

eLearning: past, present and
future

Definition

- **E-learning** can be defined as the use of computer and Internet technologies to deliver a broad array of solutions to enable learning and improve performance. (FAO)

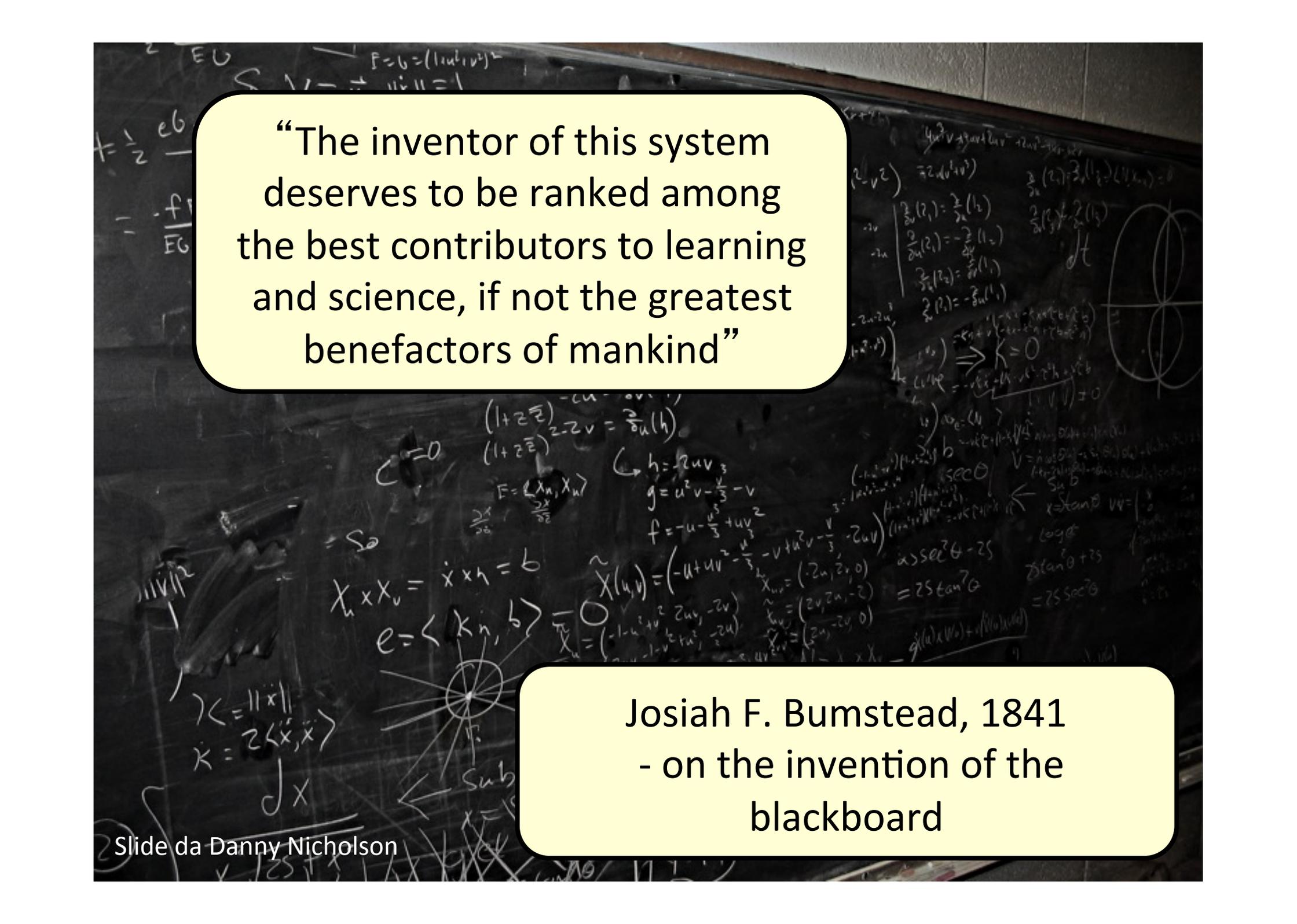
1 – Technology in learning?

