq an Authoring Tool to (re)Design Scenarios
APPLiq (Adaptation des Parcours Pédago-Ludiques) is an authoring tool based on MoPPLiq. It enables teachers to (re)design SG scenarios. APPLiq has 3 main class of features:
- Tools to **visualize** and (re)**design** MoPPLiq scenarios
- Tools to **assist** and **check** during the design stage
- Tools to **share** and **collaborate** with the scenarios

Blockly Maze
Blockly Maze, designed by Google, is an SG meant to learn to code. We forked it to run MoPPLiq scenarios.

Try APPLiq at Home

Future Work
We are currently working on new APPLiq features to enable:
- Assistance with the flow of complexity
- Modelisation of SGs events
- Redesign the GUI

Keywords
- Meta-design
- Serious Games (SGs)
- Authoring Tools
- Scenario
- Adaptation
- Design patterns
- Model checking

CogCINEL Team @ ICAR Lab
CogCINEL: Cognition, Collaboration, Interactions En Ligne (Cognition, collaboration, online interactions)
The team research focuses on: verbal production and gesture, co-development of knowledge emerging in interactions, dynamics between emotions and argumentative interactions, as well as the establishment of an inter-in trade situations.

http://icar.univ-lyon2.fr/pages/equipe12.htm

