

Clash of Wizardry, E-MaGIC Erasmus+ project

The mathemagic game - Education in mathematics in game-based immersive contexts (E-MaGIC)

Description

Clash of Wizardry is a fast-paced game of magic duels in which wizards (players) try to win fame in the arena by casting spells quickly and mastering the most powerful spells. Spells are triggered by equalizing magic energies represented as energy clouds, which essentially means solving mathematical equations. The game rewards the players with success if they play fast and choose more challenging spells (harder equations). The game never forces a difficulty level on the players, giving them free choice in the spell selection. The player can play single duels against test opponents or other players, or join a room and compete in a league-style contest.

The game stands out from other learning games because it effectively integrates the learning content into the game while hiding it behind the fun element (the player feels the excitement of casting spells without realising that they are solving equations), making it attractive for students.

Moreover, Clash of Wizardry provides an easy way for teachers to try out an app-supported teaching approach that can be consulted in the Teachers' Handbook, which also includes teaching support materials.

The game's nature makes it compatible with numerous other approaches that focus on changing the way maths is taught in class. However, no matter how well maths is taught and how much the teacher encourages the students, part of having good basic maths skills is practicing. Therefore, the game serves as a training tool that students will be motivated to use outside of class.

Clash of Wizardry was developed and optimised for mobile devices (tablets and smartphones). It is available for free on Google Play (Android) and the App Store (iOS).

Beneficiaries

Learners with low confidence and/or low motivation

Young people with complex needs (e.g. health issues, in poverty, with caring responsibilities, socially disadvantaged, living in a remote location)

Young people with disabilities and/or special educational needs (SEN)

VET students (school-based learning)

The game Clash of Wizardry has proven potential to increase maths skills in young learners: students aged from 12 to 18 years old. Regarding their profiles, the game targets everyone regardless of their gender and school enrolment (general education and special needs education) with special focus on disadvantaged learners (those with learning difficulties derived from cognitive impairments and from living in vulnerable social and economic contexts). The game appeals to girls and boys equally, having chosen a Harry Potter like setting which thematically has a large following among young people. By promoting their motivation towards maths, the game aims to stimulate interest in pursuing STEM studies.

Through the game Clash of Wizardry and the Teacher Handbook, maths teachers benefit

from an innovative teaching approach which can help support students' training of mathematics skills while enriching their own teaching practice.

Target groups:

Math teachers

Students aged from 12 to 18 years old.

Countries



Germany



Greece



Italy



Portugal

Country/ies or organisation that developed the tool

Direção Regional de Educação (Madeira, Portugal)

Ingenious Knowledge (Cologne, Germany)

I.I.S. Leonardo da Vinci-Nitti (Potenza, Italy)

E.E.G. Acharnon (Athens, Greece)

The game is translated into English, Portuguese, German, Italian, and Greek.

Date of creation of toolkit and periodicity of updates

Year of creation:

2019

Updates periodicity:

Annual

Purpose of the toolkit

The main purpose of the game Clash of Wizardry is to be used by students as a ludic tool to train maths skills, as well as a didactic tool for teachers to use in classrooms.

The game Clash of Wizardry and the Teacher Handbook aims at contributing to embrace diversity in schools because it is possible to be used with differentiated pedagogical approaches.

Type of guidance given to users

Clash of Wizardry includes an in-game extended video tutorial with exploring the game and how to play features.

The Teachers' Handbook provides further explanation about the game and the app-supported teaching approach, including teaching support materials.

Source of information of the different tools

E-MaGIC (Education in Mathematics in Game-based Immersive Contexts) is a project that gathers teachers, programmers, and researchers from GMTE - Direção Regional de

Educação (Funchal, Portugal), Ingenious Knowledge (Cologne, Germany), IIS Leonardo da Vinci - Nitti (Potenza, Italy) and Acharnes Vocational Special Education School (Athens, Greece) sponsored by the Portuguese Erasmus+ Education and Training National Agency. In the two years between 2017 and 2019 this multidisciplinary consortium consisting of a software development company and teachers from different backgrounds and know-how, developed a cutting-edge educational game for mobile devices: Clash of Wizardry. The development of Clash of Wizardry followed academic research standards, starting from a theoretical foundation on educational games and their impact on students' learning, followed by research on students' game preferences, game concept development, and finally field test trials involving students and teachers who provided their essential feedback for further improvements included in Clash of Wizardry final version. To date, the following articles have been published about the project and the game's development:

- Pechuel, R. & Beutner, M. (2019). Math or Magic? Creating a Serious Games through Design-Based Research. In: K. Graziano (Ed.), Proceedings of Society for Information Technology & Teacher Education International Conference (pp. 753-760). Las Vegas, NV, United States: Association for the Advancement of Computing in Education (AACE). Retrieved October 21, 2019 from <https://www.learntechlib.org/primary/p/207728/>.
- Ferreira, L., Garcês, E., Azevedo, M. (2019). Clash of Wizardry - Um Jogo Matemático. In: Casa das Ciências (Ed.), VI Encontro Internacional da Casa das Ciências - Ensino das Ciências e a Sociedade Moderna (pp. 9-10). Lisbon, Portugal: Casa das Ciências - EDULOG - Fundação Belmiro de Azevedo. Retrieved October 21, 2019 from <https://www.casadasciencias.org/6encontrointernacional/comunicacoes.php>.
- Capone, R., Barbieri, R., Barbieri, G. (2019). I Serious Games per una didattica della matematica inclusiva. In: Benedetto di Paola (Ed.), GIMat 2019 - Giornate di Studio dell'Insegnante di Matematica (pp. 95-96). Palermo, Italy: Dipartimento Di Matematica e Informatica Università di Palermo. Retrieved October 21, 2019 from <https://www.ejmste.com/article/serious-games-in-high-school-mathematics-lessons-an-embedded-case-study-in-europe-10857>

Link/s to the toolkit and further information

Clash of Wizardry | Get it on Google Play:
<https://bit.ly/3YL578R>

Clash of Wizardry | Download on the App Store:
<https://apple.co/3Jn51jb>

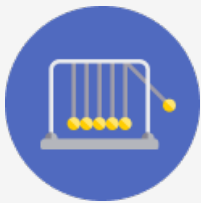
Teachers' Handbook | Available for free at E-MaGIC Project website:
<http://emagic.eduproject.eu/#4>

E-MaGIC Project website:
<http://emagic.eduproject.eu/#1>

Erasmus+ Project Results website
<https://erasmus-plus.ec.europa.eu/projects/search/details/2017-1-PT01-KA201-035847>

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Website: <http://emagic.eduproject.eu/>

Related intervention approaches



Building motivation to learn

Source URL: <https://www.cedefop.europa.eu/en/en/tools/vet-toolkit-tackling-early-leaving/resources/clash-wizardry-e-magic-erasmus-project>