“The inventor of this system
deserves to be ranked among
the best contributors to learning
and science, if not the greatest
benefactors of mankind”

Who said that, and when?

What was he referring to?





“The inventor of this system
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benefactors of mankind”

Josiah F. Bumstead, 1841
- on the invention of the
blackboard

A bit of history

- CAL started in the 1950s and 1960s, mainly in the USA.
- Suppes (Stanford University), Kemeny and Kurtz (BASIC, 1960s) and Bitzer (PLATO, University of Illinois) were among the first to use a computer as part of the learning process.
- The early CAI programs were rudimentary by today's standards, with mainly **text-based** interfaces.

Plato

- Programmed Logic for Automatic Teaching Operations

<https://www.youtube.com/watch?v=tTmWcGhIXqA>

A bit of history

- CAI – Computer Aided (Assisted) Instruction (1960)
- CAL – Computer Assisted Learning
- CBE – Computer based education
- CBT – Computer based training
- ITS – Intelligent Tutor Systems (AI, 1980s)
- WBL – Web based Learning (also Instruction or Training) (Internet, late 90's)
- e-learning

e-Learning and Distance Learning

- are they the same?

e-Learning and Distance Learning

- 1728 ,the Boston Gazette for "Caleb Philipps, Teacher of the new method of Short Hand," who sought students who wanted to learn through weekly mailed lessons.
- The University of London was the first university to offer distance learning degrees, establishing its External Programme in 1828.
- Sir Isaac Pitman 1840s: a system of shorthand by mailing texts transcribed into shorthand on postcards and receiving transcriptions from his students in return for correction.
- Open University, 1969, Fernuniversität Hagen, 1974
- Athabasca University

Types of Computer Assisted Instruction

1. **Drill-and-practice** provides opportunities for students to repeatedly practice the skills that have previously been presented and that further practice is necessary for mastery.
2. **Tutorials** include both the presentation of information and its extension into different forms of work, including drill and practice, games and simulation.
3. **Games** create a contest to achieve the highest score and either beat others or beat the computer.
4. **Simulation** can provide an approximation of reality that does not require the expense of real life or its risks.
5. **Discovery** provides a large database of information specific to a course or content area and challenges the learner to analyze, compare, infer and evaluate based on their explorations of the data.

Assignment

- Find on the web one example for each of the categories mentioned in the previous slide

Assignment (in class)

- Quickly read (skim) Chapter 6 of The Theory and Practice of Online Learning.
- Which things are obsolete?
- Is there anything missing?

When to use e-learning

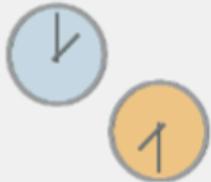
E-LEARNING IS A GOOD OPTION WHEN...

- > there is a significant amount of content to be delivered to a large number of learners;
- > learners come from geographically dispersed locations;
- > learners have limited mobility;
- > learners have limited daily time to devote to learning;
- > learners do not have effective listening and reading skills;
- > learners have at least basic computer and Internet skills;
- > learners are required to develop homogeneous background knowledge on the topic;
- > learners are highly motivated to learn and appreciate proceeding at their own pace;
- > content must be reused for different learners' groups in the future;
- > training aims to build cognitive skills rather than psychomotor skills;
- > the course addresses long-term rather than short-term training needs²;
- > there is a need to collect and track data.

Synchronous/Asynchronous



Synchronous events take place in real time. Synchronous communication between two people requires them to both be present at a given time. Examples of synchronous activities are chat conversations and audio/video conferencing.



Asynchronous

Asynchronous events are time-independent. A self-paced course is an example of asynchronous e-learning because online learning takes place at any time. E-mail or discussion forums are examples of asynchronous communication tools.

