E-Leadership:

Assimilating Educational Technology in Teaching, Learning & Management

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2014/11

Why "Technology Adoption" in classroom ?

Benefits of Technology Adoption:

- offer students new instructional and learning experiences;
- promote deep processing of ideas;
- increase students interaction with subject matter;
- provide students with significantly expanded learning opportunities;
- equip students to independently organize their learning process;

  :

- links with increased level of academic achievement.

Kurt, Serhat. (2013). Creating Technology-Enriched Classrooms: Implementation Challenges in Turkish Education. ***Learning, Media and Technology, 39(1),*** 90 – 106.

How can we use Technology to TRANSFORM Learning?

- Guiding Principle
- Bloom's Taxonomy (Revised)
- SAMR Model
- Technological Pedagogical Content Knowledge (TPACK) Framework

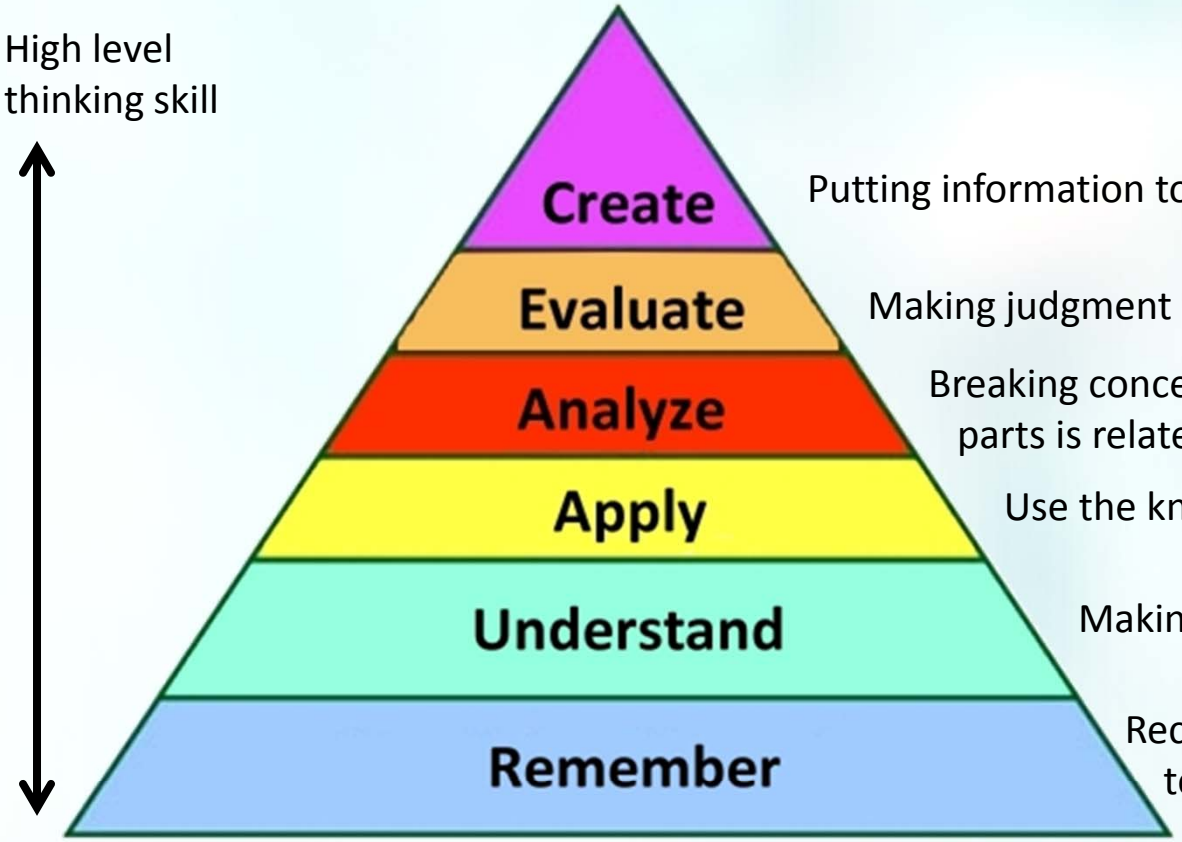
The Guiding Principle

e-learning should always be driven by

PEDAGOGICAL CONSIDERATIONS

and not the demands of the technologies themselves.

Bloom's Taxonomy (Revised Version)



Putting information together in an innovative way

Making judgment based on a set of guidelines

Breaking concept into parts & understand how each parts is related to one another

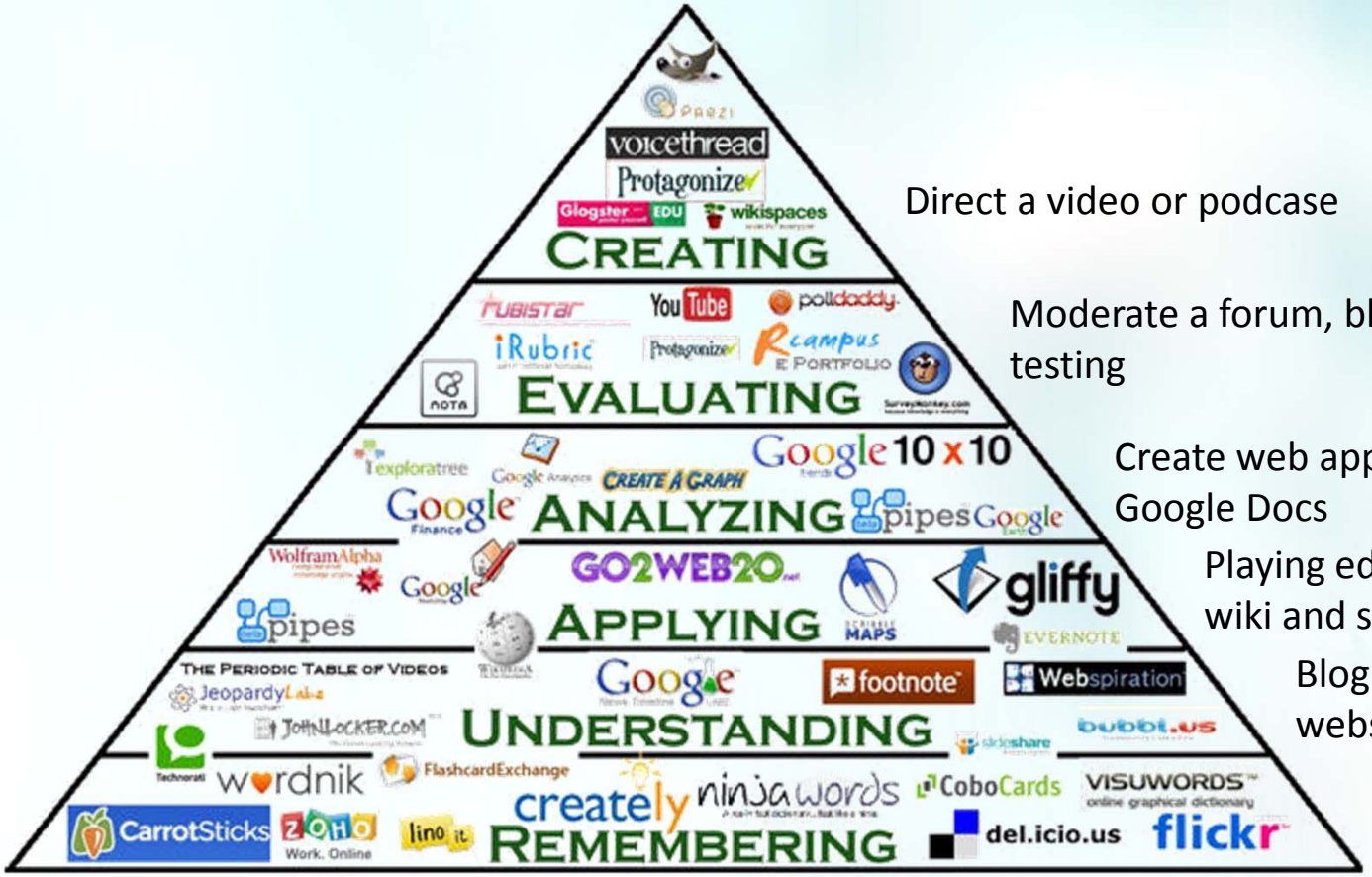
Use the knowledge gained in new way

Making sense of what you have learnt

Recalling relevant knowledge from long term memory

Based on APA adaption of Anderson, L. W. & Krathwohl, D.R.
(Source: http://www.apa.org)

