Communities of Practice of E-learning "CoPE" – Definition and Concepts

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Objectives (1)

- **The development of the e-learning domain faces a number of challenges related to :**
    - The difficulty in the **interpretation of the concepts**: scenario, learning situation, activity, role, etc.

    - the multiplicity of approaches, models, methods, techniques and tools used in the **development of the online systems**.

    - the **heterogeneity** of the learning platforms.

- The need for a **capitalization** is necessary in terms of **knowledge** and **know-how** related to the **e-learning** with the development of distance learning tools and their use, the exchange resulting from techno-pedagogic knowledge, and the collaboration between the various actors (teachers, tutors, designers, administrators...).

Objectives (2)

- **<u>Problem asked</u>:** How to **capitalise** the **know-how** and the **experience feedback** in terms of **E-learning** ?

- Communities of Practice (CoPs) → a new form of learning based on **exchange**, **sharing** and **collaboration**.

  <u>Objective</u> → set up a **structure for sharing tacit and explicit knowledge** and the **rapprochement of different actors** related to a given domain.

> **Extend the application of the Communities of Practice (CoPs) to the E-learning field.**

Plan

- **Communities of practice: New Form of Learning**
- **E-learning domain: Online Learning Systems**
- **Synthesis and Definition of Objectives**
- **Contribution**
  - **Communities of Practice of E-learning – CoPEs : Concepts and Definitions**
- **Case study Presentation**
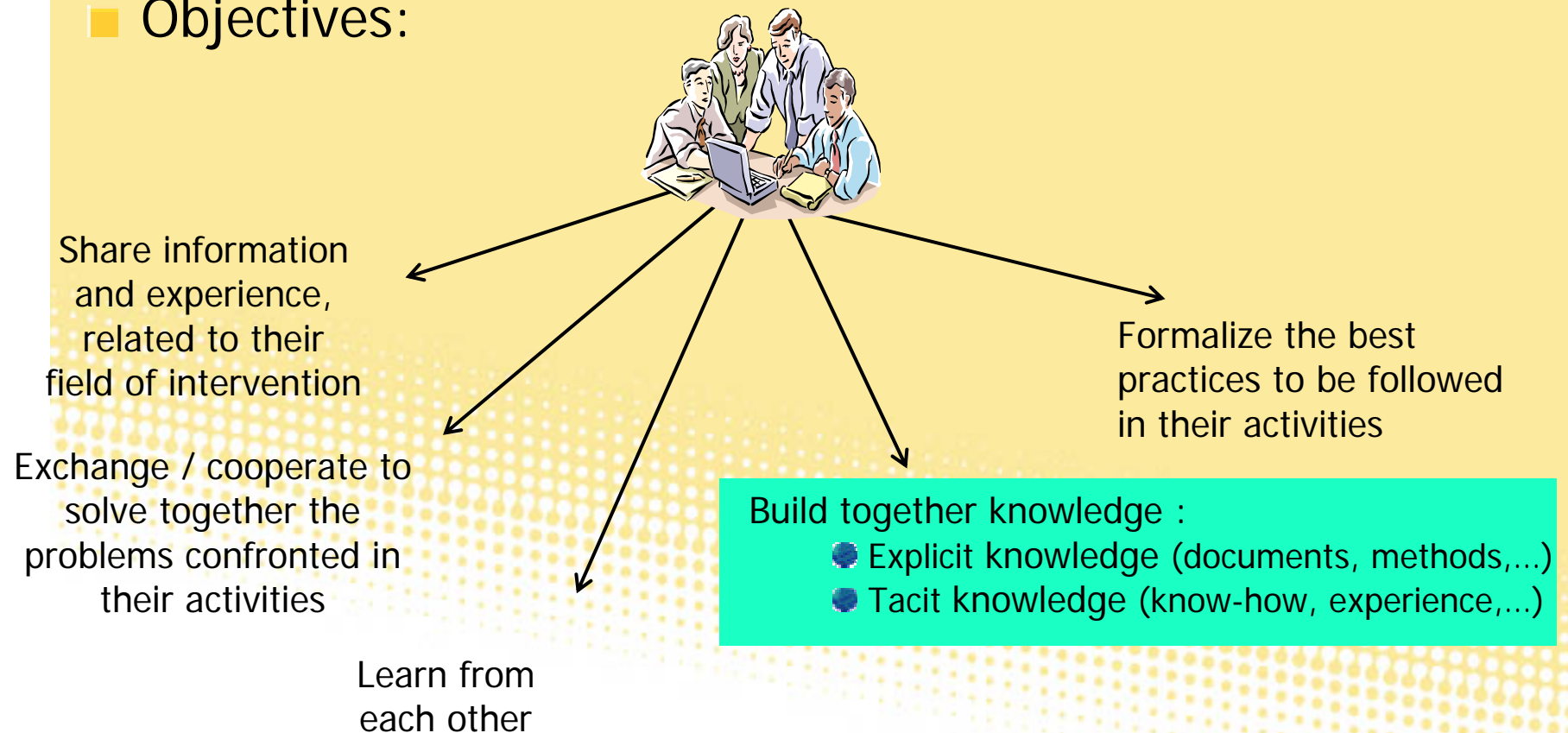- **Conclusion and perspectives**

