Preparing for the future of the 4th Industrial Revolution.

– A need for an educational reform in the Arab world

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Welcome!!

The Fourth Industrial Revolution

Ubiquitous, mobile supercomputing. Intelligent robots. Self-driving cars. Neuro-technological brain enhancements. Genetic editing. The evidence of dramatic change is all around us and it’s happening at exponential speed.

Professor Klaus Schwab,
Founder and Executive Chairman of the World Economic Forum
Visualizing the potential impacts of new technology on the educational sector

TOPIC 01
"Technology will never Replace great Teachers, But Technology in the hands of great Teachers is Transformational”

George Couros, Leadership Consultant

<table>
<thead>
<tr>
<th>Technology Impact</th>
<th>Description</th>
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<tbody>
<tr>
<td>Engagement</td>
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<td>Reach of Education</td>
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<td>Student Motivation</td>
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<td>Education Automation</td>
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<td>Staff Attendance</td>
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<td>Quicker Learning</td>
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<td>Multi-Channel Learning</td>
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<td>Anytime Learning</td>
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<td>Anywhere Learning</td>
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<td>Personalized Learning</td>
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The Benefit of Technology in Education

The Question:

If not now, when?

If not us, who?

If we don’t do it now, it may be too late?

The Fourth Industrial Revolution & Education

The Question:

How to prepare the younger, and even the current, generation for the Fourth Industrial Revolution?
Connecting the Dots

- Artificial Intelligence
- Internet of Things (IoT)
- Robotics
- Big Data Analytics
- Virtual/Augmented Reality
- 3D Printing
- Cloud/Smart Campus/Classroom
- BYOD

EDUTECH SERVICES
- LIFELONG LEARNING PATHWAYS
- DIGITAL FLUENCY AND STEM SKILLS
- 21 CENTURY CURRICULA
- EDUCATION INNOVATION
Measuring the importance of vocational education for career pathway
Knowledge, Skills and Competencies

Level X

Strand 1: Knowledge
Strand 2: Skill
Strand 3: Autonomy and responsibility
Strand 4: Role in context
Strand 5: Self-development

Aspects of competence

Traditional Education (Formal)

Knowledge Acquisition

Single Subjective or Objective Measure

Proxy Assessment

Norm Referenced Evaluation

Knowledge Application

Multiple Objective and Subjective Measures

Performance-Based Assessment

Criterion Referenced Evaluation

Competency based Learning
Soft Skills
They are the skills of the future, WHY ???

- Communication Skills
- Presentation Skills
- Job Interview Skills
- Team Skills
- Time Management Skills
- Leadership Skills
- Customer Service Skills
Soft Skills versus Hard Skills

- **Hard Skills**: Allow us to successfully interact with objects, tools, information or machines
- **Technical Skills**: Allow us to successfully interact with objects, tools, information or machines
- **Soft Skills**: Allow us to successfully interact with people
- **Social Skills**: Allow us to successfully interact with people
Qualification Framework Levels
Teaching & Learning methodologies adapted to the market need
Teaching & Learning Methodologies

Teacher-centered (teaching)

- Lecture
- Teaching Translation by Doing

Student-centered (teaching/learning)

- Task-based learning
- Project-based learning
- Problem-based learning
- Case study method
- Competency-based learning

Lifelong learning (learning)

- Continuing professional development

The Cone of Learning

- After 2 weeks, we tend to remember...
- 10% of what we READ
- 20% of what we HEAR
- 30% of what we SEE
- 50% of what we SEE & HEAR
- 70% of what we SAY
- 90% of what we SAY & DO

Source: Edgar Dale (1969)
Active Learning for Academia

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Source: Edgar Dale (1969)
Teaching & Learning Standard for TVET

Student-centered (teaching/learning)
• Task-based learning
• Project-based learning
• Problem-based learning
• Case study method
• Competency-based learning

Lifelong learning (learning)
• Continuing professional development
The relationship between the institution and the industry sectors

TOPIC 04
Industrial Partnership with Academic Sector

• Professional Certificate
• Applied Research
• Internship
• Innovation & Entrepreneurship Center
• Career Development
• Lifelong Learning
The digital workforce of the future

TOPIC 05
Employees from Past to Future

• Anywhere
• Anytime
• Any device
• Outputs
• Share
• Collaborate
• Adaptive learning
• Democratized Teaching & Learning
# Top future 10 Skills

<table>
<thead>
<tr>
<th>2020</th>
<th>2015</th>
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<tbody>
<tr>
<td>1. Complex Problem Solving</td>
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<tr>
<td>2. Critical Thinking</td>
<td>2. Coordinating with Others</td>
</tr>
<tr>
<td>3. Creativity</td>
<td>3. People Management</td>
</tr>
<tr>
<td>4. People Management</td>
<td>4. Critical Thinking</td>
</tr>
<tr>
<td>5. Coordinating with Others</td>
<td>5. Negotiation</td>
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<tr>
<td>6. Emotional Intelligence</td>
<td>6. Quality Control</td>
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<tr>
<td>7. Judgment and Decision Making</td>
<td>7. Service Orientation</td>
</tr>
</tbody>
</table>

Source: Future of Jobs Report, World Economic Forum
• Software Engineering & Programming
• Data mining
• Mathematics
• Quantum Physics
• Computer Engineering, Automation
• Business & Finance Operations
• Management
• Sales & related
The Fourth Industrial Revolution started already, and its results began to be influenced by government sectors worldwide.

A revolution in teaching & learning methodologies is necessary to adopt one type of learning outcome based on competencies and to blend academic and vocational education to answer the market need.

Industrial cooperation & partnership is mandatory to make a trust for future employability.
Thank you

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