

Innovative Showcase Presentation: How Digital Technologies in Australian Schools promote and develop 21st Century Skills across the STEM disciplines

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Abstract: *21st-century skills can be split into four broad categories: Ways of thinking, Ways of working, Tools for working and Skills for living in the world. This Showcase presentation will highlight how Australian Schools are implementing different forms of digital technologies to teach 21st skills in the areas of Science, Technology, Engineering and Mathematics through the constructivist framework. A complementary relationship exists between technology and constructivism, the implementation of each one benefiting the other. Constructivism is a principle stating that learning takes place in contexts, while technology refers to the designs and environments that engage learners. The use of technology today needs to be viewed in a 'different light' to enable learners to 'construct knowledge' in new ways and so develop their 21st Century skills. From the application of LEGO Robotics in Engineering and Mathematics, to the use of iPads as interactive science textbooks, Australian students are being exposed to many different digital technologies to enhance their higher order thinking and enhance how they collaborate and communicate with others. The use of digital technology to model, test, analyse, and simulate scientific and mathematics principles has enriched the learning process and deepened student understanding.*

Keywords: 21st Century Skills, Digital technologies, Technology and constructivism