Synchronous

- > Chat and IM
- > Video and audio conference
- > Live webcasting
- > Application sharing
- > Whiteboard
- > Polling

Asynchronous

- > E-mail
- > Discussion forum
- > Wiki
- > Blog
- > Webcasting

The flexibility of Internet technology creates gray areas around the concepts of synchronous and asynchronous.

For example, video and audio sessions can be recorded and made available for learners who cannot attend a live event.

Blended Learning

Blended learning combines different training media (e.g. technologies, activities and events) to create an optimum training programme for a specific audience. The term “blended” means that traditional instructor-led training is being supplemented with electronic formats.⁴

Bersin (2004) identifies two main models of blended learning:

- > **Programme flow model:** Learning activities are organized in a linear, sequential order and learners have deadlines to accomplish the various assignments; this is similar to traditional training, but some of the activities are conducted online.
- > **Core-and-spoke model:** A major course (e-learning or F2F) is provided and a set of supplemental materials are available to reinforce the main course; these materials are optional and not scheduled.

⁴Bersin J. (2004). *The Blended Learning Book*. San Francisco: Pfeiffer.

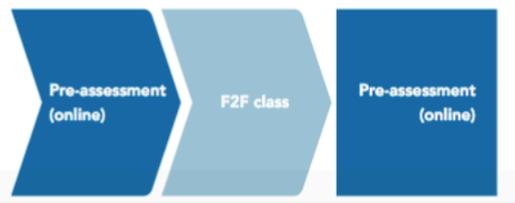
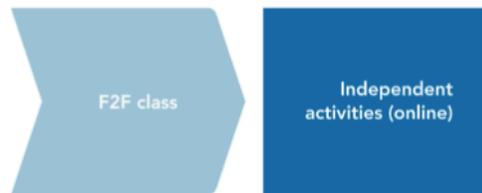
Blended Learning Sequencing

Formats:

Online pre-class event => F2F Class

F2F class => individual online activity

OL pre-assessment => Class => OL post-assessment



2: eLearning: the present

a) general concepts

Why e-learning?

- it can be as **effective** as traditional training at a **lower cost** (but at a **higher initial cost!**)
- it reaches a **wider target audience** by engaging learners who have difficulty attending conventional classroom (**distance learning**)

E-learning approaches

- Self-paced e-learning
- Instructor-led and facilitated e-learning
 - Learners, facilitators and instructors can use communication tools such as e-mails, discussion forums, chats, polls, whiteboards, application sharing and audio and video conferencing to communicate and work together.

e-Learning components

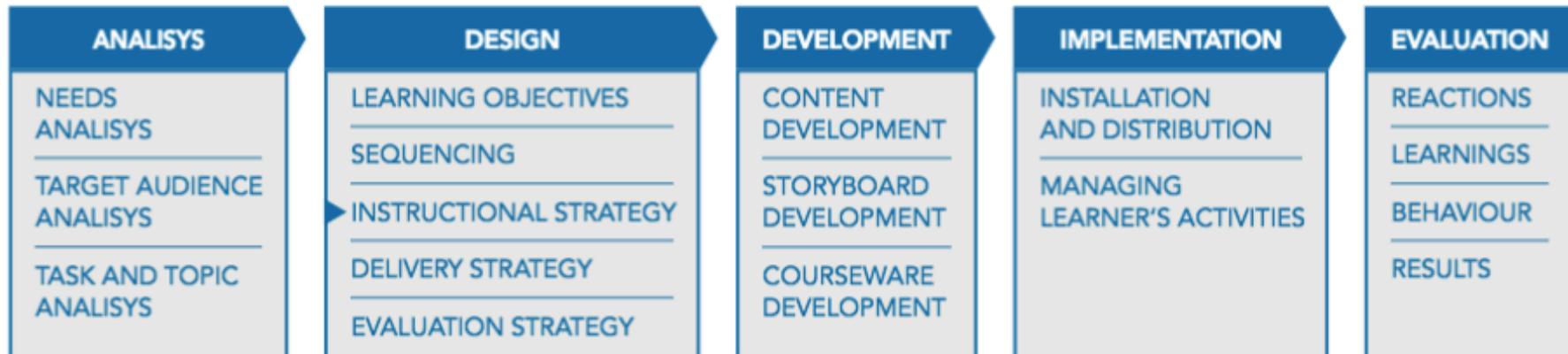
- **e-learning content**
 - simple learning resources
 - interactive e-lessons
 - computer simulations
- **e-tutoring, e-coaching, e-mentoring**
 - Services which provide human and social dimensions
- **collaborative learning**
 - online discussions
 - collaboration
- **virtual classroom**
 - e- learning event where an instructor teaches remotely and in real time to a group of learners

