ICT in Education Smart Learning (I. Part)

mohammed.shahawey@intel.com
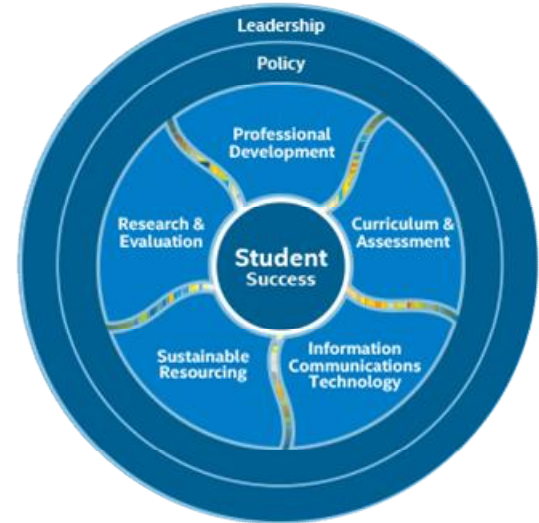March, 2015

AGENDA:

Transforming Education for the Next Generation

Planning to integrate ICT into education

Ensuring Long-Term Success (Contents and teacher professional development)

META countries in Action

Achieving **YOUR VISION** of Student Success

WHY INVEST ICT IN EDUCATION

•Government are already using billions of US dollars each year for classical education systems. They usually **ineffective, inefficient and inconsistent** if not updated and improved by technology.

•Due to lack of standardization of resources, **the classical system cause more differentiations, inequalities in opportunities**. Rich always learn more and better than Poor; they receive bigger share from the Pie.

•Digital learning can help to **close the gap** in Digital Divide.

• ICT based education system is for the future generations, gives them **new skills and intelligent knowledge**.

• With e-content, they learn as they play and they play as they learn. Whatever learned stays with them since they enjoy the learning process – **Good learning experience**

•Education Transformation is in reality an Education Based ICT Transformation. Students will teach digital skills to their friends – families; **whole society benefit**, not just students.

•Digital Literacy is key to increase the **Broadband Penetration, Internet Usage and e-inclusion**

Benefits of Education Transformation

Employment and Economic Development
- Build 21st century workforce
- Reduce unemployment

Competitiveness
- Equip every student for success
- Increase academic rigor
  and achievement

Citizenship and Social Equity
- Unlock student potential
- Prepare students for social leadership
  and citizenship

Job losses and earnings losses have been concentrated in low-skilled, low-income households. …Many workers remain trapped in low-paid, insecure jobs with little social protection…Young people continue to face record unemployment levels.

— OECD

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Shifting the Learning Paradigm

Traditional Teacher-Centered Classroom
Lecture-based knowledge dissemination. Limited use of technology.

Transitional Teacher-Centered Classroom
Lecture-based knowledge dissemination. Technology used for collaboration.

