

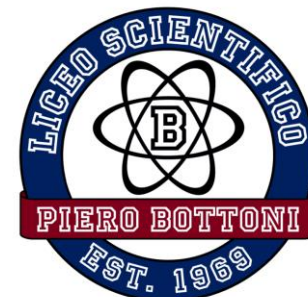
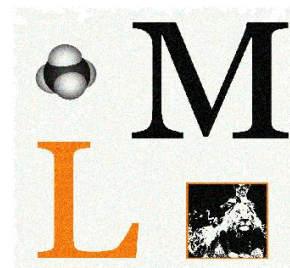


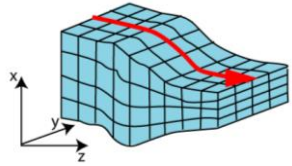
Renovatio Quest: Engaging Students in Mathematics and Physics through Video Games

Friday 30, June 2023

Enea Montoli

Liceo Scientifico Statale 'Piero Bottoni', Milano, Italy





MSc, Physics
PhD, Climate Dynamics

High School teacher of
Mathematics
and Physics



Forbes

Dec 27, 2020, 08:23am EST | 11,527 views

Making Students Love Math And Physics Through A Videogame? Here's How An Italian Teacher Did It

Irene Dominioni Contributor
Travel
I write about lifestyle in all its forms, from social to cultural aspects

Videogiochi in cattedra

Avventure interattive per risolvere problemi di Matematica e Fisica. Le lezioni hanno un formato che deriva dai social network. E alcuni online anche fuori orario. E adesso i colleghi mi copiano