Bloom's Interactive Pyramid



Direct a video or podcase

Moderate a forum, blog response & apps beta testing

Create web application & leverage Google Docs

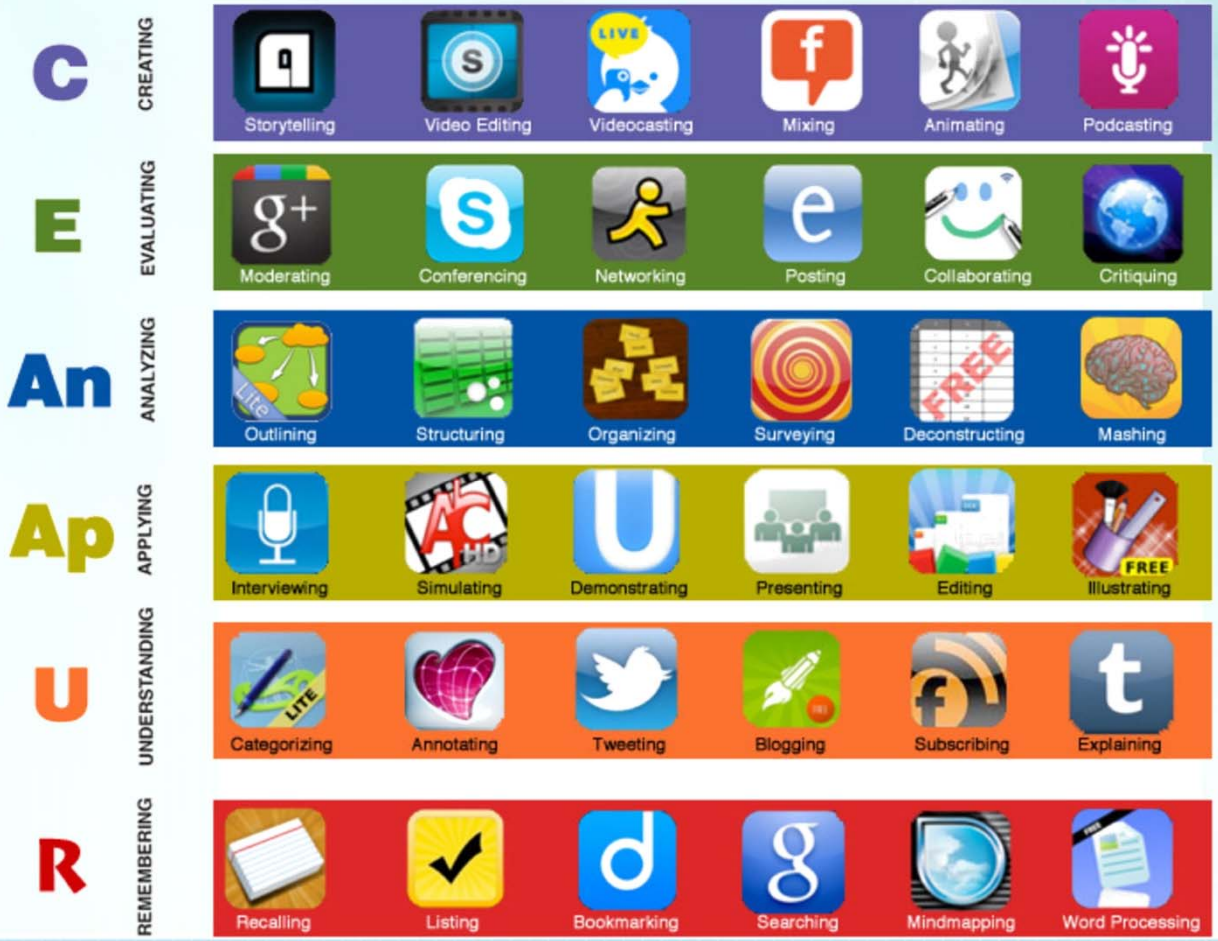
Playing educational games, editing wiki and sharing photos online

Blog journaling, commenting on websites

Use of social bookmark, search engines & social networking

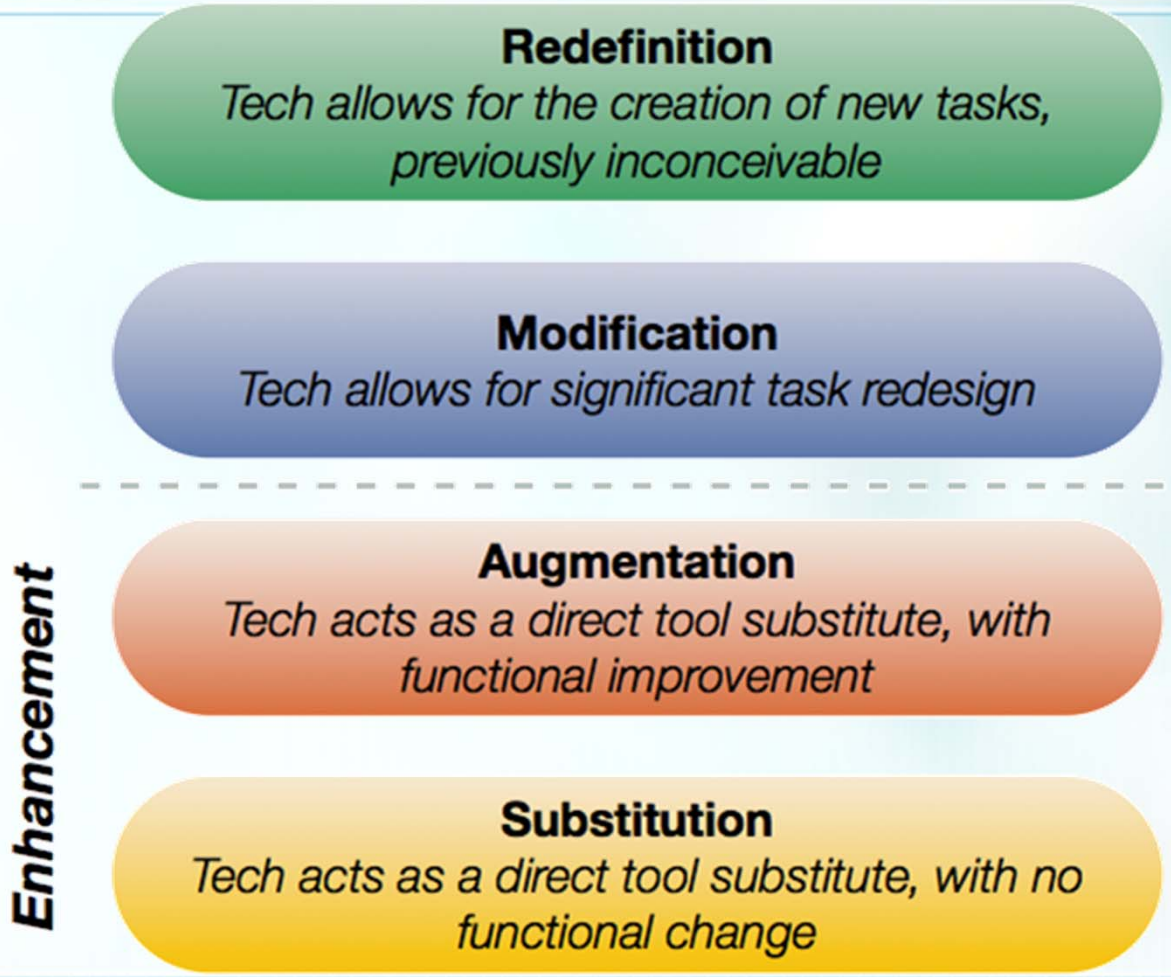
Churches, Andrew. "Bloom's Taxonomy Blooms Digitally." 2008. Tech & Learning. <http://www.techlearning.com/article/Blooms-Taxonomy-Blooms-Digitally/44988>.

iPad Apps to Support Bloom's Revised Taxonomy



Blooms' Apps – Kathy Schrock's Guide to Everything.
< http://www.schrockguide.net/bloomin-apps.html >

SAMR Model



SAMR model shows a progression that adopters of educational technology often follow as they progress through teaching and learning with technology.

