Transformation of Education with ICT
Intel Education Programs, Tools & Resources

UNESCO CASIE Summit
Tashkent, Uzbekistan
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AGENDA

- Why ICT is so Important in XXIc.
- Intel Education Programs & Resources
- Education Transformation Education Policy Development Tool & Guidebook
ICT Investment in Education ➔ Education Impact ➔ Economic Growth

Source: The High Cost of Low Educational Performance © OECD 2010
Biggest threat to economic growth:

Shortage of 21st century skills

— CEOs worldwide
The skills to thrive and succeed in the “real” world

Creativity and Entrepreneurship
Technology and Media Literacy
Effective Communication
Problem Solving
Critical Thinking
Collaboration

www.21stcenturyskills.org
http://atc21s.org
The ways in which we live, work, play and learn have been transformed by technologies. People access, use, and create information very differently from the way they did in previous decades. Citizens and workers of the 21st century need new skills and education has an important role in developing them. This project is focused on the initial tasks of defining those skills and developing ways to measure them using technology. It will also address the pedagogical implications and provide evidence on how the skills can best be developed in education.

NEW

- The **Combined White Papers** are now available for download - click [here](#) (9MB).
- **Individual Working Group White Papers** are also available for download - click on links below:
  - *21st Century Skills* (2MB)
  - *Methodological Issues* (2MB)
  - *Technological Issues* (2MB)

www.atc21s.org
• Mass customization
• Empower individuals to optimally perform in very competitive industries
ICT is now Changing Education

Today’s one-size-fits-all approach to education is **NOT** designed for the 21st century

Our education systems are responsible for producing our future leaders, citizens, and workers
The situation facing educators worldwide...

In a knowledge-based world, we need to...

- prepare students for jobs that haven’t been created
- using technologies that haven’t been invented
- in order to solve problems that may not even yet exist

— former U.S. Education Secretary Richard Riley

we need to equip students with the right skills to learn how to learn, adapt and innovate
Intel CSR in Education

✓ INTEL TEACH
✓ INTEL LEARN
✓ INTEL ISEF

INTEL On-Line Tools & Resources

INTEL Transformation of Education with 1:1 eLearning

INTEL Education Policy Guide & Tool

www.intel.com/education/teachers
PROFESSIONAL DEVELOPMENT – INTEL® TEACH

• Empower teachers to successfully integrate technology in the classroom
• Develop 21\textsuperscript{st} century skills in students
• Online courses and resources

TRAINED 10M TEACHERS, 70 COUNTRIES
CAG in RCIS at a Glance
Intel Teach Elements
Engaging eLearning Courses for K12 Educators

Intel® Teach Elements—Online Professional Development Courses

Intel Teach Elements
Engaging eLearning courses for K–12 educators

Explore 21st century learning concepts

Intel Teach helps K–12 teachers of all subjects engage students with digital learning, including digital content, Web 2.0, social networking, and online tools and resources. Intel Teach professional development empowers teachers to integrate technology effectively into their existing curriculum, focusing on their students’ problem solving, critical thinking, and collaboration, which are precisely the skills required in the high tech, networked society in which we live.

Intel Teach Elements are free, just-in-time professional development courses that you can experience now, anytime, anywhere. This series of compelling courses provides deeper exploration of 21st century learning concepts.

Learn more about the Intel Teach Elements series ➔

Moving into Mobile Learning

Take this introductory course to understand the benefits and challenges of mobile learning and the components of a successful program. Learn what you need to consider when creating a mobile-learning environment in your classroom.

Download the syllabus ➔
Launch the course (requires newer browsers: IE8+, Firefox*, or Chrome*) ➔

Creativity in the Mobile Classroom

This course builds on concepts introduced in Moving into Mobile. You’ll learn concrete ways to implement mobile learning effectively, while encouraging students’ creativity.

Download the syllabus ➔
Launch the course (requires newer browsers: IE8+, Firefox*, or Chrome*) ➔

Designing Blended Learning

Transition your teaching to blended learning experiences where some portion of learning occurs online and outside of a traditional classroom setting. Prepare your students for self-directed and independent learning.

Download the syllabus ➔
Launch the course ➔

Intel Teach Elements
Engaging eLearning Courses for K12 Educators

Inquiry in the Science Classroom
Transition from textbook science to authentic inquiry. Explore ways to develop your students’ scientific thinking and practices.
Download the syllabus>
Launch the course (requires newer browsers: IE9, Firefox, or Chrome)>

Thinking Critically with Data
Examine critical thinking with a focus on data analysis. This course will help you prepare students to think analytically in our global, knowledge-driven world.
Download the syllabus>
Launch the course>

Assessment in 21st Century Classrooms
Learn how to plan, develop, and manage student-centered assessment strategies that can benefit your teaching and your students’ learning.
Download the syllabus>
Launch the course>

Project-Based Approaches
Explore the features and benefits of project-based learning with classroom scenarios that help you to engage students with self-directed learning.
Download the syllabus>
Launch the course>

Collaboration in the Digital Classroom
Plan and manage collaboration activities that integrate online tools, which are increasingly an integral part of our digital, global world.
Download the syllabus>

Educational Leadership in the 21st Century
Learn how school leaders can better use technology to help support teacher effectiveness and improve student achievement.
Download the syllabus>
Intel Education Help Guide

Step-by-step instructions that help build students productivity software skills

The Intel® Education Help Guide helps your students complete tasks using productivity software. Want to make a bar chart, set up a three-column newsletter, or add a photo to a multimedia presentation? The on-demand Help Guide provides instructions for hundreds of productivity tasks in user-friendly, non-technical language. Visual images accompany each step to show how it’s done.

