

# **Instructional and Technical Frameworks for Online Distance Learning**

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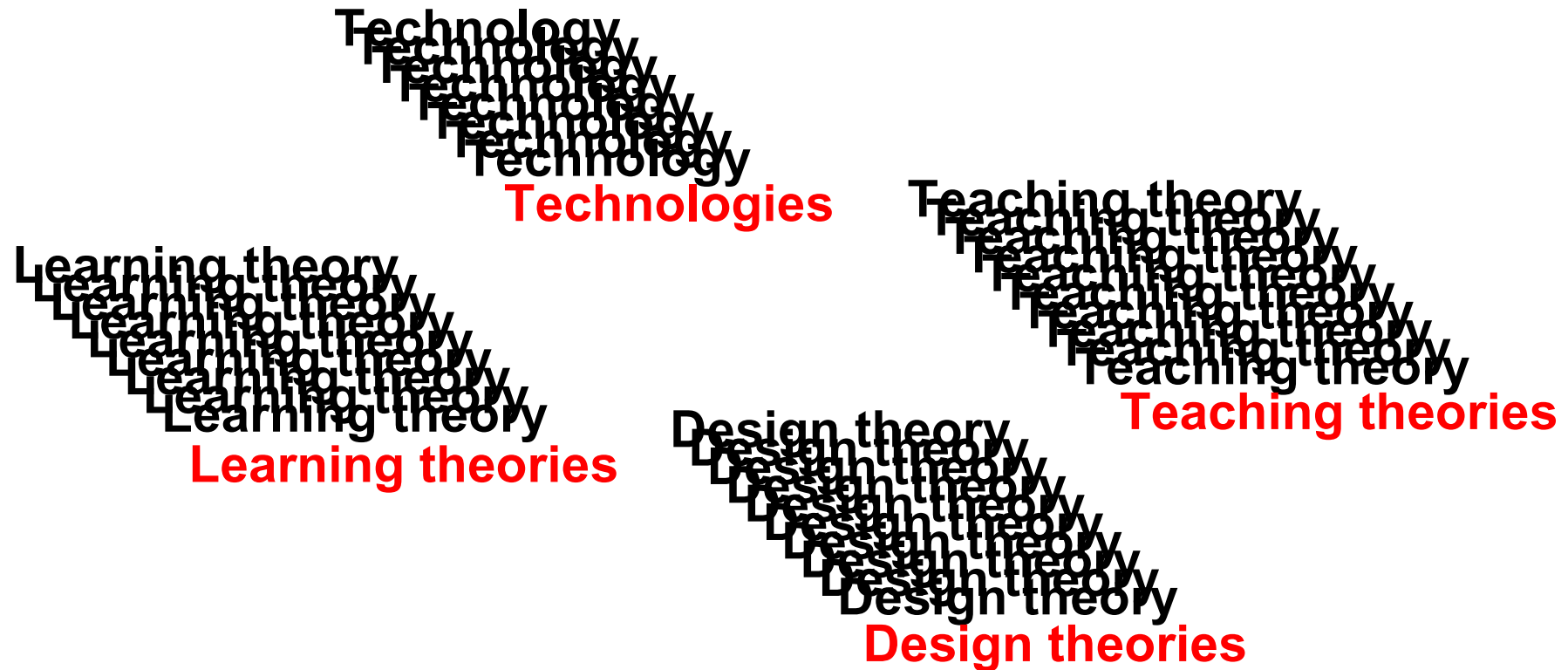
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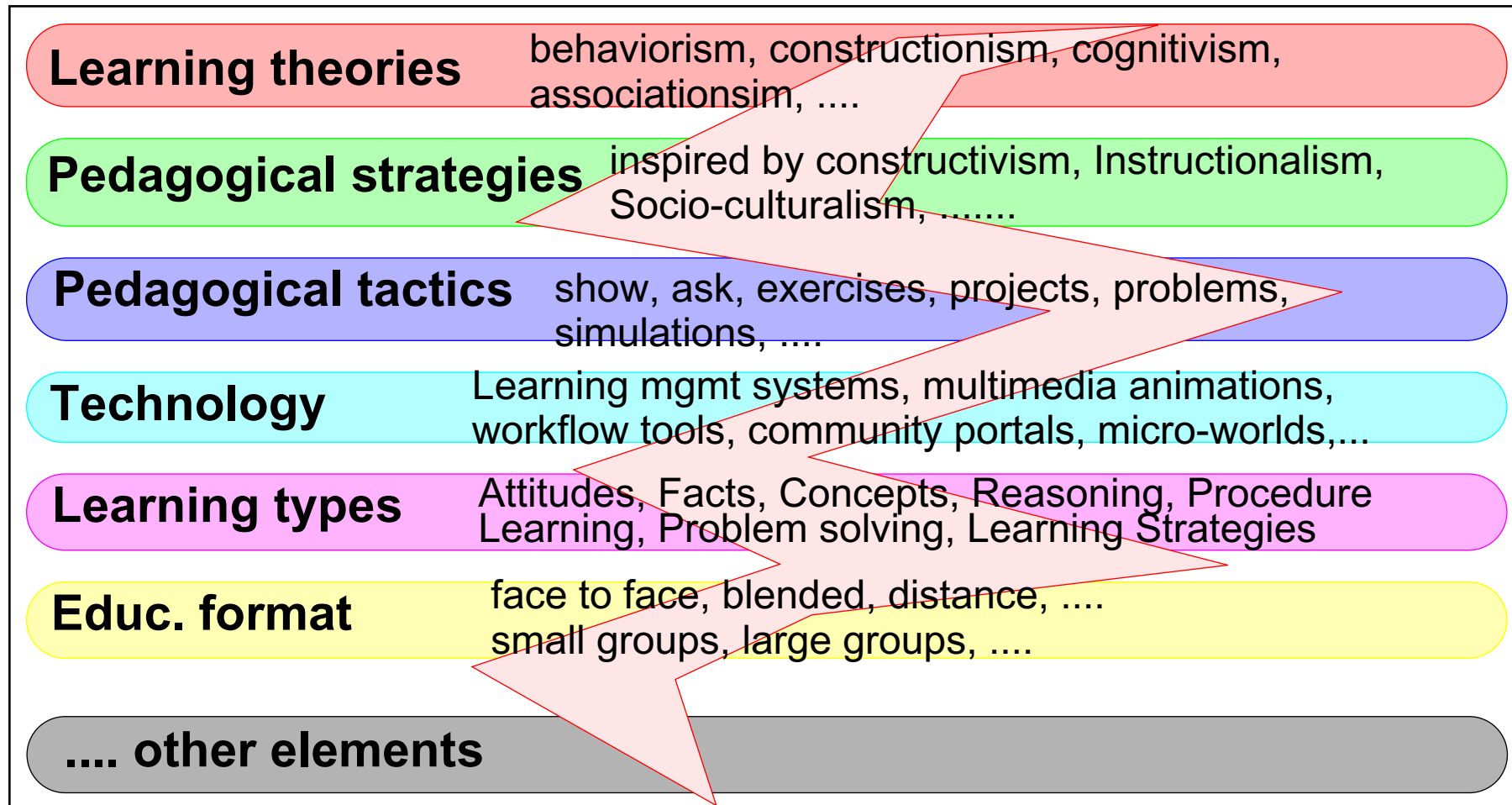
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# I Why you should worry



# 1. The problem space

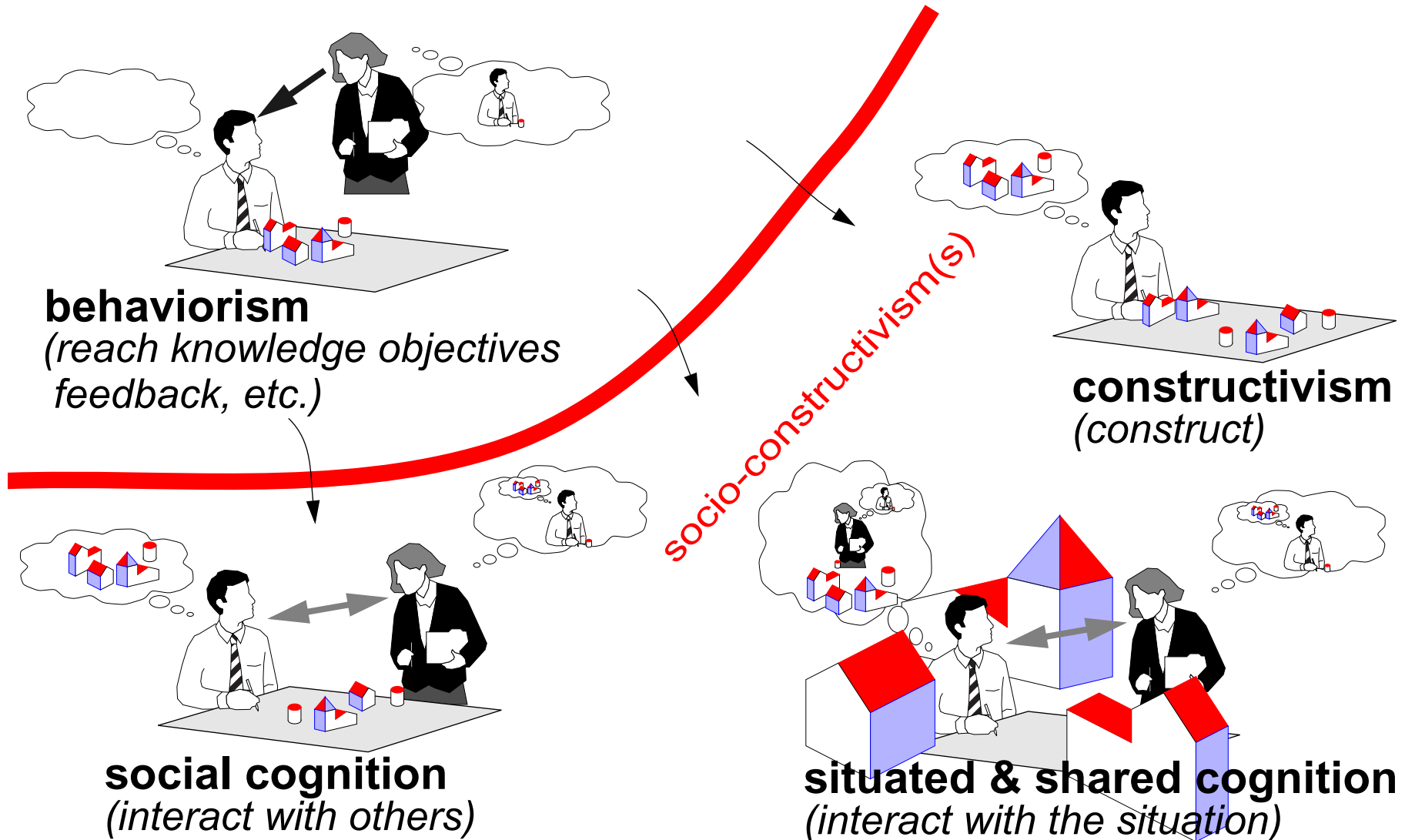
## 1.1 Learning & teaching: many dimensions & combinations !!



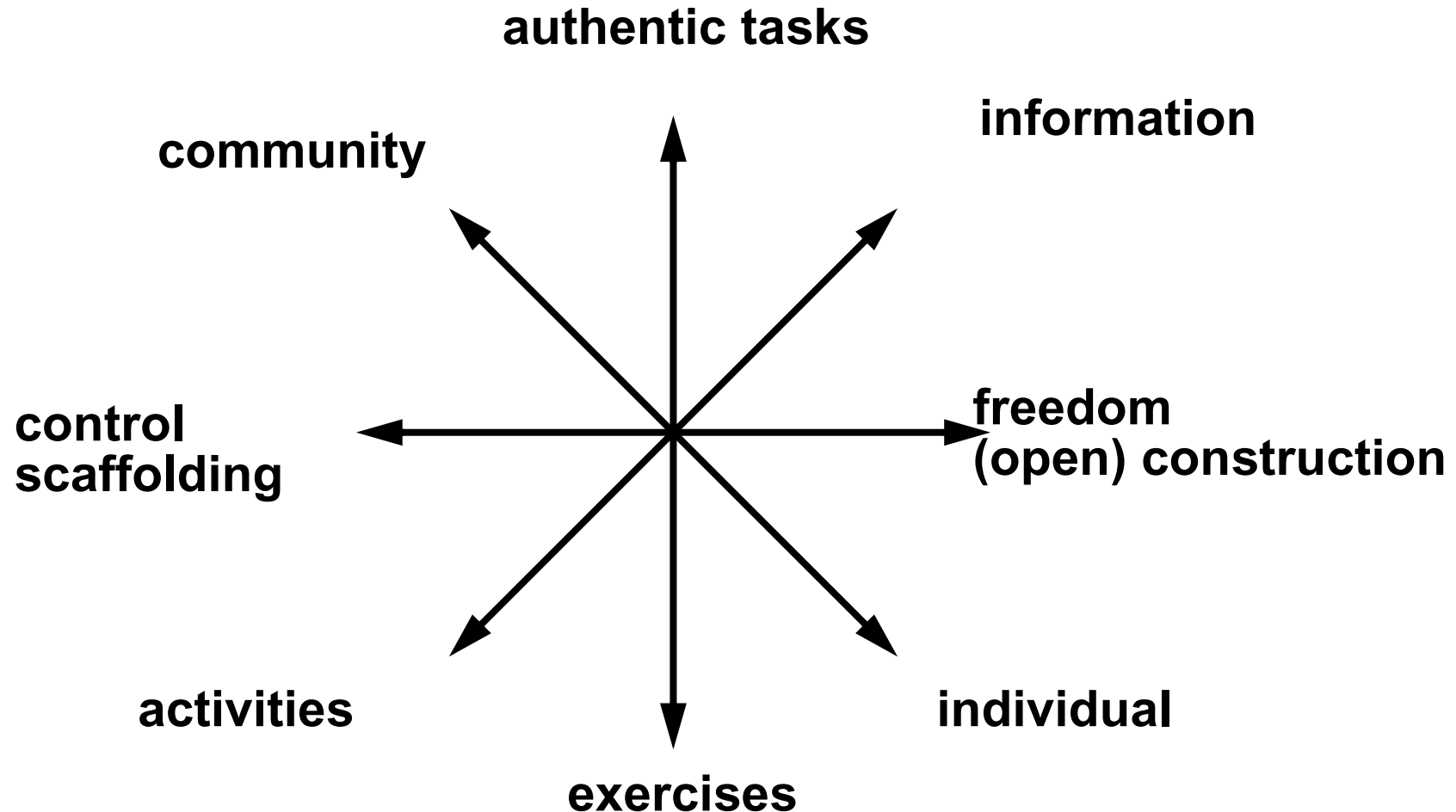
A very complex affair, the next few slides just address a few issues .... !

## 1.2. Learning theories ?

Some major schools of thought that will lead to different designs



## A few issues on which we could focus



not that much operational .....

### 1.3. Major pedagogical approaches (strategies)

(Baumgartner & Kalz), there are many other typologies ...

<i><b>Transfer</b></i>	<i><b>Tutor</b></i>	<i><b>Coach</b></i>
Factual knowledge, <b>“know-that”</b>	Procedural knowledge, <b>“know-how”</b>	Social practise, <b>“knowing in action”</b>
Transfer of propositional knowledge	Presentation of predetermined problems	Action in (complex and social) situations
to know, to remember	to do, to practise	to cope, to master
Production of correct answers	Selection of correct methods and its use	Realization of adequate action strategies
Verbal knowledge, Memorization	Skill, Ability	Social Responsibility
to teach, to explain	to observe, to help, to demonstrate	to cooperate, to support
<i><b>Teaching I</b></i>	<i><b>Teaching II</b></i>	<i><b>Teaching III</b></i>

Things (learning types, learning level, teaching, etc. )come clustered !

## 1.4.Types of Learning (Kearsley's <http://tip.psychology.org/>) ?

1. **Attitudes:**
  - Disposition or tendency to respond positively or negatively ....
2. **Factual Information (Memorization):**
  - Processing of factual information and remembering .....
3. **Concepts (Discrimination):**
  - ... how to discriminate and categorize things. It is not related to simple recall and must be constructed.
4. **Reasoning (Inference, Deduction):**
  - thinking activities that involve making or testing inferences
5. **Procedure Learning:**
  - .... being able to solve a certain task by applying a procedure.
6. **Problem solving:**
  - identification of subgoals, use of methods to satisfy subgoals.
7. **Learning Strategies:**
  - can hardly be taught and only be learned and to some extent only !