SAMR Model Explained for Teachers. ***Educational Technology and Mobile Learning.*** (Ref: http://www.educatorstechnology.com/2013/06/samr-model-explained-for-teachers.html)

SAMR Model

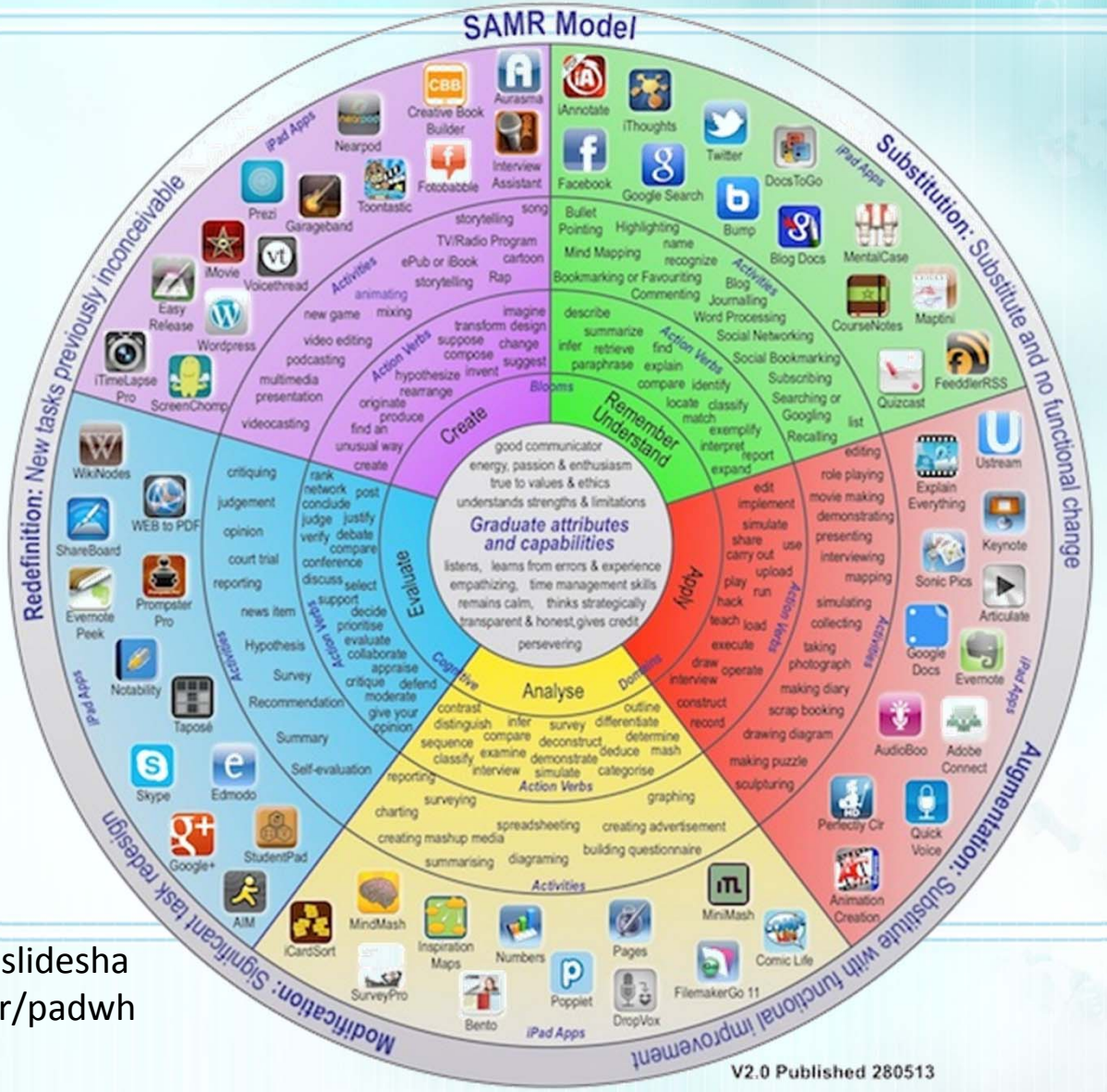
Level	Definition	Examples	Functional Change
Substitution	Computer technology is used to perform the same task as was done before the use of computers.	Students print out worksheet, finish it, pass it in.	No functional change in teaching and learning.
Augmentation	Computer Technology offers an effective tool to perform common tasks.	Students take a quiz using an online Google Form in stead of using pencil and paper.	There is some functional benefit here in that paper is being saved, students and teacher can receive almost immediate feedback on student level of understanding of material.
Modification	Common classroom tasks are being accomplished through the use of computer technology.	Students are asked to write an essay around the theme "And This I Believe...". An audio recording of the essay is made along with an original musical soundtrack. The recording will be played in front of an authentic audience such as parents, or college admission counselors.	Computer technology is necessary for this classroom to function allowing peer and teacher feedback, easy rewriting, and audio recording. Questions about writing skills increasingly come from the students themselves.
Redefintion	Computer technology allows for new tasks that were previously.	A classroom is asked to create a documentary video answering an essential question related to important concepts. Teams of students take on different subtopics and collaborate to create one final product. Teams are expected to contact outside sources for information.	At this level, common classroom tasks and computer technology exist not as ends but as supports for student centered learning. Collaboration becomes necessary and technology allows such communications to occur. Questions and discussion are increasingly student generated.

SAMR Model (iPad Version)

Class Task	Substitution	Augmentation	Modification	Redefinition
Note taking	Notes taken using ios Notes	Students choose their own notes app	All students use Notability for all notes	Teachers have access to all student's notes.
Research	Using safari to copy and paste information	Bookmark and share notes using the share button	Download and annotate with Notability	Collaborative Mindmaps
Presentation	Make a keynote presentation on the iPad	Demonstrate understanding with Explain Everything	Combine audio, video and text in Movie Presentation	Nearpod Presentation
File sharing	Sent by email every lesson	Shared Dropbox folder	Showbie	iTunes U
Reading	Open PDf from email	Use dictionary & search document	Annotating documents in Notability & iBooks	Interactive iBook
Assessment	Google form test	Google form test with automatic marking script	Creative projects with Strip Designer Showme & iMovie	Creative Assignments with audio feedback in showbie

A Wonderful Visual on How to use SAMR Model on Different Classroom Tasks. ***Educational Technology and Mobile Learning.*** (Ref: http://www.educatorstechnology.com/ 2014/02/a-wonderful-visual-on-how-to-use-samr.html)