Plan

- **Communities of practice: New Form of Learning**
  - Definition
  - Duality « Participation – Reification »
  - Structure
- **E-learning domain: Online Learning Systems**
- **Synthesis and Definition of Objectives**
- **Contribution**
- **Case study Presentation**
- **Conclusion and perspectives**
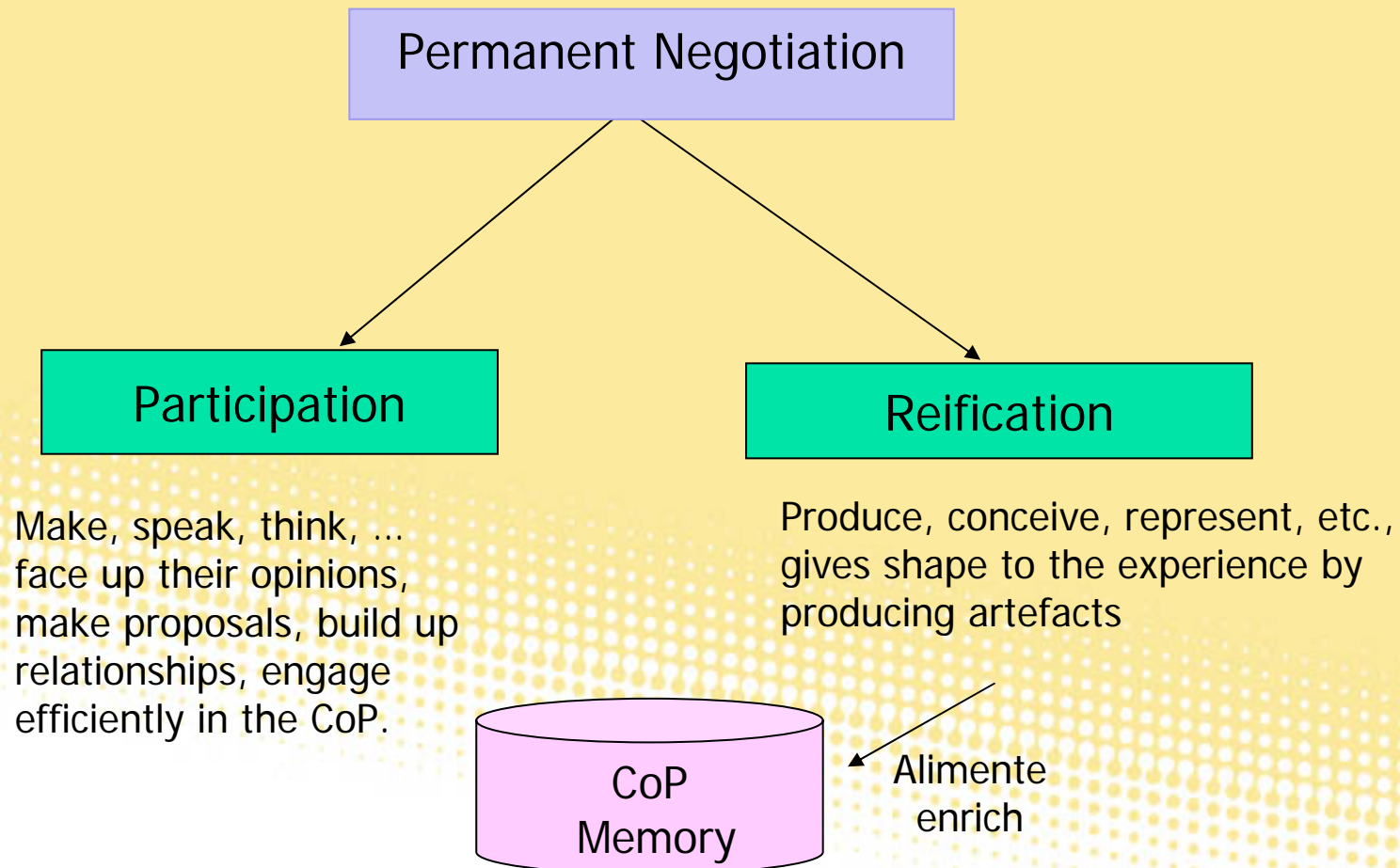
What is a Community of Practice (CoP) ?

- **Definition:**
  - Groupe of professionals who gather and organize themselves, face to face or virtually.
- **Objectives:**

Share information and experience, related to their field of intervention

Exchange / cooperate to solve together the problems confronted in their activities

Learn from each other

Formalize the best practices to be followed in their activities

Build together knowledge :
- Explicit knowledge (documents, methods,...)
- Tacit knowledge (know-how, experience,...)

Duality « Participation – Reification »

- CoPs are characterized by:

Permanent Negotiation

Participation

Reification

Make, speak, think, … face up their opinions, make proposals, build up relationships, engage efficiently in the CoP.