Synchronous vs asynchronous

- Synchronous events take place in real time.
- Asynchronous events are time-independent.

Synchronous	Asynchronous
<ul style="list-style-type: none">> Chat and IM> Video and audio conference> Live webcasting> Application sharing> Whiteboard> Polling	<ul style="list-style-type: none">> E-mail> Discussion forum> Wiki> Blog> Webcasting

The ADDIE model



1b : the present - platforms

c) platforms

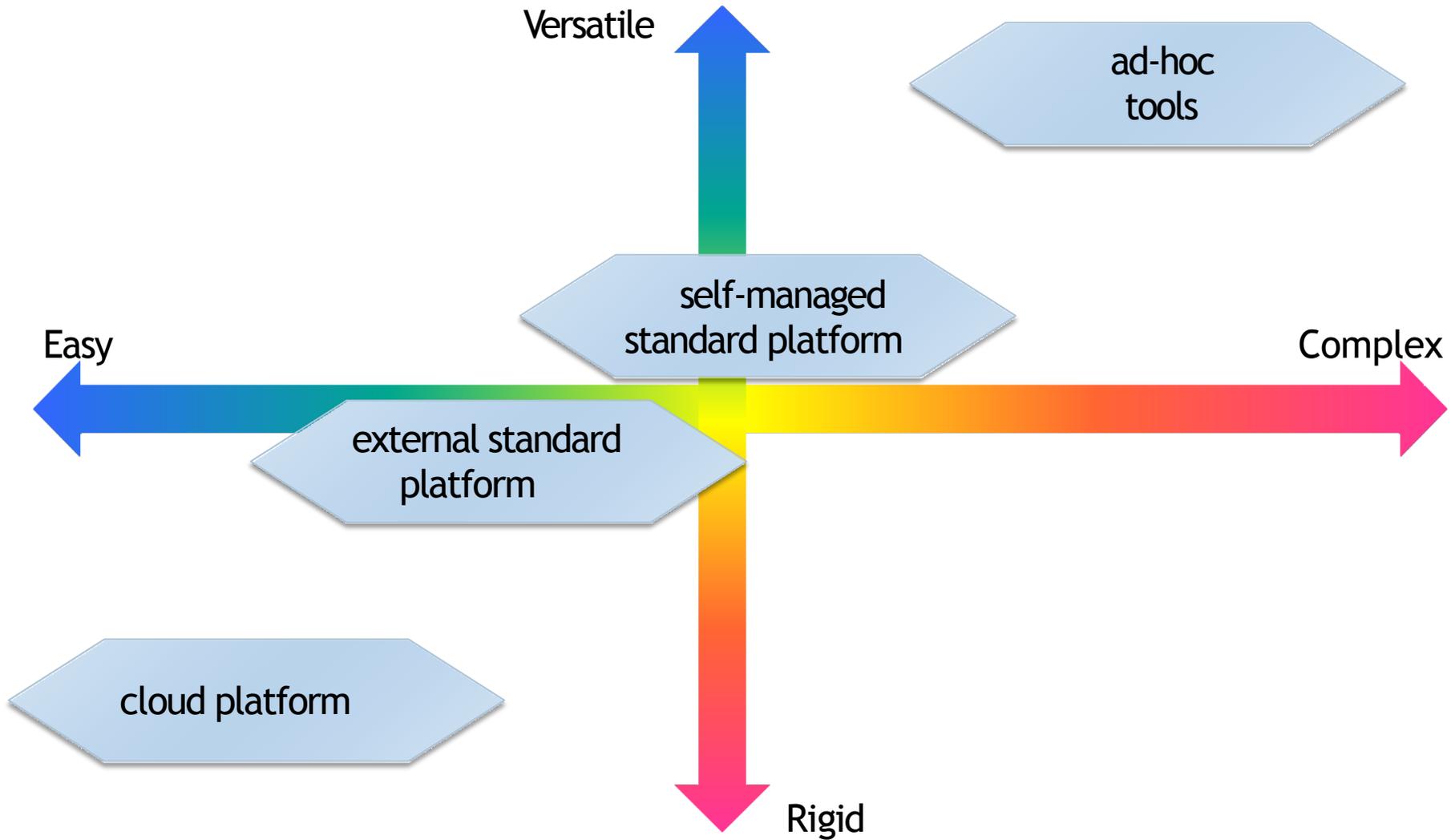