The iPadagogy Wheel V3.0

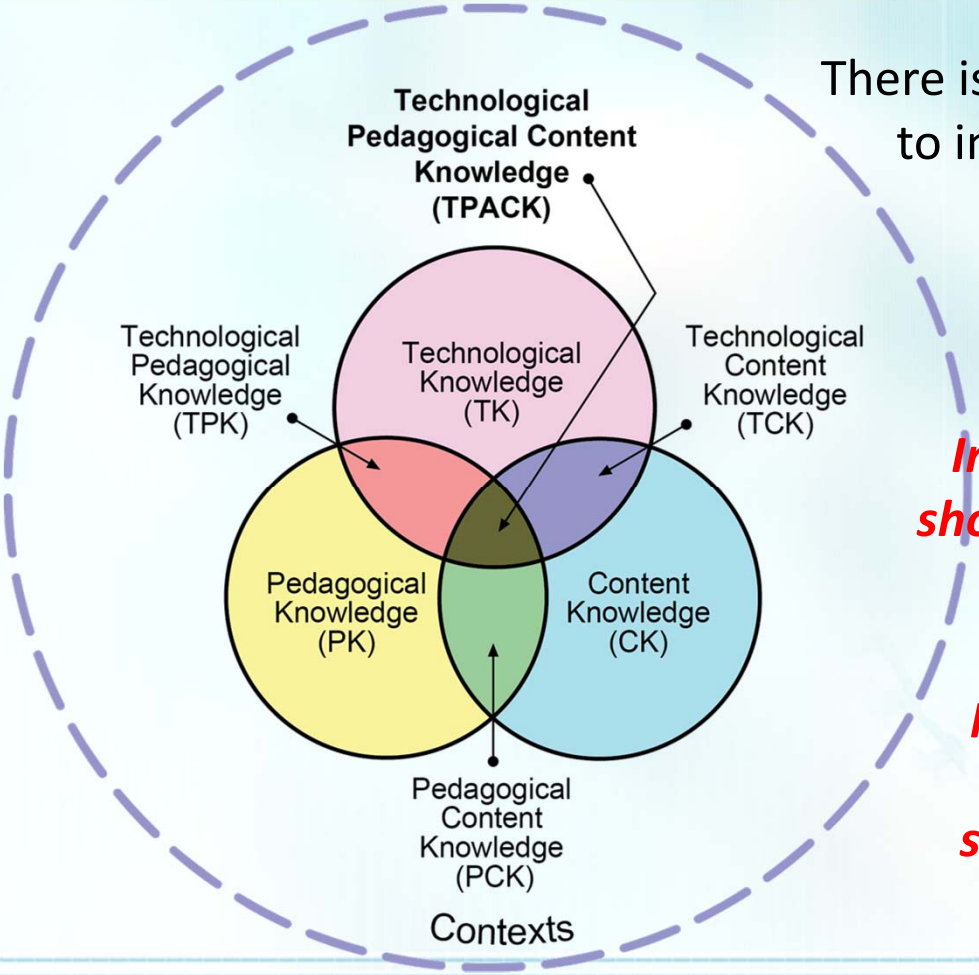


V2.0 Published 280513

Source: http://www.slideshare.net/eraser/padwheelposter-v3

Technological Pedagogical Content Knowledge (TPACK) Framework

Effective technology integration for pedagogy around specific subject matter requires developing sensitivity to the dynamic, transactional relationship between these components of knowledge situated in unique contexts.

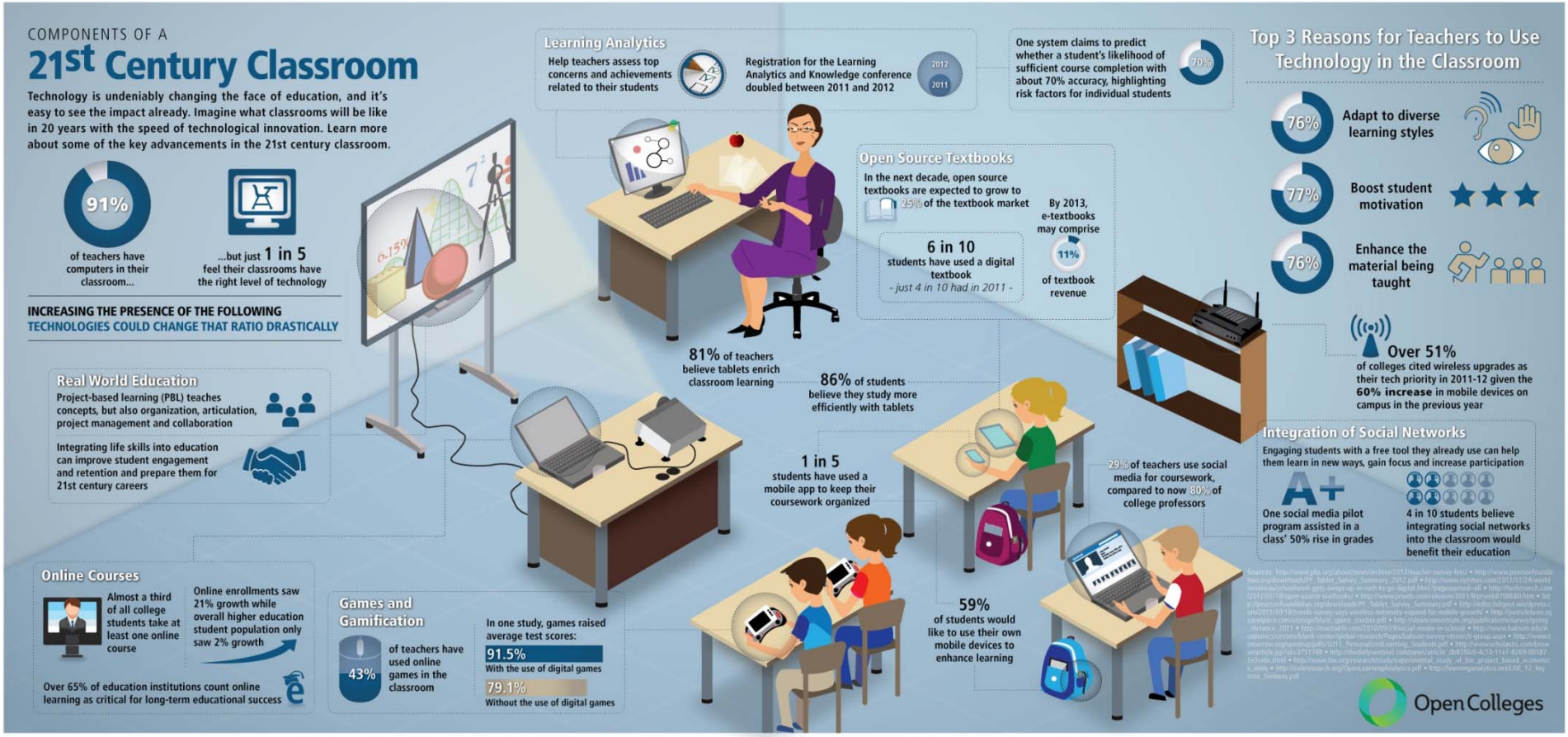


There is no "**one best way**" to integrate technology into curriculum.

Integration efforts should be creatively designed or structured for particular subject matter ideas in specific classroom contexts.

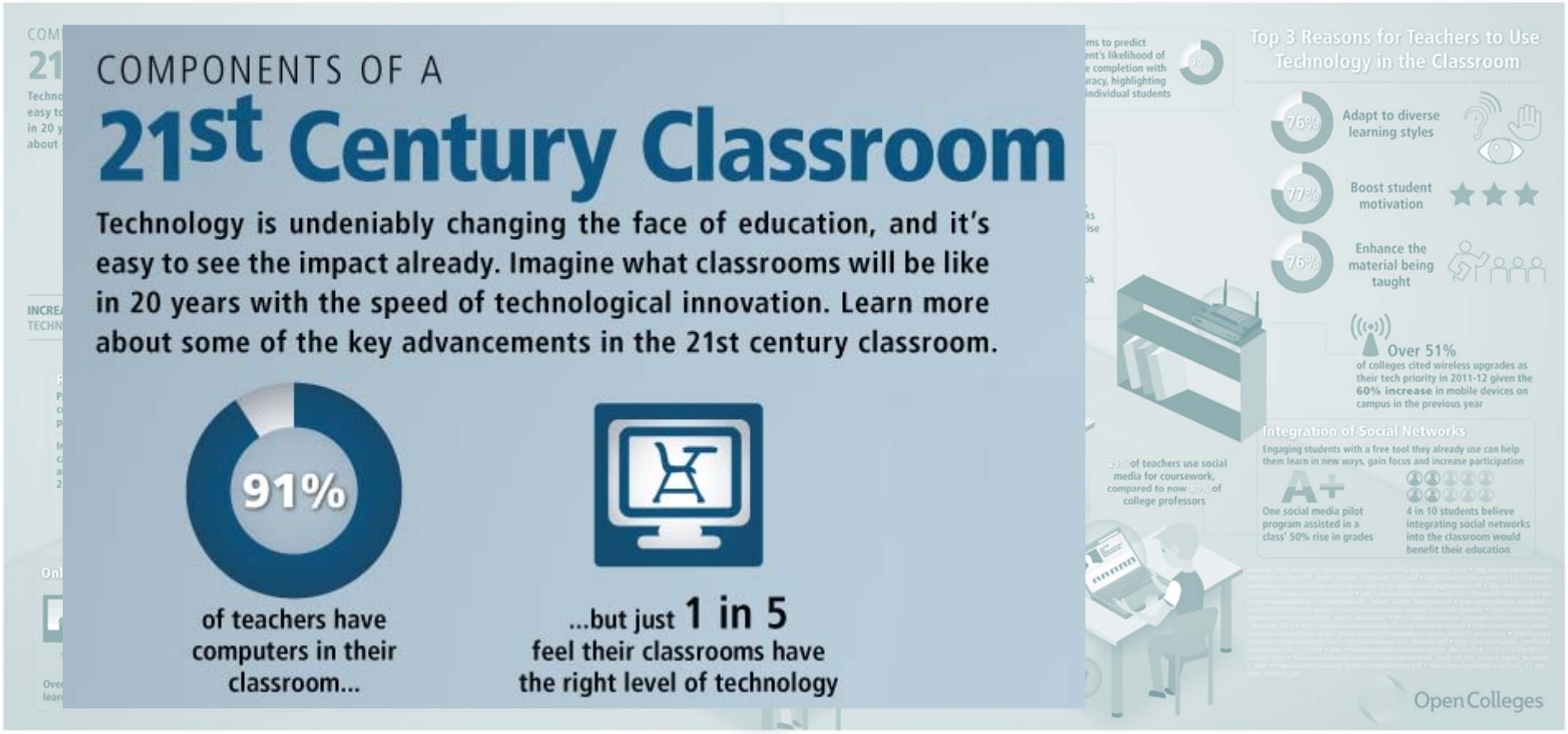
Mishra & Koehler (2006). Technological pedagogical content knowledge: A framework for teacher knowledge***. Teachers College Record, 108(6),*** 1017-1054.