› See step-by-step instructions while you work
› Help your students develop technology literacy
› Support English-language learners

Instant online help

Find the online Help Guide that matches your software version and operating system. You can also choose the guide in another language.

Use the online Help Guide >

Get the Help Guide on your own computer

Download the Help Guide that matches your software version and operating system. You can also download the guide in another language.

Download the Help Guide >

Help in the school

The Help Guide is a flexible resource for teachers and students. Find strategies for promoting technology literacy in the classroom with other educators and parents.

Read Help Guide strategies >

Help for English-language learners

Learn tactics to use with your English-language learners to help them improve their technology and content mastery skills.

Find strategies for your language learners >

Help Guide: Learning Windows* 8 and 8.1 Apps

The all new touch-enabled Windows operating system is loaded with useful features. Tap, zoom, and swipe your way to things both familiar and functional. Get help with everything Windows* 8 or 8.1 in a convenient app.

Download the Windows* 8 app >

See how Help Guide works

View an animated demonstration of how to find what you need help with using the Help Guide.

View the demo >
Intel Teach Elements (RU)

О Программе
- О Программе
- Компания
- Конференции
- Отчеты специалистов
- СМИ о Программе
- История проекта
- Доска почета
- Новости
- Фотогалерея

Обучение
- Обучающие площадки
- Тренинги
- Курсы

Поддержка
- Координатор
- Тьютор
- Справочник
- Вопросы проектов выполненных
- Это интересно
- Региональные практики

События
- Календарь событий
- Общегородские мероприяия
- Конкурсы
- Конкурс Make It
- Фабрика новых проектов

Онлайн курсы

Дистанционные курсы

Тематические тренинги «Элементы» (Intel® Teach Elements)

Тематические тренинги Intel «Элементы» - это серия коротких уникальных курсов для самостоятельного обучения, которые помогут слушателям подробно ознакомиться с образовательными концепциями XXI века, такими как обучение по методу проектов, формирующее оценивание или совместим работа с использованием средств Web 2.0.

Курсы направлены на профессиональное развитие и разработаны специально для учителей и преподавателей с большой рабочей нагрузкой и плотным графиком работы. Построение курса позволяет слушателям самостоятельно планировать график занятий.

Курсы предназначены для учителей с любым уровнем технической подготовки. Никакие особые условия не требуются. Курсы можно проходить в любой последовательности в рамках программы Intel® Обучение для будущего.

В настоящее время для самостоятельного обучения предлагается курс из серии "Элементы" - "Метод проектов", "Методы оценивания в классе XXI века", "Методы сотрудничества в классе XXI века".

Курс Intel «Метод проектов» направлен на глубокое изучение проектного подхода к обучению в школе. Этот курс будет полезен как учителям начинающим применять проектное обучение в классе, так и опытным учителям, за плечами которых уже не один проведенный проект. Составная курс, Вы найдете много интересных идей и научитесь эффективно применять метод проектов с учащимися в классе. Курс поможет Вам почувствовать мотивацию учащихся и улучшить их знания.

В ходе изучения курса Вы узнаете:

- как планировать проект, отвечающий целевым образовательным требованиям;
- как оценивать деятельность учащихся в проекте и формировать навыки XXI века и самостоятельность;
- как использовать инструменты критического мышления и сотрудничества для развития познавательных и творческих умений учащихся;
- как применять средства ИКТ для эффективной организации проектной работы в классе и дома.

На выполнение заданий курса Вам потребуется от 10-14 часов работы в году для Вас и учащихся. Вы сможете планировать свое обучение в свободные часы. В результате Вы разработаете План действий, который станет Вашим руководством по организации проектов с учащимися в Вашем классе. Виртуальные педагоги — учитель Андрей и Мария станут для Вас помощниками, они охотно поделятся своим опытом и проблемами, которые вставали перед ними, и как они их преодолевали.

http://www.iteach.ru
Изучение звёздного неба с помощью мобильных технологий

Общие темы
Дни и ночи музеев

Общие темы
Совершенство в деталях

Общие темы
Intel объявляет о региональном расширении проекта «STEM-центры»

Конкурсы
Традиционные, но обновлённые конкурсы программы "Учимся с Intel": полезный опыт и хорошие призы

Учебное программное обеспечение
Arduino + Scratch. Атака клонов

Геогebra позволяет решать множество задач: от построения графиков и геометрических фигур (как плоских, так и пространственных) до создания анимированных изображений. Если в старших классах можно решать формализованные математические задачи, то в младших классах стоит начать обучение в этой программе с "рассказывания истории"! ...

美术馆: Intel Education Galaxy (RU) Teacher Professional Community

https://edugalaxy.intel.ru/
Intel Teachers Engage Community

http://engage.intel.com
Why 1:1 eLearning is so Important

Creates an environment best suited for development of 21\textsuperscript{st} century skills
K12 Education

1811

1981

2011

Transformation of Education
From One-Size-Fits-All
Shifting the Learning Paradigm
Shifting the Learning Paradigm

Student-Centered Classroom
Learning anytime, anywhere, any way

Teacher Guides

Collaboration

Community Experts

Curriculum & Resources

Real-World Projects

Personal Learning Community

Standards-Based Assessment

ICT

Students Create
Why is 1:1 eLearning so Important

Trends: What is happening today and tomorrow
Trends

Classroom Designs
eLearning Spaces

Making Agile Learning Spaces
Trends

Personalized eLearning
A child’s potential is based on their own unique learning needs, abilities and interests that make learning personal.
My Unique Learning Personality

My Pace of Learning

My Brain Wiring

What do I want to be?