Produce, conceive, represent, etc., gives shape to the experience by producing artefacts

CoP Memory

Alimente enrich

Characteristics of CoPs

- CoPs are characterized by three fundamental features:
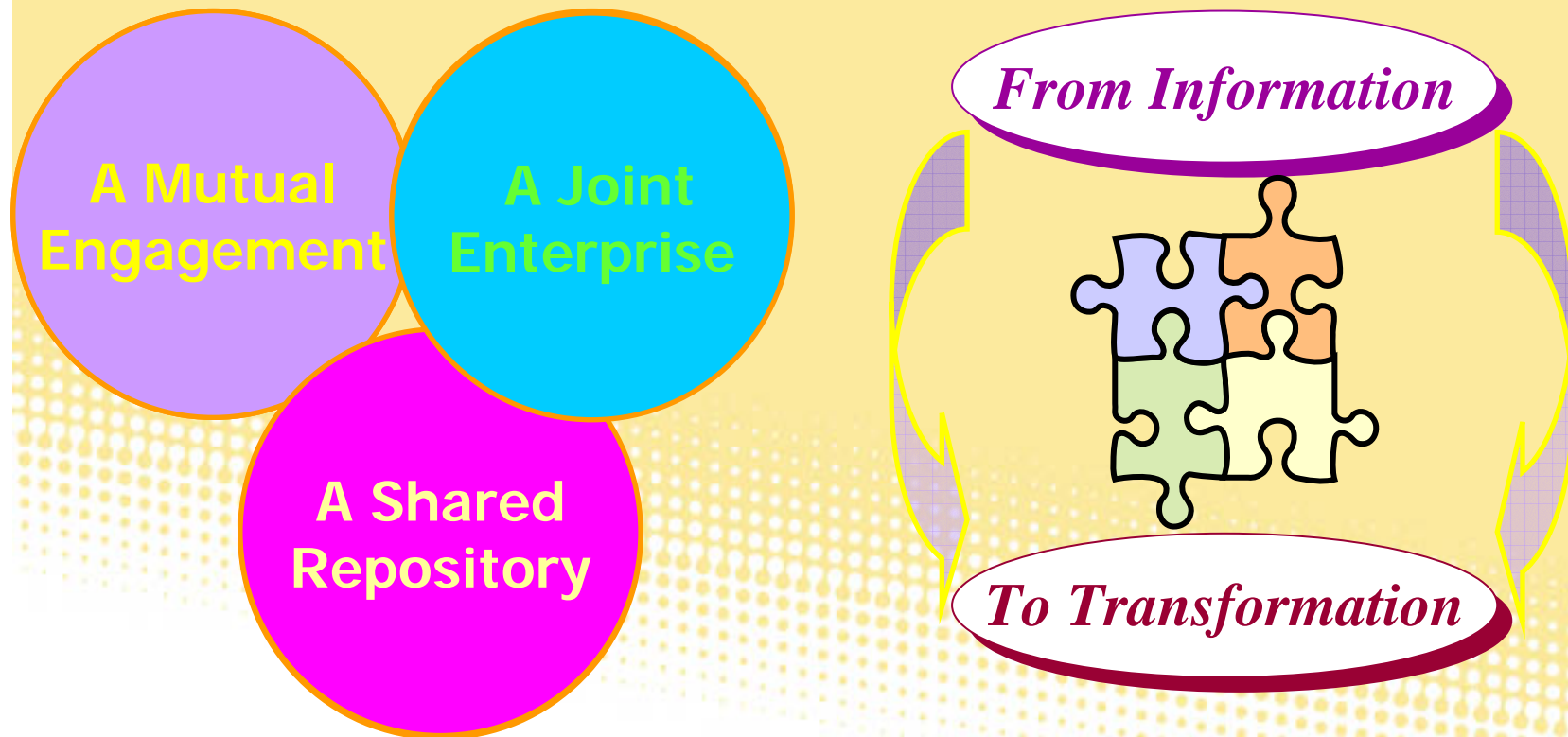
A Mutual Engagement

A Joint Enterprise

A Shared Repository

From Information

To Transformation

Plan

■ **Communities of practice: New Form of Learning**

■ **E-learning domain: Online Learning Systems**

- ◼ Definitions
- ◼ Life Cycle
- ◼ Problems encountered by the actors of E-learning

■ **Synthesis and Definition of objectives**

■ **Contribution**

■ **Case study Presentation**

■ **Conclusion and perspectives**

E-learning: Online Learning Systems

- The introduction of Information Technologies for Teaching (ITT) aims to **improve the quality of the online training** by facilitating the access to the resources and services of the Web and remote collaboration.