Components of 21st Century Classroom



Source: http://www.wiredacademic.com/2012/07/infographic-components-of-a-21st-century-classroom/

Components of 21st Century Classroom



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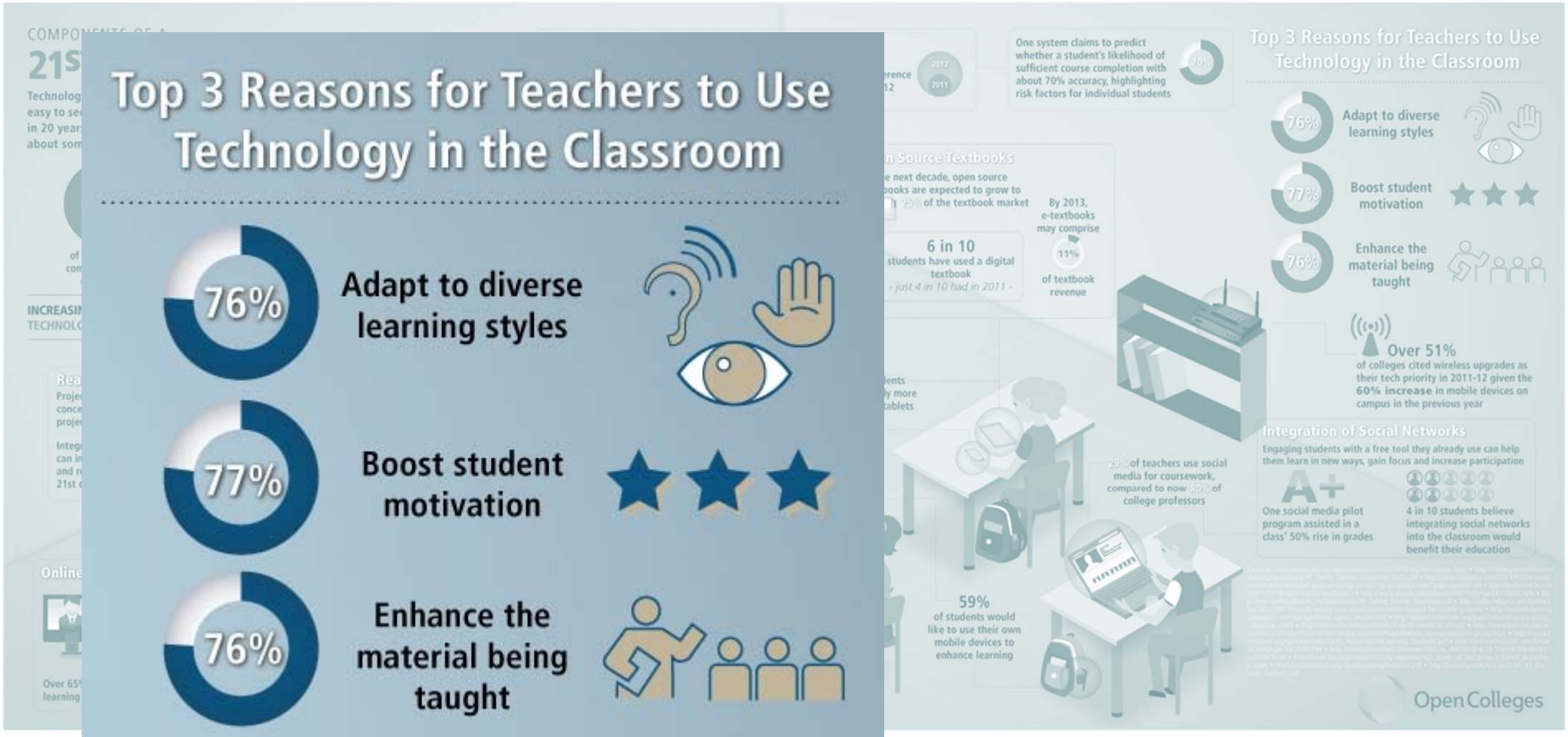

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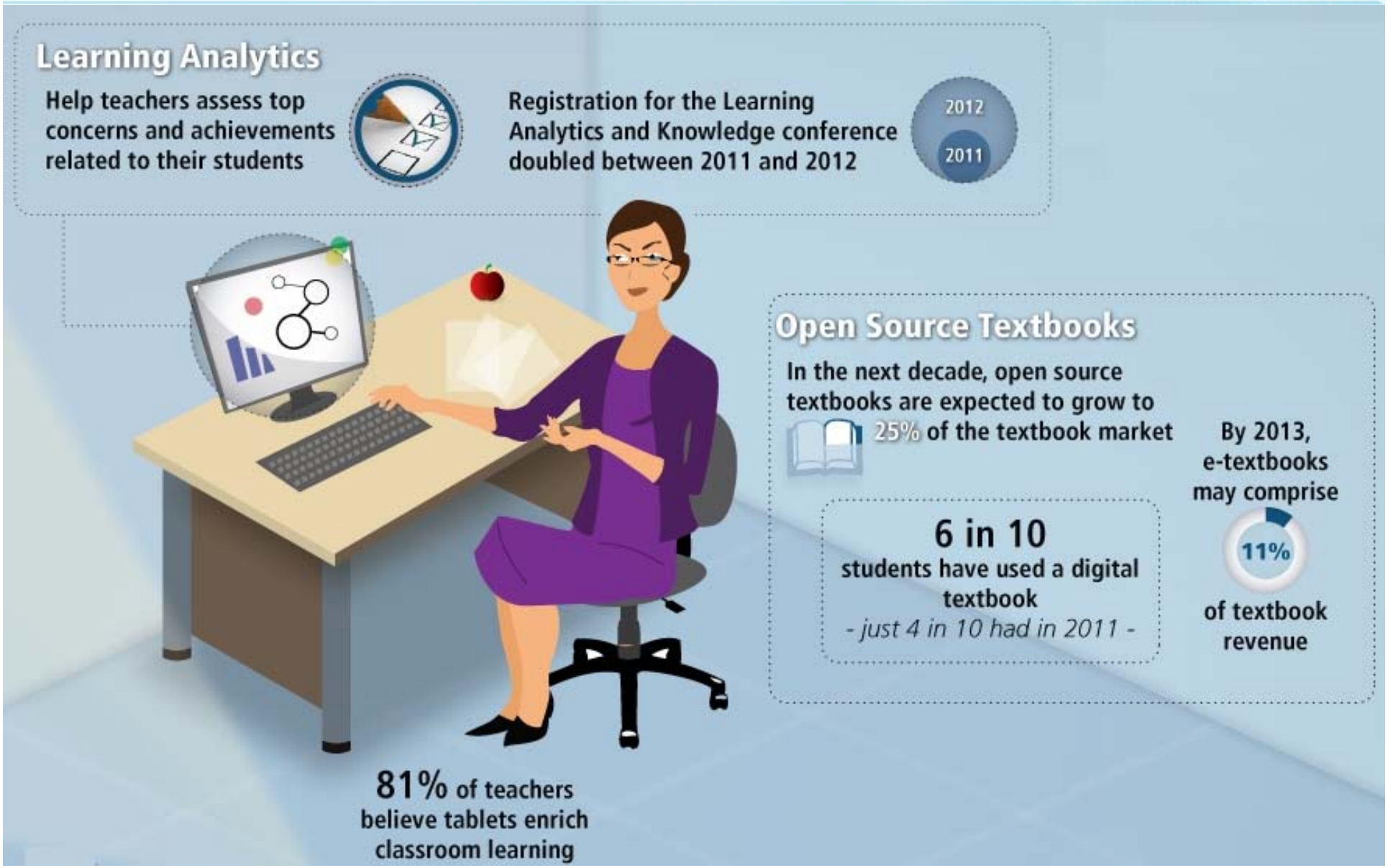

