

# **A Disruptive Technologies Strategy for Enhancing Learner's Experience in Teaching and Learning**

**[Opportunities arising from disruptive technologies in education]**

## **Abstract**

Higher education is rapidly changing, and technology is the catalyst for the change. The appeal for integrating robotics education into engineering curriculum has become more attractive and commonplace in lecture rooms. Robotics is a technology based experiential learning activity that enables participants an opportunity to learn and apply 4IR and automation skills. Since it is a highly interactive group activity, it provides students with an opportunity to interact, build teams, go through change management processes, increase cross-functional awareness and to experience real world problem solving dynamics. The integration of robotics education into engineering programs and its impact on the pedagogical proposals leads to the development of 3IR skills that will enable learners to transition into 4IR professionals. This integration is a critical area of research for ODeL institutions engaged in engineering education. The research addresses the question whether robotics thinking concept applied in education may go beyond the application of didactic and pedagogical practices and increase student ambidexterity. The dawn of 4IR reflects an era of a lot of inter-connected and internet-connected objects packed with information and applied in T&L. Therefore, application of 4IR strategies in education enhance student's experience and result in learners becoming ambidextrous. This research adopts a qualitative research approach to explore and explain the primary strength of robotics activities in engineering education. These are: a) The value derived when students become aware of the impact of cross-functional teams relationships and decisions about design of engineering products, automation and 4IR implications. b) Students learn how develop engineering design concept and establish a clear insight about alignment and the dynamics of execution as a key to total production and manufacturing process, c) Engineering technology students learn to work with the technology to solve current problems, while graduate engineering student learn to develop technology to solve future industry problems.

## **Keywords**

Robotics. Integration, design, Education, 4IR.