TEACHER DIRECTS

STUDENTS CONSUME

STUDENTS COLLABORATE

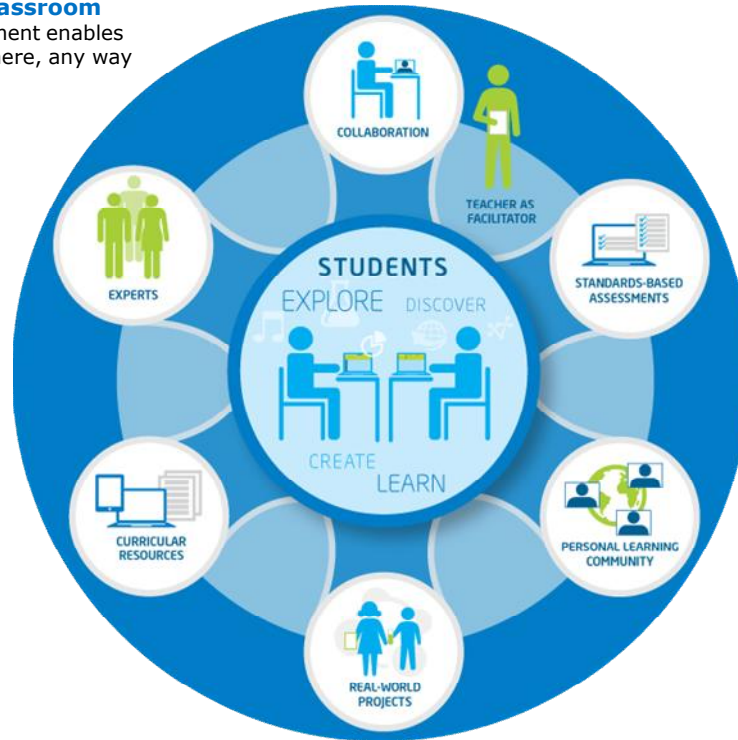CURRICULUM   PLANNING   ASSESSMENT
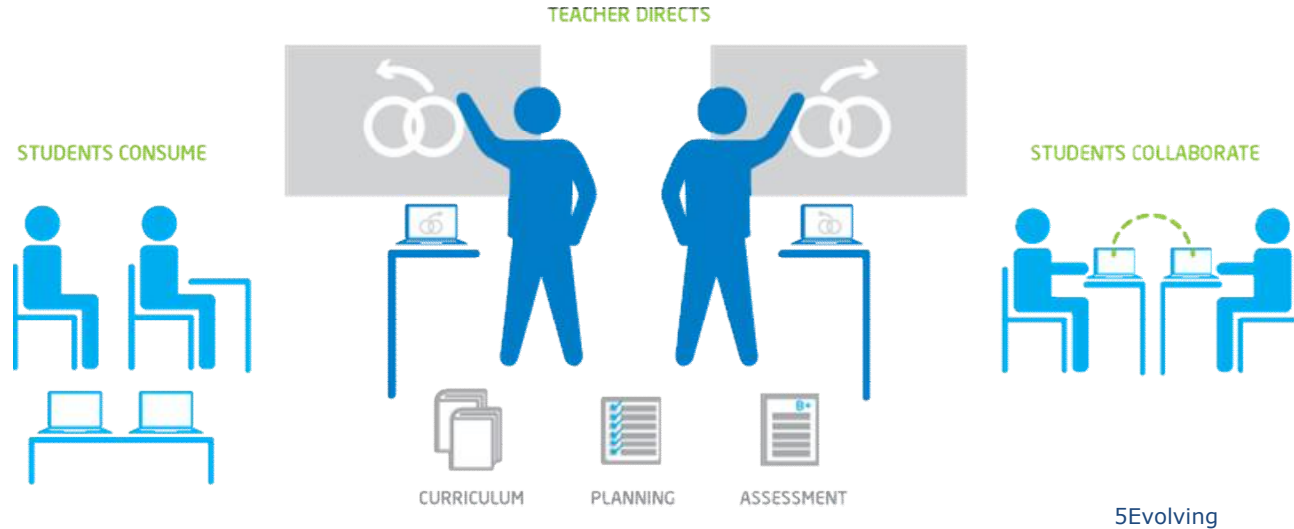
5 Evolving

Evolving toward **STUDENT CENTERED CLASSROOM**

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Shifting the Learning Paradigm

Student-Centered Classroom
Technology-rich environment enables
learning any time, anywhere, any way

TECHNOLOGY has changed the way we **LIVE AND LEARN**

Viewing Education Requirements from Several Perspectives

- What Teachers Might Need (Understand activities and requirements).

- What Students Might Need.

- What Parents Might Need.