My Learning Style

My Interests & Preferences
Personalized Learning – Learning Styles

Visual-Spatial

Kinesthetic

Interpersonal-Social

Musical

Linguistic-Verbal

Logical-Mathematical

Multiple Intelligences
The Theory in Practice
A Reader
Howard Gardner
Author of Frames of Mind
The Teacher’s role is critical to making learning personal

- Shifting from teacher centric to individual mentoring/facilitating/coaching
- Designing the learning experience ensuring alignment of learning objectives and standards
- Facilitating students through the learning process supported by different levels of technology
Personalized Learning and every student’s having anytime/anywhere access to their own computer (i.e. 1:1 eLearning) can help empower them to achieve their individual potential.
Personalization of Teaching & Learning

- **Determine Learning Gap & Mode**
- **Formative & Summative Assessments**
- **Design, Adjust & Remediate**
- **New strategy & content**
- **Student Learns**
- **Learning Mode & Knowledge Gap**
Using Technology to Personalize Learning

Automatic loop using technology as an adaptive learning platform

Manual loop with technology used as a learning support tool

The Teacher
Adaptive Individualized Learning Solutions

• **Assessment and LEarning in Knowledge Spaces** is a Web-based, artificially intelligent assessment and learning system. ALEKS uses adaptive questioning to quickly and accurately determine exactly what a student knows and doesn't know in a course.

• Waterford Institute technology offers an individualized educational experience that can be successfully implemented for any student in any setting. Our software constantly monitors each student’s mastery of skills and adapts instruction to meet individual needs.

• DynEd's ASTD certified, computer-assisted English language learning courses and tests feature an intelligent tutor, advanced speech recognition technology, teacher support, and award-winning content for professional and business English learners.
Examples

• Automated Adaptive Learning Environment
  – ALEKS, DYNED, Waterford, etc.

• Manual
  – Collaborate via Web, wiki, LMS, etc.
  – Communicate via email, blogs, LMS, etc.
  – Publish work online, LMS, etc.
  – Blended learning via LMS
Trends

The “Flipped” or “Inverted” Classroom
Traditional ("unflipped") Classroom

Transmission **inside** classroom

Assimilation **outside** classroom

Students deal with difficult concepts on their own or with non-expert parents.
The Flipped/Inverted Classroom

What a Flipped/Inverted Classroom model does?

Before Class:

During Class:
The Flipped/Inverted Classroom

Robert Talbert: Computers, the Internet, and the Human Touch
Trends

Game-Based Learning
Mimic real life (simulations and models)
Experiment (trial and error)
Goal oriented
Collaborative and Social
Interdisciplinary (integrated subject matter)
Time and resource constraints
Critical thinking and strategic problem solving
Remember “Brain Rules”
Trends

3D Printers
3D Printers Reshaping “Reality”

- Turn theory into practice
- Simplify complexity
- Prove end-results
eLearning Solution

Teachers, Students, Administrators & Parents
- Pedagogy & Professional Dev
- Education Social Network

Content & Assessments
- Core & Supplemental Curriculum
- Formative & Summative Assessments
- Internet
- Community Generated
- Tools & References

ICT & Infrastructure
- Teacher & Student Devices
- School Servers
- WLAN/LAN Networks
- Facilities
A Complete Education Solution

Standards
Syllabus
Gradebook
Assessments
Training
Content
Reporting
eLearning Solution

Teachers, Students, Administrators & Parents
Профессиональное развитие – INTEL® обучение

• Возможность для преподавателей успешно внедрять информационные технологии в процесс обучения

• Развитие навыков и умений, необходимых для успешной работы в 21 веке

• Курсы и информационные ресурсы в режиме реального времени

10 миллионов обученных преподавателей из 70 стран
## Intel® Teach Program Portfolio

Intel® Teach provides flexibility through delivery options (face-to-face, online, or hybrid courses) and course levels (beginning through advanced experience). All courses enable teachers to introduce, expand, and support 21st century learning in any subject using their existing curricula.

### Intel Teach Elements Courses

**Professional Development for Anyone, Anywhere, Anytime in 24 Languages.** A series of high interest, visually compelling short online or CD-based courses that provide deep exploration of current learning concepts.

#### K-12 CLASSROOM TEACHERS (ALL SUBJECTS)

<table>
<thead>
<tr>
<th>Project-Based Approaches</th>
<th>Collaboration in the Digital Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helps teachers improve their understanding and application of Project-Based Approaches to engage students.</td>
<td>Helps teachers develop students’ 21st century skills, deepen content understanding, and prepare for the globally connected world.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment in 21st Century Classrooms</th>
<th>Thinking Critically with Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants learn to plan, develop, and manage student-centered assessment to benefit students’ learning.</td>
<td>Participants learn to help students develop specific skills necessary for analyzing, interpreting, and displaying different kinds of data.</td>
</tr>
</tbody>
</table>

#### SCHOOL LEADERS

<table>
<thead>
<tr>
<th>Educational Leadership in the 21st Century</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educators explore and discuss school leadership in students’ technological world and develop strategies to better support teachers.</td>
</tr>
</tbody>
</table>
# Intel Teach Courses

A Network of Sustained Support through a Train-the-Trainer Model, used in more than 60 Countries since Inception in 1999.