Learning platforms

- Learning platforms are usually referred to as:
 - virtual learning environments (VLEs),
 - learning management systems (LMSs)
 - learning content management systems (LCMSs)
- LMSs are primarily for training while VLEs are primarily for education
- LCMSs – focuses mainly on creating e-learning content. In other words, developers and administrators create content material.

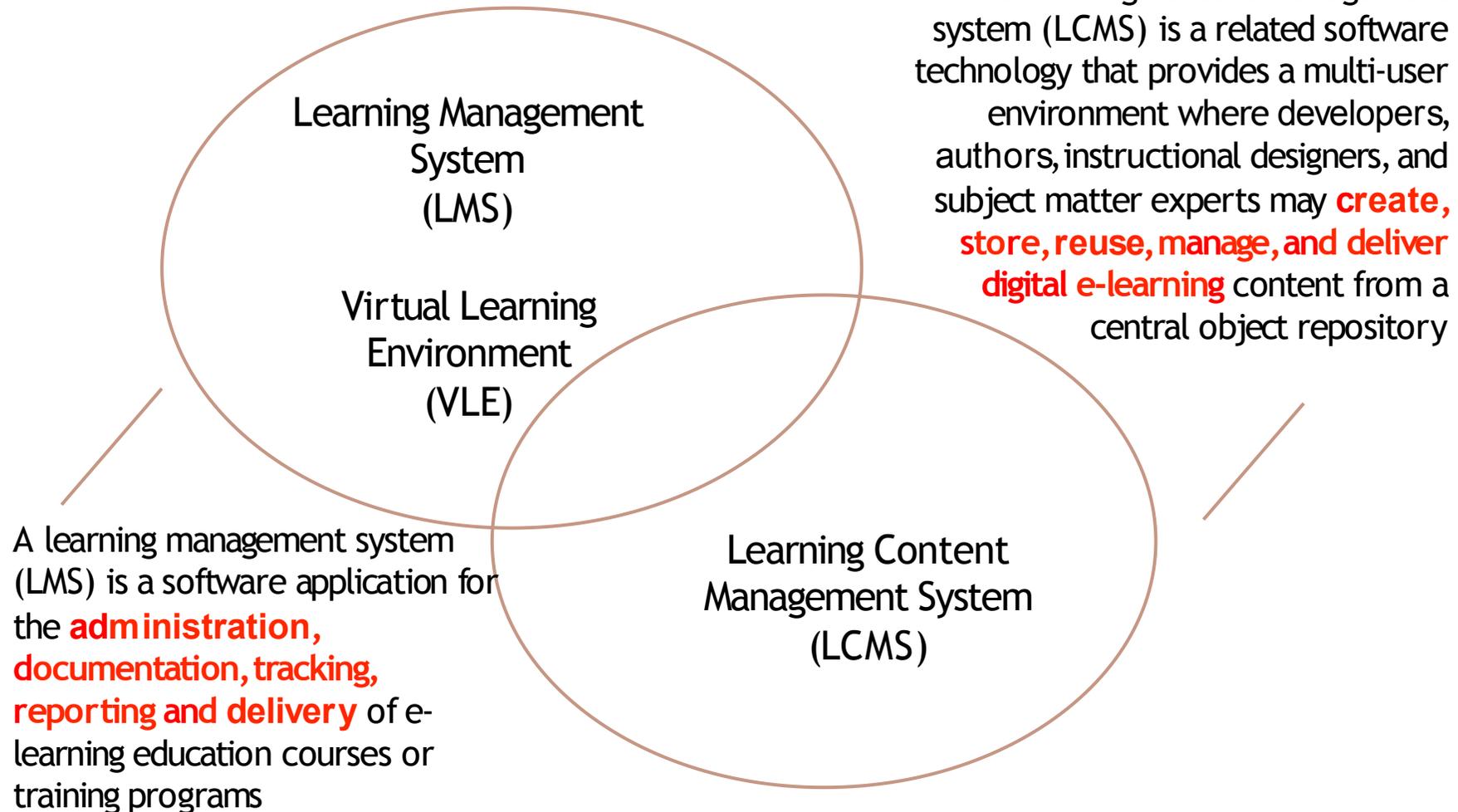
Do we need a platform?

