



New Teaching Trends





New
Tools 

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1. New tools.

Technology as a tool, not as a learning outcome.

According to Nichols (2003) the use of technology in education should be theory-led rather than technology based. This means that the choice of tools should *reflect* rather than determine the pedagogy of a course. *How* the technology is used is more important than *which* technology is used.

Nichols argues that technology as a tool can be used in two major ways:

- the presentation of education *content* and
- the facilitation of education *processes*.

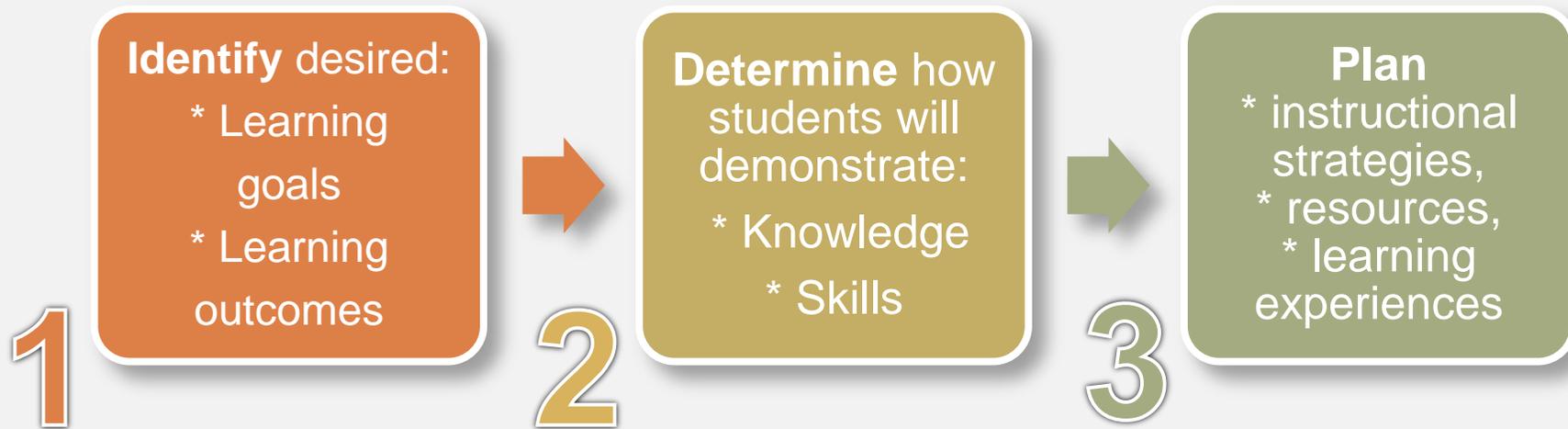
And he concludes that: “only pedagogical and access advantages will provide a lasting rationale for implementing [technology as a tool] approaches”.



References

2. Avoiding tech-led education. Backward Design Approach

Understanding by Design (Wiggins & McTighe, 2005) is a popular approach to course and curricular (re)design. It is outcome-based and mastery oriented. Therefore, it helps teachers to choose the right tool for the learning goals desired, avoiding technology-led education. Simply put, it consists of three stages:



Considering learning goals and outcomes first prevents tech-led education as well as activity or coverage oriented curriculum planning.



References

3. Integrating technology

There are three relevant models of technology integration to be considered:

An orange rectangular box with a white border containing the text 'TPACK' in white, serif, all-caps font.

TPACK

An olive green rectangular box with a white border containing the text 'SAMR' in white, serif, all-caps font.

SAMR

A mustard yellow rectangular box with a white border containing the text 'TIM' in white, serif, all-caps font.