- E-learning is seen as a process of learning :
  - **The learner** plays an **active** role in his learning.
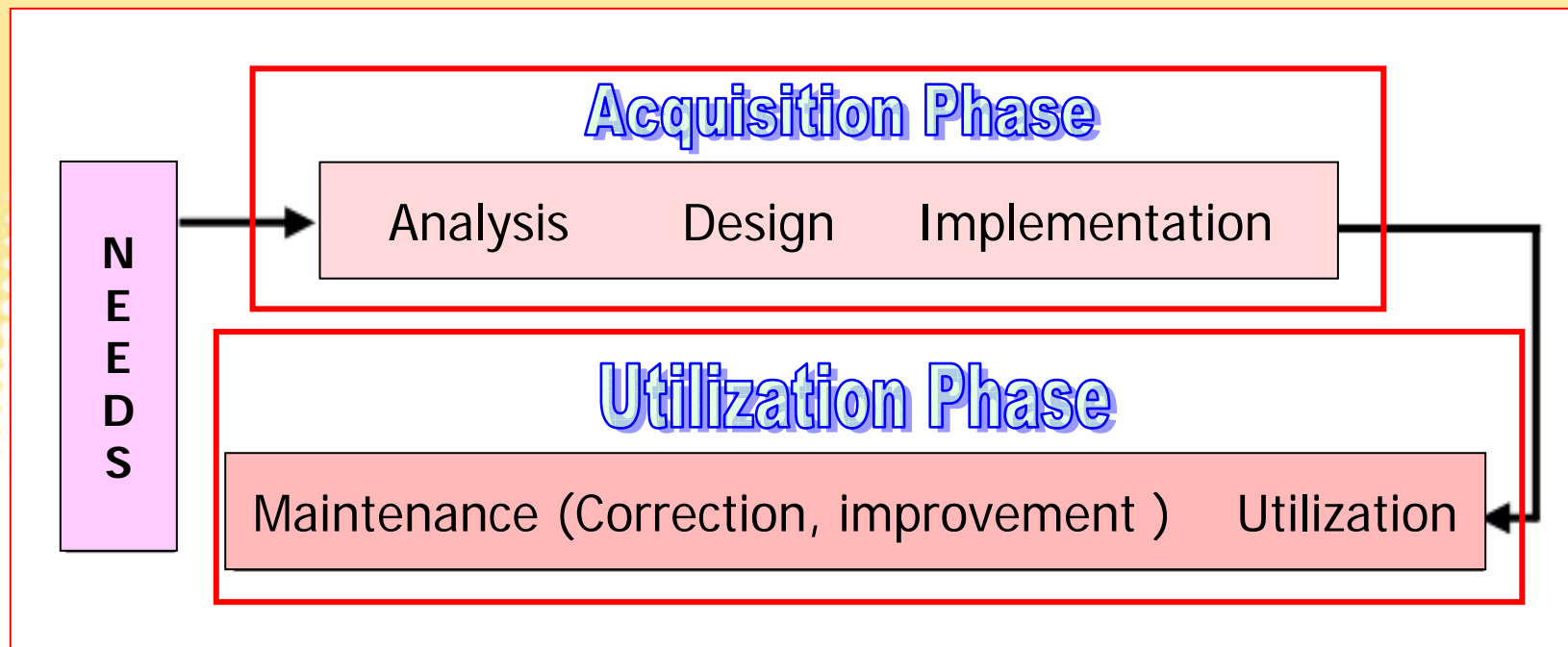 - + Interactive **Online Learning Systems**.

Proposing learning scenarios for learners.

- A learning scenario helps in:
  - the description of the context of use,
  - the identification of the actors and the clarification of their role,
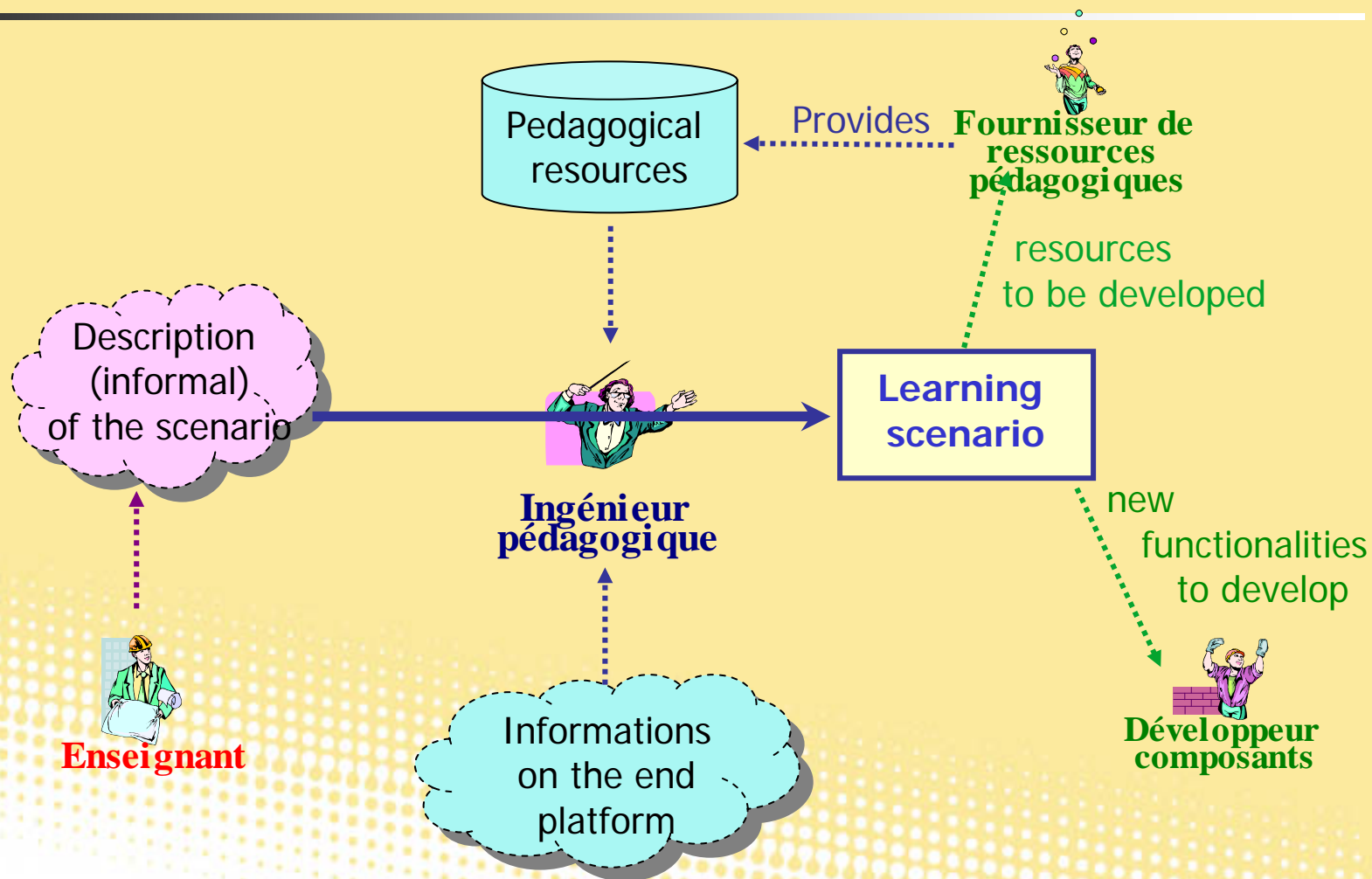 - the definition and orchestration of activities , using adequate environment.