- What School Administrators Might Need

Understand overall Constraints

- Geography and terrain (for example, rural, remote, or rugged)

- Population density

- Electrical power (quality and existence)

- Availability of broadband Internet connectivity

- Weather, climate, and other environmental concerns

- Socio-economic factors

- Language and customs

- Existing or legacy infrastructure

Intel Global Girls and Women Initiative

Empower millions of girls and women through education and technology to advance economic opportunity

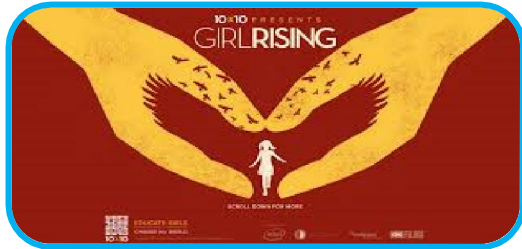## Education Access

Drive awareness and action to expand education opportunities for girls

STEM & Tech Careers

Inspire more girls and women to become creators of technology

Technology Access

Connect girls and women to new opportunities through technology access, digital literacy and entrepreneurship

Building upon the foundation: Investing in our own talent and supply chain diversity

Inspire Girls and Women to Become Creators of Technology

- Use of hands-on "Maker" and coding activities
- Exposure to peer mentors and role models
- Connecting technology and engineering careers to real world applications and positive social impact

Examples of Programs and Partnerships:

- Girls Who Code
- NCWIT AspireIT
- Robotics programs
- Hermanas: Diseña Tu Futura
- Compugirls
- TechGYRLS
- Intel Computer Clubhouse Network Start Making! program
- Intel International Science and Engineering Fair and the Intel Science Talent Search*
- EPICS program
- Higher Ed Scholarships and fellowships

Girls Who Code Video: http://www.youtube.com/watch?v=OVwrO1AxhJo

*programs of Society for Science & the Public

Education

10

Intel® She Will Connect Program

Goal: Empower millions of girls and women through technology and bridge the Internet gap

- Directly responds to findings and call to action in 2013 Intel-supported "Women and the Web" report to empower women in developing countries.

- Innovative combination of digital literacy training, online peer networks, and gender-relevant content.

- To be piloted in sub-Saharan Africa in 2014 and then scaled to other regions.

- Program to be delivered through partnerships with leading local NGOs and other organizations.

Intel® She Will Connect Video: http://www.intel.com/content/www/us/en/technology-in-education/she-will-connect-program-close-gender-gap-video.html
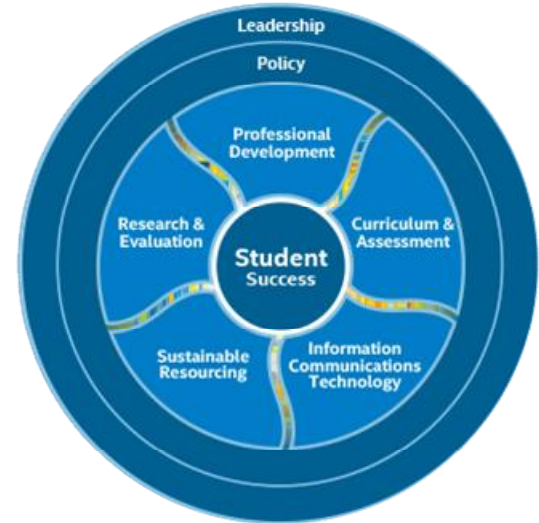
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Intel® Education Solutions

Hardware	Software & Services	Content Ecosystem	Implementation Support

Flexible, holistic education technology solution

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Information and Communication Technology Models in Education

School Station
Primary usage is for administrative tasks.
Students and Teachers have limited access.

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School Station
Labs
In Class
Personal 1:1

LIBRARY

MEDIA CENTER

ADMINISTRATION OFFICE

DESCRIPTION

- The basic ICT configuration relies on just a few computers at school where usage is focused on School Administration Tasks and Professional Learning.
- Teachers and Students may have limited access to computers in the Media Center / Library primarily for research purposes.

Information and Communication Technology Models in Education

Labs
Computers are stationary. Focused primarily on Digital Literacy (ICT skills) and limited integration of Core Curricula activities.

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School Station | Labs | In Class | Personal 1:1

DEVICES

Desktop

ALL in ONE

NUC

For more information click here

TEACHER DEVICE

STUDENTS LEARNING DEVICES

Wired (Ethernet) / Wireless Internet Access.

