

# **The Impact of Industrial Revolution 4.0 on Educational Technology, Digital Innovation and Future Learning**

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## **ABSTRACT**

The fourth Industrial Revolution (IR 4.0) has transformed the landscape of educational technology. IR 4.0 is powered by artificial intelligence and cyber-physical systems that make human-machine interface more ubiquitous. Rapid revolution in technology has produced a new model of education for the future — Education 4.0. In order to prepare graduates for future life and employment brought about by IR 4.0 where more smart robots will replace humans in certain job sectors, education should harness on relevant knowledge and skills that could not be replaced by robots. Technology disruption that produces Education 4.0 that focuses on educational innovation and agility has made future learning more personalised, hyper, interactive, mobile, global and virtual. The advent of millennial kids (Gen-Zs) with digital intelligence and cyber-talent has poses many challenges to educators. Today's Gen-Zs communicate in a language that older generation may not fully understand; they have their own genre — digital genre. They have their own ways of interpretation and expression. Digital natives take advantage of the enormous resources of the cyberspace and digital technologies to create something creative, innovative and expressive despite cyber-security issue. These techno-junkies and wi-fi generation also prefer an interactive approach to learning which blends information through system integration via a complex montage of images, icons, sound, video, simulation-animation, games, and Artificial Intelligence (AI). To sustain learning in this digital age, digital literacy and blended pedagogy are still necessary to master the knowledge and skills via flipped classroom, MOOCs, and chatroom. Beyond the 21st century skills, digital agility and innovation such as Artificial Intelligence (AI), big data and analytics, cloud computing and mobile solution, social media, the Internet of Things (IoT), Virtual Reality (VR) and Augmented Reality (AR) with digital games are fundamentally changing the dynamics of education and instructional technologies landscape into new form of digital pedagogy and smart classroom. IR 4.0 that exploded exponentially has droned the future learning into wonderland. Science fiction becomes science fact — where imagination knows no bound; and virtual and augmented reality is creeping into smart classroom. Autonomous and intelligent robots, drones, vehicles and classrooms are delights of the day. As futuristic teachers, we need to explore new

and innovative ways to using educational technology to redesign future learning. In this regards, this presentation postulates the need for educators to rethink their old conceptions of teaching and learning and redesign their students' learning experiences so that they meet the requirements of Education 4.0.

**Keywords:** Industrial Revolution 4.0, Education 4.0, digital genre, digital innovation, future learning