Renovatio Quest



Who I Am

Metano Leoni Industries

Enea Montoli

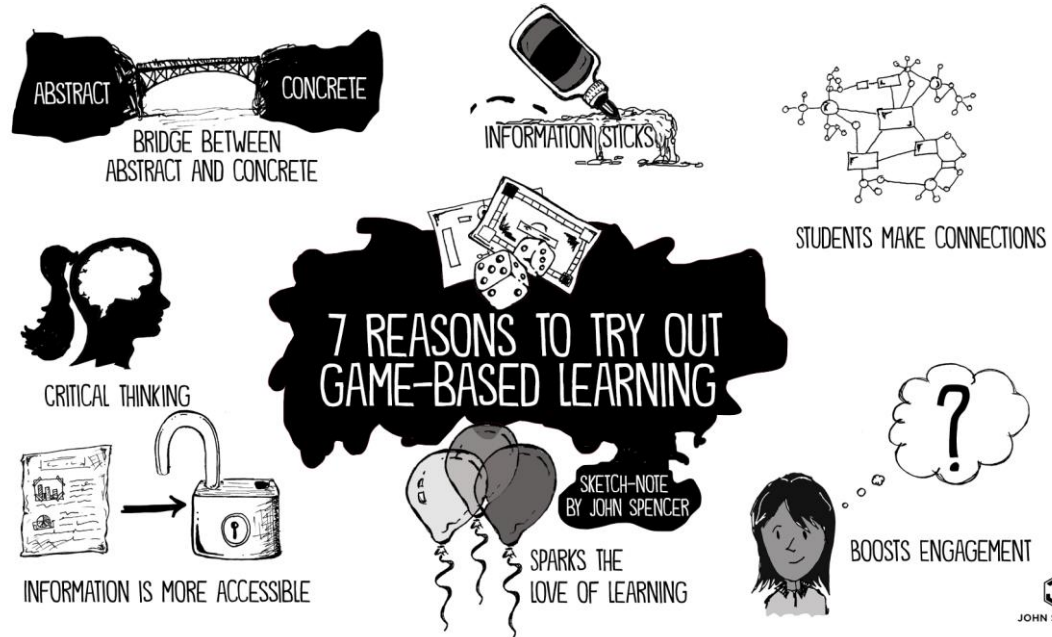


Introduction

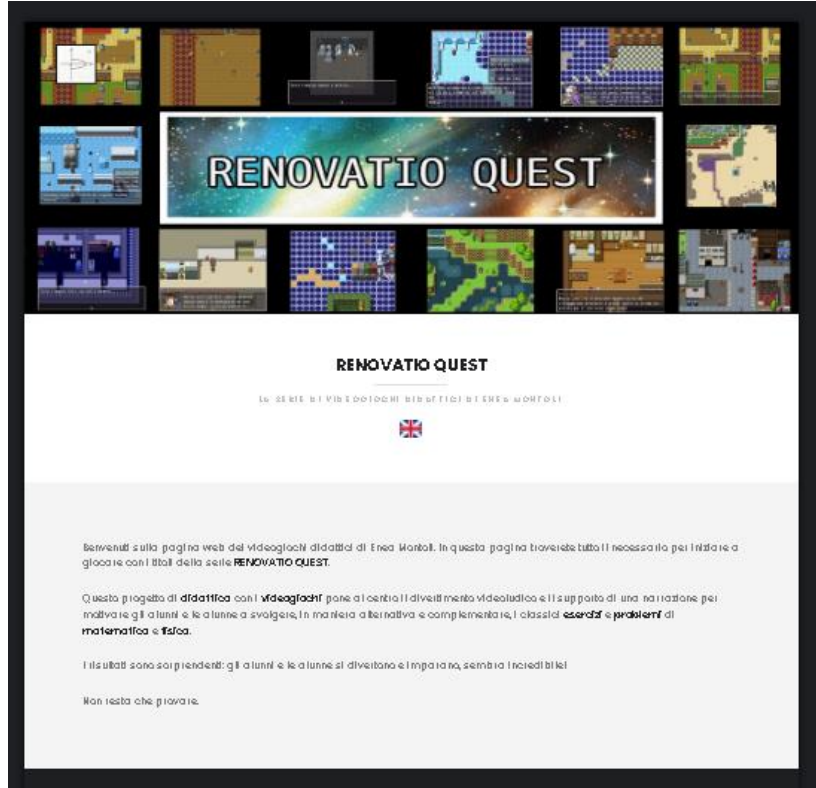
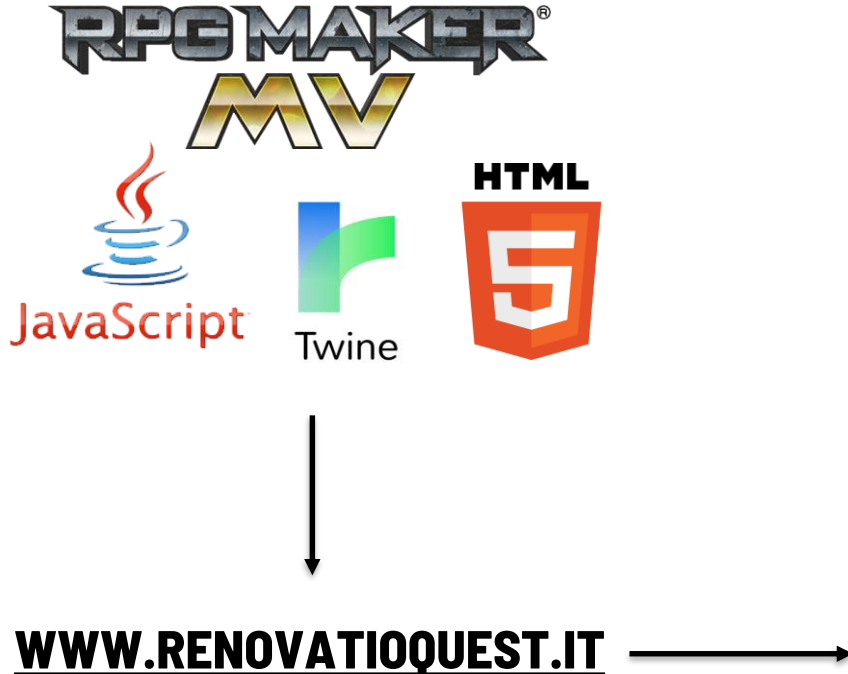
Game Based Learning + Storytelling



