DEVOTRA

# Turn-Key solutions
## for Education and Training Projects

**Devotra is an ISO 9001 certified company whose activities are mainly focused on engineering projects in developing countries and upcoming markets. We offer turn-key services for any kind of project in the field of education and training from primary up to higher education, including vocational training.**

Devotra's staff has almost 30 years of practical experience in implementing education and training projects in the field of TVET, Science Education, STEM and ICT education, and offering clients turn-key solutions which include; consultancy, project identification, project planning and coordination, supply of equipment, logistics management, installation and commissioning, technical assistance and training, finance, local services, after-sales, warranty and maintenance of goods.

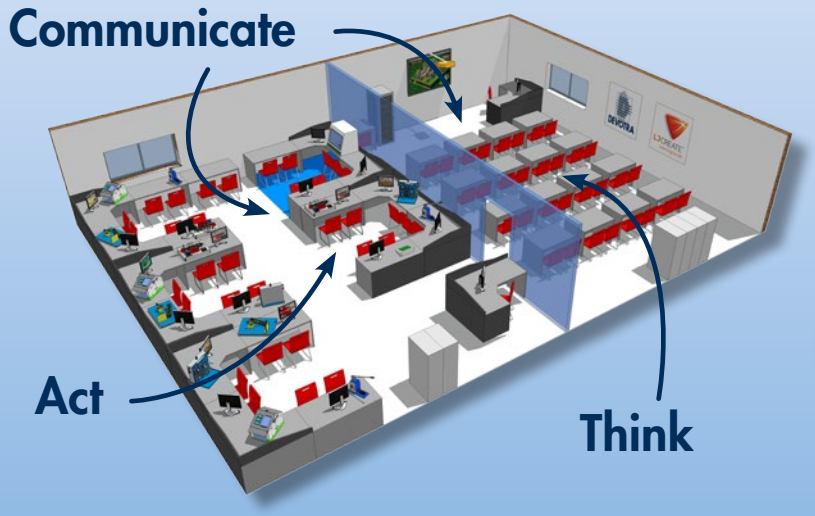
## Today we are introducing:
## 21st Century Learning Systems

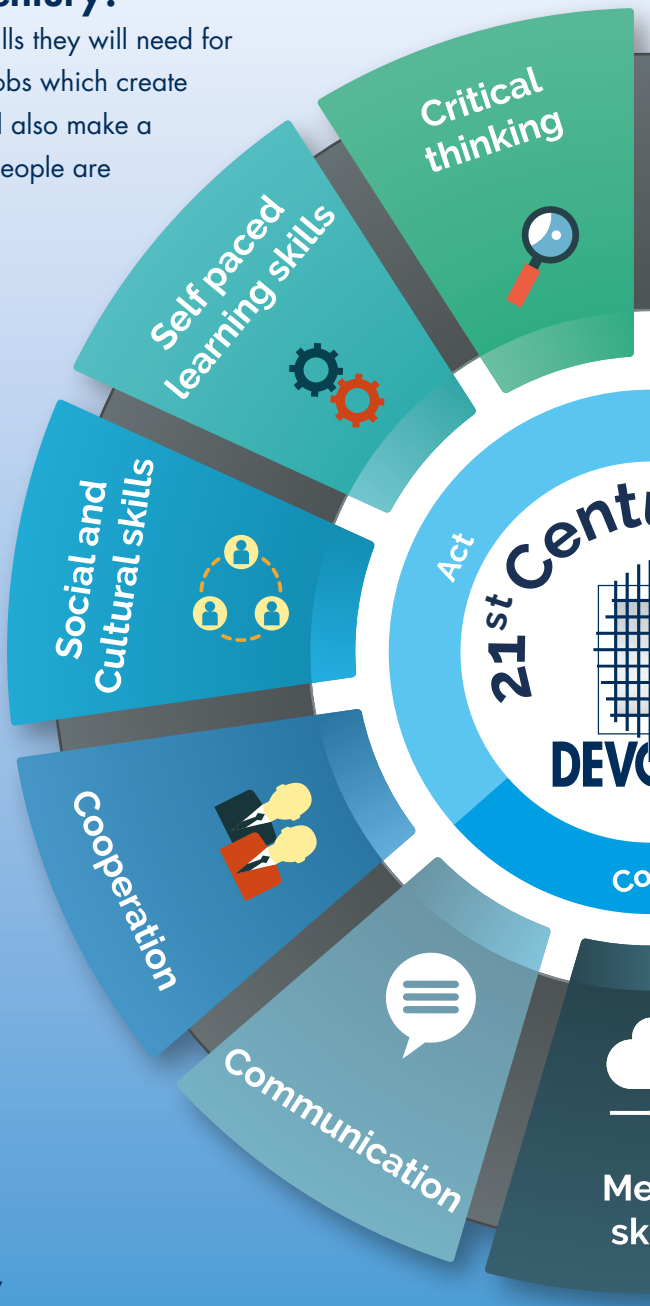
Based on the question: "How to comply to a world where change is constant and learning never stops?"

