Location Based Games

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The digital tools in WaterSTEAM

Augmented Reality

Augmented reality is used to enhance natural environments or situations and offer perceptually enriched experiences. The information about the surrounding real world of the user becomes interactive and digitally manipulated. Information about the environment and its objects is **overlaid** on the real world.

Why AR in WaterSTEAM?

Because Augmented Reality helps us connect learning content to the real-world locations.

Proposed ICT tools (Augmented Reality)
Criteria

- **Open source and free of charge**, in order to make sure they can be easily adopted within a variety of learning frameworks, both formal and informal.

- **Easy to apply**, without demanding any expertise in programming. Friendly user interfaces in editor mode, inviting developers/editors to explore their capabilities and experiment.

- **Great potential for learning and awareness raising**, tested before regarding their learning and awareness raising potential. They can facilitate learning both during their development and afterwards, as finished and freely available learning tools.

Proposed ICT tools (Augmented Reality)
Criteria

- **Facilitating engagement and participation of users**, through the tools' AR features, encouraging active participation and stimulating the interest of students.

- **Suitability of AR features**, regarding their integration in the WaterSTEAM methodology and helping achieve the learning and awareness raising objectives outlined.

- **Stability and support**, documenting their limitations regarding different operating systems for mobile devices, and including a support centre or an active online support community.

SIFTR

What is it?

An open and free platform for **collaborative mapping**, accessible both from desktop devices as well as from mobile devices, offering the opportunity to develop collaborative learning activities with reference to the real world, without any particular prior digital skills – facilitating learning in the real world.

What does it do?

It allows a facilitator to create a framework for mapping input according to a certain theme, and then let a group use their smartphones to go out and document geographically relevant material.

It gathers this input in the form of **photos**, **text** and of course **location**, and illustrates it so that it is easy to view and discuss the data as a group on a larger display together.

An additional feature of Siftr is the ability to **interact** by adding comments and "liking" certain input (similar to "like" on Facebook). The input is uploaded online on the spot through a smartphone or a tablet, or through a computer by uploading material online.

SIFTR
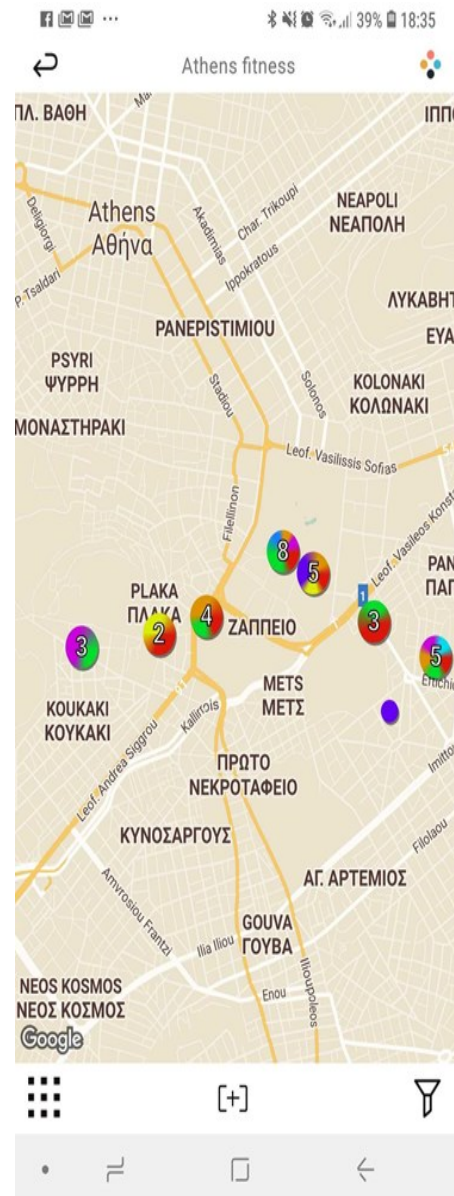
SIFTR

SIFTR

Siftr can be used for:

- facilitating collaboration between the students, the teachers and external experts involved,
- gathering geographically related input from smaller or larger groups,
- providing an excellent tool for discussion and presentation of ideas in class.

SIFTR can be used in all phases of the WaterSTEAM learning methodology

Orientation: In relation to the initial field trip(s) to local water landscape(s), to introduce the landscape concept through tracing different types of landscapes, raising awareness about different perceptions of the landscape held by different persons, and discussing later in class or online, highlighting common misconceptions

Conceptualisation: To identify and document challenges connected to the landscapes visited through photos and text, comment and "like" the water landscape and the challenges they are interested in investigating. In this way, Siftr can help the students formulate their research questions or hypothesis. Students and teachers can also comment on the input gathered in Siftr, and raise issues for discussion in class.

SIFTR can be used in all phases of the WaterSTEAM learning methodology

Investigation: As a survey tool in order to gather perceptions of school students or the local community on challenges identified and/or proposals for protection/management/planning regarding the water landscape in focus. The data gathered on Siftr can be exported in CSV format so it can be further processed in Spreadsheet applications like Excel.

Conclusion: All input (location, photos, text, responses to multiple choice questions etc.) is available online and can be presented to the class during the Conclusion phase to complement the formulation of the project findings

Discussion: Siftr can be a valuable presentation tool, facilitating discussion and participation of the whole school and the wider local community, raising awareness on landscape challenges and proposals for protection, management or planning.

SIFTR - an example

https://siftr.org/watersteam

Location-Based Game

What is it?

A location-based game (LBG) is defined as a form of play designed to evolve on a device in motion, directly linking the game experience with the location of the player.

What does it do?

Offers great educational possibilities in place-based learning, as it allows educators and facilitators of learning to create experiences rich in educational content. LBGs can be compelling for young players as well as adults.

Connects places with stories.

Due to the fuzzy border between games and real world activities, players become involved and associate with the LBG, thus gaining stronger emotions and satisfaction, as well as effective learning.

Location-Based Game

Location-based games platforms

Taleblazer   www.taleblazer.org

Enigmapp   www.enigmapp.fr

ARIS   www.arisgames.org

Location-Based Game
Application in the WaterSTEAM methodology

In an LBG, you can embed extra layers of information and narratives about, for example, the **development of local water landscapes and the reasons** (historical, environmental, etc.) **behind their change over time and/or the challenges they face nowadays**, thus transferring knowledge as well as promoting desirable attitudes and behaviours. By visiting real landscapes, **the story becomes a personal experience linking physical elements with learning content**. This conveys to the player location-specific knowledge and **promotes behaviours** through experiential learning, exploiting the connection between the real world and the game.

Location-Based Games are platforms that can effectively **merge knowledge from different disciplines through the development of the game narrative**, and **enrich gameplay with multimedia** (images, photos, drawings, audio and video) that upgrade the players' gaming and educational experience. Students can use the material they collect through the different phases of the WaterSTEAM methodology, from all disciplines included, to build the game narrative and the game material.

The development of the LBG is foreseen to take place in the last phase "**Discussion**", aiming **to synthetically present the findings and proposals developed** throughout the WaterSTEAM school project on the theme of protection/management/planning of a local water landscape to the wider school education community as well as the local community and local authority.

Location-Based Game Application in the WaterSTEAM methodology

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