- Learning material repository
- Delivery tools (presentation, assignments...)
- Communication
- Time management (scheduling etc.)
- Semantic glue (notions of "Lecture", "Course", "Class"...)
- Specialized tools (Teacher book, diary...)
- Monitoring tools (logging etc.)
- Uniform interface

A continuum spectrum



VLE – LMS – LCMS



http://en.wikipedia.org/wiki/Learning_management_system

This slide from "Elearning per la pubblica Amministrazione", Politecnico di Torino

Examples of services



<https://moodle.org/>

ATTIVITÀ

- Chat
- Compito
- Database
- Forum
- Glossario
- Lezione
- Pacchetto SCORM
- Quiz
- Scelta
- Sondaggio
- Tool esterno
- Wiki
- Workshop

RISORSE

- Cartella
- Etichetta
- File
- IMS content package
- Libro
- Pagina
- URL

Examples of services

Assignments Create or grade online and offline assignments	Calendar Maintain deadlines, activities and site related events
Chat Engage in real-time conversations with site participants	Discussion Forum Create moderate and manage discussion topics, groups and private messages
Drop Box Share files privately with site participants	Gradebook Calculate, store and distribute grade information to students.
News Display custom news content from dynamic online sources via rss	Profile 2 Create a profile and content with others using a social networking model



<https://sakaiproject.org>

Resources Post, store and organize material related to the site	Site Roster View a list of site participants and their pictures
Syllabus Post a summary outline of course requirements	Test and Quizzes Create and manage online assesments
Wiki Create and edit web content collaboratively	Lessons Lessons allows an instructor to organize resources, activities, and media on a single page

Planning and delivery

- See book e-Learning Methodologies – Chapter 4



Instructional Methods

Expositive methods

- emphasize “absorption” of new information.
- include presentations, case studies, worked examples, demonstrations.

Application methods

- emphasize the active processes learners use to perform procedural and principle-based tasks and build new knowledge.
- include demonstration-practise method, job aids, case-based or scenario-based exercises, role play, simulations and serious games, guided research, project work.

Collaborative methods

- emphasize the social dimension of learning and engage learners sharing knowledge and performing tasks in a collaborative way.
- include online guided discussions, collaborative work and peer tutoring.

Assignment

- Create a concept map for this lesson
- Deliver by e-mail, with subject
MHCI – Delivery 2

Deadline: 27/9, 23:59