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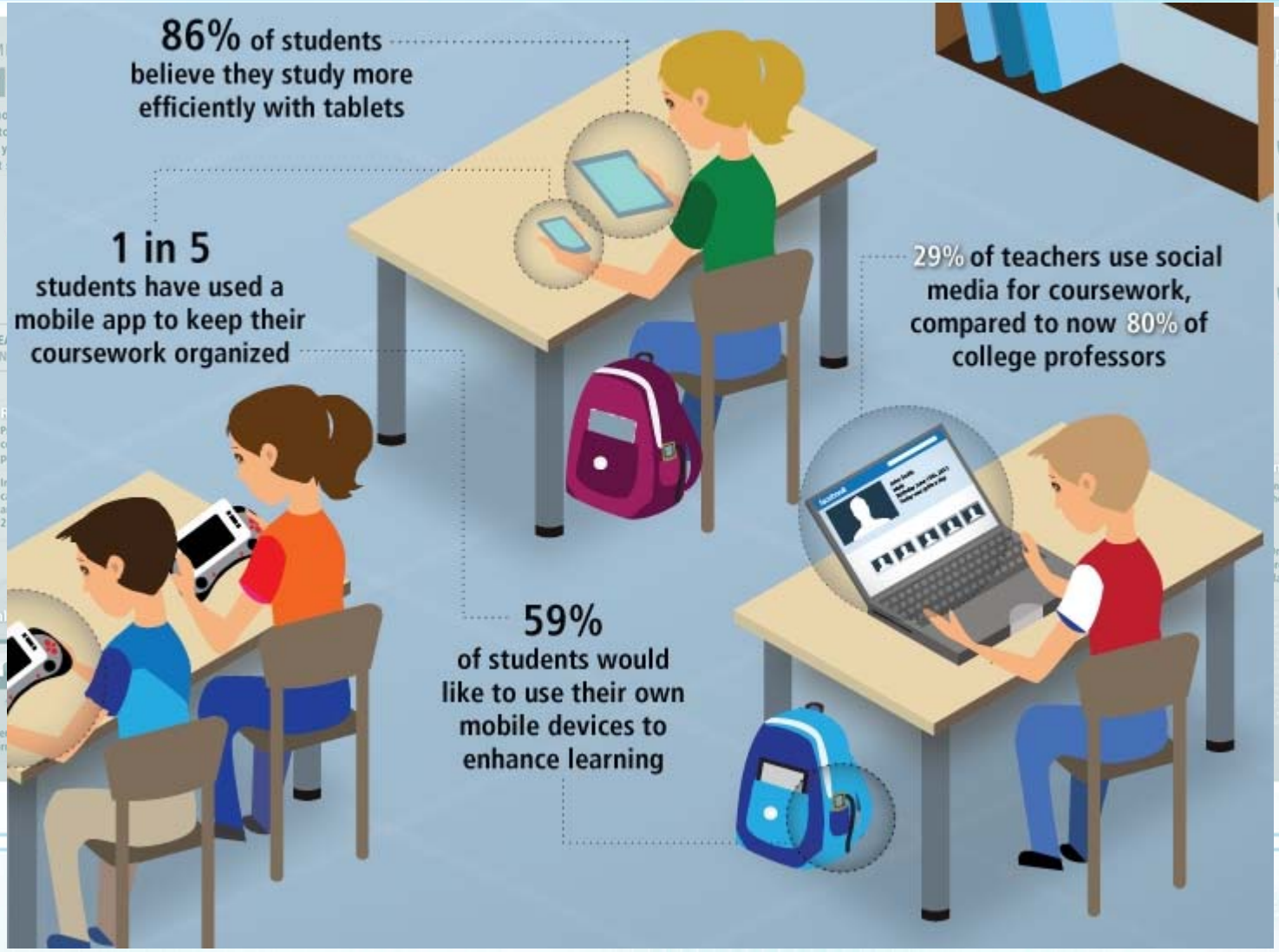
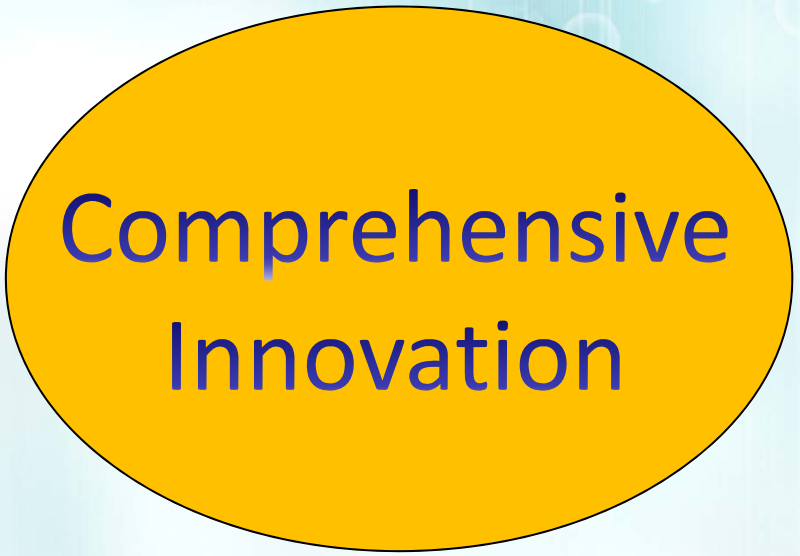


How Innovation is Implemented?

Models of Educational Technology Implementation



Avidov-Ungar, O. (2011). "Islands of Innovation" or "Comprehensive Innovation", Assimilating Educational Technology in Teaching, Learning & Management: A Case Study of School Networks in Israel. ***Interdisciplinary Journal of E-Learning & Learning Objects***, 6, 259 – 280.

Models of Educational Technology Implementation

Comprehensive Innovation

- It permeates all levels of organization;
- It creates a new organization culture which affect values and basic assumptions in organization;
- It derives from the assumption that a successful implementation of innovation requires a ***radical change*** in the organization's basic assumptions and the formulation of new organizational paradigms and perspectives.

Models of Educational Technology Implementation

Islands of Innovation

- It is implemented in form of pilot project;
- It usually leads to first degree changes which mainly involve changes in the characteristics and behaviors of the organization, without a significant change in the organization's culture, norms & basic assumption;
- It is assumed ***the success of the islands will serve as a role model, slowly dissipate to the rest of the organization*** and finally lead to a comprehensive innovation.

Models of Educational Technology Implementation

Islands of Innovation

- It is ***preferred strategy for education system*** because
  - it uses up only a small portion of resources;
  - it is less threatening to organization's overall values and basic assumption;
  - it does not adversely impact the existing hierarchies of organization;
  - it minimizes the damage of lost;
  - it is ***assumed*** will, in turn, create a ripple effect leading to comprehensive innovation.

Models of Educational Technology Implementation

Success of Islands of Innovation

- ***does not*** accomplished by a change in values and perspectives of teachers* towards technological pedagogy;
- ***does not*** generated a new organizational culture, particular in the field of pedagogy;
- ***does not*** confident teachers* to commit innovation;
- has chance to create a ***buffering effect impede*** the transfer of innovation from island to the rest of organization.