ACCESS POINT

Next Unit of Computing (Nuc)
👤 +40
For more information click here

Tower Server
👤 200

Use Multiple Servers Or Blades
👤 +200

For more information click here

PROJECTOR

SERVER

USAGES
→ Digital Literacy
→ Language Labs
→ Some integration into core curricula

SECURITY SOFTWARE
For more information click here

CLASSROOM MANAGEMENT
For more information click here
All students devices are connected with the teacher's computer.

FEATURES
· Labs are stationary and can foster 1:1 or 1: many learning environments.
· Time spent using technology is limited to availability of Lab.
· The teachers may begin integrating technology into the core curriculum.
· Professional Learning focuses on Digital Literacy.
· Focus areas can include ICT skills development, online assessments, and limited Core Curriculum (math, language, science, etc).

RECOMMENDED ACCESSORIES

Headsets

Printer

Information and Communication Technology Models in Education

In Class
Devices are mobile and foster 1:1 learning environment. Teachers share access to devices and plan curriculum accordingly. Learning becomes more technology-enhanced but in short periods of time.

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School Station | Labs | **In Class** | Personal 1:1

DEVICES
- Tablet
- Laptop
- 2 In 1

For more information click here

TEACHER DEVICE

STUDENTS LEARNING DEVICES

ACCESS POINT
Wired (Ethernet) / Wireless Internet Access (mobile devices are connected to the network).

CHARGING CART
Allows charging, transporting and storing devices

Next Unit of Computing (Nuc)
+40
For more information click here

Tower Server
200

Use Multiple Servers Or Blades
+200

For more information click here

WHITEBOARD

SERVER

SECURITY SOFTWARE
For more information click here

USAGES
- Activity-based
- Project Learning
- Virtual Learning Environment

CLASSROOM MANAGEMENT
All students devices are connected with the teacher's computer.
For more information click here

FEATURES
- An in classroom set of digital learning tools subject to availability to be used inside the classroom for all subjects.
- Also known as a Computers on Wheels model where the devices are on a charging cart and wheeled from room to room.
- Teachers plan curriculum according to availability of devices.
- In-class digital learning usage prepares students and teachers for a more comprehensive use of technology in a 1:1 environment.
- Professional Learning focuses on integration of technology into core curriculum and movement to a student-centered environment.
- Focus areas can include STEM, staff and parents communication, and online assessment.

RECOMMENDED ACCESSORIES
- Headsets
- Printer

Information and Communication Technology Models in Education

Personal 1:1

Personalized Learning. Anytime/anywhere/anyway learning. Fully integrated with core curriculum.

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School Station | Labs | In Class | **Personal 1:1**

DEVICES
- Tablet
- Laptop
- 2 in 1
- Chromebook

For more information click here

TEACHER DEVICE

STUDENTS LEARNING DEVICES

ACCESS POINT

Wireless Internet Access (A robust network to support all students online at one time).

INTERACTIVE WHITEBOARD

Next Unit of Computing (Nuc) +40
For more information click here

SERVER

Tower Server 200

Use Multiple Servers Or Blades +200

For more information click here

Compelling Content Local / On Server / In Cloud
Cloud computing facilitates sharing of resources / content / software over a network.

CONTENT

For more information click here

SECURITY SOFTWARE

USAGES
- Comprehensive Digital Content and Tools integration
- Embedded Measurement of Skills and Content

CLASSROOM MANAGEMENT
For more information click here

All students devices are connected with the teacher's computer.

FEATURES

- The Personal model facilitates Personalized Learning, allowing **device usage anytime, anywhere**.
- The one to one computer model allows for improved usage of a wide range of digital materials and focuses on a **true student-centered learning environment where students take control of their own learning** through high quality education software, comprehensive digital content and tools.[1]
- A faster connection also enables online assessment and evaluation.
- Measurement of skills and digital content is embedded in the curriculum.
- Teacher becomes a tutor and expert facilitator.
- Refresh cycle and security plans take place.