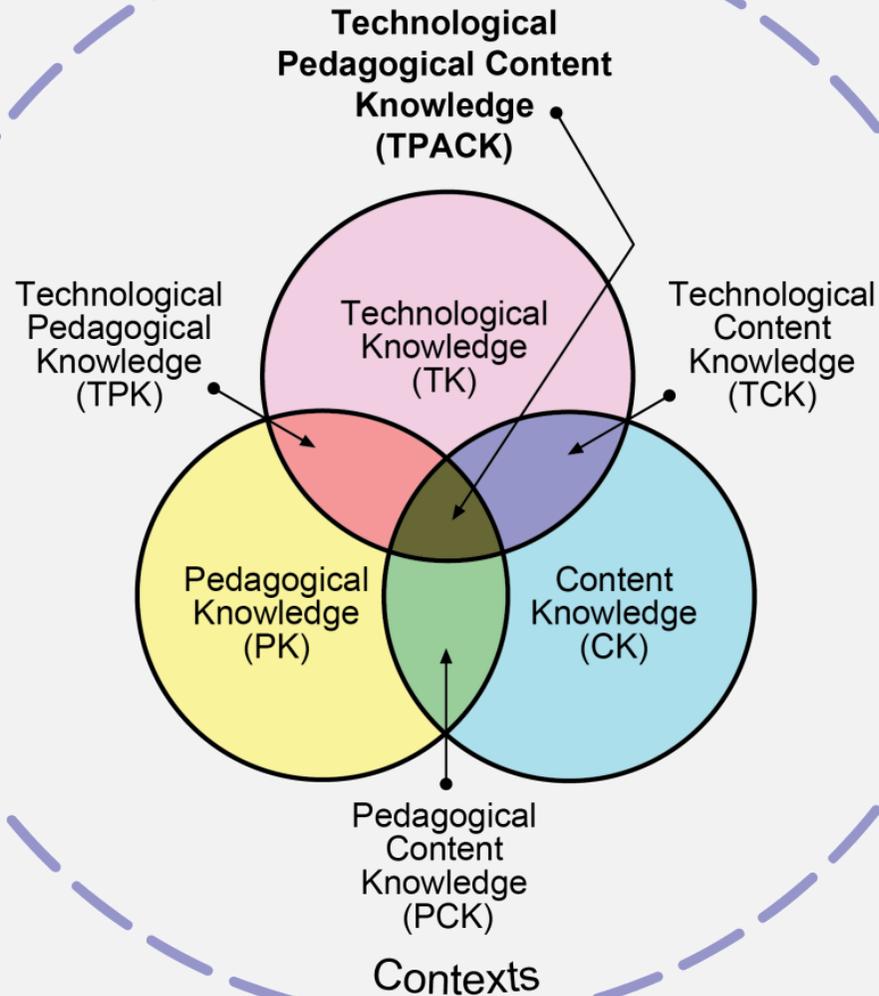
TIM

3. 1 The TPACK Model

TPACK stands for Technological, Pedagogical, and Content Knowledge. It focuses on the interaction between these three concepts as they relate to teaching in a technology enhanced learning environment. It allows teachers to move beyond oversimplified approaches that treat technology as an “add-on” because it focuses on the connections among technology, content, and pedagogy in classroom contexts.