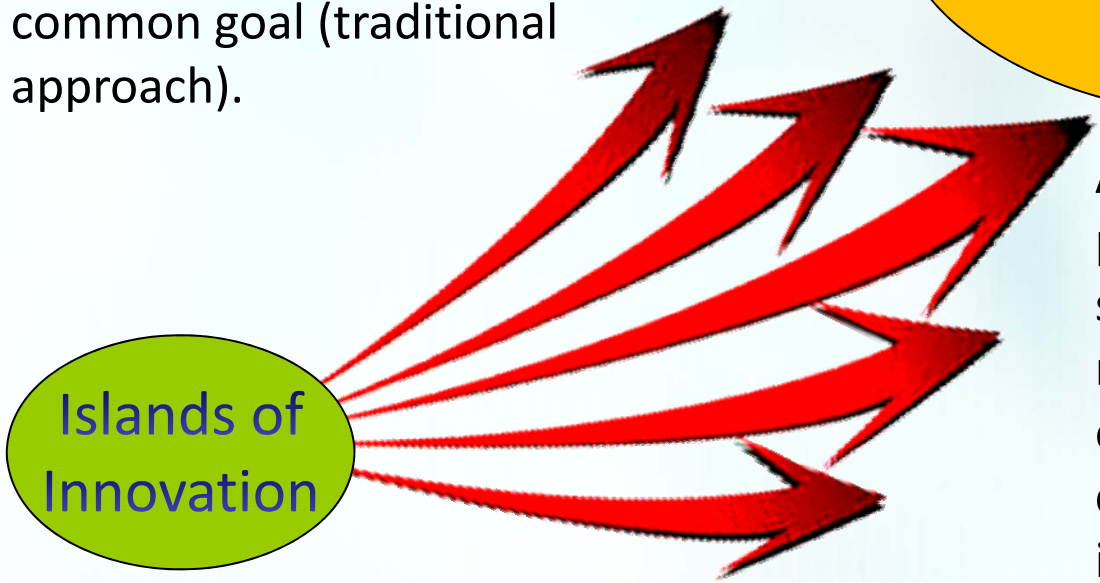
* Teachers who were not involved in islands of innovation

Orit Avidov-Ungar and Yoram Eshet-Alkakay. (2011). The Islands of Innovation Model: Opportunities and Threats for Effective Implementation of Technological Innovation in the Education System ***Issues in Informing Science and Information Technology***, 8, 363 - 376.

What should "Technological Leader" do?

E-Leadership refers to the ability of a person to influence the behavior of others in a digital technology-mediated environment in order to achieve common goal (traditional approach).

Comprehensive Innovation



Appropriate strategic action to promote consensus regarding shared values and to allocate necessary resources which enable the creation of new culture of comprehensive innovation.

What should "Technological Leader" do?

Factors interfering with technological integration identified by a number of researches (2005 – 2011) :

- Beliefs about the role of technology in education;
- Fundamental disjunction between traditional teaching approaches and technology-enhanced teaching methods;
- Lack of availability of technology tools;
- Lack of adequate technological training for teachers.

Kurt, Serhat. (2013). Creating Technology-Enriched Classrooms: Implementation Challenges in Turkish Education. ***Learning, Media and Technology, 39(1),*** 90 – 106.

陳朱素華校本經驗

Barriers

- Beliefs about the role of technology in education;

推行措施

- 由專責同工負責推動IT教學；
- 定期向全體老師報告IT教學新趨勢，目的營建一個整體「 IT教學」的文化；
- 與各科協商，推行IT教學的時間表。

- Fundamental disjunction between traditional teaching approaches and technology-enhanced teaching methods.

- 搜集成功資訊科技教學案例向不同學科分享；
- 與科任老師一同設計課堂教學，讓科任老師明白 IT 在課堂活動中適當的位置及教學功能；
- 鼓勵同工多參與教育局舉辦有關IT教學培訓課程。

陳朱素華校本經驗

Barriers

- Lack of availability of technology tools;

⟺

推行措施

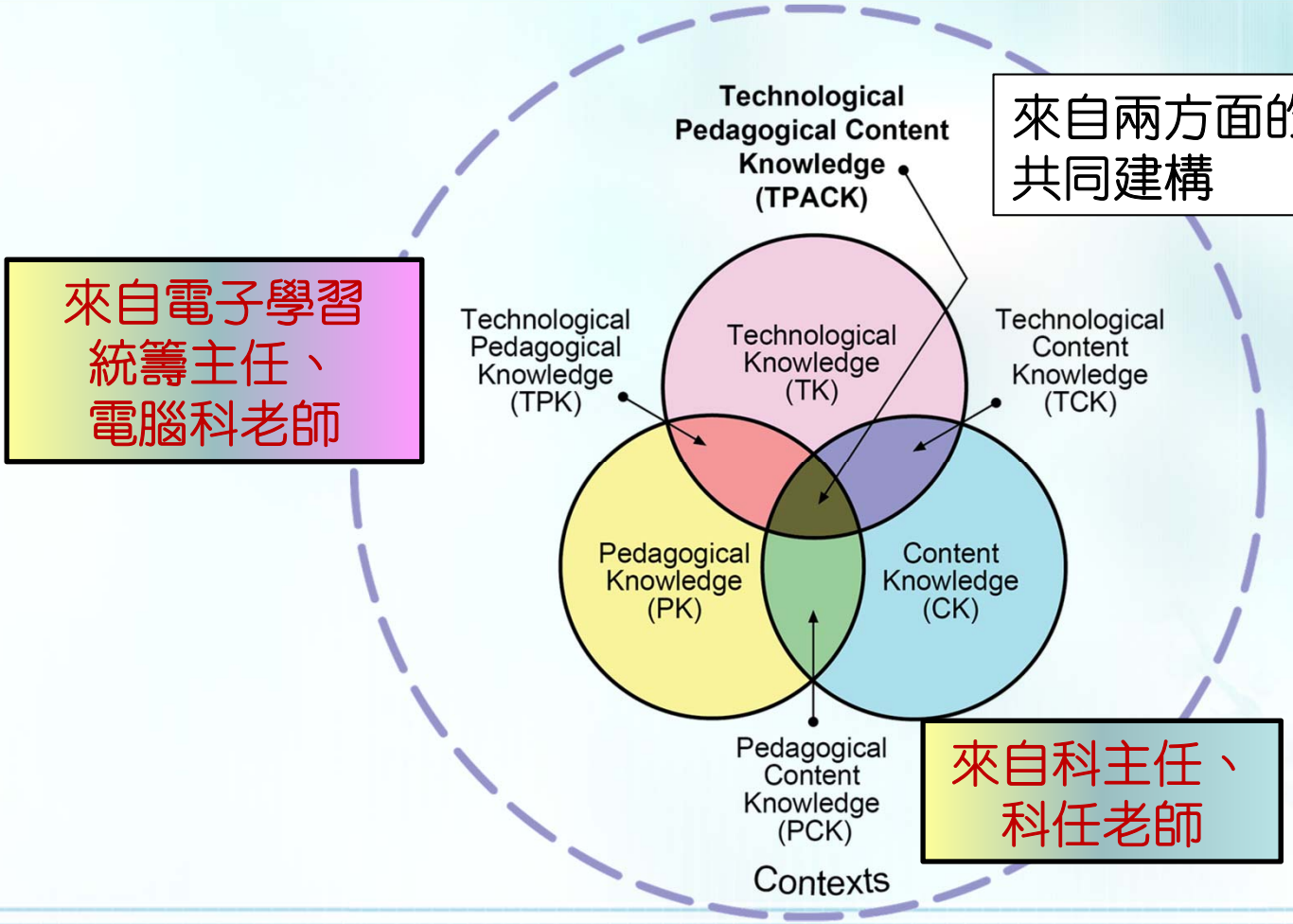
- 安排需用**IT**設備及適合課堂活動用**Apps**；

- Lack of adequate technological training for teachers.

⟺

- 向老師及學生提供使用**IT**教學活動所需的培訓；
- 邀請老師出席校內**IT**教學觀課活動；
- 提供科任老師在眞實**IT**課堂教學時的支援，目的在加強教師的信心，將失敗的機會減至最低。

陳朱素華校本經驗



來自兩方面的專家
共同建構

來自電子學習
統籌主任、
電腦科老師

來自科主任、
科任老師

How do your school use ICTs?

e-Learning Planning Framework

Ministry of Education, New Zealand

What is the e-learning planning framework?
Why is it important?
How was it developed?
What's in it for you?