## 1.5. Pedagogical strategies and methods?

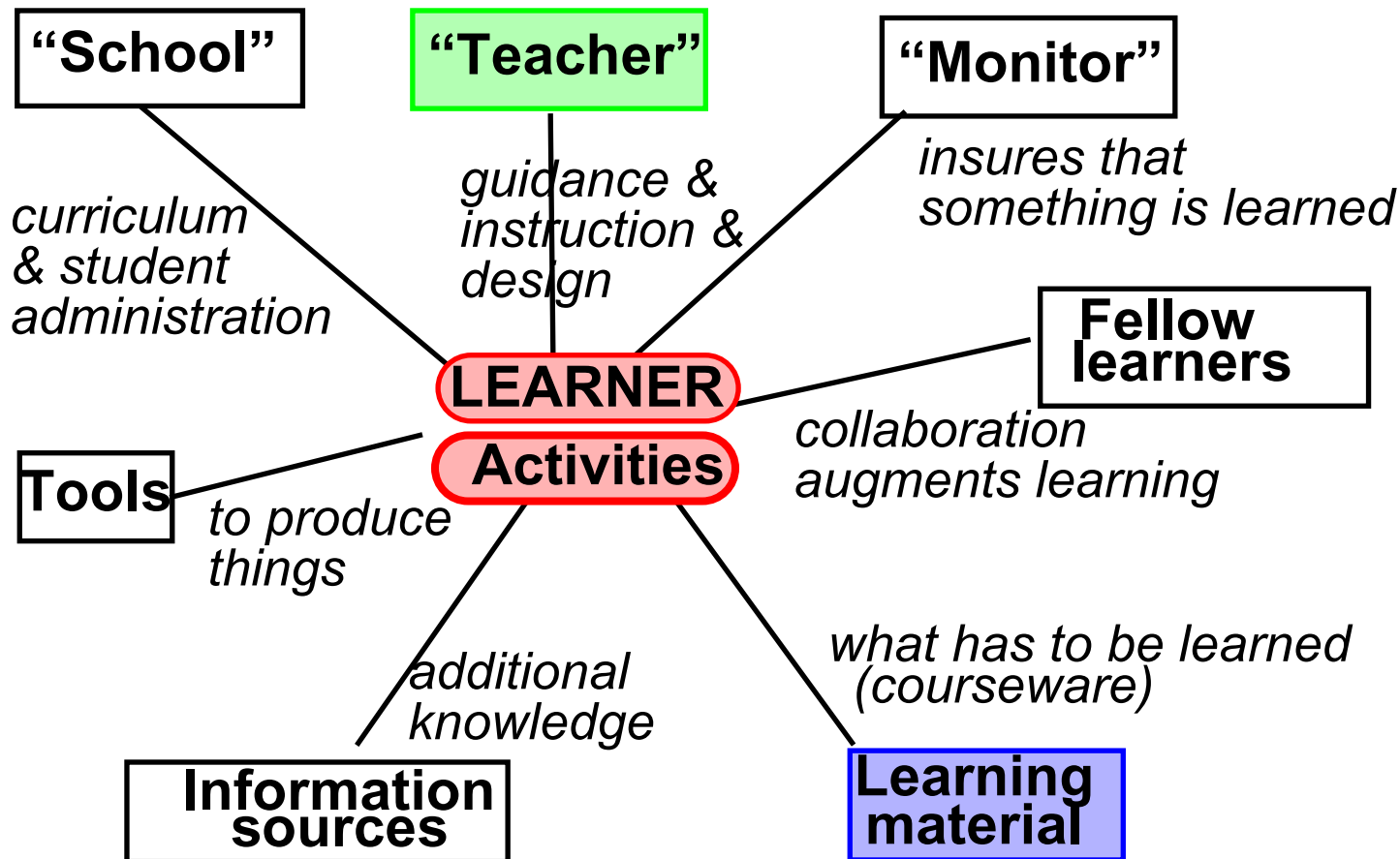
E.g. Khan's (2000) list of Methods and Strategies

<b>Presentation</b>	<b>Exhibits</b>
<b>Demonstration</b>	<b>Drill and Practice</b>
<b>Tutorials</b>	<b>Games</b>
<b>Story Telling</b>	<b>Simulations</b>
<b>Role-playing</b>	<b>Discussion</b>
<b>Interaction</b>	<b>Modeling</b>
<b>Facilitation</b>	<b>Collaboration</b>
<b>Debate</b>	<b>Field Trips</b>
<b>Apprenticeship</b>	<b>Case Studies</b>
<b>Generative Development</b>	<b>Motivation</b>

**So we have more to worry:**

**What strategies work better for what types of learning ?**

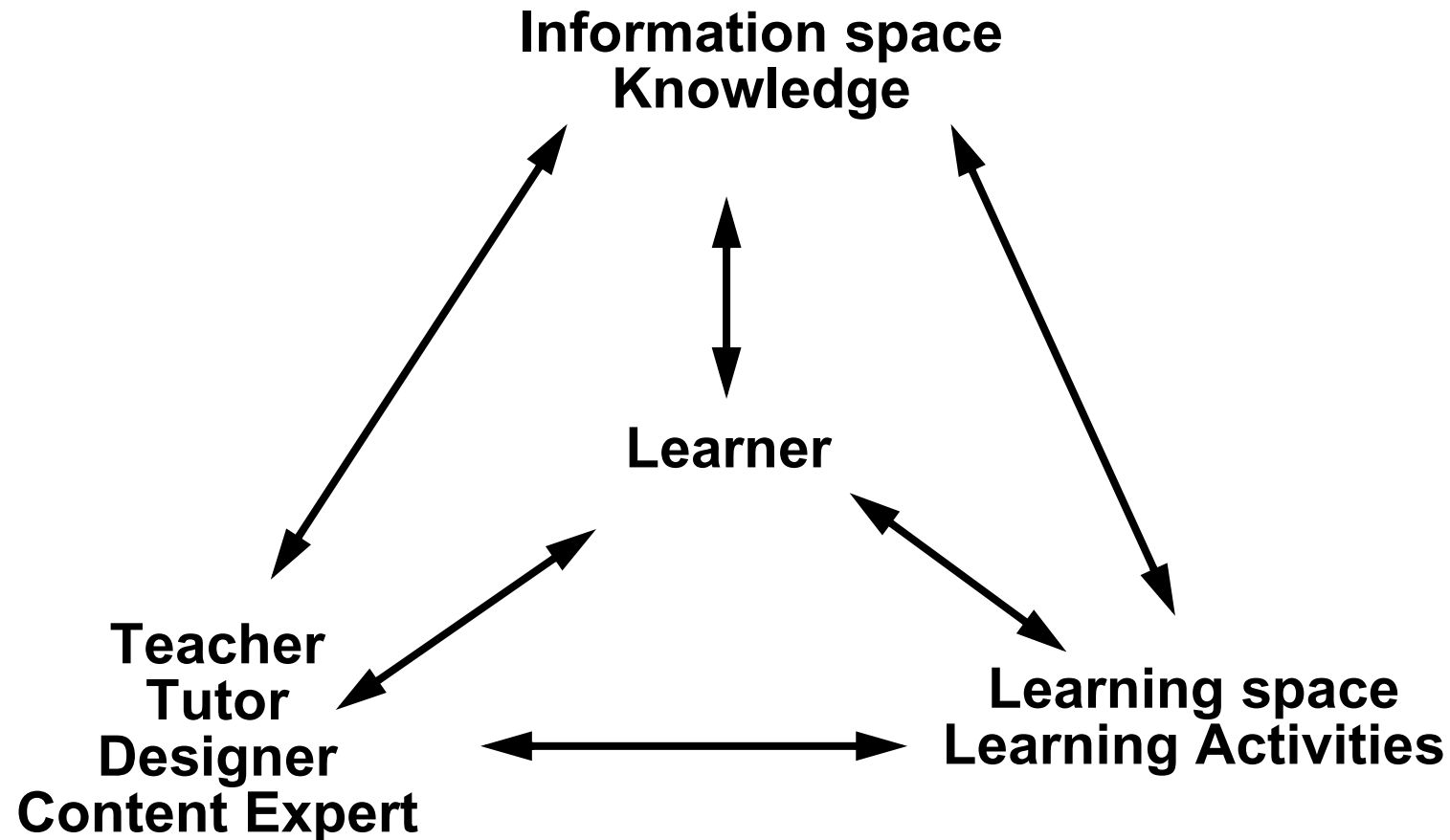
## 1.6. Functions of a learning environment: Where do we focus ?



modified from Sandberg

- E.g. **teacher role** is central in activity-based designs
- E.g. **Learning material** is important for mass-education

## A simplified version ....



How should we define roles, structures and relations ?

## 1.7.Motivation: learn from computer games or flow theory ?

- Motivation is key element (particularly in distance teaching)

### Intrinsically motivating elements of gaming: a curious blend ...

(Frete 2002, Master thesis)

<i>Element</i>	
<i>fantasy</i>	<ul style="list-style-type: none"> <li>• <b>imagination</b> and freedom (make believe + voluntary activity)</li> </ul>
<i>challenge &amp; curiosity</i>	<ul style="list-style-type: none"> <li>• a <b>level of difficulty</b> that triggers curiosity</li> <li>• presence of goals</li> <li>• uncertainty (surprise)</li> </ul>
<i>feedback</i>	<ul style="list-style-type: none"> <li>• <b>immediate</b></li> <li>• clear</li> </ul>
<i>self-esteem</i>	<ul style="list-style-type: none"> <li>• adapted tasks</li> <li>• encouragement to learn &amp; augment scores</li> </ul>
<i>control</i>	<ul style="list-style-type: none"> <li>• levels to play, <b>user selection</b> of goals, strategies &amp; tactics</li> </ul>

## Csikszentmihalyi's elements of "optimal experience" (flow) applied to programming and gaming activities:

<i>element</i>	<i>games</i>	<i>programming</i>		<i>learning designs</i>
		<i>good</i>	<i>bad</i>	
<b>1. optimal challenge</b>	<b>XX</b>	<b>x</b>	<b>no</b>	<b>improvable</b>
<b>2. immersion</b>	<b>XX</b>	<b>x</b>	<b>no</b>	<b>improvable</b>
<b>3. clear goals</b>	<b>XX</b>	<b>x</b>	<b>no</b>	<b>improvable</b>
<b>4. immediate feedback</b>	<b>XX</b>	<b>x</b>	<b>x</b>	<b>improvable</b>
<b>5. concentration</b>	<b>XX</b>	<b>x</b>	<b>no</b>	<b>?</b>
<b>6. sense of control</b>	<b>XX</b>	<b>?</b>	<b>no</b>	<b>improvable</b>
<b>7. disappearing self</b>	<b>XX</b>	<b>x</b>	<b>no</b>	<b>?</b>
<b>8. altered sense of time</b>	<b>XX</b>	<b>x</b>	<b>no</b>	<b>?</b>

... take advice from "skilled programming" and gaming ?

## 2. Instructional design

### 2.1 The instructional voice ?

#### A. The executive summary:

- Reading is NOT learning  
=> One must “do” to learn
- Most learning material (e.g. Internet) is NOT interactive (per se)  
=> Skills and concepts can only be learned through **activity**  
(triggered by the system and/or by the task)
- Passing an exam or a MCQ does NOT guarantee much  
=> One must do “**real**” **tasks** to insure transfer
- Most people need **guidance** to achieve instructional goals  
=> External conditioning (teaching, monitoring)

Now that is quite understandable, however, let's look at some more detailed principles ....

## B. Example: Merrill's criteria for 5 Star Instructional Design's

Not applicable to transmissive ("spray-and-pray" / or exploratory designs ("sink-or swim").

### 1. Does the courseware relate to real world problems?

- a.... show learners the task or the problem they will be able to do/solve ?
- b.are students engaged at **problem or task level** not just operation or action levels?
- c.... involve a **progression** of problems rather than a single problem?

### 2. Does the courseware activate prior knowledge or experience?

- a.do learners have to recall, relate, describe, or apply **knowledge from past experience** (as a foundation for new knowledge) ?
- b.does the same apply to the present courseware ?
- c.is there an opportunity to demonstrate previously acquired knowledge or skill ?

### 3. Does the courseware demonstrate what is to be learned ?

- a.Are **examples consistent** with the content being taught? E.g. examples and non-examples for concepts, demonstrations for procedures, visualizations for processes, modeling for behavior?
- b. Are learner **guidance techniques** employed? (1) Learners are directed to relevant information?, (2) Multiple representations are used for the demonstrations?, (3) Multiple demonstrations are explicitly compared?
- c.Is **media** relevant to the content and used to enhance learning?

## 4. Can learners practice and apply acquired knowledge or skill?

- a. Are the **application (practice)** and the post test **consistent** with the stated or implied **objectives**? (1) Information-about practice requires learners to recall or recognize information. (2) Parts-of practice requires the learners to locate, name, and/or describe each part. (3) Kinds-of practice requires learners to identify new examples of each kind. (4) How-to practice requires learners to do the procedure. (5) What-happens practice requires learners to predict a consequence of a process given conditions, or to find faulted conditions given an unexpected consequence.
- b. Does the courseware require learners **to use new knowledge or skill** to solve a varied sequence of problems and do learners receive **corrective feedback** on their performance?
- c. In most application or practice activities, are learners able to access context sensitive help or guidance when having difficulty with the instructional materials? Is this coaching gradually diminished as the instruction progresses?

## 5. Are learners encouraged to integrate (transfer) the new knowledge or skill into their everyday life?

- a. Is there an opportunity to publicly demonstrate their new knowledge or skill?
- b. Is there an opportunity to reflect-on, discuss, and defend new knowledge or skill?
- c. Is there an opportunity to create, invent, or explore new and personal ways to use new knowledge or skill?

**=> This is rather a list of evaluation criteria**



## **2.2.The socio-constructivist voice ?**

### **Socio-constructivist features of on-line teaching (Taylor and Maor**

- 1. Relevance : How relevant is on-line learning to students' professional practices?**
- 2. Reflection : Does on-line learning stimulate students' critical reflective thinking?**
- 3. Interactivity : To what extent do students engage on-line in rich educative dialogue?**
- 4. Tutor Support : How well do tutors enable students to participate in on-line learning?**
- 5. Peer Support : Is sensitive and encouraging support provided on-line by fellow students?**
- 6. Interpretation : Do students and tutors make good sense of each other's on-line communications?**

## 2.3. So how shall we proceed ?

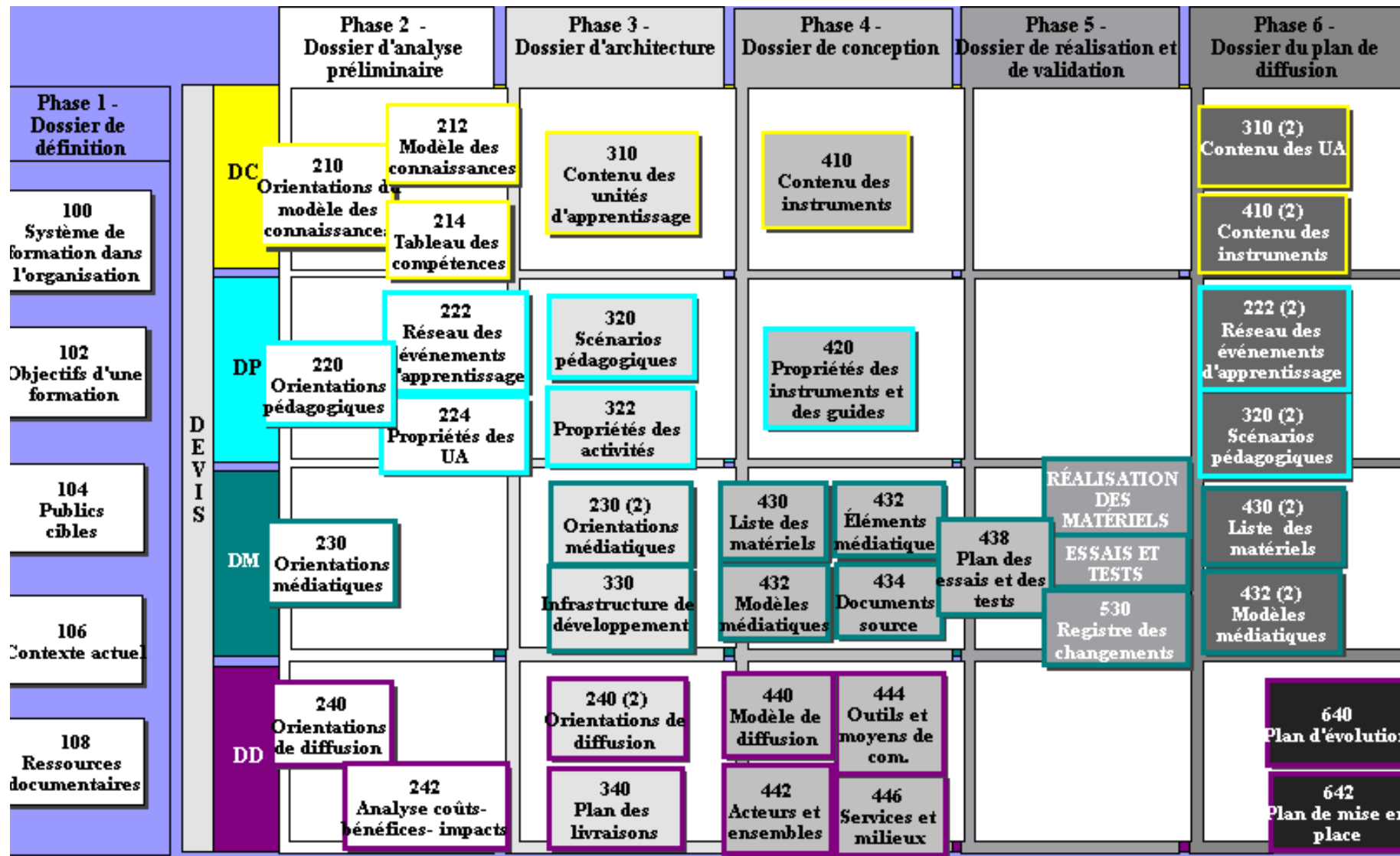
E.g. MISA/MOT/ADISA: Course designer works on "4 models"

1. **Knowledge** and **Skill** Representation  
DC: Design of Content (know-that **and** know-how)
2. Application of **Teaching Methods** and Approaches  
DP: Design of Pedagogical specifications
3. Specification of **Learning Materials**  
DM: Design of Materials
4. **Delivery** Planning  
DD: Design of Delivery

Using such a method (see next slide) is worth the effort:

- if you plan do it right (e.g. buy the MOT editor)
- if you focus on a whole course instead of difficult problems
- if you plan to train yourself in instructional design

[url: http://www.cogigraph.com](http://www.cogigraph.com)



Too much for you ? Let's rather look at "natural types"