[1] Project RED: A Global Toolkit for Education Transformation, 2014   For more information click here

RECOMMENDED ACCESSORIES
Headsets   Printer

OPTIONAL
Charging Cart

Bridging connectivity issue inside Classroom

Easy to service: open back to access battery, HDD, 3G/4G/LTE

Easy to mount in a classroom – bracket and screws included. Can be easily removed from wall mount for educator to transport from classroom to classroom OR to and from home

RJ-45 jack provides **access to school Ethernet network**

USB 3.0 port provides an additional easy way for educators to upload their content or for IT administrators to update device settings.

← Mounting Bracket

USB 3.0   RJ45   DC-in

Intel Education Solutions

ICT in Education solution elements

- Technology: devices—cell phones, tablets, netbooks, laptops, PCs, servers and networks—communications and computing
- Connectivity: broadband Internet access, wired or wireless
- Digital Content: learning material from the Net, multimedia CD/DVDs, podcasts, or other digital media
- Improved teaching methods include student-centric models, project-based
- learning, etc.; and professional development that helps teachers effectively integrate technology into their curriculum.

And to facilitate your implementation you should have the following support systems
1. Policy
2. Funding
3. Metrics and assessment
4. Commercial industry partners

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Achieving **YOUR VISION** of Student Success

Strategic Solution Design

Education Leadership Development	Digital Curriculum Development
Policy Development	LCMS & Learning Platform Solutions
Teacher Professional Development	Personalised Learning & Learning Analytics
Curriculum Design & Development	Infrastructure and Services
Assessment Plan & Solutions	School Server and Local Cloud Solutions

The Achievement of Measurable Learning Outcomes is key focus of the design and assessment

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Supporting a worldwide Education Publisher and Content Developer Ecosystem

- Major Education Publishers
- Specialist Innovators and Disruptors
- Content Delivery Platforms
- Open Content Ecosystem
- User Generated Content
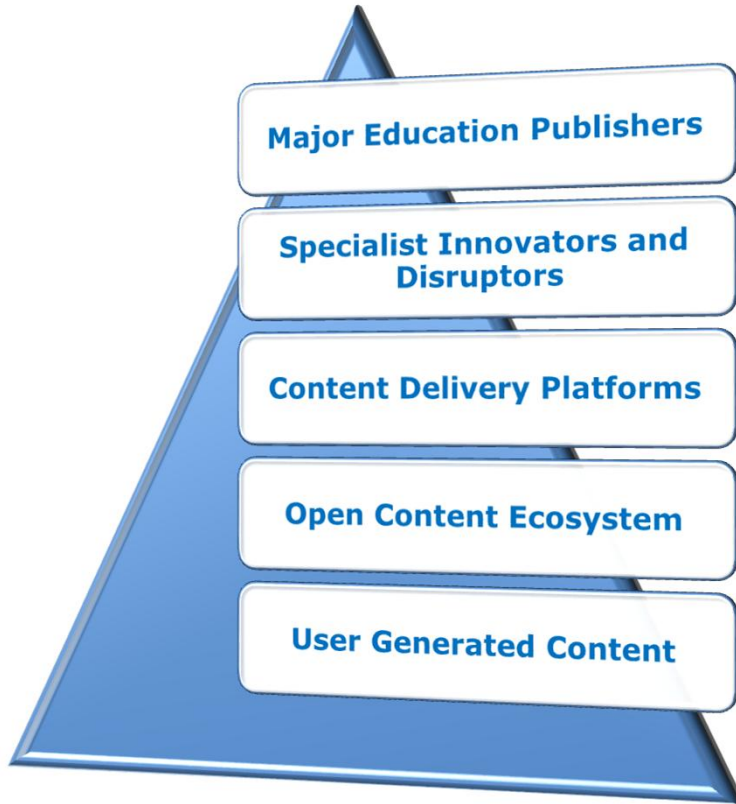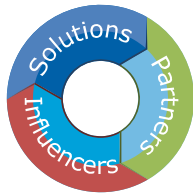
- Education content from **major publishers**

- Innovative **learning content and tools** from innovators

- **Core Curriculum** and **Supplementary Learning**

- Rich interactive **eBooks**

- **Creative Learning Tools**

- **Local Content Development**

Investments in software & service industry drives local capacity development and youth employment

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Intel® Education Resources

3 years.