Serious Games



Methodology





First year



Second year



Fourth year

Role Playing Games



Multilevel game

24 levels
A level for a topic

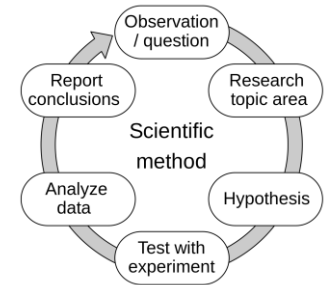
Digital Gamebook



Methodology



Maze and Scientific Method





Fighting the Odds

$$P(H|D) = \frac{P(D|H) \cdot P(H)}{P(D)}$$

where :

$P(H|D)$ = posterior probability

$P(D|H)$ = likelihood

$P(H)$ = prior probability

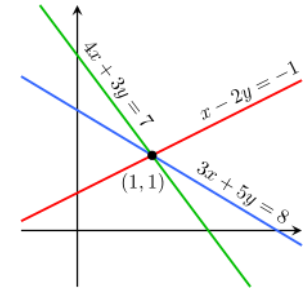
$P(D)$ = total probability

21:43

Capitano Teach:
 La prima parte del tesoro è sepolta nel punto in cui si sono incontrati due pirati che camminavano lungo queste due rette:

- 1) $5X + Y = 20$
- 2) $5X + 7Y = 20$

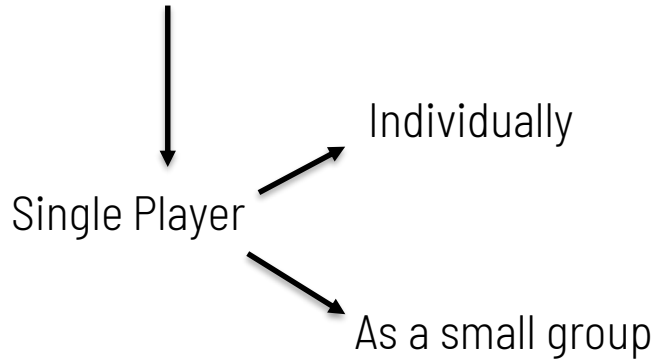
Pirates and Linear Systems



Methodology

Integration into the educational context

- Introduction
 - Review
 - Consolidation
-
- Classroom
 - Homework



- Game score into a grade
- Final ranking

PRIZES



Results

- Experience in classroom
- Self-reported from students
- Testimonial from other teachers



- 1. Increase in students' engagement**
- 2. Inclusive educative environment for students with learning difficulties**
- 3. Project's scalability**



TEACHERS' SKEPTICISM



NUMBERS

- 27,709 unique visits since January 2021
- More than 50 teachers
- About 5000 students



Enea Montoli <enea.montoli@gmail.com>

a

Carissimi,

con questa e-mail apro ufficialmente la **competizione** videoludica.

gio 26 dic 2019, 14:17



a me ▾

Spero di essere ad un punto decente uscito, comunque complimenti per il livello prof

gio 26 dic 2019, 19:38



calcolando che sono sul gioco da quando è

Future Work

1. Expand the portfolio of games and topics



2. Collection of data for quantitative results



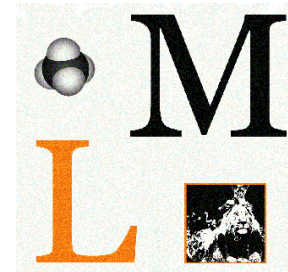
3. Full translation to English



THANK YOU

Questions?

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Thanks to



<https://gofund.me/02b9e5f3>