# II Natural types

**The Internet Model:  
how it (re)started**

**Main stream  
"e-learning"**

**Structured activity-based  
project-oriented learning**

**Learning within  
a community**

**Microworlds, simulations,  
rich exercising machines**

**Teleteaching**

**CSCCL (Computer supported  
collaborative learning)**

**Content & Document  
Management Systems**

**Weblogs**

**The Wiki way**

**Groupware  
and CSCW**

**The "help desk model"  
for life-long learning**

## 3. What's out there ? What do people really use ?

### 3.1 Rationale and plan for the rest of the talk ...

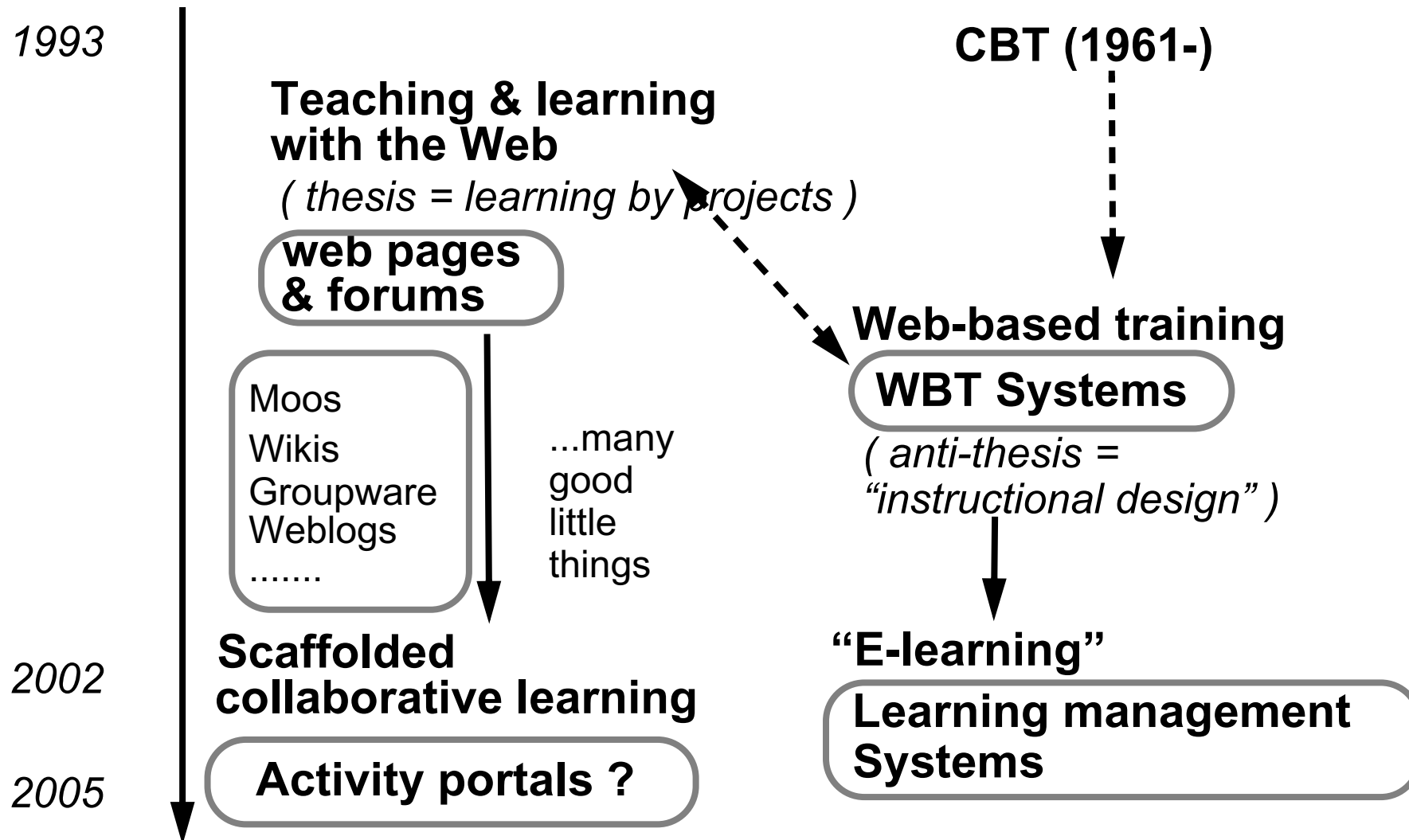
#### A few remarks:

- There is a HUGE amount of designs and technology
- What is currently marketed (e-learning/Learning Management systems) does not necessarily represent what people really use
- Distance teaching universities are just moving in. They know what DT means and don't want to compromise
- Most sustainable designs are developed within “blended formats” by “ordinary” but creative university teachers
- Research produces interesting but costly designs

#### Plan

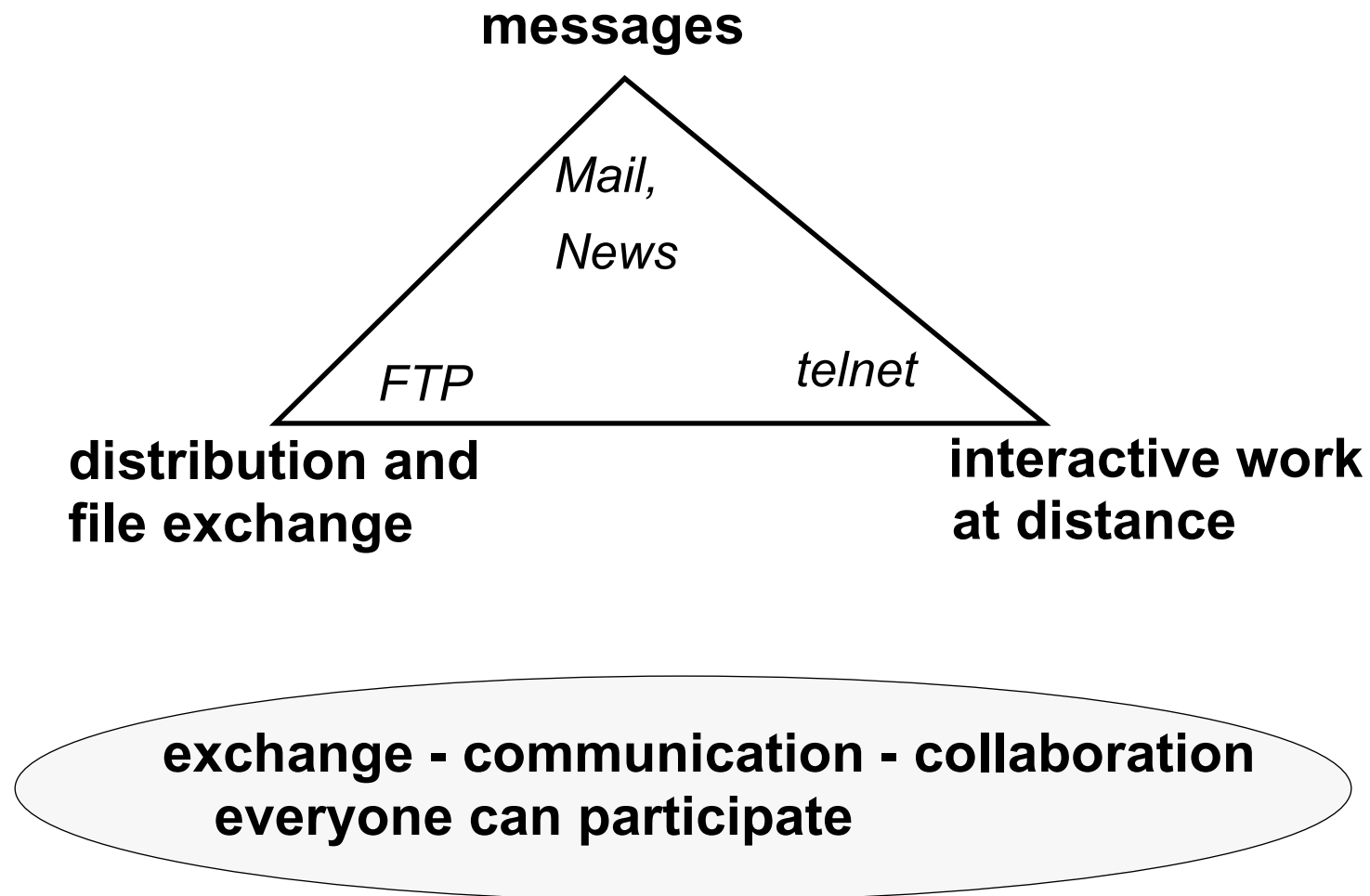
- Show a relevant subset of existing designs (biased of course !)
- Focus on (1) “Internet Model” (2) simple e-learning (3) Project-based learning with portals.
- **Missing**: ROI (there only 2 reasons why you should engage in e-learning, and a **lot against**)

### 3.2.A condensed historical view

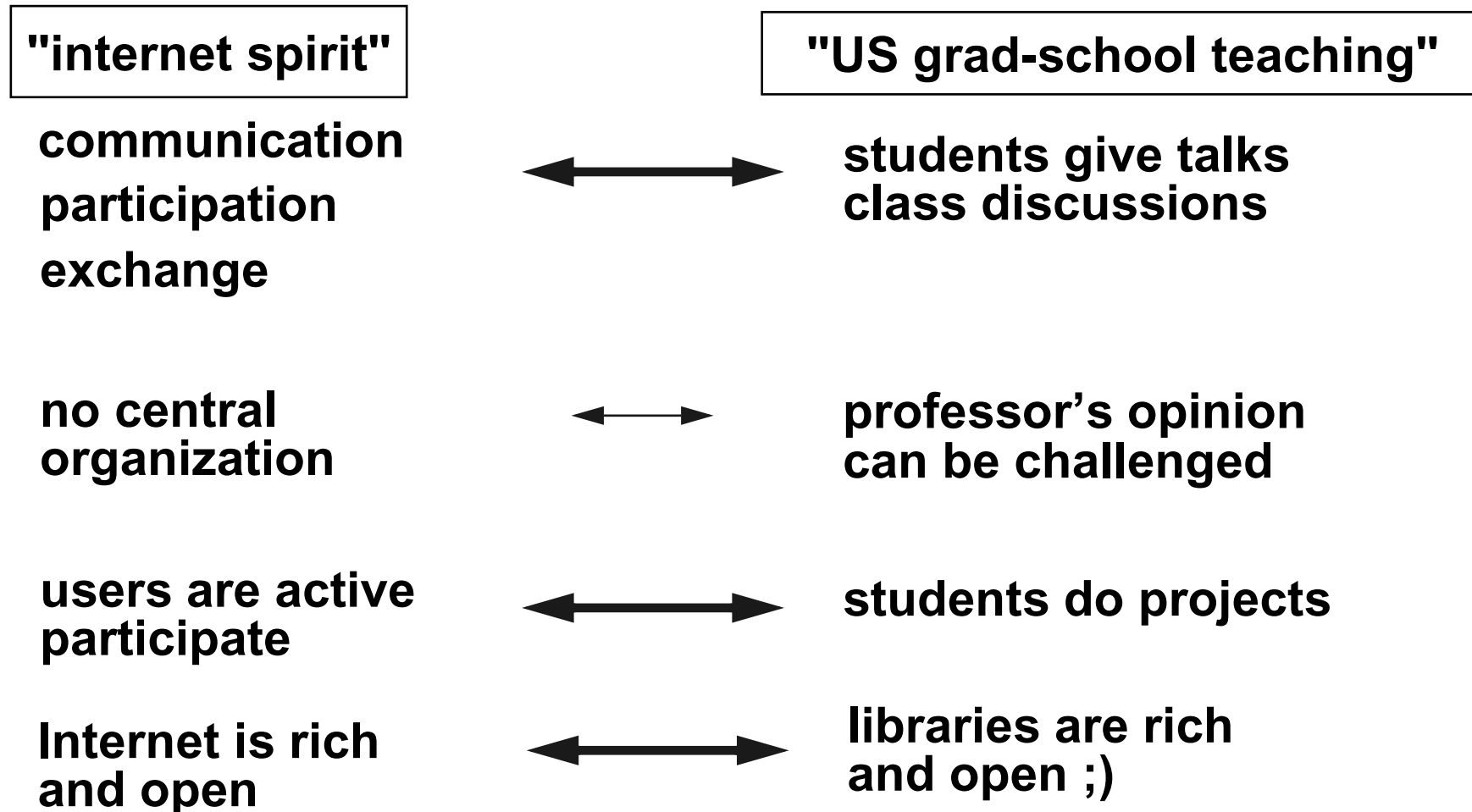


## 4. The Internet Model: how it (re)started

Internet : services et "spirit" 1980-1993



## 4.1. Structural similarities ...





## 4.2. The traditional technical infrastructure & its use

### 1. WWW (hypertext), e.g. for:

- a. planning, curricula, agendas, assignments
- b. texts, manuals, resources and pointers
- c. assignments (student productions)
- d. collaboration within group projects

### 2. Email, e.g. for:

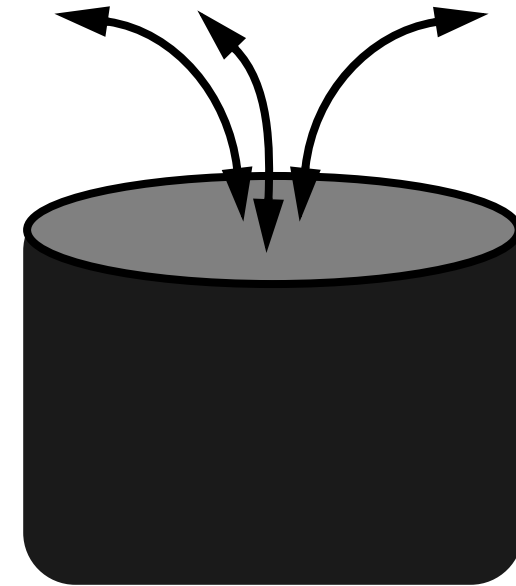
- a. agenda planning (teacher)
- b. search for information (student)
- c. information about updates (student, teacher)
- d. short comments (teacher)

### 3. Discussion Forums, e.g. for:

- a. debates (about articles or themes)
- b. technical Q/A
- c. student-student help (!)

### 4. Some chat or similar (text or audio/video)

- a. urgent things
- b. co-presence (common virtual space, radio channels)
- c. virtual meetings for simple discussions



The simple  
"Internet soup"

## 4.3. Moodle - like systems are based on this tradition

<http://moodle.org/>

- activity-based design
- CMS tools
- socio-constructivist flavor
- supports many designs

## 5. Main stream "e-learning"

### 5.1 Purpose and features

- **Based on CBT ("Computer-based training"), 1961,->**
- **Mostly "tell & ask" (learning I), inclusion of learning II possible**
- **Dozens of commercial and open source systems**

### **Common main features of Learning Management Systems:**

- **Closed circuit platforms (logins, restricted access to classes)**
- **Asynchronous Communication: email, forums**
- **Synchronous Communication: chat, whiteboard, teleconferencing,**
- **Student tools: home page, self tests, bookmarks, progress tracking, ....**
- **Student Mgmt Tools: progress tracking, on-line grading, ....**
- **Lessons tools: authoring (structured XML or HTML), testing (e.g. Java Script generators)**

## 5.2.Screenshot from ATutor

The screenshot shows the ATutor Learning to Learn course interface. At the top, there's a navigation bar with links for My Courses, Preferences, Profile, Browse Courses, Search, Inbox, Help, and a dropdown menu for Learning to Learn. Below this is a secondary navigation bar with Home, Tools, Resources, Discussions, and Site-map. The main content area is titled "Learning to Learn" and includes a search box, a table of contents, and an introduction to learning styles. The table of contents lists sections 4.1 and 4.2. The introduction text discusses the concept of learning styles and their research. A red text overlay "Content menu" points to the left-hand navigation menu. Another red text overlay "Other tools" points to the top navigation bar. A third red text overlay "Content" points to the main text area.

**Content menu**

**Other tools**

**Content**

Learning to Learn

Home » Learning Styles

Close Menus

Close Search

Match:  All words,  Any word

Search

Open Local Menu

Close Global Menu

Home

1 Getting Started

2 Consider Us First

3 Metacognition

4 Learning Styles

4.1 Targets: Outline: Learning Styles

4.2 Assessing Your Learning Style

5 Memory

6 Language

7 Reading

8 Writing

8.1 Targets: Outline: Learning Styles

8.2 The Origins of Writing

8.3 Developing Written Communication

8.4 The Communication Process

8.4.1 Lets Put Words to Paper

8.4.2 The Discipline of Writing

8.4.3 Style In Writing

8.4.4 Writing Clearly

8.4.5 Writing for a Purpose

8.4.6 Writing Letters

8.4.7 Writing a Sales Letter

8.4.8 Writing An Article

8.4.9 Writing a Report

8.4.10 Preparing a Speech

8.4.11 Time to Talk To Yourself

8.5 Grammar Glossary

9 Problem Solving

10 Creativity

Contents:

4.1 Targets: Outline: Learning Styles

4.2 Assessing Your Learning Style

**Introduction**

The concept of learning styles has been at the center of controversy for several decades now, and there is still little agreement about what learning styles really are. Regardless, the subject of learning styles is very popular in the realms of education.

One of the major distinctions made in learning styles research is the visual/auditory/kinesthetic distinction. Researchers generally agree that several perceptual modalities of learning are distinguishable. Some have included such factors as environmental influences such as intake (i.e. food), light, or heat as components of style. Others have distinguished between structural styles, claiming learners may prefer to process information in a global, hierarchical, or perhaps a linear or sequential manner. Learning about perceptual and structural preferences is a focus of this week's module

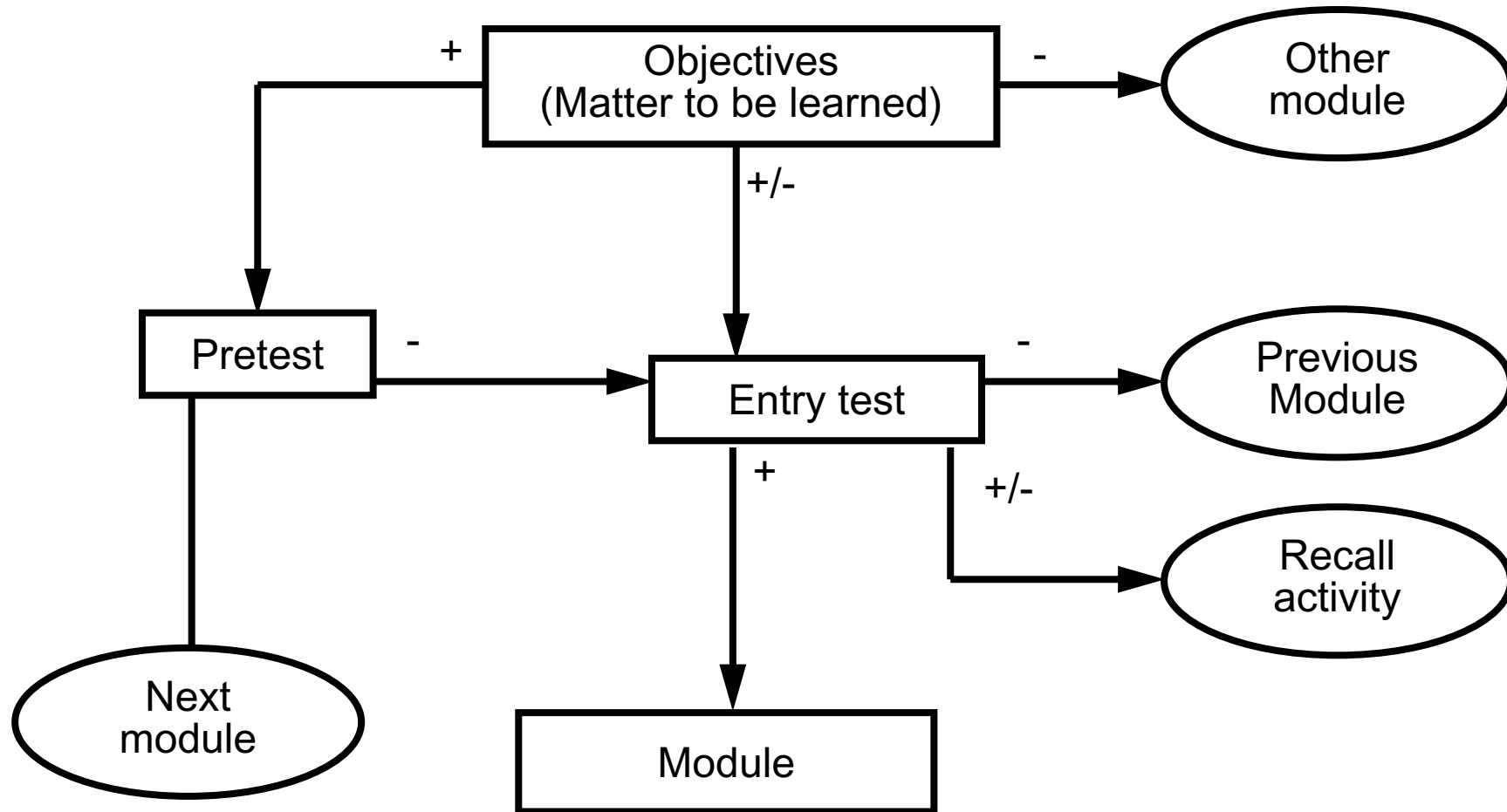
Last Modified: Sunday Oct 6, 2002 - 13:31. Revision: 10. Release Date: Thursday Oct 10, 2002 - 10:52.