The TPACK Model



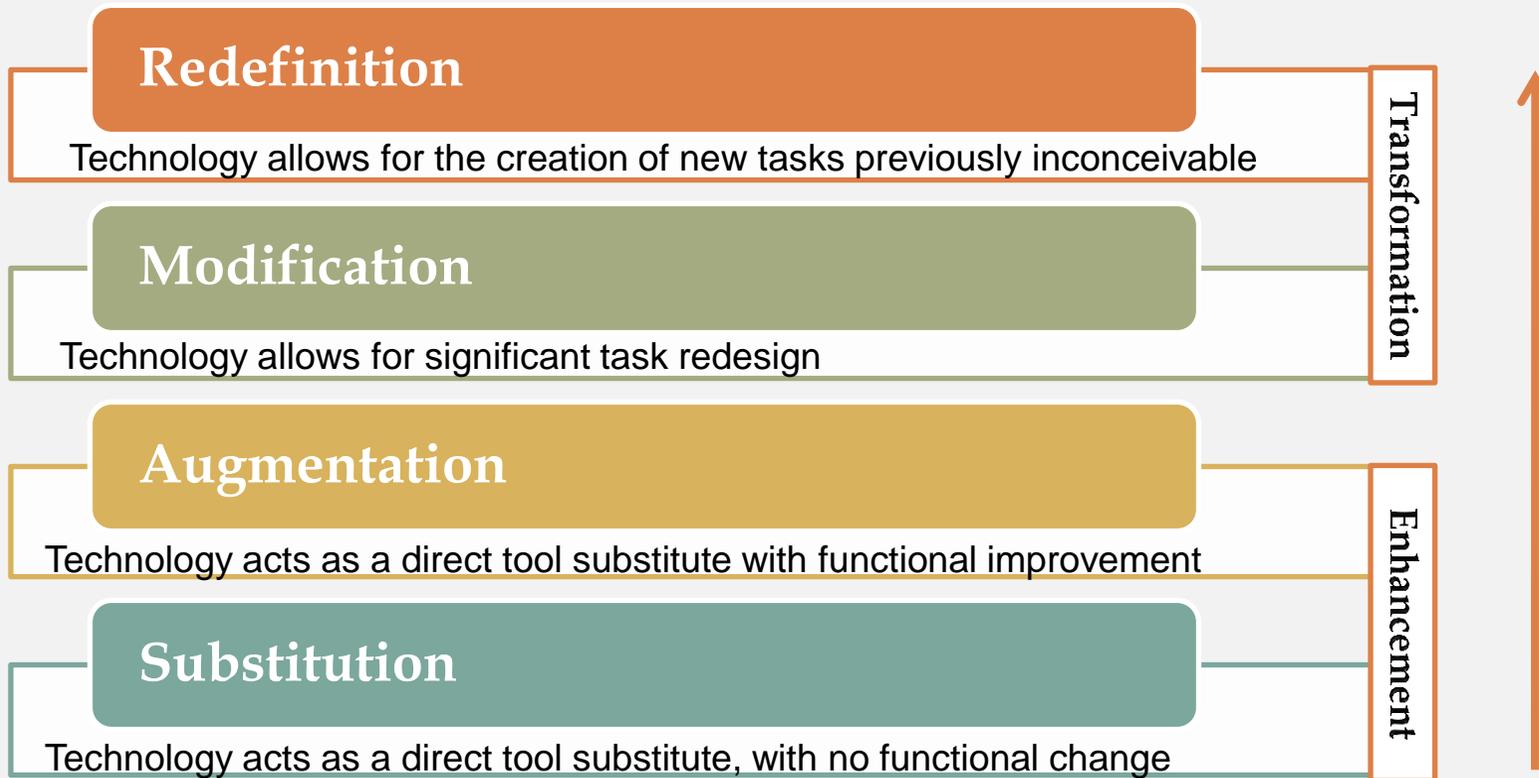
Reproduced by permission of the publisher, © 2012 by tpack.org

References



3. 2 Integrating technology. The SAMR Model

The SAMR Model, developed by Dr. Ruben Puentedura, describes technology integration through four levels defined as follows:



References



The goal for teachers who want to integrate technology to their teaching is to move beyond the substitution and augmentation levels (Enhancement) and toward the modification and redefinition levels (Transformation).

3. 3 Integrating technology. The Technology Integration Matrix

The Technology Integration Matrix (TIM) incorporates five interdependent characteristics of meaningful learning environments: active, constructive, goal directed, authentic, and collaborative and associates them with five levels of technology integration: entry, adoption, adaptation, infusion, and transformation.

