[Digital Learning Across Boundaries: Immersive technologies supporting](https://docs.google.com/document/d/1FU5_GhFGL3oU_b2r31SIe2YZoNlu8bRc7RMbsEHIxPM/edit?ts=5e414906) changemaking in an international context.

**Abstract**

The Digital Learning Across Boundaries: Developing Changemakers (DLAB) project uses immersive technologies in education to explore three challenges across three years: physical, personal and environmental. This paper focuses on the first of these, bringing together the themes of digital making and changemaking to cross physical boundaries by raising awareness about physical inactivity in 11 and 12 year old school pupils. Immersive technologies such as augmented and virtual reality enabled the development of empathy and intercultural understanding among participants, fostered an understanding of changemaking, and created environments for sharing prototype exergames. Research data is analysed to seek evidence of the development of changemaker attributes and impact within a sample group of 60 English school pupils.

**Key words:**

* Digital literacy
* Changing society
* Social dynamics
* Social progress
* Educational technology

Aprendizaje digital a través de las fronteras: tecnologías inmersivas que apoyan la creación de cambios en un contexto internacional.

**Resumen**

El proyecto Digital Learning Across Boundaries: Developing Changemakers (DLAB) utiliza tecnologías inmersivas en educación para explorar tres desafíos a lo largo de tres años: físico, personal y ambiental. Este documento se centra en el primero de estos, que reúne los temas de la creación digital y la creación de cambios para cruzar los límites físicos al crear conciencia sobre la inactividad física en los alumnos de 11 y 12 años de edad. Las tecnologías inmersivas, como la realidad aumentada y virtual, permitieron el desarrollo de la empatía y la comprensión intercultural entre los participantes, fomentaron la comprensión de la creación de cambios y crearon entornos para compartir prototipos de juegos de ejercicios. Los datos de la investigación se analizan para buscar evidencia del desarrollo de los atributos y el impacto de los creadores de cambios dentro de un grupo de muestra de 60 alumnos de inglés.

* Alfabetización digital
* Sociedad cambiante
* Dinámica social
* Progreso social
* Tecnologia Educacional

Aprenentatge digital a través de fronteres: tecnologies immersives que donen suport al canvi en un context internacional.

**Resum**

El projecte Digital Learning Across Boundaries: Developing Changemakers (DLAB) utilitza tecnologies immersives en educació per explorar tres reptes al llarg de tres anys: físic, personal i ambiental. Aquest treball es centra en el primer d’ells, que reuneix els temes de l’elaboració digital i el canvi de dades per traspassar les fronteres físiques mitjançant la sensibilització sobre la inactivitat física dels estudiants de 11 i 12 anys. Tecnologies immersives, com la realitat augmentada i virtual, van permetre el desenvolupament de l’empatia i la comprensió intercultural entre els participants, van fomentar la comprensió del canvi de canvis i van crear entorns per compartir exercis de prototips. Les dades de la investigació s’analitzen per cercar proves del desenvolupament d’atributs i canvis d’impacte en un grup d’exemple de 60 alumnes d’escola anglesa.

* Alfabetització digital
* Canviant la societat
* Dinàmica social
* Progrés social
* Tecnologia educativa

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**What is currently known about the object of this research [past]?**

This paper builds on research related to AR and VR in educational fields. It explores the role of immersive technologies in social innovation education and the notion of changemaking. The current status of health and physical activity in young people is a global issue and there is much debate relating to the role of gaming and technology in contributing to sedentary behaviours. Immersive technologies are appealing to young people and there is a growing drive to incite change and be creators and innovators. This work draws on the maker movement and combines the notion of digital making with changemaking.

**What does this article contribute as original [present]?**

This study is pioneering in its use of AR and VR technology in an educational context by demonstrating that the creative use of immersive technologies, supported by a mix of other technologies, has the potential to enable young people to recognise social dilemmas, plan collaboratively, and design and make prototype solutions. It presents an original set of data that suggests that the creative use of technologies such as AR and VR might develop changemaker attributes and an understanding of the changemaker process within an international project, providing compelling evidence that there is much potential for technology-enabled changemaking in education.

**What are the implications of this work for practice and future policy [future]?**

Whilst immersive technology use in schools is in its infancy, this study indicates that there is a willingness and excitement to develop it as a learning tool and as a pedagogical approach. This work identifies the potential to develop exergaming in relation to health, physical activity, sport and physical education on a wider scale. It also identifies opportunities to explore social and environmental issues through AR and VR within the context of social innovation education. The work highlights the enabling power of technologies in acting as a catalyst for transformative learning, promoting the aims of UNESCO’s Sustainable Development Goal 4, Target 7 that focuses on promoting sustainable societies and global citizenship through education (UN, 2015).