### K-12 CLASSROOM TEACHERS (ALL SUBJECTS)

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Getting Started Course</strong></td>
<td>Introduction to classroom software productivity tools and student-centered approaches.</td>
</tr>
<tr>
<td><strong>Essentials Course</strong></td>
<td>Develop units that integrate technology into existing classroom curricula to promote student-centered learning.</td>
</tr>
<tr>
<td><strong>Essentials Online Course</strong></td>
<td>Develop units that integrate technology into existing classroom curricula to promote student-centered learning in an online course.</td>
</tr>
</tbody>
</table>

### SCHOOL LEADERS

<table>
<thead>
<tr>
<th>Forum</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership Forum</strong></td>
<td>Network with other leaders to focus on leadership in promoting, supporting, and implementing effective technology integration in schools.</td>
</tr>
</tbody>
</table>

### ICT TEACHERS

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skills for Success</strong></td>
<td>Training on a student curriculum that develops digital literacy, problem solving, critical thinking, and collaboration skills.</td>
</tr>
</tbody>
</table>

### Intel Education Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Online Community</strong></td>
<td>Teachers Engage is a personal learning network for anyone interested in the core concepts of Intel Teach Program courses: instructional design, project-based approaches, effective use of technology, assessment of 21st century skills, and open-ended questioning.</td>
</tr>
<tr>
<td><strong>Free Teaching Tools and Resources</strong></td>
<td>The Intel Education Web site offers robust, practical, easily integrated content and resources including exemplary lesson plans, assessment strategies, technology-enriched project ideas, and higher-order thinking tools, in more than 18 languages. Find out more at <a href="http://www.intel.com/teachers">www.intel.com/teachers</a>.</td>
</tr>
</tbody>
</table>
**Курсы Intel Teach**

Система постоянной поддержки, которая осуществляется с помощью модели преподавание для преподавателей, которая используется более, чем в 60 странах с начала 1999.

**Для учителей, преподающих по 12 летней системе (все предметы)**

<table>
<thead>
<tr>
<th>Начало курса</th>
<th>Работа с курсом</th>
</tr>
</thead>
<tbody>
<tr>
<td>Внедрение на занятиях программных средств и личностно-ориентированных методов.</td>
<td>Развитие идей на основе проектов, используя онлайн инструменты, которые позволяют улучшить навыки мышления учащихся.</td>
</tr>
</tbody>
</table>

**Составляющие курса**

<table>
<thead>
<tr>
<th>Основы онлайн курса</th>
<th>Опция для продвинутых</th>
</tr>
</thead>
<tbody>
<tr>
<td>Развитие идей, которые помогут ввести технологии в привычный учебный план и поспособствуют личностно-ориентированному обучению.</td>
<td>Сотрудничество с другими преподавателями, чтобы ускорить процесс внедрения технологий 21 века в образование.</td>
</tr>
</tbody>
</table>

**Для руководства школ**

<table>
<thead>
<tr>
<th>Форум руководства</th>
<th>Для преподавателей ИКТ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Взаимодействие с руководителями других школ с целью продвижения и поддержки эффективного внедрения технологий в образовательный процесс.</td>
<td>Навыки для успеха</td>
</tr>
<tr>
<td>Подготовка учебного плана, который способствует развитию навыков в сфере технологий, решению задач, критического мышления и навыков работы в группе.</td>
<td></td>
</tr>
</tbody>
</table>

**Ообразовательные ресурсы Intel**

<table>
<thead>
<tr>
<th>Всемирное онлайн сообщество</th>
<th>Бесплатные инструменты обучения и ресурсы</th>
</tr>
</thead>
</table>
Connecting people and digital learning resources

Use Learnify together with your students to communicate, create and share digitally. Cooperate with colleagues on a national scale to develop the best digital learning resources in the world.

Create a Trial Account  Use Invitation Code

Welcome to our new website!

On our new web, we have made several significant changes to enhance the experience for our visitors. One of the improvements made is that the new website is constructed to work even better on mobile devices, as well as on smart phones and tablets. Also - all teachers are now welcome to create a free test account at Learnify.

Sign up and test our tools without any charge! We hope you will enjoy o... Read more »
eLearning Solution

Content & Assessments
Types of Content

• Learning Objects
• Simulations
• Models

• RSS Feeds
• Blogs & Wikis
• Open-ended Tools

• Mashups
• Crowd Source
• Podcasts
High Quality Content

- Immersive
- Interactive
- Multimedia
- Relevant to Language
- Relevant to Culture
- Relevant to Curriculum Standards
- Personalized
- Social
- Online and offline
- Developing XXI c skills
McGraw-Hill & Kno Offer A Peek Into The Future Of Textbooks: They’re Dynamic, Vocal, Adaptive & Bring Stats To Studying

READING

Now that you have previewed the content of this chapter, it is time to dig deeper.

Reading with SmartBook™ allows you to read in an adaptive fashion. This way you can build your knowledge through learning the essential and critical things first - and then add details later. SmartBook™ continuously monitors your learning as you read through the chapter by “probing” your understanding. We don’t want to distract your reading too much, but watch out for the green icon glowing.

This example indicates that you have twelve relevant probes ready for you answer whenever you are ready. If you prefer to continue reading, no problem. The probes for the following will just accumulate.

NEXT

PART TWO Support and Movement

6.3 Cutaneous Glands

Objectives

When you have completed this module, you should be able to:

- name two types of sweat glands, and describe the structure and function of each.
- describe the location, structure, and function of eccrine and apocrine glands.
- describe the relationship between eccrine and apocrine glands, and explain their respective functions.

The skin has two types of glands: sebaceous sweat glands, eccrine sweat glands, apocrine glands, and accessory glands.