Previous: 3.8 Advanced Readings on Metacognition | Next: 4.1 Targets: Outline: Learning Styles

Interactive JS or Java code can also be included

### 5.3. Overall course design: the module principle

#### The module architecture



## 5.4. Architecture of a module (lesson, topic)

- **Should follow (some) sound instructional design principles, e.g. Gagné's 9 steps of instruction for learning I + II**
  - a. **Gain attention** e.g. present a good problem, a new situation, use a multimedia advertisement.
  - b. **Describe the goal**: e.g. state what students will be able to accomplish and how they will be able to use the knowledge, give a demonstration if appropriate.
  - c. **Stimulate recall of prior knowledge** e.g. remind the student of prior knowledge relevant to the current lesson (facts, rules, procedures or skills). Show how knowledge is connected, provide the student with a framework that helps learning and remembering. Tests can be included.
  - d. **Present the material** to be learned e.g. text, graphics, simulations, figures, pictures, sound, etc. Chunk information (avoid memory overload, recall information).
  - e. Provide **guidance for learning** e.g. presentation of content is different from instructions on how to learn. Use of different channel (e.g. side-boxes)
  - f. Elicit **performance "practice"**, let the learner do something with the newly acquired behavior, practice skills or apply knowledge. At least use MCQ's.
  - g. Provide **informative feedback**, show correctness of the trainee's response, analyze learner's behavior, maybe present a good (step-by-step) solution of the problem
  - h. **Assess** performance test, if the lesson has been learned. Also give sometimes general progress information
  - i. Enhance retention and **transfer**: inform the learner about similar problem situations, provide additional practice. Put the learner in a transfer situation. Maybe let the learner review the lesson.

## 5.5. Standards

Implemented standards mostly focus on (modular) content:

- Describe CBT contents as **data**
  - sequential content, quizzing, packaging, meta-data, etc.

(Unclear instructional standards: page-turning "shovelware" only ?)
- **Modularity**
  - **Allows for *modular management* of reusable learning contents**

(But: how easily can contents be hacked à part and repurposed ?)
- **New: Learning Design (LD) educational markup language**
  - engines are under way (e.g. a MOT extension)
  - **difficult !**

(yet unclear how it could support socio-constructivist pedagogies)
- **Summary:**
  - **Good standards for so far (!) simple instructionalist pedagogies**
  - **Compliant Learning Content & Management Systems exist**

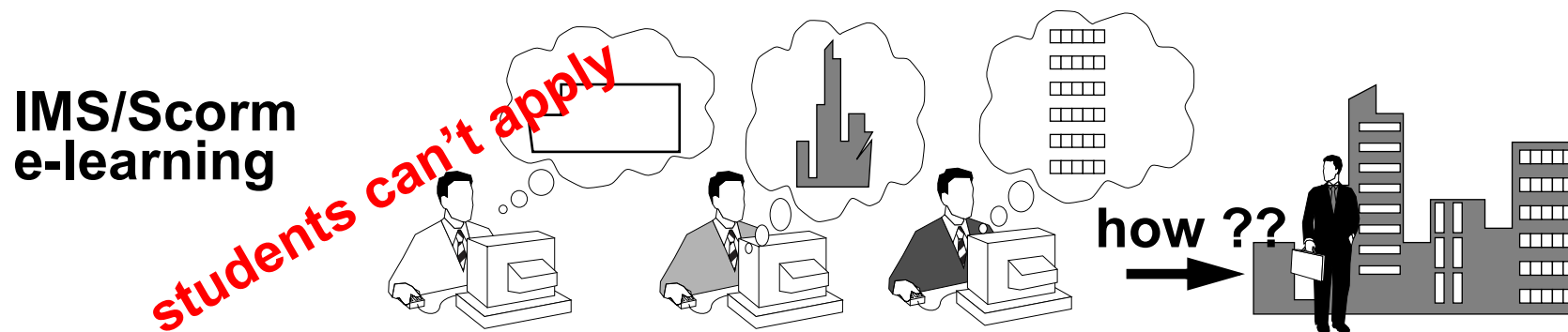
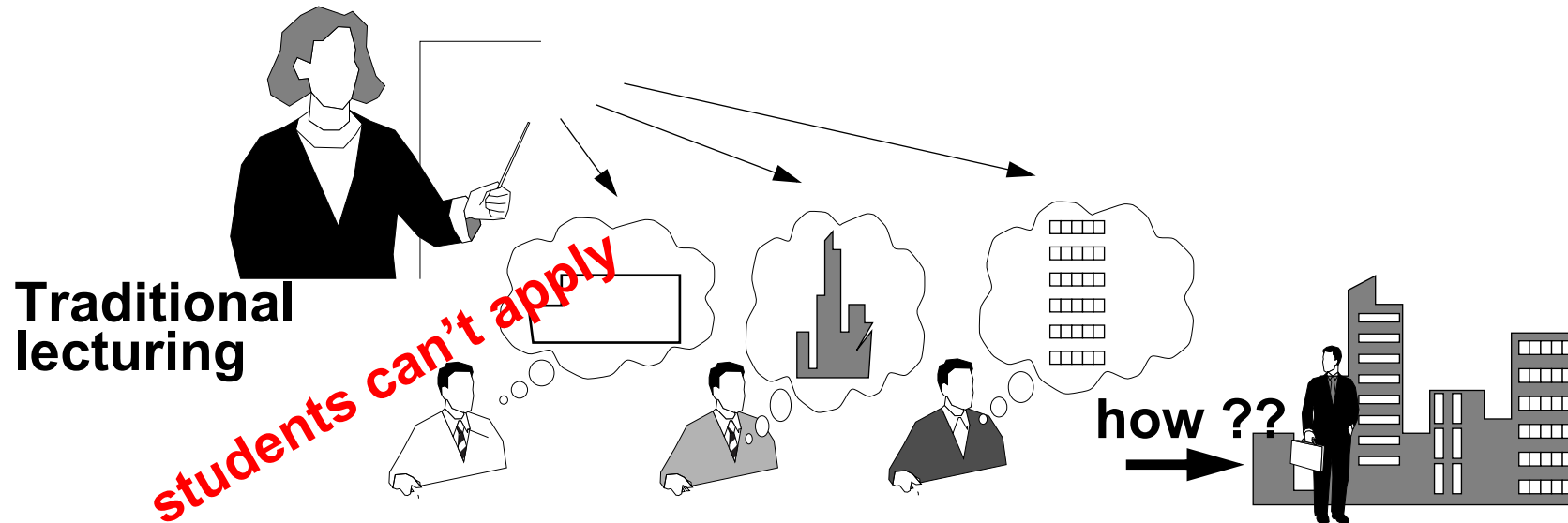
**Major standard bodies**

- **IMS and Scorm (mostly an IMS-based operational subset)**



## 6. Structured activity-based project-oriented learning

### 6.1 Motivation: the problem with reproductive tell & ask learning

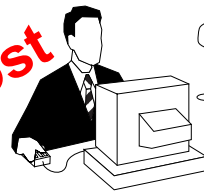




## 6.2. The problem with "let's do projects" answer

Traditional learning by projects

**students are lost**



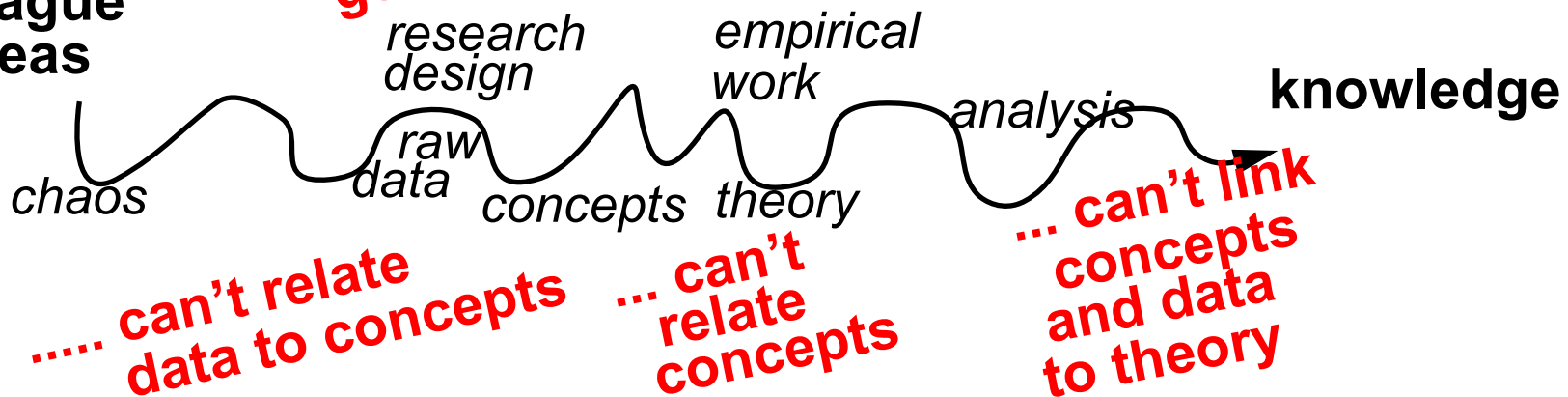
how ??