Download site:
http://www.ncte.ie/elearningplan/handbook/

Source: http://www.ncte.ie/elearningplan/handbook/

e-Learning Planning Framework

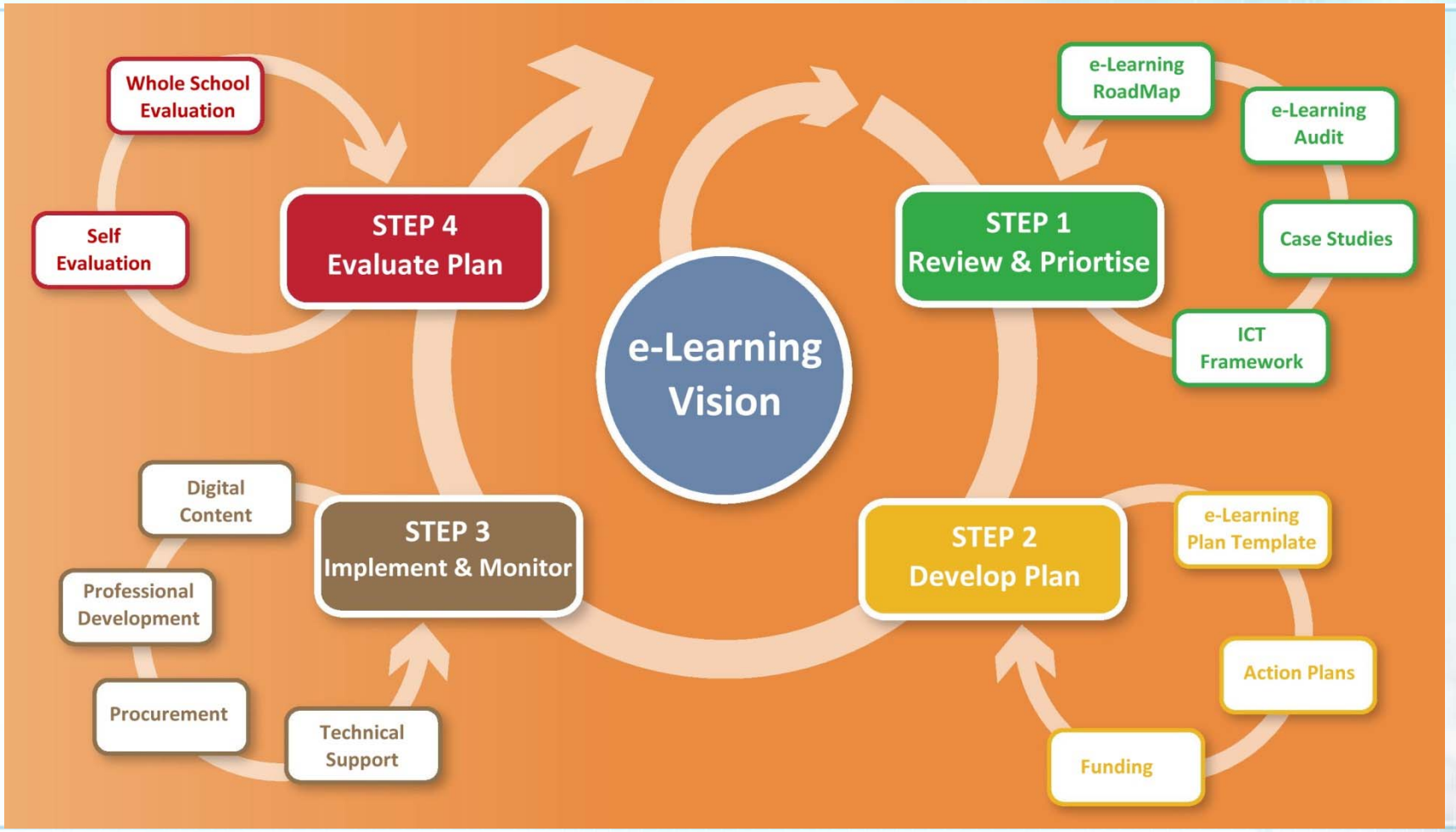
What – and who - is it for?

- Principals and e-learning leaders (organisational)
- Teachers (individual)
- Professional development facilitators

The **primary purpose** is

- a planning tool
- **to provide a 'road map' to review how well they use ICTs to support learning** for the purpose of finding out *where they are*, and *what they need to do next*.

e-Learning Planning Cycle



Source: http://www.ncte.ie/media/ENG_Getting_started.pdf

e-Learning Roadmap

- Provides the school with a snapshot of its strengths and challenges in relation to e-Learning and allows the school to identify priorities for progression to the next stage.

- 5 key areas:
  - Leadership and planning
  - ICT in the curriculum
  - Professional development
  - e-Learning culture
  - ICT infrastructure

- 4 stages of development:
  - Initial
  - e-Enabled
  - e-Confident
  - e-Mature

Source: http://www.ncte.ie/elearningplan/roadmap/

e-Learning Roadmap

Leadership and planning (example)

	Initial	e-Enabled	e-Confident	e-Mature
Vision	Vision focuses mainly on ICT equipment.	e-Learning vision is developed by e-Learning Team.	e-Learning vision is fully integrated into the whole school vision.	e-Learning vision is wide ranging and shared by all stakeholders. It is actively tested through the student learning experience.
Plan	Basic ICT Plan is in place.	e-Learning Plan has been developed by e-Learning Team. One teacher or a group of teachers has assumed leadership for ICT planning in the school.	Comprehensive e-Learning Plan is integral to the whole school plan. The development of the plan is led by principal/ICT co-ordinating teacher/e-Learning Team with all staff contributing and whole school acceptance. There is a designated ICT co-ordinating teacher with clearly defined duties and responsibilities.	Teachers implement the e-Learning Plan in their daily work. Staff & students are actively engaged in innovative and exemplary practice.
Integration	Focus is mainly on ICT equipment and the acquisition of basic ICT skills.	Focus is mainly on supporting the integration of ICT usage throughout the school.	Focus is mainly on supporting more comprehensive integration of ICT and the exploration of new and more effective approaches to ICT integration.	Focus is mainly on supporting and facilitating personalised and self-directed learning.
Acceptable Use Policy	School has developed an Acceptable Use Policy for the Internet.	School has developed an AUP following consultation with staff, students, parents/guardians, board of management/trustees.	School has developed and ratified an AUP for Internet and ICT use following consultations with staff, students, and parents. All stakeholders are familiar with its contents and the plan is fully implemented.	The AUP accommodates innovative use of new technologies, and facilitates the development of an ethical and responsible approach to the use of these technologies.
Special Educational Needs	Support of ICT as a tool for learning in special educational needs exists but is uncoordinated.	Use of ICT is focused on the areas of learning support and resource teaching.	School supports and encourages the use of a wide range of ICT resources and assistive technologies throughout the school to facilitate the inclusion of students with special educational needs in line with the EPSEN Act.	School includes the use of ICT and assistive technologies in the development of all Individual Educational Plans (IEP) for students with special educational needs and uses ICT in all aspects of special educational needs assessment.

Source: http://www.ncte.ie/media/Leadership_and_Planning_area.pdf

21st Century e-Leadership

e-Leadership

is defined as the usage of a school management information system, not just only educational technology, for exchanging updated pedagogical data in order to increase school effectiveness through data-based decision making and instant interactions among different stakeholders.

Blau, I & Presser, O. (2013). e-Leadership of School Principals: Increasing School Effectiveness by a School Management Information System. ***British Journal of Educational Technology*, *44(6)***, 1000 – 1011.

School Management Information System

- School MIS emphasize organizational aspects and the transfer of pedagogical information, such as curriculum performance and student activity and achievement.
- Each member of the organization receives access to the data according to his or her position.
- e-Leadership by school principals is empowered by providing extensive on-demand up-to date data at different levels and enabling data-based pedagogical decisions.

Conclusion

E-Leadership refers to

- the ability of a person to influence the behavior of others in a digital technology-mediated environment in order to achieve ***technological adoption in pedagogy***;
- the usage of a school management information system for exchanging updated pedagogical data in order to ***increase school effectiveness***.

Support Service to IT in Education

Education Bureau

IT in Education Section

Centre of Excellence (CoEs)

http://www.edb.gov.hk/en/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/coes.html

School Based Support Service provided by CoE

- Pedagogy & Resources in E-Learning
  - Effective use of tablet computers and mobile devices in classroom teaching and outdoor activities;
  - Use of Free Apps in Learning & Teaching;
  - Use of Google Apps / Office 365 in Learning & Teaching;
  - Creating of E-Teaching Resources;
  - Information Literacy;
  - Creative Commons;
  - Use of eLearning in Special Education.

School Based Support Service provided by CoE

- System & Resources Management in E-Learning
  - Effective manage and maintenance of tablet computers and mobile devices;
  - System setup and account management of Google Apps / Office 365;
  - Points to note in Hiring WiFi Services.
- BYOD
  - Policy implementation and Documentation
  - Parental Education

Thank You