Life Cycle of Online Learning System

■ **Two main phases are distinguished:**

  ■ Acquisition Phase

  ■ Utilization Phase

Acquisition Phase in detail

Pedagogical resources

Provides **Fournisseur de ressources pédagogiques**

resources to be developed

Description (informal) of the scenario

Learning scenario

Ingénieur pédagogique

new functionalities to develop

Enseignant

Informations on the end platform

Développeur composants

Analysis → **Design** → **Implementation**

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Problems encountered by the actors of E-learning ?

Can't find solutions for some problems faced.

Generally, solutions exist elsewhere. But this information is not always known?

Ressources

- Knowledge
- Know-how
- Attitude

Solutions not always capitalized

Absence of means and mechanisms for collaboration between actors of different platforms

Face problems

Difficulty to find experts in a given domain and at a given situation

Actors involved in the two Phases of Acquisition and Utilization of an Online Learning System
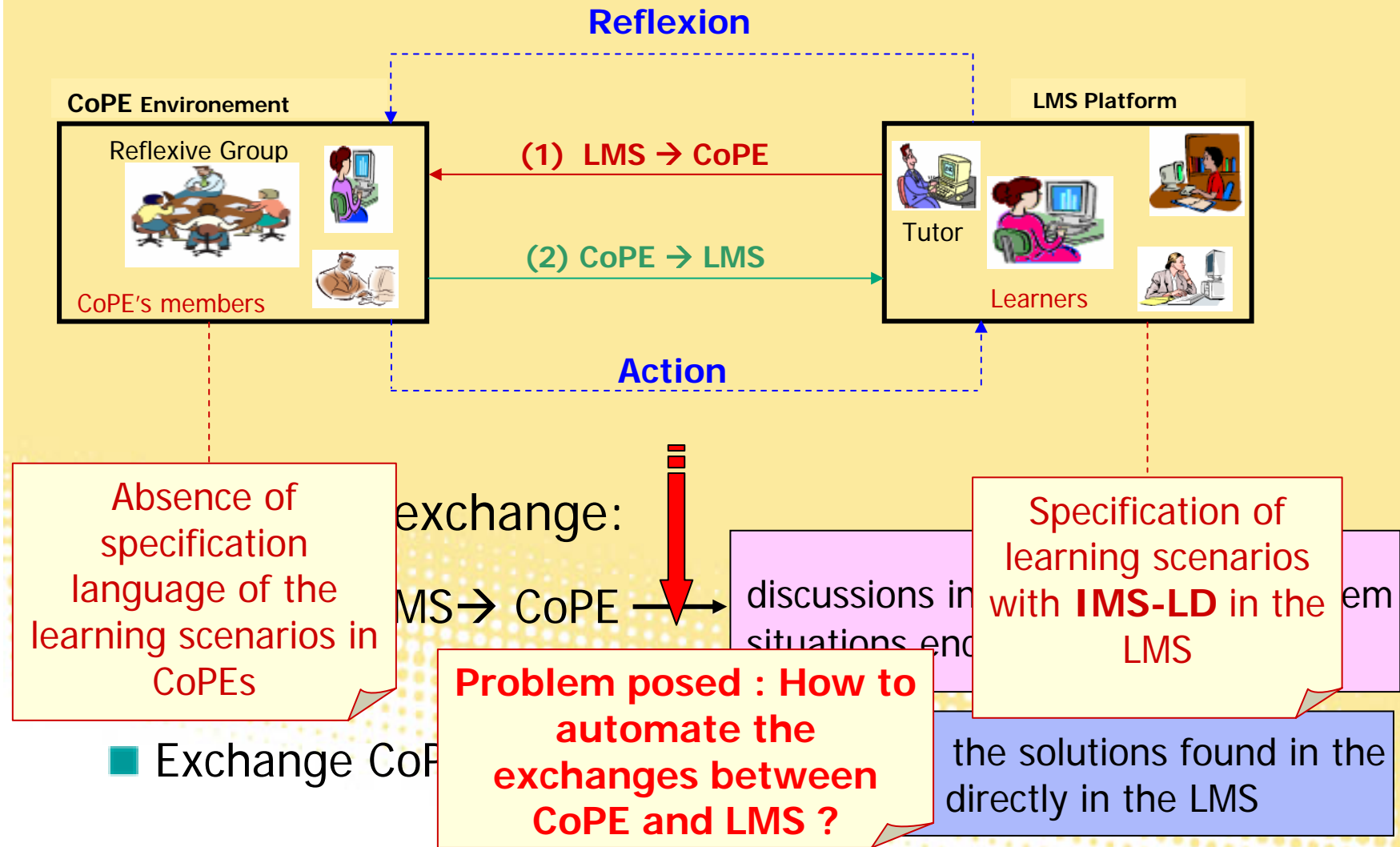
Synthesis (1)

■ The E-learning domain faces a **problem of capitalization of technopedagogic knowledge** and competences.