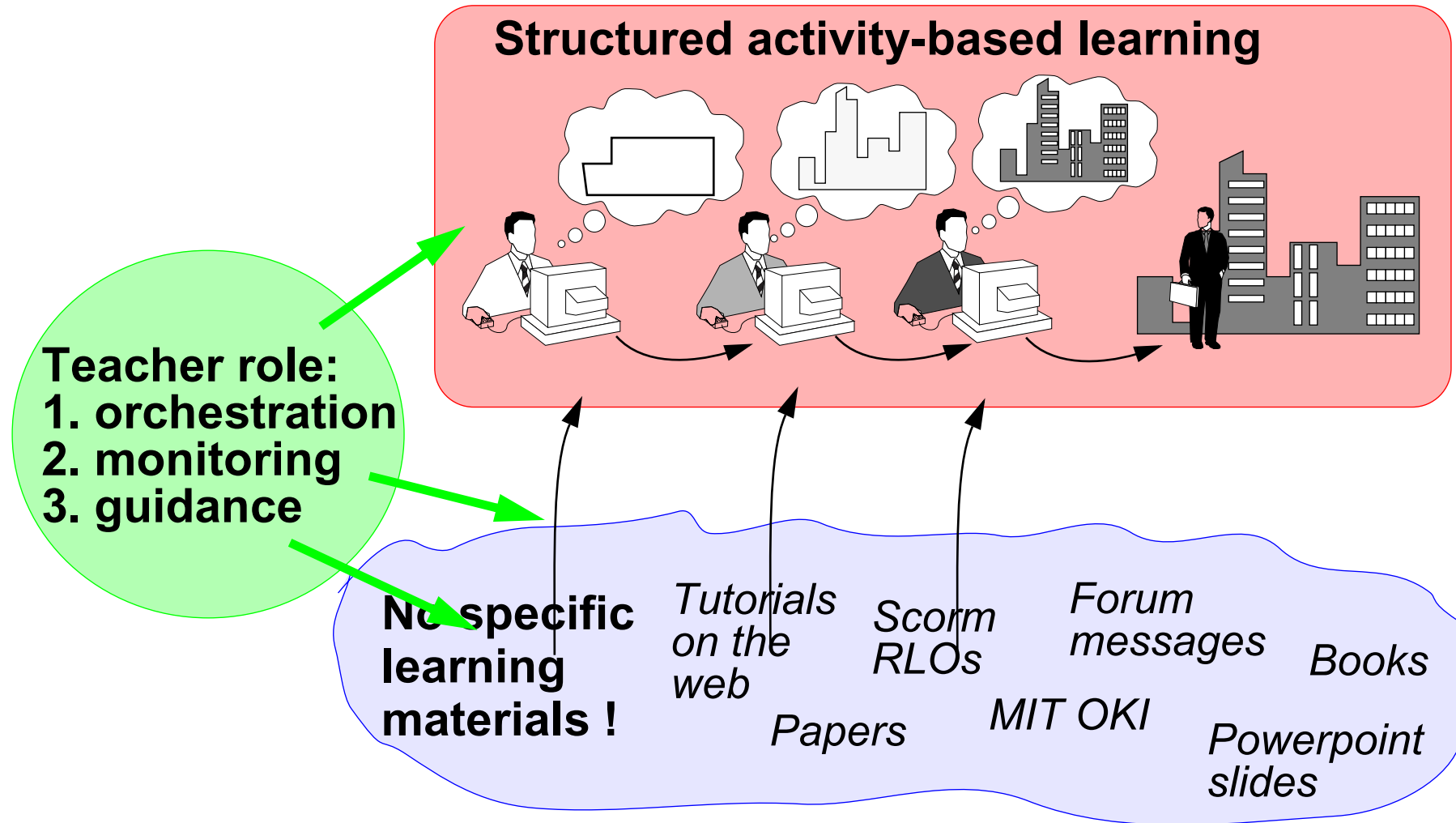
vague ideas

**students can't formulate goals**

**students have trouble with research designs**



### 6.3.A possible solution

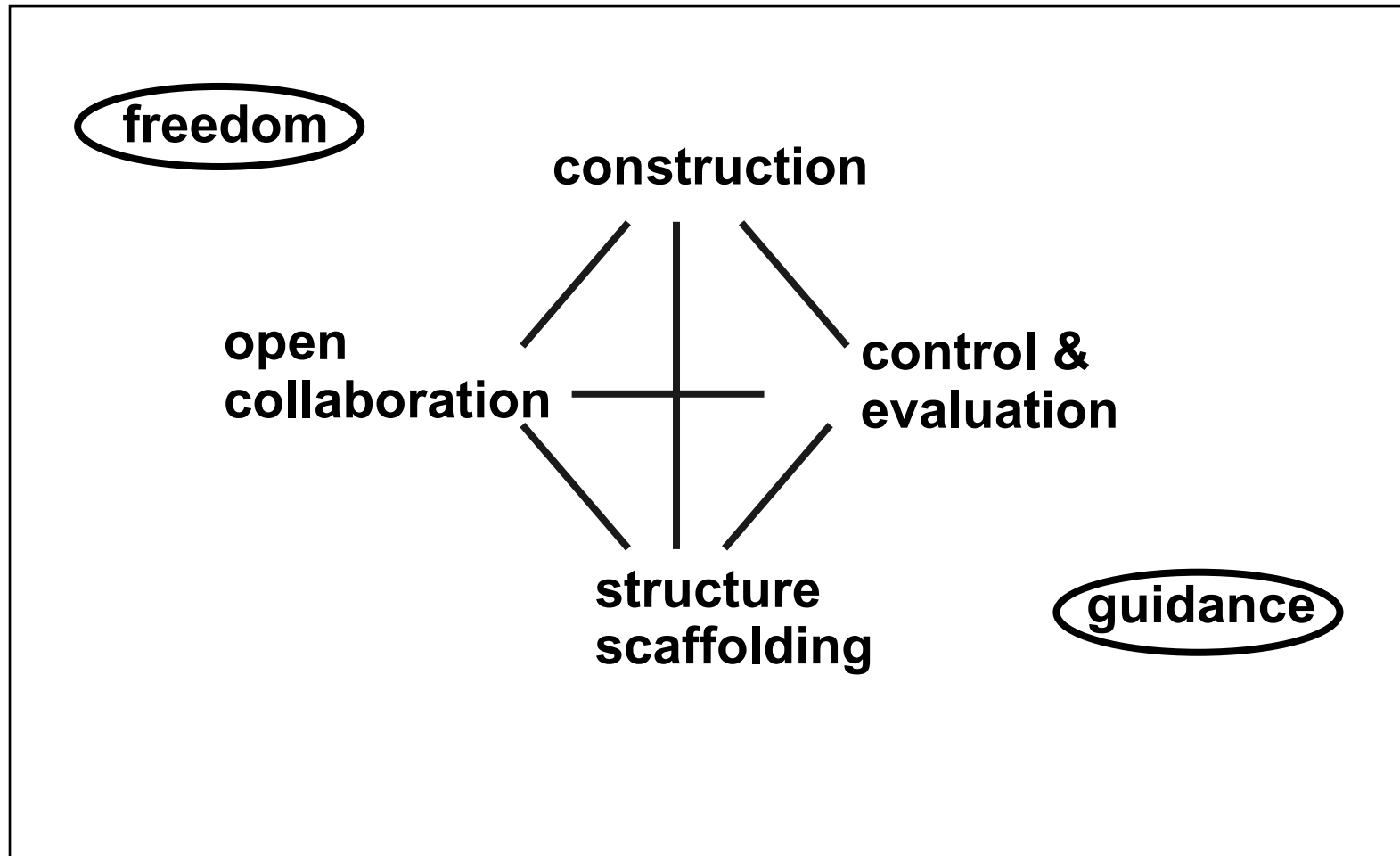


<http://tecfaseed.unige.ch/door/>

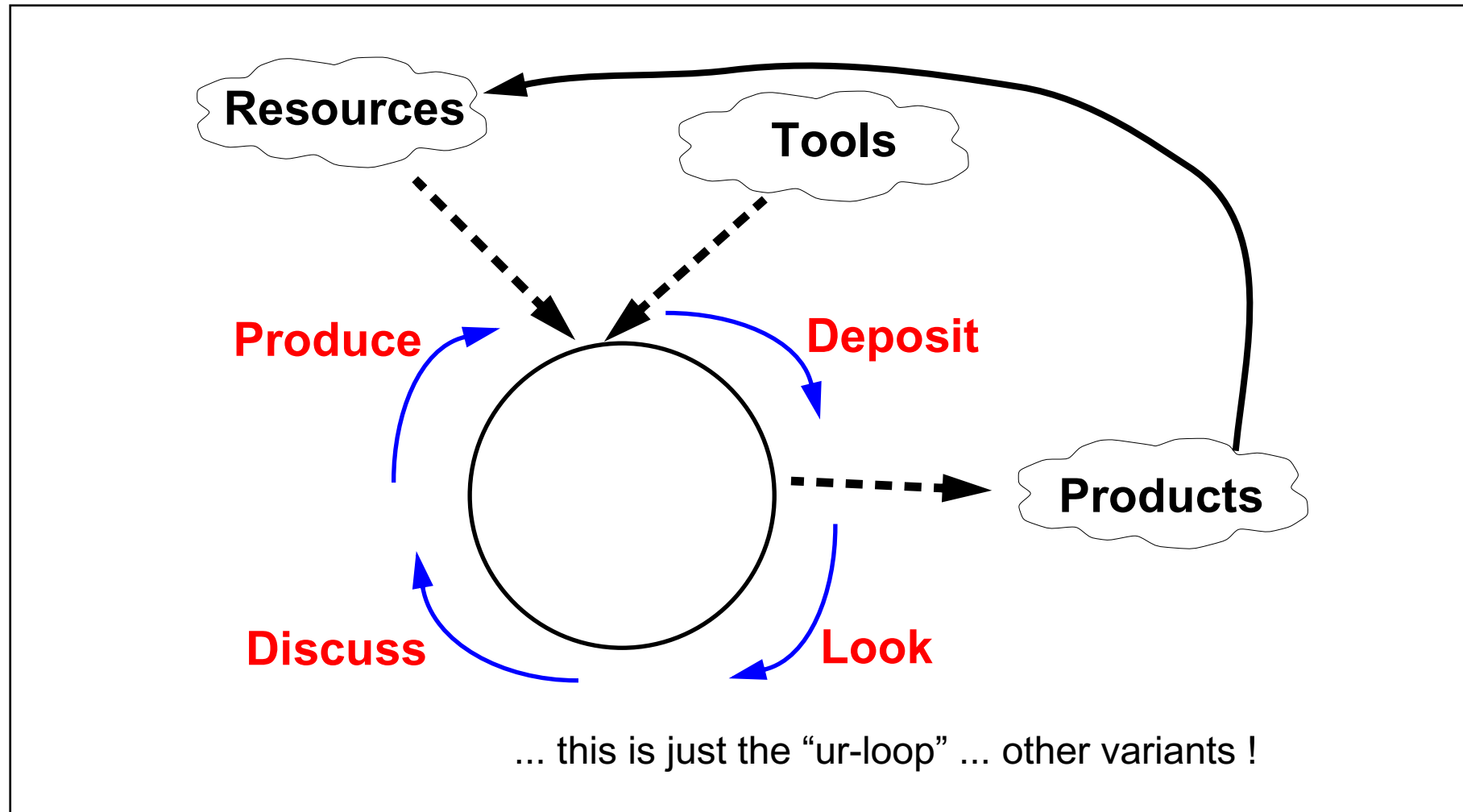
<http://tecfa.unige.ch/proj/seed/catalog/>

## 6.4 Structured socio-constructivist pedagogical scenarios

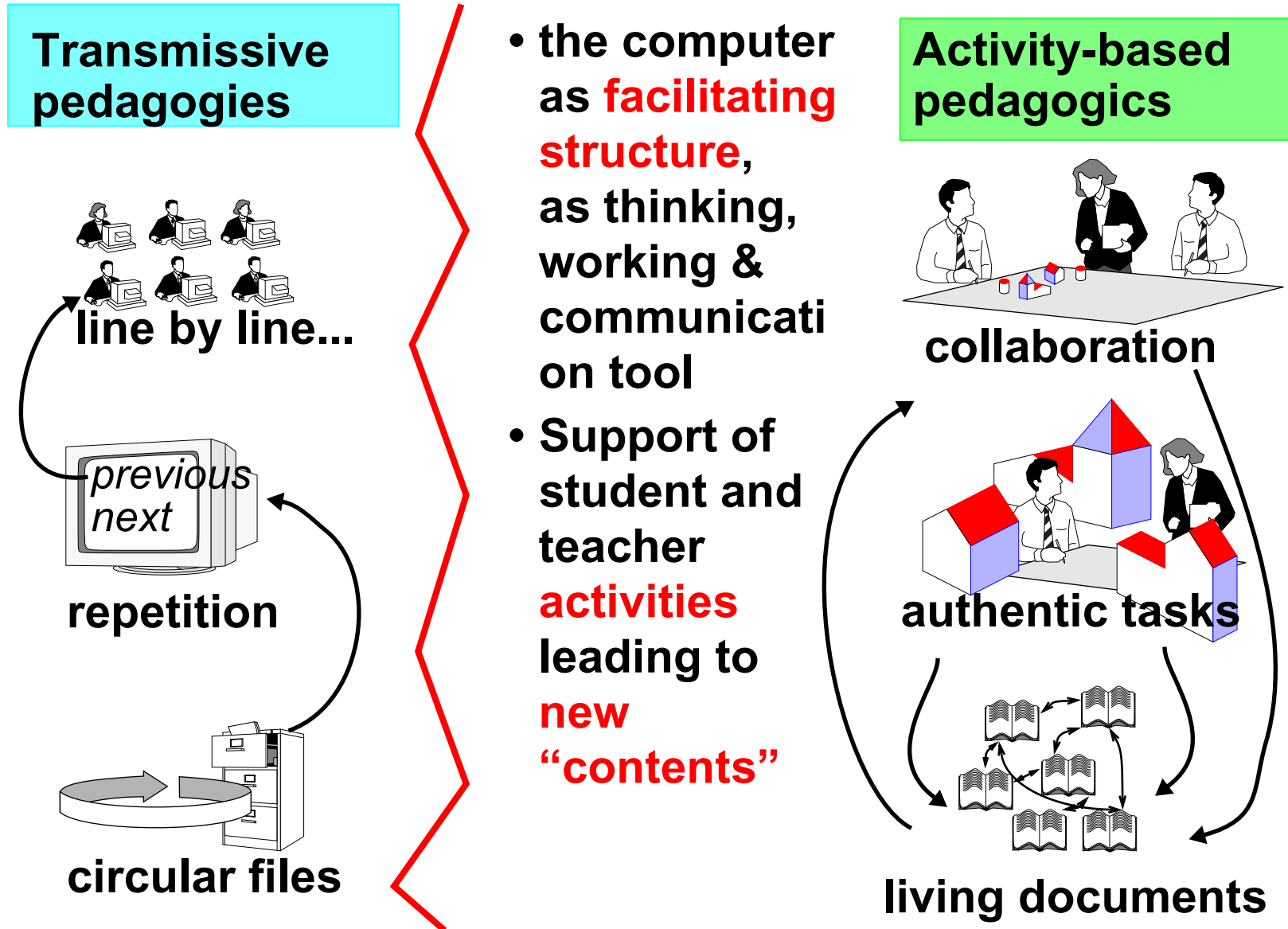
- Open ended & “rich” socio-constructivist designs are **more effective** if individuals and groups have to evolve within somewhat **specified scenarios**



- Scenarios are **sequences of activity phases** within which group members **do tasks** and **play specific roles**
- This orchestration implies organizing **workflow loops**

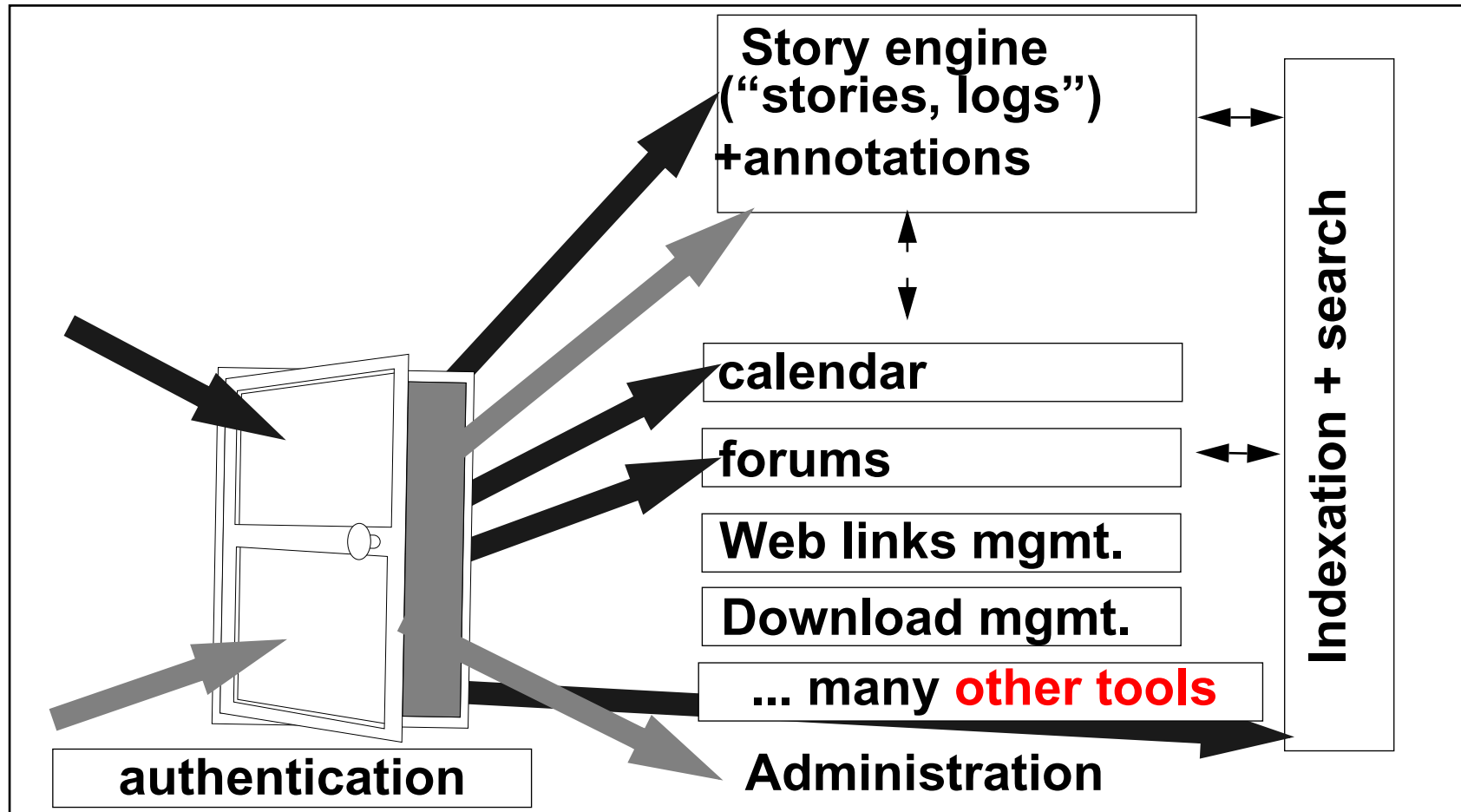


## 6.5.LMS (learning I) vs. knowledge engines (learning III)!



## 6.6.C3MS Portals for Learning III support!

### **C**ommunity, **C**ontent, & **C**ollaboration **M**anagement **S**ystems

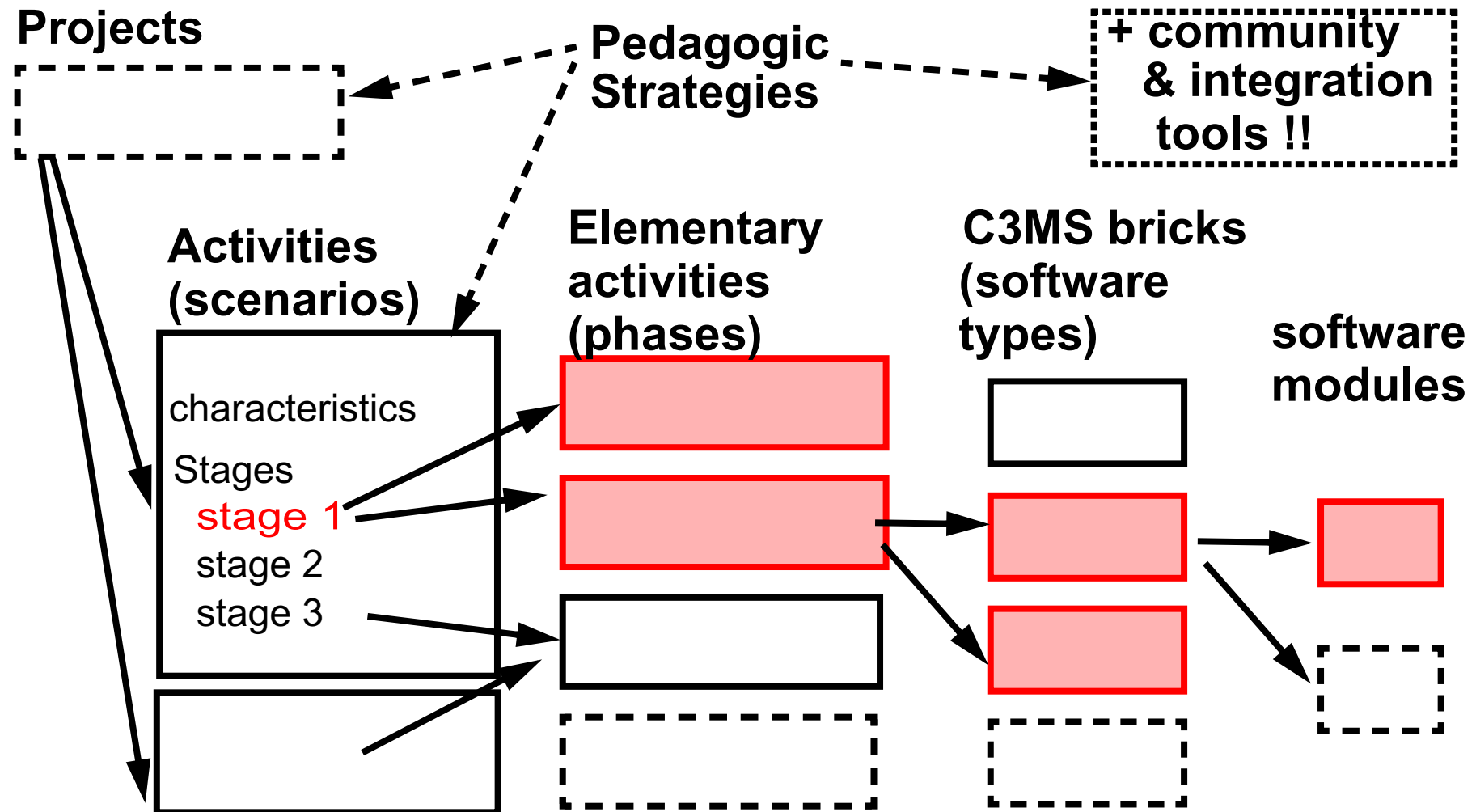


- Integration of most applications (authentication, interfaces,...)
- Plug-in architecture ! (**YOUR** organization can write modules)

**6.7.A good start: available C3MS bricks**

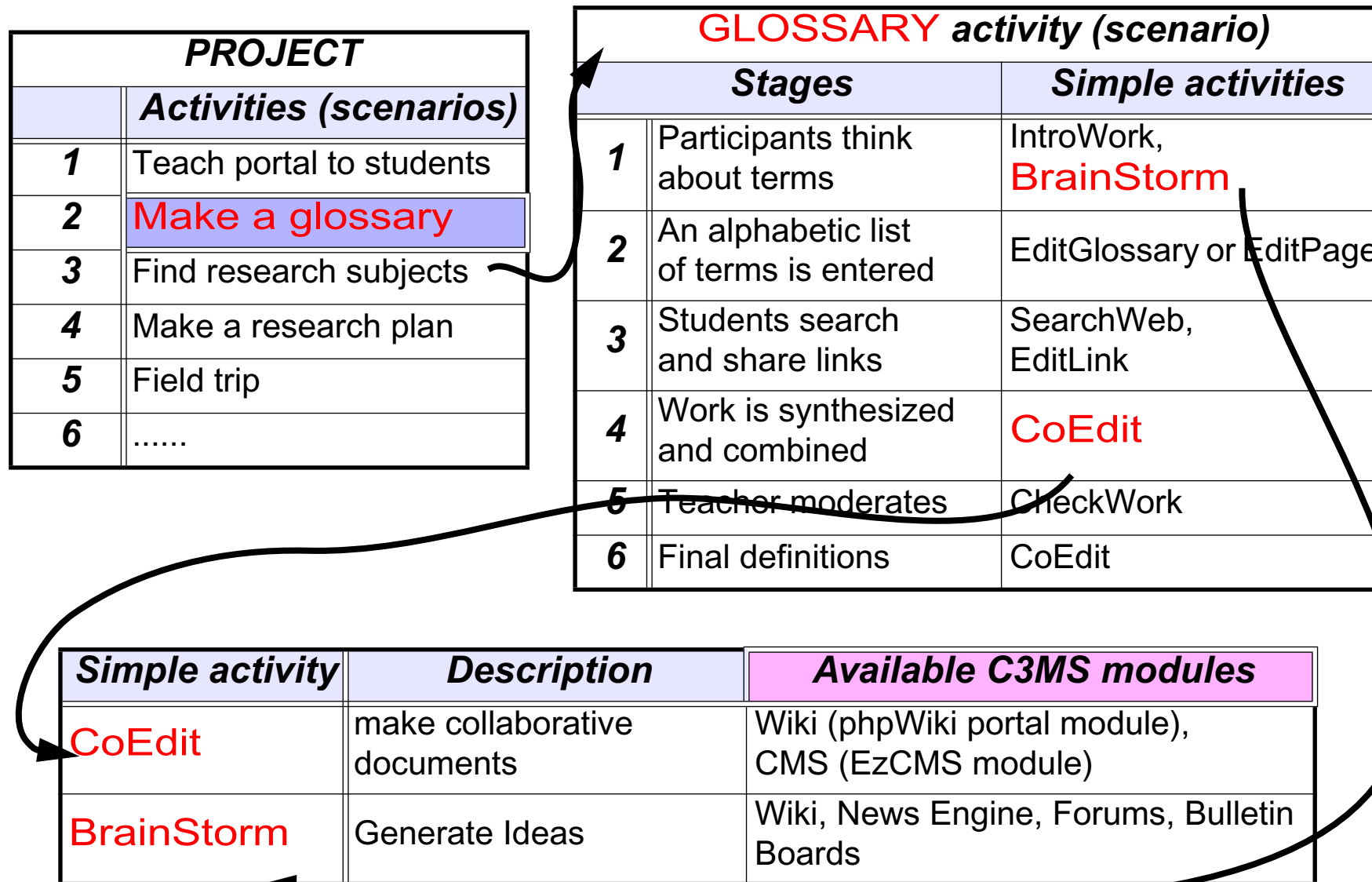
<b><i>Function</i></b>	<b><i>C3MS modules (tools of the portal)</i></b>
<b><i>Content management</i></b>	News engine (including a organization by topics and an annotation mechanism) - Content Management Systems (CMS) Collaborative hypertexts (Wikis) - Image albums (photos, drawings, etc.) - Glossary tool or similar - Individual weblogs (diaries)
<b><i>Knowledge exchange</i></b>	News syndication (headlines from other portals) File sharing (all CMS tools above)
<b><i>Exchange of arguments</i></b>	Forums and/or new engine Chats, .....
<b><i>Project support</i></b>	Project management modules, Calendars, .....
<b><i>Knowledge management</i></b>	FAQ manager - Links Manager ("Yahoo-like") Search by keywords for all contents "top 10" box, rating systems for comments "What's new" (forum messages, downloads, etc.), .....
<b><i>Community management</i></b>	Presence, profile and identification of members Shoutbox (mini-chat integrated into the portal page) Reputation system Activity tracing for members Event calendar News engine, .....