Sweat Glands

Sweat glands, or sudoriferous (sweat-producing) glands, are of two kinds, described in chapter 5: eccrine and apocrine. Eccrine mucous sweat glands, the most numerous glands of the skin, produce watery perspiration that serves primarily to cool the body (fig. 6.11b). There are 2 to 4 million of these in the adult skin, with a total weight about equal to that of a kidney. They are especially abundant on the palms, soles, and forehead, but they are widely distributed over the rest of the body as well. Each is a simple tubular gland with a modified cell to the dermis or subcutaneous and an extruding or cellular duct leading to a sweat pore on the skin surface.

A microscopic structure in a cell that carries out individual functions is known as a(n):

Click the answer you think is right:

organ
tag
organ
molecule

Do you know the answer? (Be honest)

Find it
Start over
Check
Tip
No idea

iLearnSmart™
• License-Free
• Open Access
• Standalone
• School Server
• Internet

• Instructional Models
• Simulations
• Toolkits
• Problem Solving
• SCORM-compliant
• Integrated with Moodle
More than 50% of the usage of skoool UK is outside school hours
Облако
В любое время/в любом месте Услуги доступны с любого устройства

В любое время/в любом месте
Услуги предоставляются в соответствии со стандартной инфраструктурой

Мобилный телефон
Смартфон
Нетбук
Планшет
Стационарный компьютер
Мобильные Интернет-устройства
Ноутбук
Портативный компьютер
МСА
Intel Education Software and Content

Intel Learning Series Software Resources

Learn these software from How-to, introduction, FAQ and video documents. Learn these software from How-to, introduction, FAQ and video documents.

- Classroom Management
- LabCarm
- Kno E-Reader
- Platform Management
- Theft Detection

Digital Literacy

Need to improve your PC skills? Try out Intel® Education’s industry leading courseware!

- Intel® PC Basics
  Introductory software helps new users learn to use a PC and surf the Internet.
- Intel® Easy Steps
  Provides instruction on how to create useful products using Office Software.
- Intel® Help Guide
  Provides step-by-step instructions to complete hundreds of tasks using Office Software.

Education Resources

World class education resources supporting ongoing learning at a time that suits you.

- Skool
  Award winning Maths & Science content for students and teachers.
- Khan
  Tutorial videos that explore math and science solutions.
- British Council
  English language learning resources for children, teens & adults.
- Intel® Learning Series Alliance
  Education resources from Intel® Learning Series Alliances Online Showcase.
20th Century Learning
Framework for 21st Century Learning

- Blending of specific skills, content knowledge, expertise and literacies
- Help students master the multi-dimensional abilities required of them in the 21st century

www.p21.org
Tools for Student-Centered Learning

Free tools and resources from Intel Education

Free Tools and Resources to Help Students Develop 21st Century Skills

Our online tools create active learning environments where students can engage in discussions, analyze information, pursue investigations, and solve problems. You’ll also find teaching resources, including lesson plans, assessment strategies, and technology-enriched project ideas for all K-12 subjects.

Intel® Education Mobile Learning

Mobile Learning offers an exciting opportunity to make learning truly personal and more powerful. Visit this site for practical ideas and resources to transform learning.

Learn about Mobile Learning >

Visual Ranking Tool

Help your students identify and refine criteria as they assign rankings to a list. This tool can help them better organize ideas, debate differences, and reach a consensus.

Learn more about the Visual Ranking Tool >

Mobile Scenarios for K-12 Education

Find ideas for using mobile devices effectively in the classroom. Read stories that span grade levels and subject areas that can inspire you to integrate new technologies into your classroom.

About Mobile Scenarios >

Seeing Reason Tool

Help students understand the cause-and-effect relationships of complex systems. This tool allows them to create visual maps that organize their ideas and build their collaborative reasoning skills.

Learn more about the Seeing Reason Tool >

Intel Education Tools

**Showing Evidence Tool**
Teach students how to use a visual framework to construct a well-reasoned argument and prove their case with credible evidence.

Learn more about the Showing Evidence Tool >

**Assessing Projects Tool**
Develop or create assessments that address your students' critical thinking and collaboration skills. You can also learn strategies to help make assessment an integral part of your teaching.

Learn more about the Assessing Projects Tool >

**Intel® Teach Elements Professional Development**
Explore 21st century learning concepts for your classroom with free, on-demand online professional development courses.

Take a course >

**Intel® Education Help Guide**
Promote technology literacy skills in your classroom with this set of easy-to-follow, task-based activities. The guide helps build students' abilities in areas such as word processing, spreadsheets, and multimedia.

Explore the Help Guide >

**Designing Effective Projects**
Gather ideas from a collection of exemplary unit plans that integrate technology into classroom projects, and learn how to design your own technology-rich teaching plan.

Learn more about Designing Effective Projects >

**Teachers Engage Community**
You're invited to join our online community, where you can engage in real-time conversations with other educators and find resources focusing on effective uses of technology in K-12 classrooms.

Join the Teachers Engage Community >

eLearning Solution

ICT & Infrastructure
INTEL® EDUCATION SOFTWARE REFERENCE SUITE

**ENGLAG**

**STUDENTS IN 21ST CENTURY LEARNING**

- **Kno**
  - Interactive eReader built specifically for education.

- **Lab Camera**
  - Built in camera based tools that enhance STEM curriculum.

- **SPARKvue**
  - Science application that collects and analyzes data from sensors.

- **My Notes**
  - Capture notes and organize information from multiple sources.

- **Media Camera**
  - Multimedia creation and editing for project-based learning.

- **ArtRage**
  - Painting and drawing app that lets students create digital artwork.

- **Intel® Education Resources**
  - Content from Khan Academy, British Council, and skool.

**EMPOWER EDUCATORS**

- **Classroom Management**
  - Tools to manage efficient classrooms and collaboration.

**ENABLE IT**

- **Parents Carefree**
  - Monitor online access and protect from undesirable online content.