6 million implementations.

28 countries.

And growing.

Courseware and supplemental apps to support 21st century skills development

World-class resources
Curated courseware and supplemental apps

Multi-platform and OS
Use the device and OS that meets your needs

Global reach
Available in major languages from Intel® Education and global/local partners

Offline access
For anytime/anywhere usage

Easy to install
With support from Intel

3 easy steps to get Intel® Education Resources!

1. **Send request** for courseware or supplemental apps. http://inteleducationresources.intel.com/crt

2. **You will receive an e-mail with a link to our Download Center** where you can download the latest build.

3. **Accept the license agreement** to download.

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Building Success with Intel® Education

CURRICULUM AND ASSESSMENT

Intel Education Collaborates to Advance and Align Curriculum and Assessment

- Intel® Education Alliance: worldwide network of content and solution providers to expand high-quality, locally relevant content

- ATC21S: Research-driven assessment initiative supported by Intel, Cisco, and Microsoft

- UNESCO ICT-Competency Standards for Teachers

- International Society for Technology in Education (ISTE)

- Collaborative Assessment Alliance

RESULTS-DRIVEN resources, tools, and collaborations

New Pedagogies for Deep Learning

ASSESSMENT
Driving Education Transformation

Student Assessment New Perspectives

By Cheryl Lemke, Metiri Group

Commissioned by Intel Corporation

February 2011

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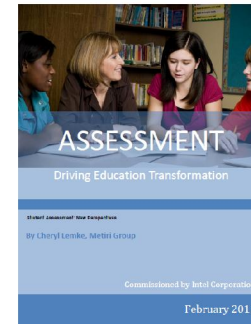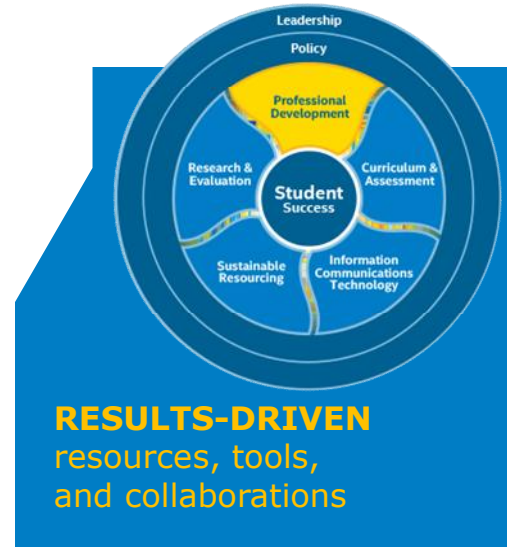
Professional Developme[nt] for Your Customers' Suc[cess]

It takes **5-6 YEARS** for teachers to **master technology integration**[1]

INADEQUATE PD is a **significant barrier** to successful technology integration in schools[1]