## 6.8 C3MS portals & educational scenario scripting





## 6.9.Planning example: Study wildlife of Mauritius



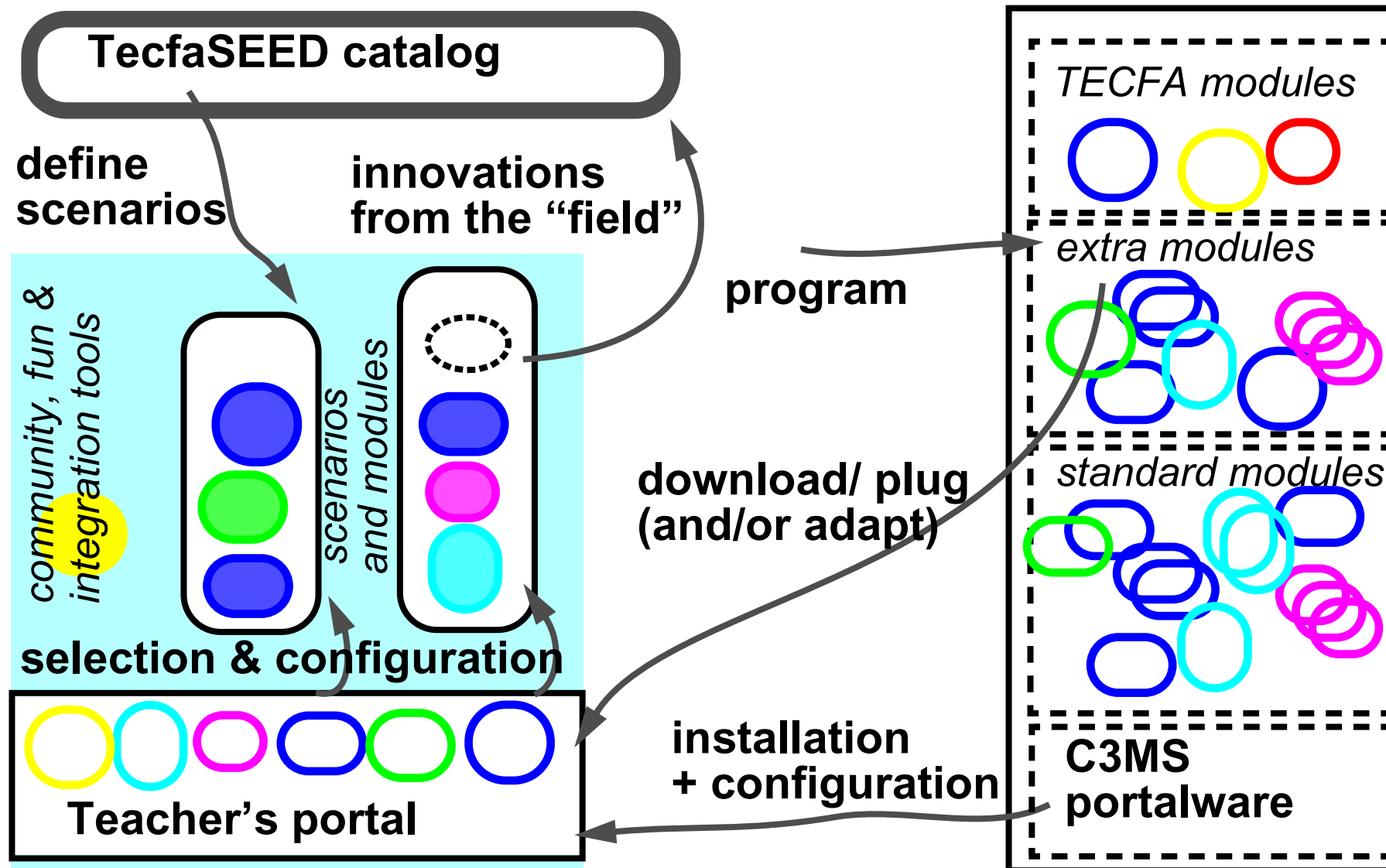
## Implementation example of the Glossary activity

( previous step: learn portal )

<b>Instantiated example “glossary” activity (activity 2)</b>			
<b>Stages</b>		<b>Tools</b>	<b>Instructions</b>
<b>1</b>	Suggest terms	Wiki (= coll. hypertext)	Each student must suggest 3 terms and enter them
<b>2</b>	Provisional list of terms	Wiki	Together in class we clean up the list
<b>3</b>	Search and sharing of results	Google, Links manager	Each student must provide 4 links and make comments to 2 other
<b>4</b>	Raw information is synthesized and combined	Wiki	Each student must enter 2 definitions, make links from “his” definitions to others and modify others
<b>5</b>	Teacher moderates	News engine	Teacher will give feedback in an article
<b>6</b>	Students produce final definitions	Wiki	Students can make final modifications

( next step: find research subjects )

## 6.10. Scenario configuration with C3MS bricks



## 6.11. Teacher roles in a C3MS approach



**Teacher as  
orchestrator**

**designs the environment  
designs the global project  
designs flexible tasks**



**Teacher as  
monitor**

**makes audits  
reads blogs  
controls project plans  
evaluates**



**Teacher as  
facilitator**

**gives feedback  
answers questions  
writes tutorials  
makes examples  
provides links**

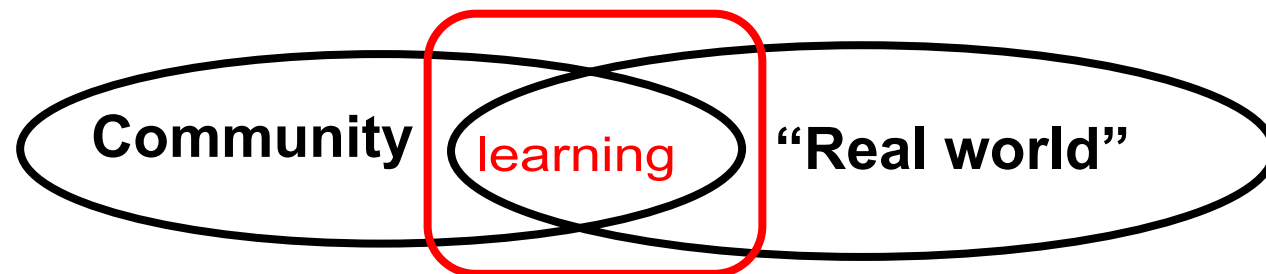
*..... (now try to do this without ICT!)*

- **More to come: C3MS also must be designed as virtual environments and support the learning community**

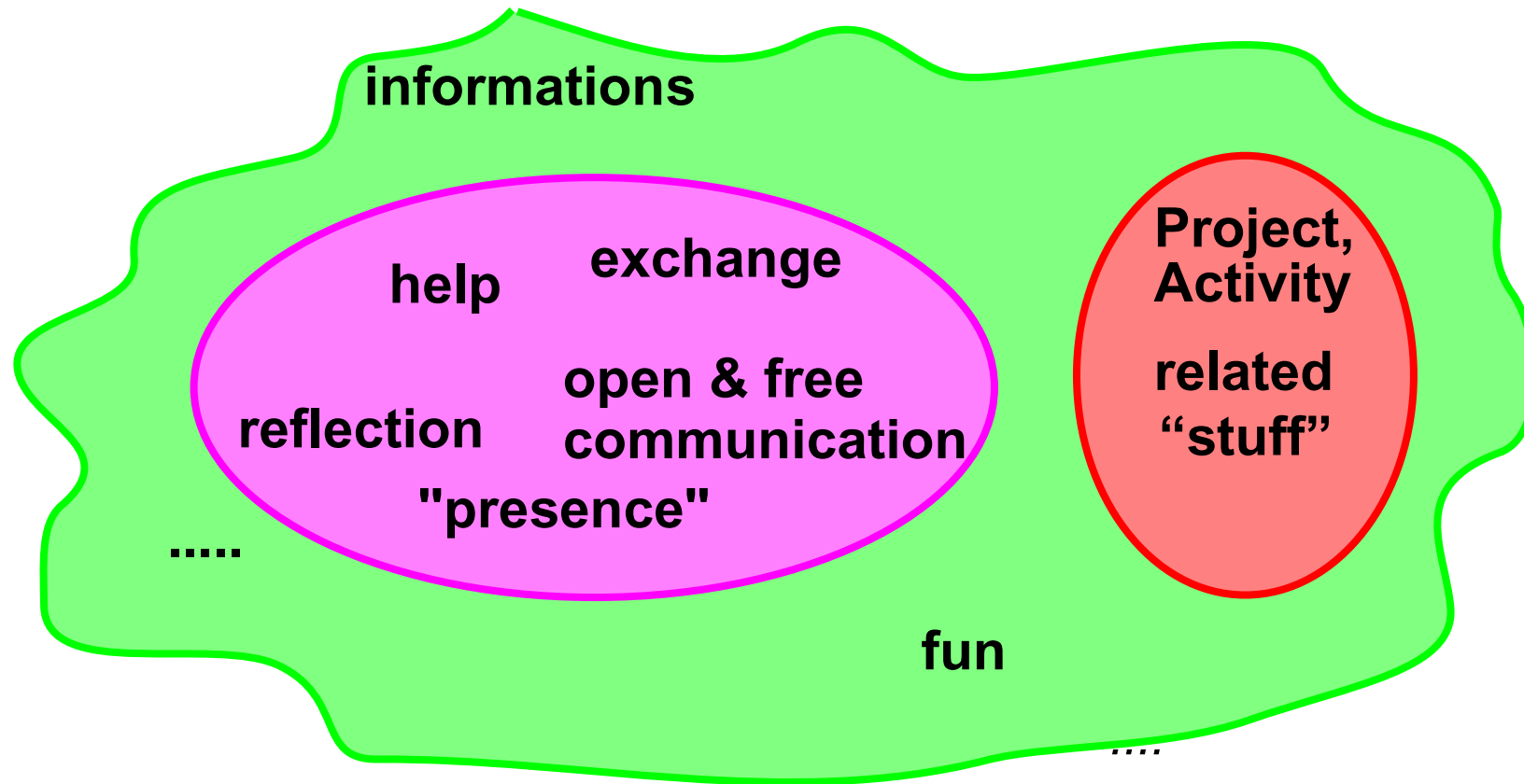
## 7. Learning within a community

### A sampler of arguments:

- members of a community tend to make better progress (**peer intellectual & emotional help** and **mutual stimulation**)
- some goals **can't be reached alone** (distributed cognition)
- a group can develop **special language** and practice adapted to specific problems
- knowledge through **enculturation** (collective memory)
- cognition is **tied to experience** (grounded)
- communities **can extend** beyond formal groups of learners
- a lot of learning **is informal**
- good communities are **knowledge management** aware

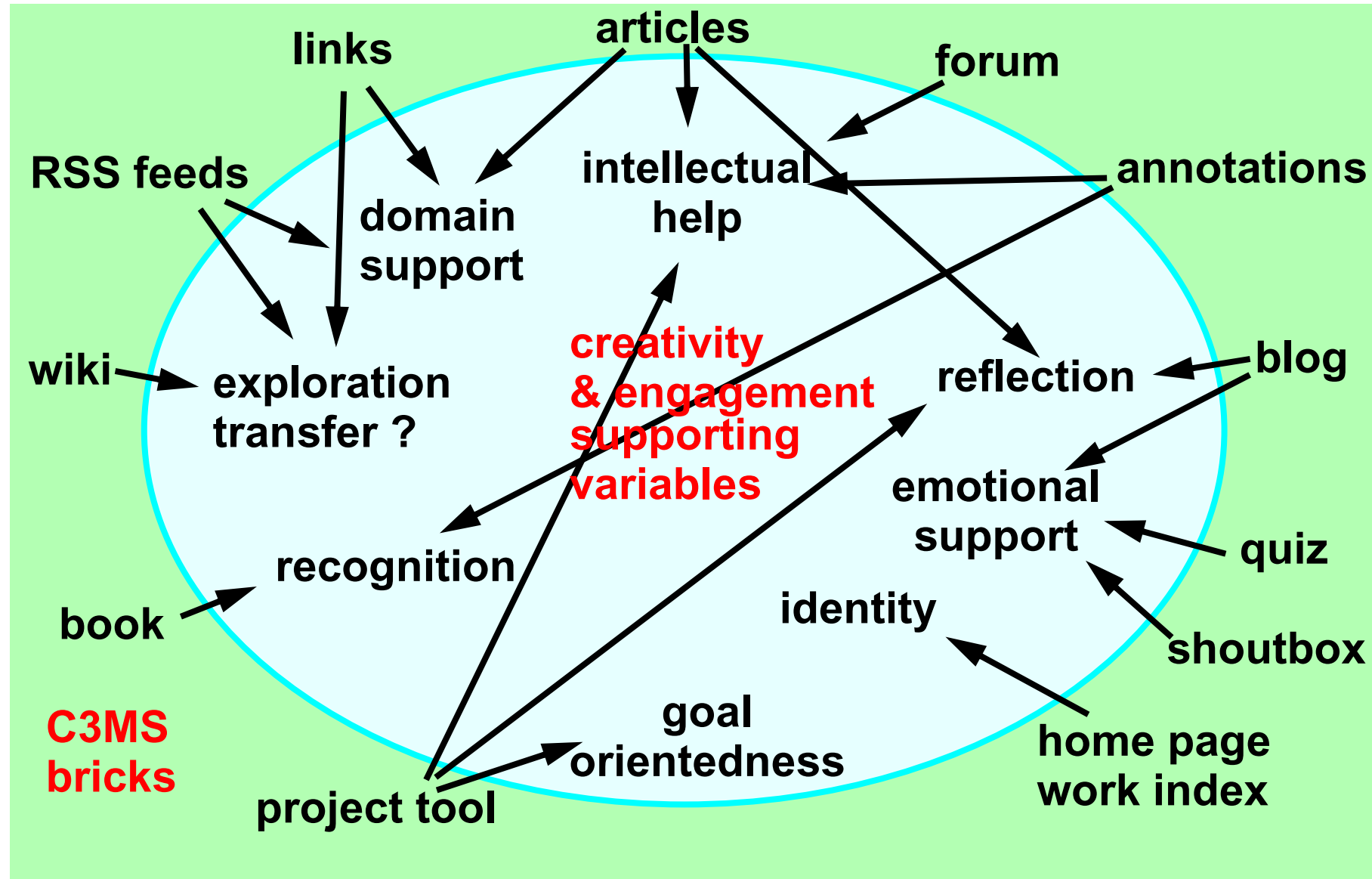


## 7.1 On-line virtual environments for communities

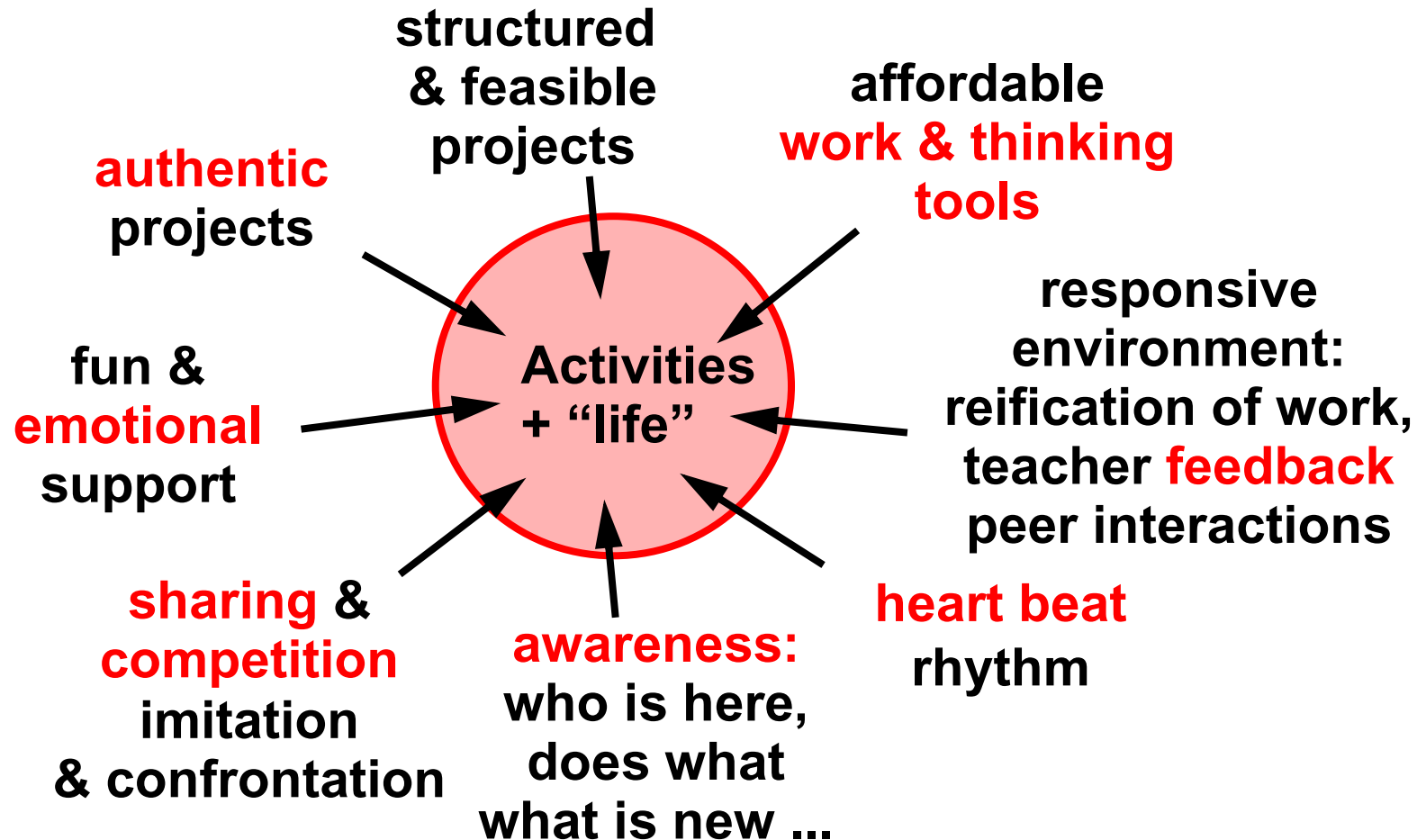


- A **"place to be"** ! (virtual environment implies social presence)
- Activity support
- .... many sorts of virtual environments