■ CoPs aims to set up a structure **for sharing tacit and explicit knowledge** and the rapprochement of different actors related to a given domain.

→ Extend the application of the CoPs to the domain of E-learning.

■ Creation of a new category of CoPs named: **CoPE** (Communities of Pratice of E-learning)

Synthesis (2)

Reflexion

CoPE Environement

Reflexive Group

CoPE's members

(1) LMS → CoPE

(2) CoPE → LMS

LMS Platform

Tutor

Learners

Action

Absence of specification language of the learning scenarios in CoPEs

exchange:

MS→ CoPE ⟶ discussions in situations enc...

Specification of learning scenarios with **IMS-LD** in the LMS

Problem posed : How to automate the exchanges between CoPE and LMS ?

the solutions found in the directly in the LMS

■ Exchange CoP...

Definition of the Objectives

Contribution 1 (LINC'07; IWAISE'08)
Define the concept of CoPE and the underlying concepts :
• Learning Situations
• Components of the Learning Situations (actors, roles, activities, environement)

Contribution 2 (WEBIST'08)
Provide a specification language of the learning scenarios in CoPEs, to facilitate the communication between the CoPE and the Learning Management System LMS.
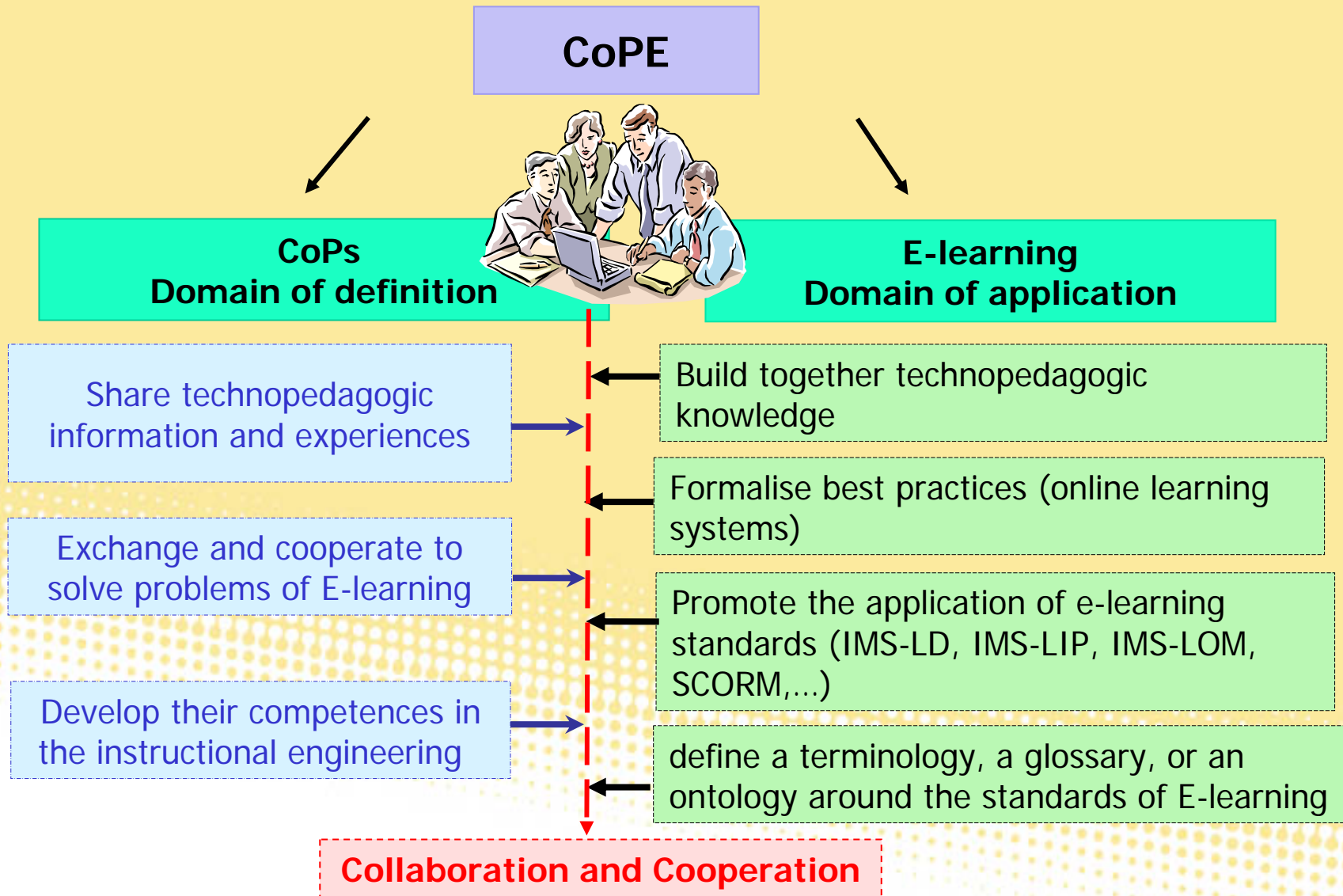
Two objectives are defined

Synthesis

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Communities of Practice of E-learning « CoPE »

CoPE

CoPs
Domain of definition

E-learning
Domain of application

Share technopedagogic information and experiences

Build together technopedagogic knowledge

Formalise best practices (online learning systems)

Exchange and cooperate to solve problems of E-learning

Promote the application of e-learning standards (IMS-LD, IMS-LIP, IMS-LOM, SCORM,...)