INFORMAL or GENERAL TRAINING has **little effect** on teachers' use of technology[1]
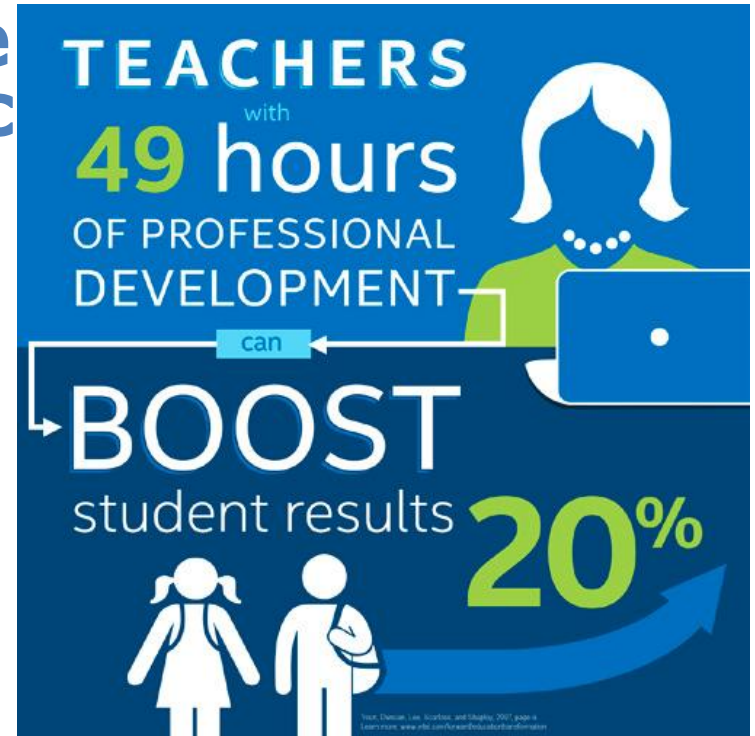
For technology implementations to be successful, teachers need the skills to make effective use of the technology in the classroom

1. Mueller, J., Wood, E., Willoughby, TI, Ross, C. and Specht J. Identifying discriminating variables between teachers who fully integrate computers and teachers with limited integration. Computers & Education 51, 1523-1537, 2008.

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Intel® Teach Elements eLearning Courses

K12 teachers. Format: Facilitated or self paced online

Moving into Mobile Learning
Learn the benefits and challenges of mobile learning, and how to create a successful mobile-learning environment in their classrooms.

Creativity in the Mobile Classroom
Build on concepts from Moving into Mobile, learning to implement mobile learning effectively, while encouraging students' creativity.

Assessment in 21st Century Classrooms Learn to plan, develop, and manage student-centered assessment strategies for improved teaching and learning.

Collaboration in the Digital Classroom
Design and manage collaboration activities that integrate online tools and prepare students for a globally connected world.

Designing Blended Learning
Explore transitioning to blended learning experiences where some portion of learning occurs online and outside of a classroom setting.

Inquiry in the Science Classroom
Explore ways to develop students' scientific thinking and practices.

Project Based Approaches
Explore the features and benefits of project-based learning to engage students with self-directed learning.

Thinking Critically with Data
Examine critical thinking with a focus on data analysis – preparing students to think analytically in our knowledge-driven world.
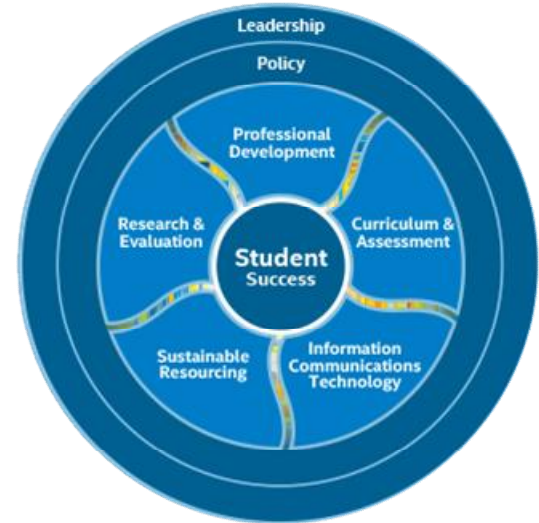
Leadership in the 21st Century
For school Leaders: Explore school leadership practices and policy for effective digital learning

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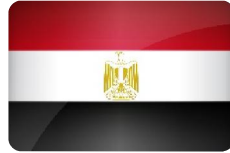
META countries in Action

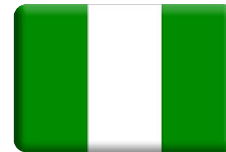# Education Transformation in Action

META Momentum

TURKEY
KOCAELI STATE

EGYPT

Rwanda

UAE

South Africa

Morocco

Niagara

LEBANON

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Q&A