## 7.2.C3MS and support for creativity “elements”



## 7.3.LE design = landscaping & conditioning





## 7.4. Other alternatives to C3MS as virtual environments

*Multi-user Dungeons (MUDs)  
and MMORPGs(\*)*

**"community  
building"**

**apprenticeship**

*Immersive virtual realities*

**direct experimentation  
constructions**

**procedure learning**

*Desk-top VR  
(VRML, gaming engines)*

**visualizations  
Concept learning  
some proc. learning**

*Augmented virtual  
realities*

**collaborative  
work**

*Combined multi-user  
environments 200?*

*(\*)Massively multiplayer online role-playing games*

## 8. Microworlds, simulations, rich exercising machines

- There is a rich variety
- Can sometimes be imported into a LMS or an other platform
- Frequently used in technical teaching

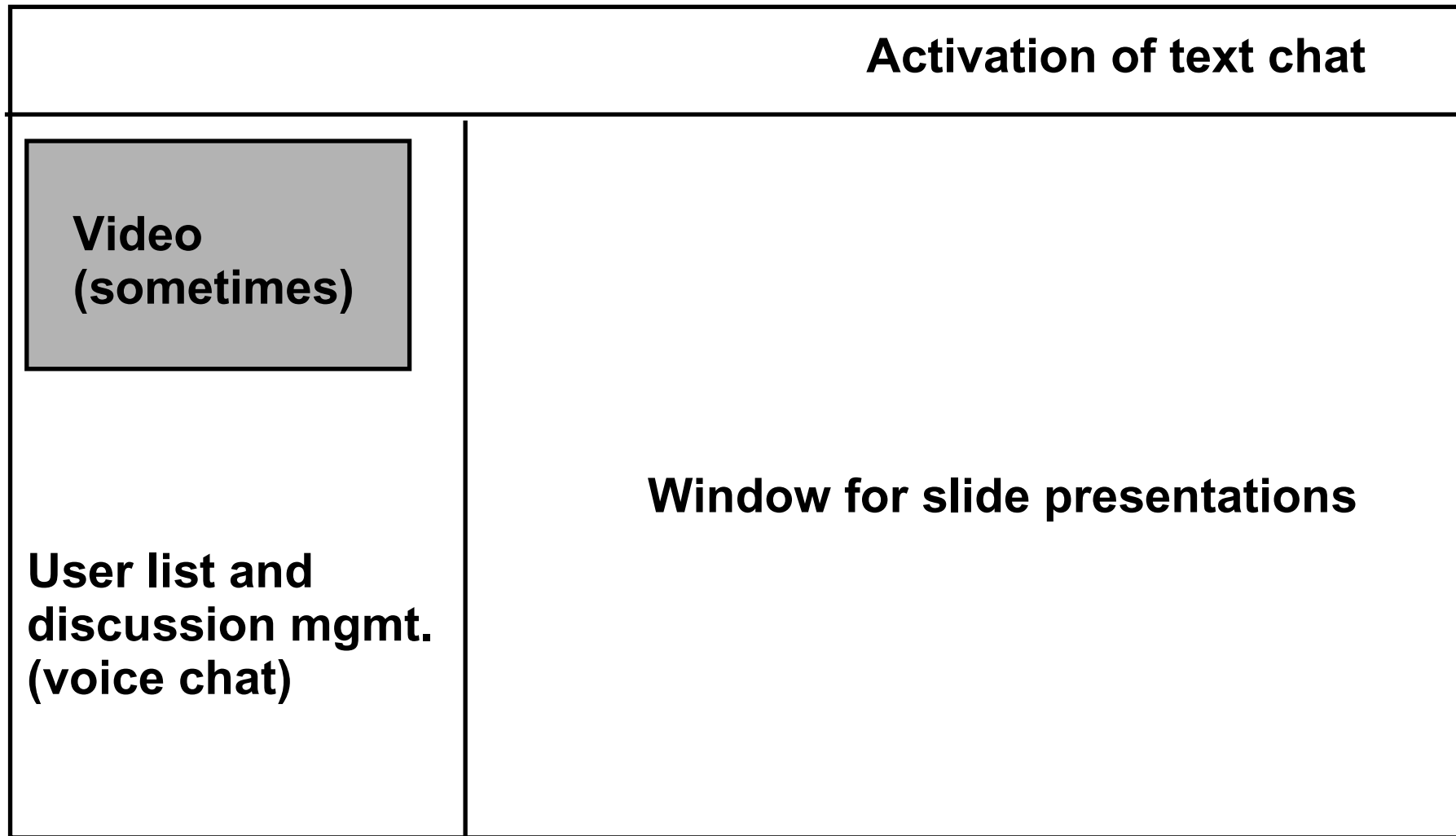
### Example: on-line syntax parser

url: <http://www.latl.unige.ch/>

The screenshot shows the Latl-Fips online syntax parser interface. The title is "Latl-Fips [French]" and the subtitle is "Fips [French]". There are two main text input areas: "Texte à analyser (max. 1500 car.)" containing the sentence "This is a wonderful sentence that I just made up" and "Texte analysé" containing the corresponding syntactic tree structure: "[TP[DP this ][T is [VP [DP a [NP[AP wonderful ]][N sentence ]]]][DP that [DP I [FP[DP e ][F [AP[DP e ][AdvP just ]][A made up ]]]]]]]]]]403". Below the input areas is an "Analyser" button. At the bottom, there are two dropdown menus: "langue" set to "anglais" and "Types d'affichage" set to "Structures syntaxiques".

## 9. Teleteaching

### 9.1 Slides + voice applications



## 9.2 Centra "virtual class solution" (MS only)

discussion  
management

Agenda  
(with slides)

Microsoft Excel - Virtual Classroom.xls

Industry	Number	%
High-Tech	100	27%
Banking & Ins.	45	12%
Consulting	155	42%
Manufacturing	72	19%
<b>Total</b>	<b>372</b>	<b>100%</b>

Industry Distribution

- High-Tech
- Banking & Ins.
- Consulting
- Manufacturing

Appshare Tools

- Exit Markup Mode
- Clear Markup
- Markup Color...
- Snapshot...
- Pause Appshare
- Select Applications...
- Quit Appshare

Presenters: Stephanie

Participants: Charles, Genna C., Joe T., John

Agenda

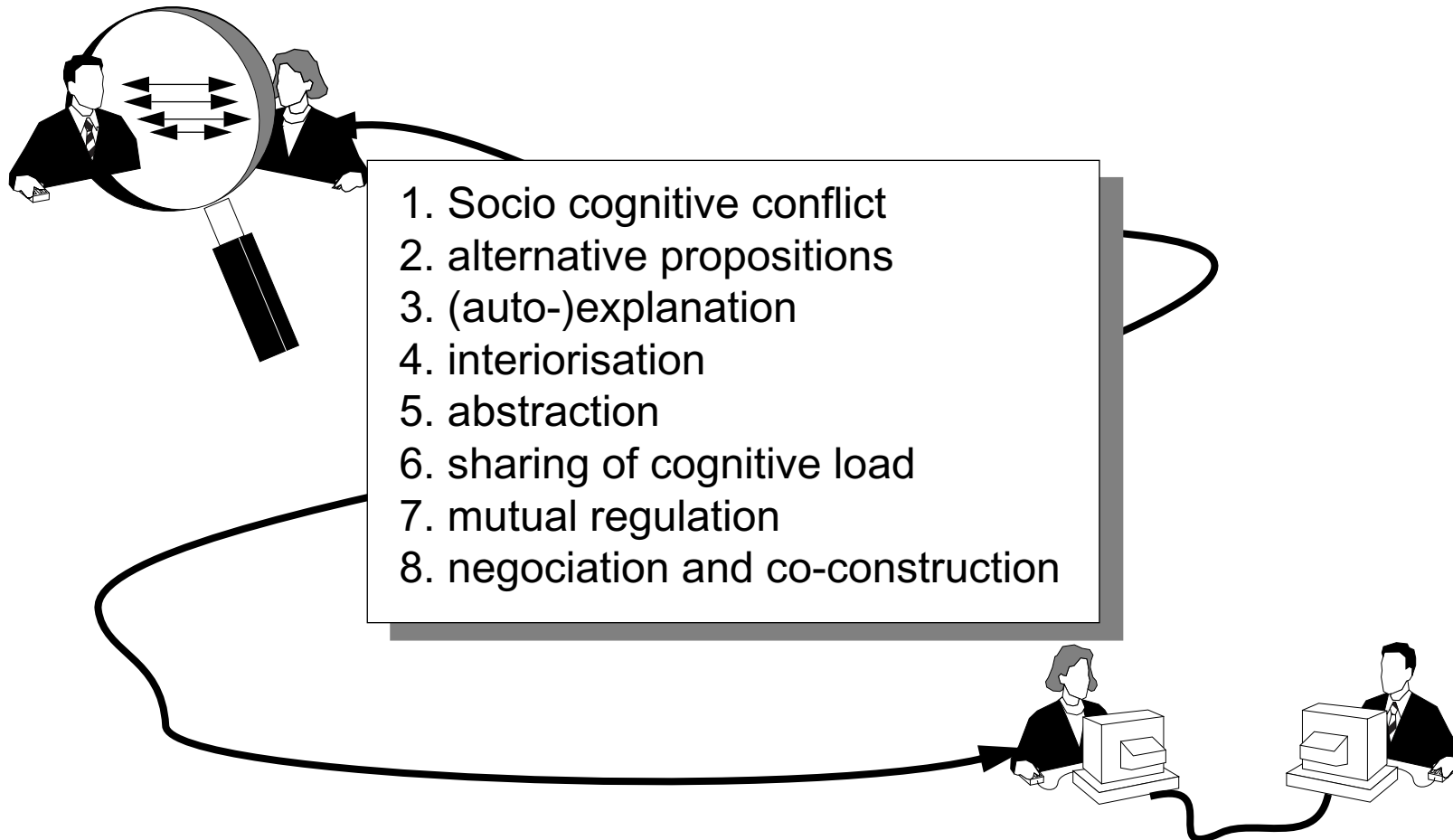
- Appshare Snaps
- Meeting screens
  - Product Lea
  - Ensuring Yo
  - Experience
  - Customer C
  - ROI Analysis

Slides &  
Shared Applications &  
Shared Whiteboard

### **9.3 Other alternatives**

- **Mass market text and voice/video chat**
  - e.g. MS Messenger
- **High-end video-conferencing systems**
  - Video/voice quality adapted to client
  - Application sharing (Microsoft)
  - Slide presentation management
  - Document camera
  - Special video rooms with feedback cameras/screens
  - ....
- **Peer-to-peer groupware**
  - e.g. Groove

## 10.CSCL (Computer supported collaborative learning)



- Collaborative learning can be very powerful
- needs scenario-building (story-boarding)

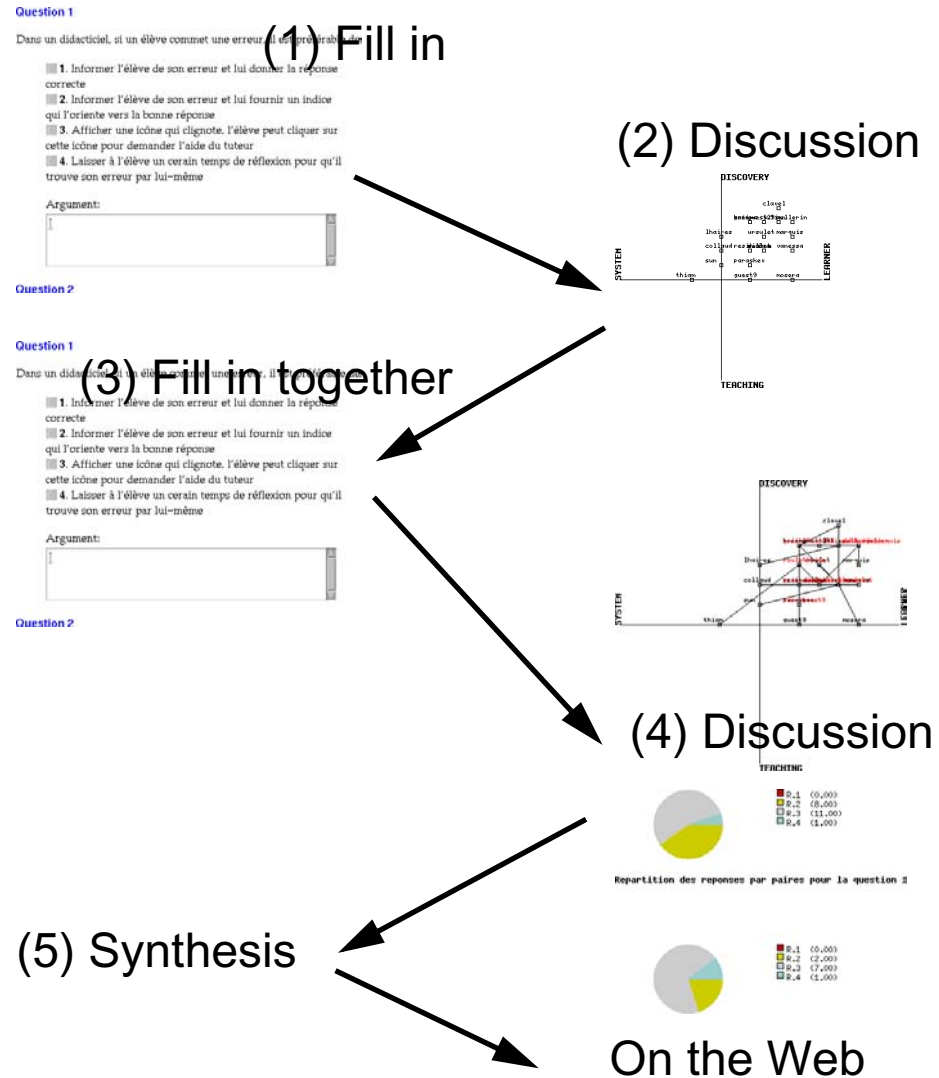
## 10.1. Locally made (at Tecfa)

### The ArgueGraph scenario

- **Goal: Support conceptual learning**

#### Scenario:

1. Students answer survey
2. Discussion on summary information
3. Collaborative fill in
  - Teacher selects opposite pairs
  - Pairs argue and answer survey again
4. Discussion
5. Synthesis (HomeWork)
  - Each student writes a text



## The Iconometer

- Test icons used in web pages
- Learn about multiple meanings

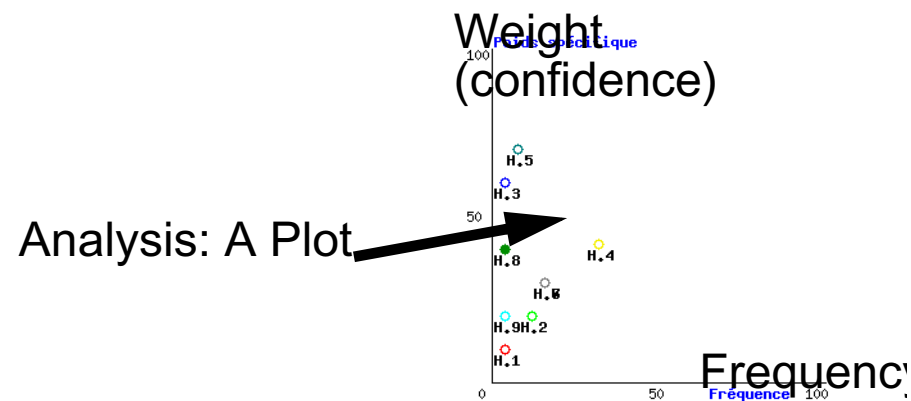
## Scenario

1. Look at an icon
2. Formulate hypothesis
  - one or several
  - each with a confidence factor
  - total must not exceed 100%
3. Look at results
  - Look at each hypothesis
  - Look at summary information
4. Discuss ....

The screenshot shows the 'Hypothèses formulées' section of the Iconometer. It displays a hypothesis 'Hypothèse n°: 1' with the text 'C'est un/une moutn.' and a 'Degré de certitude' of 80%. A 'Certitude Totale' of 80% is also shown. Below this, there is a form to 'Ajouter une hypothèse' with fields for 'Hypothèse:' (containing 'C'est un/une [input] (nom).') and 'Certitude:' (with instructions 'entrer un chiffre entre 1 et 100'). There are 'Ajouter' and 'Modifier / Supprimer une hypothèse' buttons.

