TRAINERS 4CREATIVITY

MERGE CUBE

Synopsis

This case study is about doing dedicated training sessions using the Merge Cube, an Augmented Reality (AR) device created by the US company Merge EDU. The concept behind this cube is simple: it has recognizable facets which can be easily scanned by a mobile device's camera to define a 3D space where another 3D object will be shown. Merge Edu provides 3 apps to use with the Cube (available both on iOS & Android) which have different purposes. The Merge Hologlobe app will display an Earth globe and propose several options to visualize multiple aspects (population, weather…) around the world. The Merge Explorer app offers 100+ scientific experiments that the kids can learn everywhere. Finally, the Merge Object Viewer app can be used to display any 3D objects, which can open a wide range of activities. These 3D objects can easily be added to the app from the thousands available to download for free online. Therefore, we recommend this tool for its versatility, making it an ideal tool for children to get familiar with AR at a relatively limited cost.

Target Audience

The content available to learn through the Merge Cube is quite broad and can be suitable for kids from 5-6 years old (e.g. discovering the solar system) to 13-14 years old. (e.g. learning how a power plant works).

Goals

- Discover AR as a educational tool
- Learn a wide range of topics in a deeper and more entertaining way using 3D visualization
- Create and enjoy experiences using 3D visualizations
- Collaborate with other kids to learn and present a specific topic through AR

Skills developed

The merge Cube is in itself a good way for kids to get familiar with the AR technology. Then, most of the content available is linked to STEM learning (Science, Technologies, Engineering, Maths) but educators also found creative ways to build critical thinking and creativity. In fact, any 3D objects can be projected using the Merge Cube and there are thousands available to download for free, which opens a lot of possibilities.

Why is it a good practice in the digital area?

AR offers 3D visualization and interaction that classic textbooks do not offer. Kids can exercise spatial intelligence by manipulating and inspecting digital 3D objects.The Merge Cube also enables a multisensory learning experience where kids can engage with digital content naturally and intuitively using visual, auditory, kinesthetic, and tactile senses, for more memorable and impactful learning.

Moreover, **unlike Virtual Reality (VR) which requires a headset, AR is easier to implement as it demands a lot less hardware.** The fact that the Merge Cube requires only a mobile phone or tablet makes it easier to update and expand gameplay over time, and it drives down the price point significantly. Merge's apps are also free, and the Cube can also be constructed manually from a sheet of paper, so the only cost of setting up this training is minimal. If educators want more content than these apps, there is a possibility of subscribing to a yearly plan which gives access to more content.

Some research has already been carried out on the learning outcomes of the Cube in the classroom and it showed interesting learning possibilities. But research also warns that these types of games, toys, and apps can fail to engage kids meaningfully or mess with a child's sense of "reality testing"—understanding what's real, and what's not. It all depends on how the AR

experience is designed so that is something educators need to keep in mind.

Training Team

One educator can animate a full session with max 6 groups of kids. The groups of childrens should be relatively small. One device should be shared by 2 to 3 kids maximum.

Some preparation will also be needed to get the session ready: the Cube needs to be either bought or constructed (the latter option can be done with the children). Then, it is important to set up the devices beforehand (install the app and test them) so that it can start smoothly.

Note: the apps seems to have better feedback on iPhones/iPad than Android devices, therefore it is advised to prefer Apple devices for this training or that the Android devices function with the Merge cube prior to the training.

Duration proposed

2 – 4 hours sessions with:

- 20 – 30 min to explain the session, telling the guidelines on using the mobile phones / tablets, letting the kids pick a topic for their group…
- 1h – 2h (with break): the kids learn the topic in their group in autonomy and prepare a presentation.
- 30 min: kids make a little presentation for the others to explain what they learn. The educator will help the presentation by showing the images from the Merge Cube on a screen during the kids presentation.

Prizes / recognition received

Since its creation, Merge has already gotten recognition and awards both as a company and their products.

Here is a selected list:

- Company
- Since its creation, Merge has already gotten recognition and awards both as a company and their products.

Microsoft Partner as Education Specialist → Best in STEM 2021 by Newsweek

Cube Product → CES Product winner in 2017; Tech & Learning Winner 2019; American Association of School Librarians – Best Apps 2019

The INTEF (Instituto Nacional de Tecnologías Educativas y de Formación del Profesorado) has written an article in 2021 after testing the Merge Cube in classrooms where they confirm the device's education potential and adoption success with the kids.

Promoting Organization

The Merge Cube is a tool developed by Merge Labs, Inc. based in San Antonio, USA.

Starting Year

Merge is a US based company created in 2014, launching their first product, a VR headset, in 2015 which was followed by the Cube in 2017.

You can follow them on…

Website:

https://mergeedu.com/

Other useful links:

https://intef.es/observatorio_tecno/merge-cube-un-cubo-que-nos-acerca-a-la-realidad/

https://www.wired.com/story/ar-toys-the-future-of-play/

https://www.coolcatteacher.com/e288/

https://www.researchgate.net/publication/352391184_Feasibility_study_of_a_solar_system_learning_media_based_on_merge_cube_augmented_reality_to_embedding_problem_solving_skills

Free vs paid content in Merge Edu:

https://support.mergeedu.com/hc/en-us/articles/9895900652813-Free-vs-Paid-Content-in-Merge-EDU