Together, the five levels of technology integration and the five characteristics of meaningful learning environments create a matrix of 25 cells as illustrated in the following chart:



Levels of Technology Integration into the Curriculum

	Entry	Adoption	Adaptation	Infusion	Transformation
Active	Information passively received	Conventional, procedural use of tools	Conventional independent use of tools; some student choice and exploration	Choice of tools and regular, self-directed use	Extensive and unconventional use of tools
Collaborative	Individual student use of tools	Collaborative use of tools in conventional ways	Collaborative use of tools; some student choice and exploration	Choice of tools and regular use for collaboration	Collaboration with peers and outside resources in ways not possible without technology
Constructive	Information delivered to students	Guided, conventional use for building knowledge	Independent use for building knowledge; some student choice and exploration	Choice and regular use for building knowledge	Extensive and unconventional use of technology tools to build knowledge
Authentic	Use unrelated to the world outside of the instructional setting	Guided use in activities with some meaningful context	Independent use in activities connected to students' lives; some student choice and exploration	Choice of tools and regular use in meaningful activities	Innovative use for higher order learning activities in a local or global context
Goal-Directed	Directions given, step-by-step task monitoring	Conventional and procedural use of tools to plan or monitor	Purposeful use of tools to plan and monitor; some student choice and exploration	Flexible and seamless use of tools to plan and monitor	Extensive and higher order use of tools to plan and monitor

The Technology Integration Matrix



References

4. Assessing technology _ SECTIONS

Bates & Poole (2003) developed the acronym SECTIONS as a framework to select instructional technologies. It is useful to assess the fit between the teachers' goals, the technology selected and the technology support requirements.

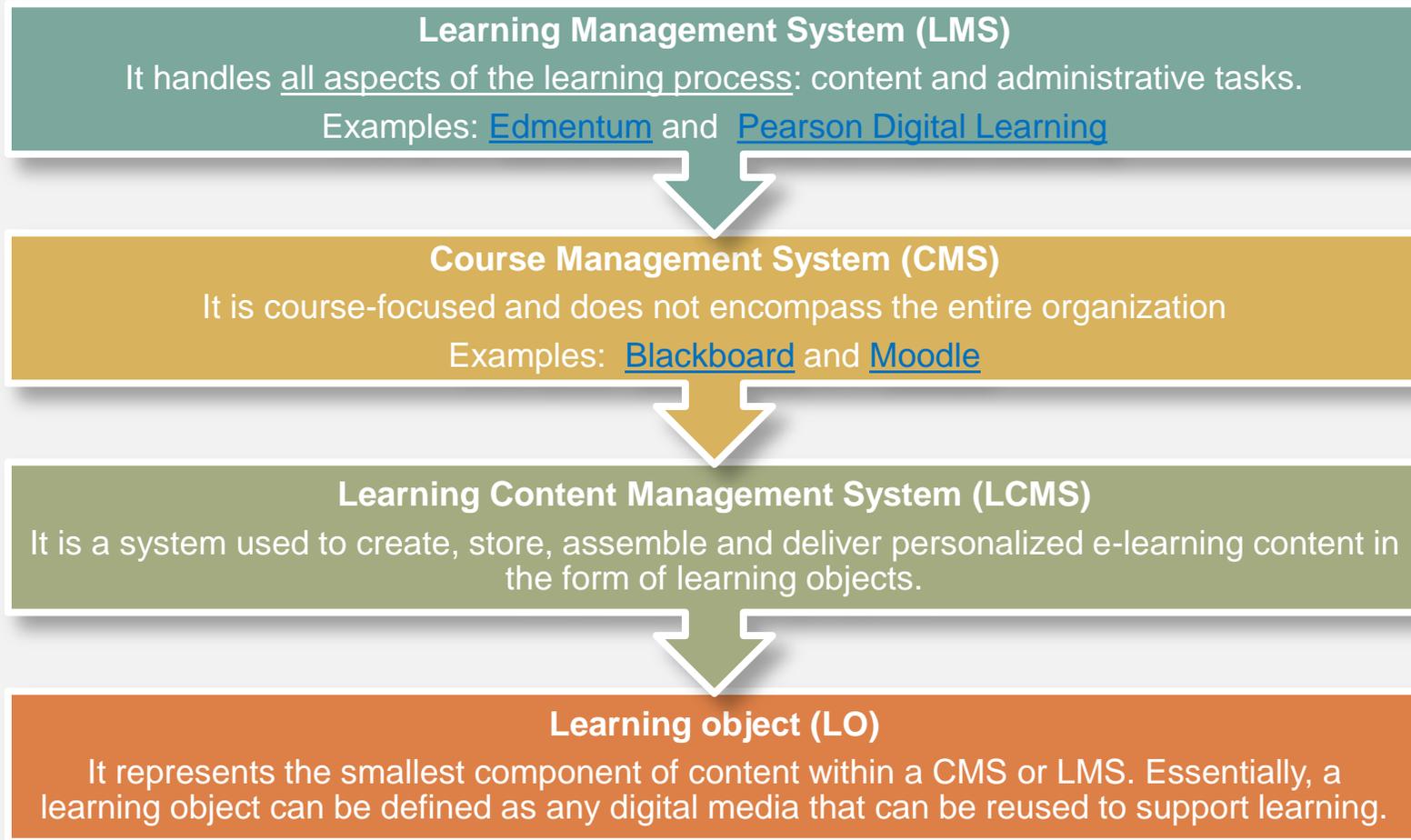
- S** **Students:** Is it appropriate for your student population?
- E** **Ease of use:** Is the interface and design reliable and intuitive to the learner?
- C** **Cost Structure:** Is the production cost reasonable?
- T** **Teaching & Learning:** Will it enhance learning?
- I** **Interactivity:** Does it move the learner beyond just reading, viewing and listening?
- O** **Organization:** Does the organizational system make it both feasible and practical?
- N** **Novelty:** Does it offer a relief from instruction that relies heavily on text?
- S** **Speed:** Is it quick to implement and update?