Annotations with arrows point to:

- Icon:** Points to the image of a sheep labeled 'Image n°: 1' and 'mouton'.
- Existing hypothesis:** Points to the first hypothesis entry.
- Add hypothesis:** Points to the 'Ajouter une hypothèse' form.
- Add degree of confidence (0-100%):** Points to the 'Certitude:' input field.
- Edit a hypothesis:** Points to the 'Modifier / Supprimer' button.





## 10.2.Platform Example: "Knowledge Forum"

The screenshot displays the Knowledge Forum web application interface. The main window is titled "KForum 4\_5 Demo.kdb: A". The interface is divided into several sections:

- Left Sidebar:** Contains navigation icons and a list of notes. The notes list includes: "About My Reader", "About Authors a", "Published Views", "Creating a Web", "About Rise-abc", "Creating a New", "Referencing a Vi", "Searching by Ma:", "About the Scaffo", "Test note 2/17/05", "testing a buik", "Another test not", "Knowledge Buil", and "Welcome To Kn".
- Advanced Form:** A form for creating a new note. It includes a "Title" field, a "Scaffold" dropdown menu (set to "Theory Building"), a "Content" text area, and a "Reference" dropdown menu (set to "Note"). Below the "Reference" menu are "Attachment" and "Movie" dropdowns. There are also "Keyword" and "Problem" fields. A "Show View" button is visible.
- Right Sidebar:** Shows a list of notes and a detailed view of a selected note. The selected note is titled "Advanced Features" and contains the URL "http://www.knowledgeforum.com". Below the note content, there are sections for "This note references" (listing "About Rise-above" and "Quoting other Authors"), "This note is referenced by" (listing "Searching"), and "Views for this note" (listing "Advanced Features").

Open Source and Freeware examples: DREW, CoolModes, ....

## 11.Groupware and CSCW

### 11.1Overview

- **Sometimes an alternative to the C3MS presented before**
  - **less focus on system supported production**
  - **less community building features**
- **Typical features**
  - **document management: file-exchange, file management**
  - **asynchronous communication tools (forums)**
  - **user management and access control**
- **Not so typical**
  - **(sometimes) application sharing**
  - **workflow support and roles definitions**
  - **less focus on system supported production**

## 11.2. Typical example: BSCW - <http://bscw.fit.fraunhofer.de/>

The image displays the BSCW (Business Support Collaboration Work) web interface. The top navigation bar includes links for 'ABOUT' and 'HELP', and buttons for 'ADD MEMBER', 'ADD DOC', 'ADD FOLDER', 'ADD URL', 'ADD ARTICLE', and 'ADD MEETING'. Below this is a search bar.

The main content area shows a file list for the user ':elke' in the 'Beta Release of BSCW' directory. The list includes items like 'bug reports', 'proposals & remarks', 'software', 'Public Server', 'Whats New', 'Altavista Search Results', 'final make (beta)', and 'What do you think about...'. Each item has associated actions like 'Modify', 'Verify', 'Fetch', etc.

On the right, a larger view of the BSCW interface is shown, featuring a menu with 'Datei', 'Bearbeiten', 'Ansicht', 'Optionen', 'Anzeigen', and 'Hilfe'. Below the menu is a toolbar with icons for 'Arbeit', 'Öffnen', 'Ablage', 'Abfall', 'Adrsb', and 'Kalend'. A position field shows ':Teamleiter / Vertriebsplanung'. A secondary toolbar contains 'bestätigen', 'kopieren', 'ausschneiden', 'entfernen', 'archivieren', and 'bewerten'. The main content area shows a folder 'Vertriebsplanung' with sub-items like 'Termine', 'Korrespo', 'Verträge', 'Preisliste', and 'Adressen'.

Overlaid on the bottom right is a diagram titled 'World-Wide Web' illustrating the BSCW architecture. A central 'BSCW Server' is connected to several components: 'WWW-Browser', 'Textdokumente', 'Grafikdateien', 'Meinungen, Notizen', and 'Diskussionen'.

At the bottom left, the user status is shown: 'You are: :elke [Edit Prefs] [Edit Details] [Change Pwd] [Admi]'

# 12. Weblogs

- Diary for interesting information and ideas
- **Propagation mechanisms** of good ideas through "blogsphere"
- Learn by "look", write, exchange, confront, ...

2/25/2005 | [ Future] A nice book about innovation and user-centric development  
 — Nicolas @ 3:26 pm

During my holidays I read a very relevant book (in french) about innovation and how to invent futuristic stuff: *Fabriquer le futur : L'imaginaire au service de l'innovation* by Pierre Musso, Laurent Ponthou, Éric Seulliet. The book is well connected to the France Telecom/Orange/Wanadoo galaxy (the preface is handled by France Telecom R&D boss), which is cool because as I already stated [here](#) it's difficult to get some information about this company does. It is a pity since I know that there is plenty of valuable research there.

Back to the book, the authors offer a review about how the design of futuristic applications are carried out. They also advocates for more user-centric approaches. I won't go to much into the detail now because I don't have time for that. I will rather wait a bit and put my notes next week about it. Dunno whether I'll have enough time to write the notes in french or english. I'll see

Besides, one of the author also has a blog: [e-mergence](#) which offers a nice follow-up to the book.

## Comments

Comments » | The [URI](#) to TrackBack this entry is:

**Backtracks**  
 (see that others quote this)

P&V  
**A blog by nicolas nova about pasta (human computer interaction, innovation, technologies, futuristic trends, location based services, mobile computing, user-centered stuff) and vinegar (various weird stuff)**

email is nicolas (dot) nova (at) epfl (dot) ch

Search:  Go

Board  
[Home](#) | [Blog](#) | [Book/movies](#)  
[Les Bob](#)  
[Flickr RSS feed](#)  
[my 43 things](#)  
[my del.icio.us](#)

rss4you.com  
 Accueil | Recherche | Fils de syndication populaires | Guide | FAQ

**Navigation sociale du site pasta and vinegar**

a blog by nicolas nova, mind/tech bazar from outer space

site rss +

**Liste des membres ayant souscrit le fil rss sélectionné**

Seuls les membres ayant accepté de partager leur nickname et liste de rss sont membre pour visualiser sa liste):

- CharlesNepote 87 souscriptions, inscrit le 2004-03-26 11:17:49
- jcmoriaud 176 souscriptions, inscrit le 2004-06-10 19:10:58

**Qui a voté ce site**

Aucun membre n'a attribué une note d'appréciation à ce site.

**Derniers billets publiés**

- [Research] [The services and how closeness](#)
- [Tech] [What about VoGFRs](#)
- [Future] [From R&D to ?Connect and Develop?](#)
- [VideoGames] [TRAIN: a narrative controlled by cell phone](#)
- [Book] [Zeitgeist \(Bruce Sterling\)](#)

List of other blogs

Syndication by aggregators and other blogs

Classification by date and topic

## 13. Content & Document Management Systems

- A CMS can be used to edit & organize contents through the web
- Note: most LMS have simple (IMS/Scorm) CMS functionality
- A CMS can also be used as write-to-learn tool for students

The screenshot displays the SPIP CMS interface. At the top, there is a navigation bar with icons and labels for 'Launch pad', 'Site edit', 'Authors', 'Forums / petitions', 'Site administration', and 'Online help'. Below this is another row with 'Launch pad', 'The entire site', 'Calendar', and a search box. A blue bar contains 'Simplified interface' and 'complete interface' (selected), along with a language dropdown set to 'English'. The main content area shows a user profile for 'ANTOINE PITROU', a 'SHORTCUTS' section with options like 'Write a new article', 'Write a new news item', and 'Create a new section', and a 'Your articles in progress' section listing articles in Esperanto, Deutsch, and Deutsch.

<http://www.spip.net/>

- open source CMS

## 14. The Wiki way

### 14.1 Definition and usage forms

#### Features

- Through the Web editing with simple markup or Wysiwyg
- Autolinking of terms (each term that correspond to a page name)
- Versioning control and tracking

#### Some usage patterns

1. **Collaborative documentation tool (e.g. programmers teams),**
  - related to life-long and organizational learning
2. **Students write (also: collaborate, discuss, confront, link)**
  - Write-to-learn strategies
  - Support for exploratory, inquiry-based scenarios
3. **Large collective encyclopedias**
  - Useful for resource-based teaching scenarios
  - <http://wikipedia.org/> has over 470'000 articles in English, many versions in other languages.

## 14.2 Example: Biology teaching at High school level

### Cyber 4 OS : Création de cours interactive par les élèves *Cyber-4OS*

Réalisé au [Collège Calvin](#) avec le soutien de TECFA dans le cadre du projet **TECFA Seed**

Les élèves composent eux-mêmes les pages. Elles sont donc

- le reflet de leur maîtrise actuelle du sujet
- une mémoire pour la continuité du cours
- un outil de travail collaboratif
- un outil de construction de ces connaissances
- le *produit* concret du projet matérialisant leurs efforts

#### II Neurobiologie Accueil

Du neurone au comportement humain.

De janvier à fin mai

Dernière édition le mai 18, 2004.

[RecentChanges](#) | [FindPage](#) |  | [LikePages](#)

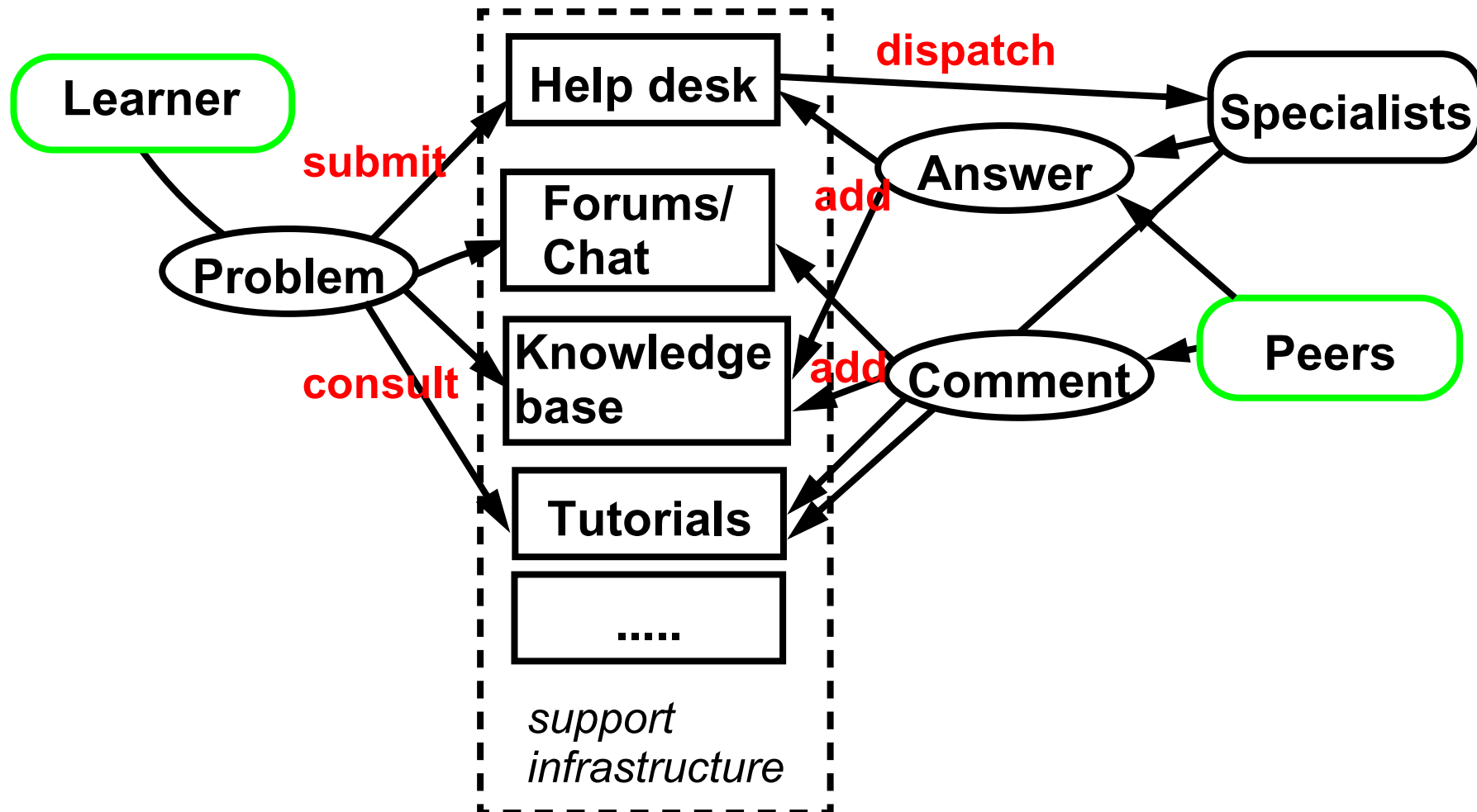
[Edition](#) | [PageHistory](#) | [Diff](#)

[Login](#)

[DebugInfo](#)

- **Several long-term experiments: Ecology, Neurobiology, Anatomy, Reproduction, ...**
- **Each course was "story-boarded": distribution of task, collaborative and collective activities included.**

## 15. The "help desk model" for life-long learning



Systems used: either C3MS portals, Groupware, specialized helpdesk and knowledge management software.

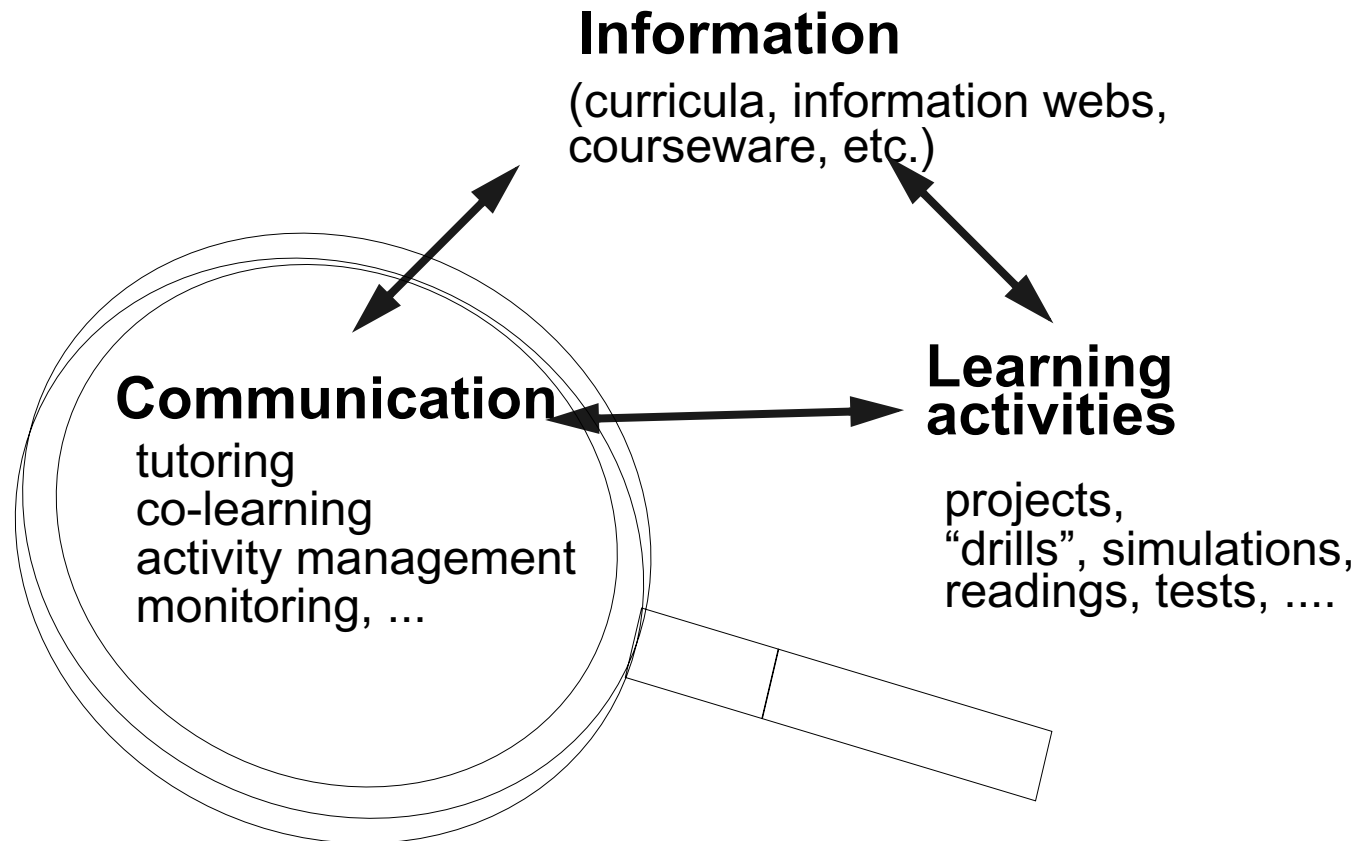


# III Conclusions

**Think !**

**Make scenarios  
(story boarding)**

## 16.Three key elements



Focus on communication when you start delivery planning (costs are NOT constant)

## 17. Make sure that technology fits your needs

<b><i>Technology (is <b>not</b> innocent !!)</i></b>	<b><i>Teaching I "know-that"</i></b>	<b><i>Teaching II "know-how"</i></b>	<b><i>Teaching III "knowing-in- action"</i></b>
<b>E-learning Systems</b>	<b>***</b>	<b>*</b>	
<b>Hypertext, Wikis, CMS (exploring, reading)</b>	<b>***</b>	<b>*</b>	
<b>Groupware (help desk, discussion)</b>	<b>*</b>	<b>***</b>	<b>**</b>
<b>Microworlds (exercising, simulating)</b>		<b>***</b>	<b>*</b>
<b>Hypertext, Wikis, CMS (producing, collaborating)</b>	<b>**</b>	<b>*</b>	<b>***</b>
<b>C3MS</b>	<b>*</b>	<b>*</b>	<b>***</b>
<b>CSCL</b>	<b>*</b>	<b>***</b>	<b>*</b>

## Technical standards

	<b><i>behaviorist instructionalist</i></b>	<b><i>socio-constructivist activity-based</i></b>
<b><i>Data</i></b>	<p>metadata, quizzing, packaging, simple sequencing learning design (new) learning objectives</p>	<p>metadata structured text (XML) Internet formats (activity-design is under preparationS !)</p>
<b><i>Systems</i></b>	<p>IMS compliant Learning Content &amp; Management Systems, Teleteaching</p>	<p>portals, web services, (API's for portal bricks), User CMS &amp; wikis, isolated groupware, CSCW Systems, CSCL Systems, .....</p>