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ARPHYMEDES: WHEN EDUCATION BECOMES INTERACTIVE AND ENGAGING

We live in an increasingly **science-driven society**, the continuous evolution and development of technologies nowadays open up opportunities never seen before.

Can technological development, however, in order not to be a cold instrument that only creates novelty and consumption, be supported and guided by broader visions that embrace the **triple dimension**: social, environmental and economic?

Shouldn't directing the technological and innovative tools that gradually become available to us towards a vision of a more **collaborative** and **sustainable** society that is inclusive and fair in its recognition of diversity be a priority and desirable function?

There are many difficulties in educational environments, including the **scarcity** of teaching materials for teachers within the educational landscape, **obsolete** and overly theoretical curricula, inadequate technological equipment, and poor teacher motivation. There is also a decline in students' preference for scientific subjects such as physics, perceived as excessively complicated and burdensome for their course of study.

Exacerbating and highlighting the previous difficulties has been the current Covid-19 pandemic, which has had a strong impact on the educational and training paths of so many girls and boys, further amplifying pre-existing inequalities and increasing the risk of educational poverty, school drop-outs, and barriers to job placement.

Questioning the **role of technologies** within the educational dimension could be significant for new experiments and devising **new interactions**, **connections** that can disrupt and at the same time enhance existing models.

Giving further support to what already works and exploring new points of contact and compatibility between the new digital technologies and more 'traditional' approaches, in order to realise new combinations and synergies, so as to support didactics and the educational pathway as a whole.

THE PURPOSE OF THE PROJECT: What future are we designing?

The **Arphymedes project** is part of this reflection. By enabling an educational context and renewing its methods and tools, it shows how it is possible to pursue the attempt to make the **digital** fresh and organic, integrating it into a **traditionally** analogue context, such as education, and enriching it with new possibilities, new ways of interaction.

Indeed, the 'Arphymedes' project aims to increase and improve student involvement through the integration of new technologies in the school and educational space.

An **innovative approach** that aims to combine realities that, if traditionally they might have appeared distant, will instead show all their unique potential and transformative value.

A crucial combination that will enhance the **educational experience** through the integration of media, apps, **augmented reality (AR**) in the classroom.

It accompanies the current digital and technological revolution at school by enabling students, teachers and the entire educational **ecosystem** to transcend physical boundaries and make the learning experience authentic, immersive and stimulating.

AUGmented reality: new learning scenarios?

A powerful new tool at our disposal: it is AR. **Augmented reality** is fully integrated into our educational kits, accompanying the content, twisting it. Its use makes learning in the 'real world' so to speak augmented by the use of the virtual, integrating the two dimensions to create **new learning scenarios**. Augmented reality thus offers the opportunity for **problem-based learning** and exploration in a safe environment, which can be explored from different perspectives, where students can experiment with ideas, make decisions.

Would you like to know how we will act on these issues?

In order to develop the assumptions of the project and thus implement innovations to existing educational models, the project is thus run by **organisations** with different characteristics and fields of specialisation. Here are the **7 partners** from **six European countries**: Univerzita Sv. Cyrila a Metoda v Travne (Slovakia) Slovenska Technicka Univerzita v Bratislave (Slovakia) Tallinna Tehnikaulikool (Estonia) Univerza V Ljubljani (Slovenia) VITECO (Italy) DIADRASIS (Greece) Universitatea Tehnica Gheorghe Asachi Diniasi (Romania).

In the Arphymedes project we will develop an **educational toolkit**, combining the use of books and AR through a smartphone and tablet application and a source of learning information that will offer the **opportunity to attract**, hold attention and **provide a hands-on experience**, The following tools will enrich the experience by adding **new levels** of engagement for students and expanding support for teachers, with the aim of reshaping traditional educational methods and learning environments towards digital and interactive forms.

It is essential to **imagine** a more inclusive and innovative education, taking action and sowing the seeds of new learning experiences.