- **Theft Deterrent**
  - Protect IT investment by disabling devices in the event of loss.

- **McAfee® AntiVirus Plus**
  - Protects devices from exposure to malware.

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Not all features available on all platforms. *Other names and brands may be claimed as the property of others.
Experience and Explore Rich Content
• Videos
• 3D Models: molecules, etc.
• Linked glossaries
• Search other resources

Open Authorship
• Students can add their own links and other information
• Drives home content

Search and Reference Other Sources

Term and Course Mgmt Tools Keep Materials Organized, Learning Focused

Frequently Updated Electronic Textbooks Keep Learning Relevant
INTEL® EDUCATION LAB CAMERA
BY INTELLISENSE*

Six Imaging and Analysis Tools in One App
• Time-lapse cam
• Kinematics
• Microscope
• Pathfinder
• Motion cam
• Universal logger

Promotes Higher-Level Skills Development
• Investigation
• Problem-solving
• Critical thinking, deductive reasoning

Helps Make Abstract Concepts Tangible

Implement Cost-Effective STEM Curriculum

Time-Lapse Cam
Kinematics
Pathfinder
Motion Cam
Universal Logger
Microscope
SPARKVUE*
PART OF INTEL® EDUCATION

Data Analysis Application for Science and Math Concepts
• Uses built-in camera and sensors
• Includes data analysis and visual reporting tools
• Optional external sensors

60 Built-In Labs Make it Easy to Get Started
• Temperature: Track/analyze melting ice
• Acceleration: Analyze while riding a bike
• Sound: Examine sound and noise pollution
• Camera: Capture, annotate images
• Light: Measure daylight light intensities
• Magnetometer: Study magnet field strengths

Create Custom Labs

*Other names and brands may be claimed as the property of others.
Enable Creative Exploration and Communication

- Camera
- Advanced editing tools
- Presenter

Capture Imagery with Lab Cam, Media Cam Recorder, or Other Application
Fun, Easy-to-Use Painting and Drawing
Enables Students to Explore Creativity and Communicate Visually

Wide Range of Tools/Effects
- Watercolor
- Ink pen
- Flood fill
- Gloop pen
- Sticker spray
- Text
CLASSROOM MANAGEMENT
PART OF INTEL® EDUCATION

Allows Teacher to Easily Support Diverse Learning Styles
• Individual, Group, or Entire Class Activities

Provides an Infrastructure for 1:1 eLearning
• Deliver interactive lesson content
• Monitor student learning with quiz functions
• Administer assessments
• Transfer files
• Monitor student screens
• Chat with individual students
INTEL® EDUCATION THEFT DETERRENT
HIGHLIGHTS PROTECT CAPITAL AND OPERATIONAL INVESTMENT

• Asset management infrastructure
• Robust, hardware-hardened
• Helps deter theft, protect investments

MANAGEMENT SERVER
Hierarchical infrastructure supports very complex regional deployments

MANAGEMENT DASHBOARD
Includes IT ready management dashboard to monitor clients and implement policies

HARDWARE HARDENED CLIENT
Provide hardware hardened, tamper-resistant client to render stolen systems valueless

EASE OF USE FOR STUDENTS
No student interactions and no login passwords required
McAFEE* ANTIVIRUS PLUS/MOBILE SECURITY
5 YEARS COMPLETE VIRUS PROTECTION AND INTERNET SECURITY

Provides five years of trusted malware protection for schools and students to have a safe and secure carefree digital classroom.

**COMPREHENSIVE PC SECURITY**
Provide multiple layers of protection with innovative features.

**WEB AND E-MAIL PROTECTION**
Prevent system from risky web connections, contents, and e-mail threats.

**TRUSTED SECURITY VENDOR**
Offer largest dedicated security technology vendor with streamlined support.

**BETTER CUSTOMER EXPERIENCE**
Include a clear user interface and optimized performance for better user experience.

McAfee* AntiVirus Plus is for Win* 7/8 OS
McAfree* Mobile Security is the application for Android OS

Not all features available on all platforms.
*Other names and brands may be claimed as the property of others.
ICT & Infrastructure

Teacher & Student Devices
Device Trends

BYOD (Bring Your Own Device)
Intel® Architecture - Platforms for Education
## INTEL® ARCHITECTURE
### ADVANTAGES FOR EDUCATION

| FULL-FEATURED PLATFORMS | • Support for multitasking  
                          • Online/offline file access  
                          • Peripheral compatibility including USB |
|-------------------------|--------------------------------------------------------------------------------|
| MANAGEABILITY AND SECURITY | • Security and management tools  
                              • Classroom collaboration to optimize learning efficiency  
                              • Secure content and apps deployment |
| PLATFORM AND SOLUTION INNOVATION | • Innovative solutions  
                                       • Robust PC performance  
                                       • Knowledge creation aligned to curriculum |
| LEGACY CONTENT SUPPORT | • Approved content and curriculum  
                                    • SW Compatibility (Adobe Flash* and JavaScript*)  
                                    • Easy to integrate existing materials |
| OPEN ECOSYSTEM AND ARCHITECTURE | • Interoperable technologies  
                                       • Choice of vendors  
                                       • Maximize value by leveraging existing infrastructure |