Develop their competences in the instructional engineering

define a terminology, a glossary, or an ontology around the standards of E-learning

Collaboration and Cooperation

Communities of Practice of E-learning « CoPE »

■ Two dimensions during the acquisition phase of an online learning system life cycle :
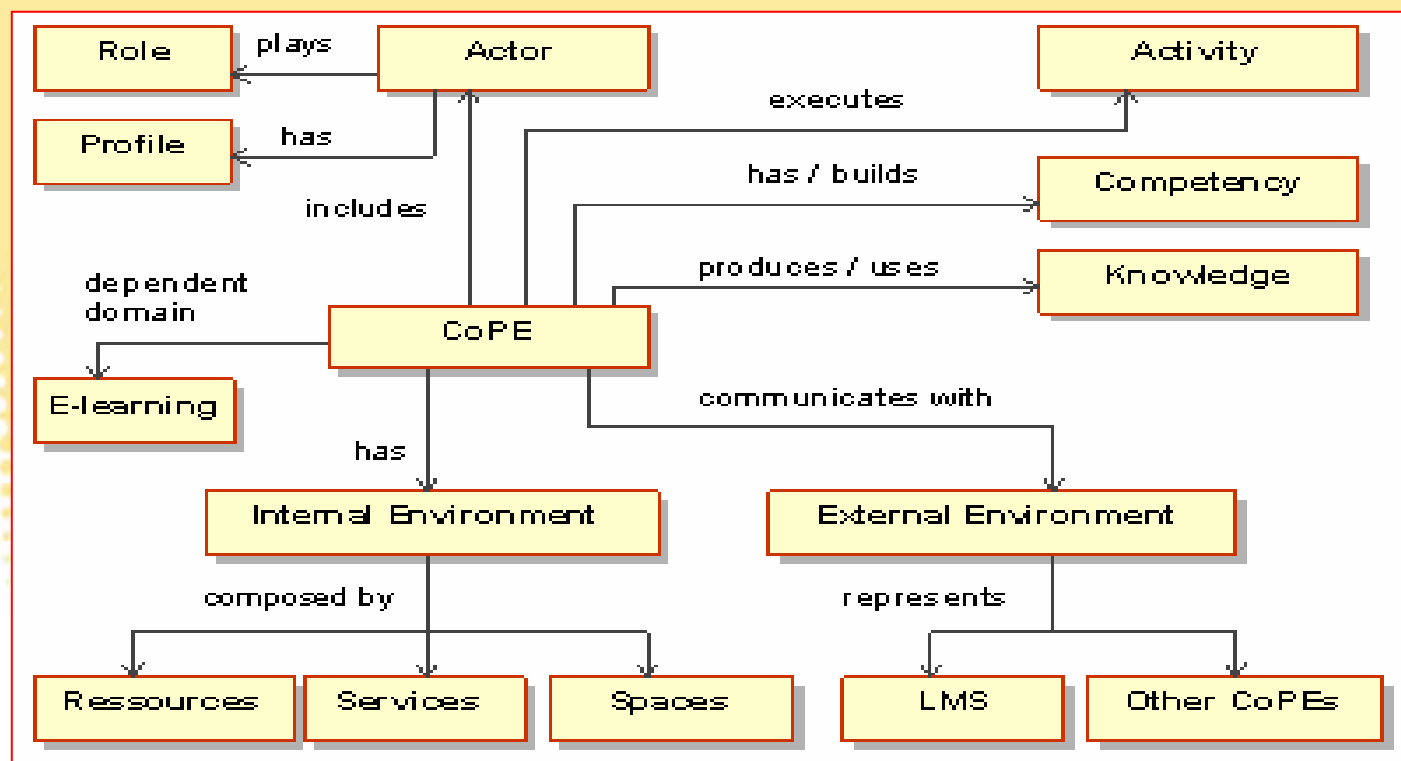

Exchange

Product

Process
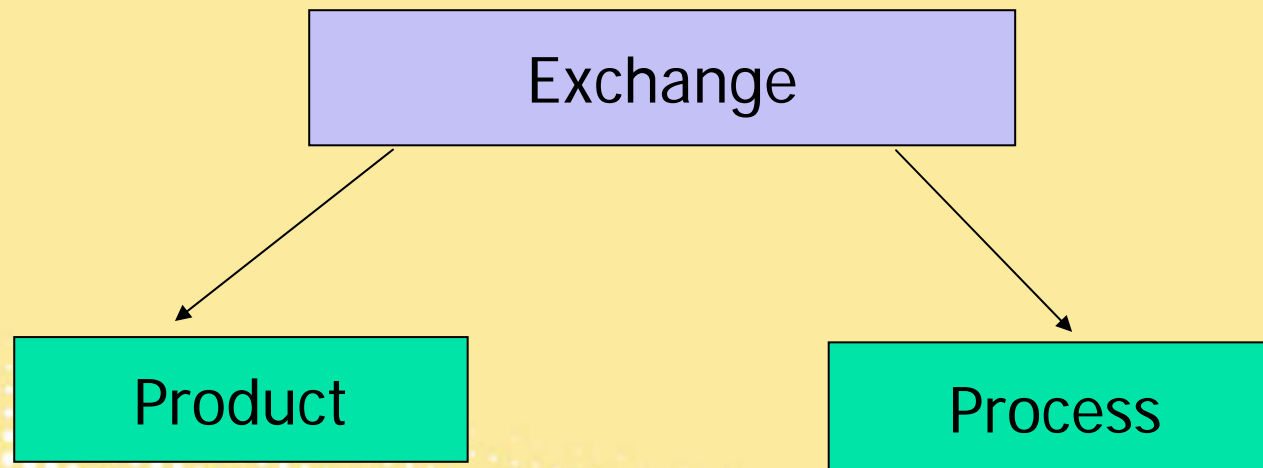
Roles ; Activities;
Resources, Services and
Tools ; Properties...