# 21st CENTURY LEA

## How to prepare students for work in the 21st Century?

The next generation teaching is all about providing students with the skills they will need for productive employment over the next 40 years. They are interested in jobs which create the opportunity for fulfilling and exciting lives for young people and will also make a positive contribution to the economy. In all different parts of the world people are interested in these same things.



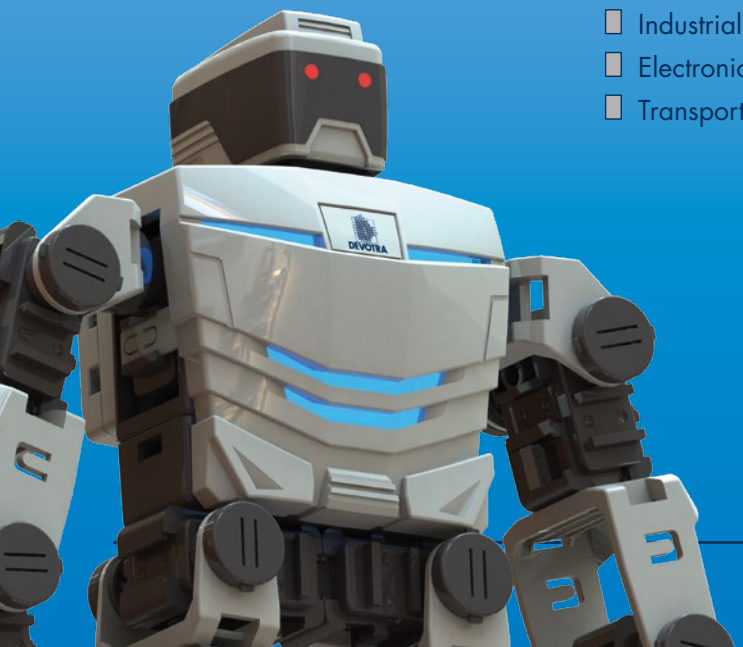




**Smart Classroom maximizes the use of the existing equipment at the workshops, amongst others, through:**

- Presentations
- Digital lessons
- Investigations
- On-screen simulations
- Virtual experiments
- Practical exercises
- Project and group work

**The typical STEM Lab configuration includes the following 12 themes:**

- Biomedical Technology
- Engineering design
- Architectural technology
- Construction engineering
- Engineering design
- Mobile robotics
- Mechatronics
- Manufacturing technology
- Mass transportation
- Industrial robotics
- Electronics technology
- Transportation technology



# ARNING SYSTEMS

## Smart Classroom Concept

So we designed an environment; with digital content and training equipment required to implement it, to develop these skills across the STEM disciplines and eight related career clusters. A teacher-led space to be used for student investigations, teacher presentations and performance assessment, to develop thinking skills and teach communication. Front-of-class digital content and hundreds of student investigations were required to create this space. Then a student centered space for hands-on study of a wide range of STEM disciplines, adjustable according to the specific needs of the client.


The primary purpose of this space is to bridge the gap between theoretical and practical skills. We use it to provide students with an opportunity to practice the thinking skills they have developed and to learn specific STEM subjects independently.

## Smart Science Bench Concept

The Devotra Smart Science Bench has been developed by practitioners to facilitate the teaching and learning of science education.

The concept provides self-contained mobile science benches which, collectively, convert any space into a science laboratory. Supplied with a wide range of experimental equipment and supported by a comprehensive range of practical worksheets, teaching science could not be simpler.

To further enhance the teaching and learning of secondary science, a variety of technology based teaching resources are available to use in conjunction with the Smart Science Bench. These resources include computer based interactive software, PowerPoint presentations for classroom delivery and a range of standalone or computer based data logging devices and sensors.



# Turn-Key solutions

**During the years Devotra has realized a large number of projects in Africa based on the Turn-Key Concept. Two examples of a turn-key project are Kenya & Zimbabwe.**

## UNICEF - Zimbabwe Science Project

- Value 9,5 million USD
- Supply of 2,449 Science kits
- With apparatus, chemicals, consumables and storage system
- Biology, Chemistry and Physics
- 85 containers
- 170 different items
- 5 shipments
- Implementation 8 months
- Design and implementation of Training programme for 5,000 science teachers and 100 Education officers across 72 districts in 10 provinces on the use, care and maintenance of the science kits
- Design of training manual with 300 practical science experiments
- Official handover of the project March 2014


## Project Kenya - TVET phase 1

- Value 14,9 million Euro
- 10 Technical Training Institutes
- 8 vocational training subjects
- 140 containers
- 6 shipments
- 60 teachers trained in the Netherlands (8 weeks)
- 600 teachers trained in Kenya (12 months)
- 3 years support phase
- Duration 6 years (2009 – 2015)

## Phase 2 - Smart Classrooms

- Value 4 million Euro
- Digital learning resource library
- 8,500 lessons, presentations, assessments, simulations, experiments and practical exercises
- Practical demo units
- 18 workstations, incl. Rapid prototyping and Robotics
- Implementation 8 months (2016)
- Training of 150 teachers and 10 ICT supervisors

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