*Other names and brands may be claimed as the property of others.*
<table>
<thead>
<tr>
<th>Q1’13</th>
<th>Q2’13</th>
<th>Q3’13</th>
<th>Q4’13</th>
<th>Q1’14</th>
</tr>
</thead>
</table>
| Lenovo ThinkPad* Tablet 2  
(Intel® Atom™ Processor Z2760) | Lenovo ThinkPad* X131e Notebook  
(Intel® Core™ i3 Processor, Celeron® Processor) | Lenovo ThinkPad* L430 and L530 Notebooks  
(Intel® Core™ i3/i5/i7 Processors) | JP Sá Couto* MG140A2 Notebook  
(Intel® Core™ i3/i7 Processors) | Samsung 100NZC* Clamshell  
(Intel® Atom™ Processors N2600/N2800) |

*Other names and brands may be claimed as the property of others.
Student friendly rugged design
• Drop resistant without a cover
• Dust and water resistant

Tools to foster learning through exploration
• Snap-on magnification lens
• Plug-in temperature probe

Tools for content creation
• Stylus for writing and drawing

Enhanced security to protect and manage devices
• Trusted Platform Module (TPM) provides theft deterrence
Intel® Education Tablet
INTEL® ATOM™ PROCESSOR Z2420

7” RUGGEDIZED TABLET
Includes software suite to help teachers teach and to help students build 21st century skills

Brings Scientific inquiry to life
• Snap-on magnification lens
• Front and Rear-facing cameras

Vivid display produces brilliant imagery and easy-to-read text

Plug-in temperature probe
Enables diverse scientific exploration

Integrated speakers and microphone
enrich multi-media content

Enables access to wide range of learning tools with Intel® Education Software

Not all features available on all platforms. Other names and brands may be claimed as the property of others.
Intel® classmate PC – convertible
INTEL® CELERON® PROCESSOR 847/NM70

TWO DEVICES IN ONE

- Tablet and full-featured PC
- Swivel-Screen allows easy sharing and collaboration

Powerful full PC experience supports both Windows* 8 and Windows* 8 Pro

High-definition LCD display produces vivid imagery and easy to read text

Enables diverse scientific exploration

- High-definition rotatable camera,
- Snap-on magnification lens and
- Plug-in temperature probe

Precise digital note-taking

Drop-tested and spill-resistant for long-term durability

Enables access to wide range of learning tools with Intel® Education Software

*Other names and brands may be claimed as the property of others.
**Intel® classmate PC – Clamshell**

**INTEL® CELERON® PROCESSORS 847/NM10 (NON-TOUCH)**

**POWERFUL FULL PC EXPERIENCE**
supports both Windows* 8 and Windows* 8 Pro

- **High-definition LCD display**
  produces vivid imagery and easy to read text

- **Drop-tested and spill-resistant**
  for long-term durability

- **Enables access to wide range of learning tools**
  with Intel® Education Software

- **Enables diverse scientific exploration**
  - High-definition rotatable camera,
  - Snap-on magnification lens and
  - Plug-in temperature probe

*Other names and brands may be claimed as the property of others.*
**Intel® classmate PC – convertible** (Atom™ N2600)
FOR WINDOWS* 7 / LINUX

**POWERFUL FULL PC EXPERIENCE**
with Intel® Atom™ processor N2600

- **eReader scroll button** for easy student use
- **Swivel-screen** allows student sharing and collaboration
- **Changes from tablet to clamshell** to adapt to the learning and tasks at hand

**Educational features for student collaboration**
- Built-in camera
- Two speaker jacks for on-demand audio sharing
- Increased HDD storage
- Up to 12 hours of battery life

**Drop-tested and spill-resistant** for long-term durability

**Enables access to wide range of learning tools**
with Intel® Education Software

*Other names and brands may be claimed as the property of others.

Not all features available on all platforms.
How to Implement 1:1 eLearning
eLearning Solution

- Teachers, Students, Administrators & Parents
  - Pedagogy & Professional Dev
  - Education Social Network

- Content & Assessments
  - Core & Supplemental Curriculum
  - Internet
  - Community Generated
  - Formative & Summative Assessments
  - Tools & References

- ICT & Infrastructure
  - Teacher & Student Devices
  - School Servers
  - WLAN/LAN Networks
  - Facilities
Overall eLearning Program

Policy

Vision

Objectives

Feedback

eLearning Solution

Teachers, Students, Administrators & Parents

Pedagogy & Professional Dev

Education Social Network

Content & Assessments

Core & Supplemental Curriculum

Formative & Summative Assessments

Internet

Tools & References

Community Generated

ICT & Infrastructure

Teacher & Student Devices

School Servers

WLAN/LAN Networks

Facilities

Vision

Objectives

Policy

Results

Monitor & Evaluation

Dashboard
Policy

Vision & Objectives
Education Transformation: Policy

- Leadership
- Policy
- Professional Development
- Research & Evaluation
- Curriculum & Assessment
- Sustainable Resourcing
- Information Communications Technology

Envision the Future
- Create long term shared vision
- Define government and stakeholders' mission
- Analyze the socio-ecosystem

Develop Country Master Plan
- Create long term plan
- Look for levers
- Build multi-stakeholder alignment
- Design strategies

Management Plan + Sustainable Resourcing Plan
- Management plan
- Sustainable resourcing plan

Evaluate and Adapt
- Monitor, adapt, revise
- Measure success
- Recommend change

Continuous process of improvement

Each stage impacts all others
Stages happen in order
Monitor & Evaluation

KPI
(Key Performance Indicators)

