EDUCATIONAL POSSIBILITIES OF AUGMENTED REALITY (RA)

**AUGMENTED REALITY: DEFINITION AND PROGRAMS**

RA is a real-time combination of digital and physical information through different technological devices that allow the user to see the real world with virtual objects overlapped with it.

The creation of augmented reality requires the following:

1. An element which captures the image of reality (a computer screen, a telephone, or a video camera).
2. A device where the mixture of real images with synthesized images can be projected.
3. A processing which interprets real-world information, which generates virtual information, and which mixes it.
4. A specific program production software.
5. An activator of augmented reality or markers.
6. A content server where virtual information is located.

**EDUCATIONAL APPLICATIONS OF AUGMENTED REALITY**

RA can be useful at different educational levels: primary education, lower and upper secondary education, vocational training, and university education.

RA can be applied to a variety of curricular areas: engineering, architecture, tour-planning, mathematics-geometry, art and history, language learning, technology design, chemistry, physics, geography, etc.

Aspects supporting RR use in educational contexts:

1. It facilitates the understanding of complex phenomena and concepts since, on the one hand, it allows the breakdown of a phenomenon and/or object into its different phases, stages, or parts, and, on the other hand, it allows the perception of that object or phenomenon from various points of view.
2. It allows for a contextualization of information while simultaneously enriching it with additional information.
3. It makes possible a direct and natural interaction with virtual objects through the manipulation of real objects and without the need for sophisticated and costly devices.
4. Any physical space can become a stimulating academic scenario.
5. It favors an active type of teaching on the part of the student.
6. The physical movements carried out by the student for object rotation and orientation changes favor the perception of spatial contents and 3D objects, something that facilitates the development of graphic competences amongst students.
7. It allows for flexibility, different educational levels, various disciplines, several levels, and a wide range of technologies.
8. It is presented as a significant game-creation technology and makes possible game-based and discovery-based learning.
9. The possibility exists to use it in distance training and e-learning contexts.
10. Students can also become producers and designers of such media.

**SOME FINAL REFLECTIONS**

Principles required to incorporate RR into education:

1. Designing environments where its incorporation is not a technological issue but an educational and didactic one, working with curricular contents.
2. Resolving the limitations posed by the context.
3. Ensuring that teachers and students have digital competencies.
4. Investigating methodologies for RR.
5. Producing multi-platform materials.
6. Training teachers in didactic competences to incorporate technology into educational practices and making them able to create scenographies of an educational nature.