LEAP project

NEWSLETTER #4

LEAP games ready

Leap evaluation

After months of development and testing, the 3 LEAP serious games (*Scrum game*, *Dice of debt* and *5S*) presented in previous issues have been finally released. In order to guarantee that LEAP outcomes meet the end user needs (learners, teachers and industry), the project involved early on an evaluation strategy that generated feedback. This evaluation was performed internally by project partners and, most importantly, externally through the engagement of learners and teachers at several sites in Greece, Estonia, Spain, Portugal and UK. A participatory user-centered design strategy combined with formative evaluation has been applied throughout the games design so that it offered the chance as well as the right tools for researchers and game designers to develop and improve the games iteratively.

LEAP evaluation strategy is established through formative, quantitative and qualitative evaluation methodologies using focus-group discussions, observation sheets and questionnaires in data collection. The qualitative data has been used and analyzed under the perspective of ensuring objective feedback for LEAP games' functionalities and quality, relevance, acceptance and effectiveness of the games in higher education learning courses. This LEAP evaluation strategy provided a comprehensive guide on:

- Overall quality and usability.
- Relevance of the game to active teaching scenarios in different fields and contexts, industry processes, teachers' current knowledge and competences and students' current knowledge and competences (learning oucomes).
- Acceptance of the LEAP games.
- Instructional support.
- Effectiveness of the LEAP games.

Evaluation process

Evaluation took place in an on-going manner throughout the implementation period.

Stage 1 was related to participatory design and formative evaluation of LEAP games prototypes, namely alpha testing, during which:

The experts and teachers were engaged in participatory design sessions in order to help with the development of the games.

Project partners, researchers-educators and small student samples play-tested the LEAP serious game in its alpha and beta stage in order to report bugs and inconsistencies as well as to validate the functionalities of the game, using specific evaluation sheets.

Stage 2 refers to beta testing and summative evaluation of the LEAP games prototype. During this process the consortium pursued beta-testing the LEAP games in their actual (not yet finalized) version within real-life educational contexts in Greece, Spain, Portugal, Estonia, and the UK with the following planned sample sizes, which had been surpassed by far:

- In Greece (1 site): 70 higher education students
- In Estonia (1 site): 50 higher education students
- In Portugal (1 site): 50 higher education students
- In Spain (1 site): 50 higher education students
- In the UK (1 site): 50 higher education students

Farewell LEAP

The project has come to an end. However, all the resources and outcomes generated during the project, meaning serious games, learning sheets, manuals and even the source code, are available online in an open manner to be used by learners, teachers and interested institutions. These open resources can contribute to improve learners' agile skills and knowledge.

ΙΔΡΥΜΑ ΚΡΑΤΙΚΩΝ ΥΠΟΤΡΟΦΙΩΝ IKY

Erasmus+

KA2 Higher Education project
2016-1-EL01-KA203-023624

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Evaluation activities in 5 different countries

Greece

In Greece the LEAP project engaged in an active way a total of approximately 200 students of the University of Thessaly in the context of two different evaluation activities. The first one, during Fall 2017, got involved approximately 130 students of the University of Thessaly, since it was introduced in the elective course named "HY310 Educational Technologies", which is taught by Dr H. Tsalapatas. The second activity was based upon an evaluation activity that engaged students of the Polytechnic Faculty of the University of Thessaly.

Estonia

First, an external expert, Kadri-Liis Kusmin, was invited to give feedback to LEAP games and their value. After this, a second evaluation with users was performed. The evaluation of LEAP games was done in three sections. First group was master students of educational technology curriculum and there were two groups of first year bachelor students of informatics.

Spain

The evaluation at Uvigo was conducted with students on the Projects Lab subject. One of the main issues involved in this subject is team work performed by students and the development of an engineering project of product. In this context, the application of Lean and Agile methodologies seems very appropriate in order to support team communication, coordination and management as well as the different stages involved in the development of new innovative products towards the provision of value to final users.

Portugal

In Portugal, the LEAP project was used and tested by a set of students from the Engineering College of the Porto Polytechnic, at the MSc level, in a total of 60 students, 42 from the MSC in Computer Engineering (2 groups) and 18 from the MSc in Electrical Engineering (1 group). Students had between 23 and 30 years-old with a majority of men (48).

All the students were familiar with Agile development methodologies and Lean but in different scales.

U.K.

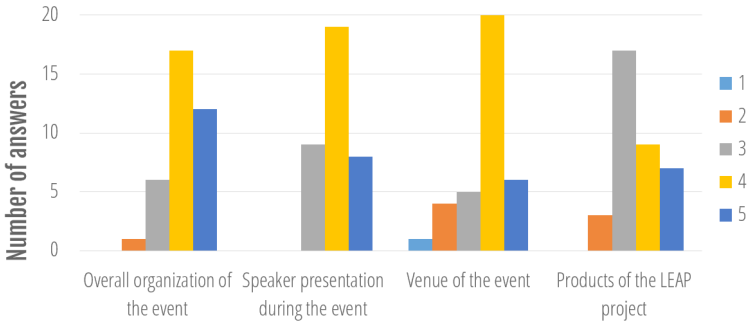
The first evaluation was conducted with students on first year Interactive Applications module. A follow-on evaluation was conducted with students from the MSc Computing, MSc Information Security and MSc Interaction Design groups.

Conclusions

The LEAP games were evaluated on many stages and different contexts. There were a lot of valuators from a vast variety of backgrounds, from students to experts. The feedback from the evaluation events and experts was integrated into the software and support materials.

The games provide a good material for teachers to talk about emerging practices in industry such as agile and lean. The games offer many teaching scenarios such as individual learning when students play the games individually and learn about the different methodology. Flipped classroom where students play the games at home and then in class they discuss what they have learned. Also a scaffolding approach can be taken when the students play the game and the teachers acts as a scaffold when the students get stuck. Or even semi-constructivism approach where the students play for a while and then stop and teacher talks what they have learned, they play again and then teacher stops and talks again.

The evaluation results are compiled into a publicly accessible report through which interested parties should be able to get practical feedback on how to best integrate the LEAP proposed methodologies and tools into their own instructional practices.



Event classification Number of answers per area. 5 is the highest score.

Multiplier events

Three multiplier events were held in Portugal, Estonia and UK during the late spring. The first one was held in Porto (Portugal) on April 13, 2018. This international event was jointly organized by Porto Polytechnic (ISEP) and the University of Vigo, and it was attended by 98 individuals. Following, two more events were held in Tallinn (Estonia) and Preston (UK) on May 23rd. During the 3 events, presentations were provided by LEAP partners, introducing the project and the games. Besides, software companies like Optare Solutions (Spain) and Magna Digital (UK) contributed with talks about Agile development in industry. Afther the demonstrations, participants were able to try the LEAP software and provided us with valuable feedback. The events were also an opportunity to discuss the advantages and drawbacks of lean and agile approaches and to network with industrial visitors interested in the project.

Partners

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