&

Success Metrics
<table>
<thead>
<tr>
<th></th>
<th>Knowledge Acquisition (1 to 2 years)</th>
<th>Knowledge Deepening (2 to 4 years)</th>
<th>Knowledge Creation (4 to 6 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy</strong></td>
<td>• Education is a basic requirement with very basic use of ICT. Encourage regular use of ICT.</td>
<td>• Emphasis on high school graduation with ICT as a key enabler</td>
<td>• Emphasis on higher education and lifelong learning. Individualized education and global citizenship. ICT ubiquitous part of overall education system.</td>
</tr>
<tr>
<td><strong>Professional Dev</strong></td>
<td>• Basic use of ICT for lesson preparation and curriculum integration</td>
<td>• ICT used to develop 21st century skills</td>
<td>• ICT Used to create communities of practice</td>
</tr>
<tr>
<td><strong>Pedagogy</strong></td>
<td>• ICT used for classroom management and content broadcast</td>
<td>• ICT used to interact and work with students to develop 21st century skills</td>
<td>• ICT used for collaborative projects</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Focus on student-centered learning</td>
<td>• Teacher becomes model learner, coach, mentor, facilitator</td>
</tr>
<tr>
<td><strong>Curriculum</strong></td>
<td>• eBooks and digitized curriculum (e.g. skoool™)</td>
<td>• ICT is the primary means for delivering content (via LMS)</td>
<td>• ICT is a tool for content creation and collaboration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Content is localized</td>
<td></td>
</tr>
<tr>
<td><strong>Assessments</strong></td>
<td>• ICT used to conduct standardized assessments and collect results</td>
<td>• ICT used to analyze results and make correlations</td>
<td>• ICT used for cause-and-effect feedback loops</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Self and peer evaluations with student goal setting and self monitoring</td>
</tr>
<tr>
<td><strong>School Organization</strong></td>
<td>• ICT is used to manage school hierarchy</td>
<td>• ICT is used to be relevant and responsive to student’s interests and needs</td>
<td>• ICT enables community involvement of student, teacher, administrator, parents and local community</td>
</tr>
<tr>
<td><strong>ICT</strong></td>
<td>• Teacher laptop program to start teachers using ICT.</td>
<td>• 1:1 student laptops for simulations and multimedia</td>
<td>• Pervasive technology and social networks (wikis, blogs) support collaboration and knowledge sharing</td>
</tr>
<tr>
<td></td>
<td>• First steps toward 1:1 classroom and computers-on-wheels (COWs)</td>
<td>• High-end teacher laptop for content creation</td>
<td>• National network to build large-scale knowledge community</td>
</tr>
<tr>
<td></td>
<td>• School network with a simple server and some Internet connectivity</td>
<td>• Community network to collaborate and connect to outside contexts</td>
<td></td>
</tr>
</tbody>
</table>
## eLearning Program KPIs (SAMPLE)

<table>
<thead>
<tr>
<th>Knowledge Acquisition (1 to 2 years)</th>
<th>Knowledge Deepening (2 to 4 years)</th>
<th>Knowledge Creation (4 to 6 years)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy</strong></td>
<td><strong>Teacher are more efficient and are regularly using ICT in the classroom.</strong> 25% of teachers have ICT certifications</td>
<td><strong>Secondary students graduation rates</strong></td>
</tr>
<tr>
<td><strong>Professional Dev</strong></td>
<td><strong>Focus on students are developing 21st century skills.</strong> 75% of teachers have ICT certifications.</td>
<td><strong>ICT used to collaborate with other teachers and work with students to develop 21st century skills.</strong></td>
</tr>
<tr>
<td><strong>Pedagogy</strong></td>
<td><strong>Teachers use ICT to actually teach and manage classroom more than 50%.</strong></td>
<td><strong>ICT used to collaborate with other teachers and work with students to develop 21st century skills.</strong></td>
</tr>
<tr>
<td><strong>Curriculum</strong></td>
<td><strong>20% of curriculum is digital. eBooks and simple animations.</strong></td>
<td><strong>85% of curriculum is digital. Highly interactive content and models.</strong></td>
</tr>
<tr>
<td><strong>Assessments</strong></td>
<td><strong>20% of assessments are conducted online.</strong></td>
<td><strong>75% of assessments are conducted online. Student assessments indicate an increase in learning and 21st century skills development.</strong></td>
</tr>
<tr>
<td><strong>School Organization</strong></td>
<td><strong>100% of enabled teachers have eMail accounts and actively using them. 50% of enabled students have ePortfolios.</strong></td>
<td><strong>100% of enabled students have ePortfolios.</strong></td>
</tr>
<tr>
<td><strong>ICT</strong></td>
<td><strong>25% of primary and middle schools use COWs[12], and secondary school use true 1:1. Laptops are used for ~25% of class time. 25% of all teachers are enabled with laptops via the TPP.</strong></td>
<td><strong>50% of primary and middle schools use COWs, and secondary school use true 1:1. Laptops are use for ~50% of class time. 75% of all teachers are enabled with laptops via the TPP.</strong></td>
</tr>
</tbody>
</table>

KPI = Key Performance Indicator
Intel from Education Programs to Education Policy

- **2003**: Intel Teach in Ukraine Launch
  - 6 More CIS countries & 16 programs Launch
  - Enabling Quality & Networking
  - Enabling Partnership w/ Multi-Stakeholders
  - Focus on 1:1 E-Learning & E-Content
  - Education Policy

- **2010**: Education Ecosystem Development
  - Program Support

- **2012**: Systemic Education Transformation

- **2013**: From Programs to Transformation of Education

- **2014**: >> Systemic Education Transformation

- **2020**: >> Education Ecosystem Development

From Programs >> to Transformation of Education
Intel Education

✓ INTEL TEACH
✓ INTEL LEARN
✓ INTEL ISEF

INTEL On-Line Tools & Resources

INTEL Transformation of Education with 1:1 eLearning

INTEL Education Policy Guide & Tool
Thank You

Tatiana.Nanaieva@intel.com
Let’s build a bridge