References

5. From Learning objects (LO) to Learning Management Systems (LMS)

Technology can be used to support different levels of instruction and organization:



Adapted from Watson & Watson (2007)

References



6. Useful online tools for LO creation

One of the most comprehensive classifications of tech tools is that of edtechteacher.org.

Resources are presented by academic subject, by topic and by learning activities.



Resources by Academic Subject



Math



Science



History



English

Resources by Topics



Research and Writing



Multimedia Presentations



Discussion and Collaboration



Google Apps for Education

Resources by Learning Activity



Create Timelines



Publish their writings



Backchannelling or enable a real time discussion



Search and evaluate web sites



Connect with other Classrooms



Create portfolios



Create books, magazines, posters, or newsletters



Use an interactive whiteboard effectively



Create and edit maps



Create Quizzes and Student Responses



Organize, bookmark and edit their research



Build a PLN to connect with other educators



More resources



Box of tricks is one of the most comprehensive alphabetical lists of tech tools.

Top 100 Tools for Learning 2014

This list was compiled by [Jane Hart](#) from the votes of **1,038** learning professionals from **61** countries worldwide.



321 Free Tools for Teachers



EdTech: 100 tech tools for teachers and students

101 FREE
TECH TOOLS FOR TEACHERS

Free ebook by Simple K12



7. Promises and usual challenges of technology integration

According to Bingimlas (2009), the many advantages of integrating technology to education are:

- ✓ it expands the pedagogical resources available to teachers (images, videos, simulations, etc)
- ✓ it promotes communication and collaboration
- ✓ it promotes creation and deep learning

However, there are some challenges to be considered :

Teacher-level barriers	School-level barriers
<ul style="list-style-type: none">• Lack of teacher confidence.• Lack of teacher competence.• Resistance to change & negative attitudes.	<ul style="list-style-type: none">• Lack of time.• Lack of effective training.• Lack of accessibility.• Lack of technical support.



In what ways will technology enhance your teaching? Which challenges will you have to face in order to integrate technology into your practice? Which may be the possible solutions?



References

8. Conclusion

The purpose of this module has been to reflect on the tech tools available for teachers and the criteria that should be used for their integration to instruction. Hopefully, this module will help you develop classroom activities enhanced by technology according to your personal concepts about teaching and learning and the learning goals and outcomes that you have chosen for your students. This constitutes the fourth item of the philosophy of teaching statement that you have started in the previous module. We will deal with the last item (professional growth) in the following module.

Take some time to reflect on this topic and write your conclusions.



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3.3 The Technology Integration Matrix

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Also see [Triple E Framework](#)



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See:

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