Approaches ; Methods ;
Techniques ;

CoPE's Concepts

- ## The basic concepts of CoPE:
  - ### Actors with their Roles
  - ### Activities
  - ### Learning Environment

Learning Situations in the CoPE

- Three types of Learning Situations:

  - **Problem Situation** → **find solutions** to common problems encountered during the two phases of acquisition and utilization in LMS.

    Example: How to incorporate a Java Applet for a given exercise in Moodle LMS in order to make it interactive.

  - **Decisional Situation** → **choosing** between several alternatives during the acquisition phase of the life cycle of an online learning system or the **validation** of some design results.

    Example: What type of learning situation do we select in a specific course?

  - **Project Situation** → concerns the final **build up** and **realization** of the online learning system according to the acquisition cycle.

    Example: Development of an online learning system related to a course on system engineering for master students in computer science field.
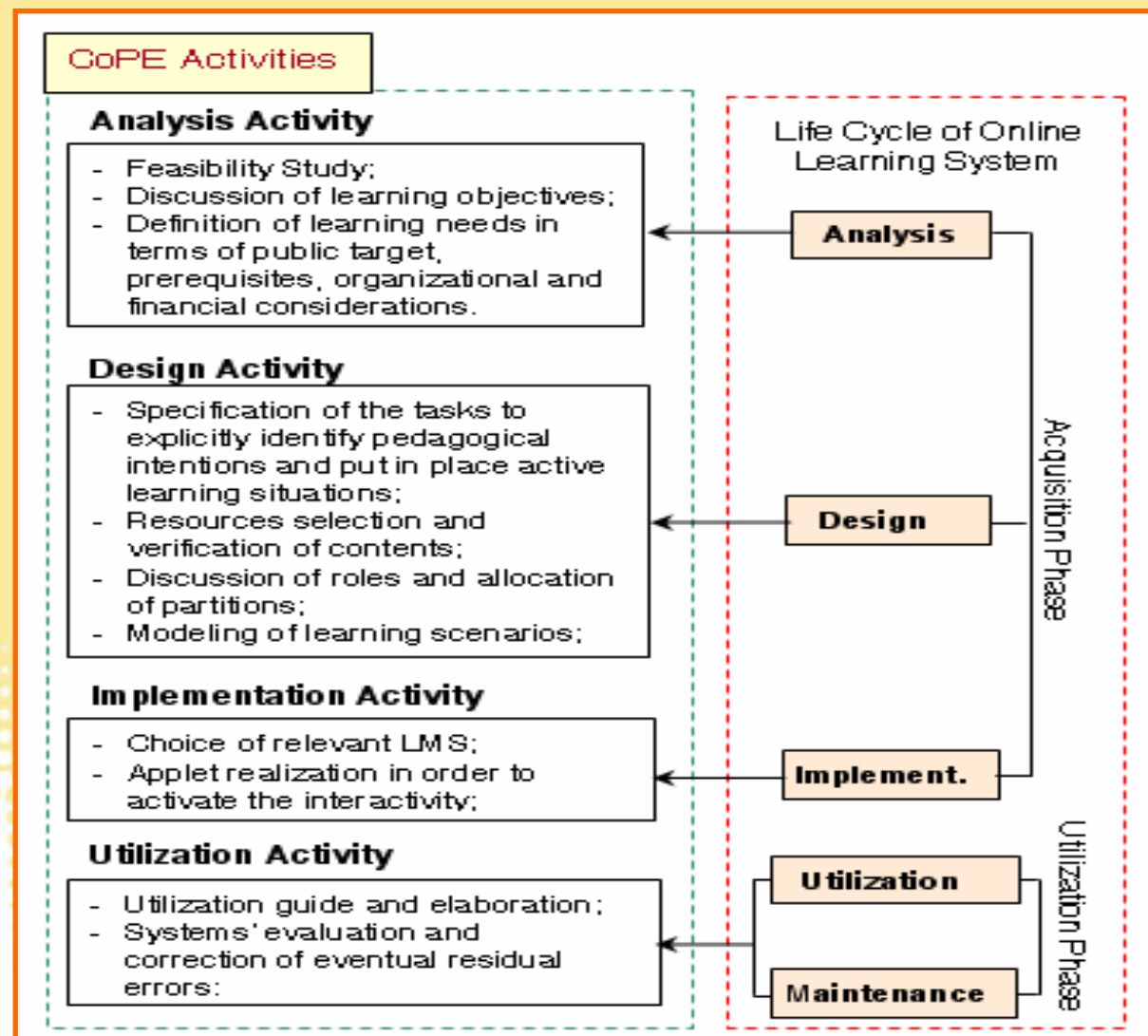
Components of a learning situation (1)

■ **Actors and Roles:**
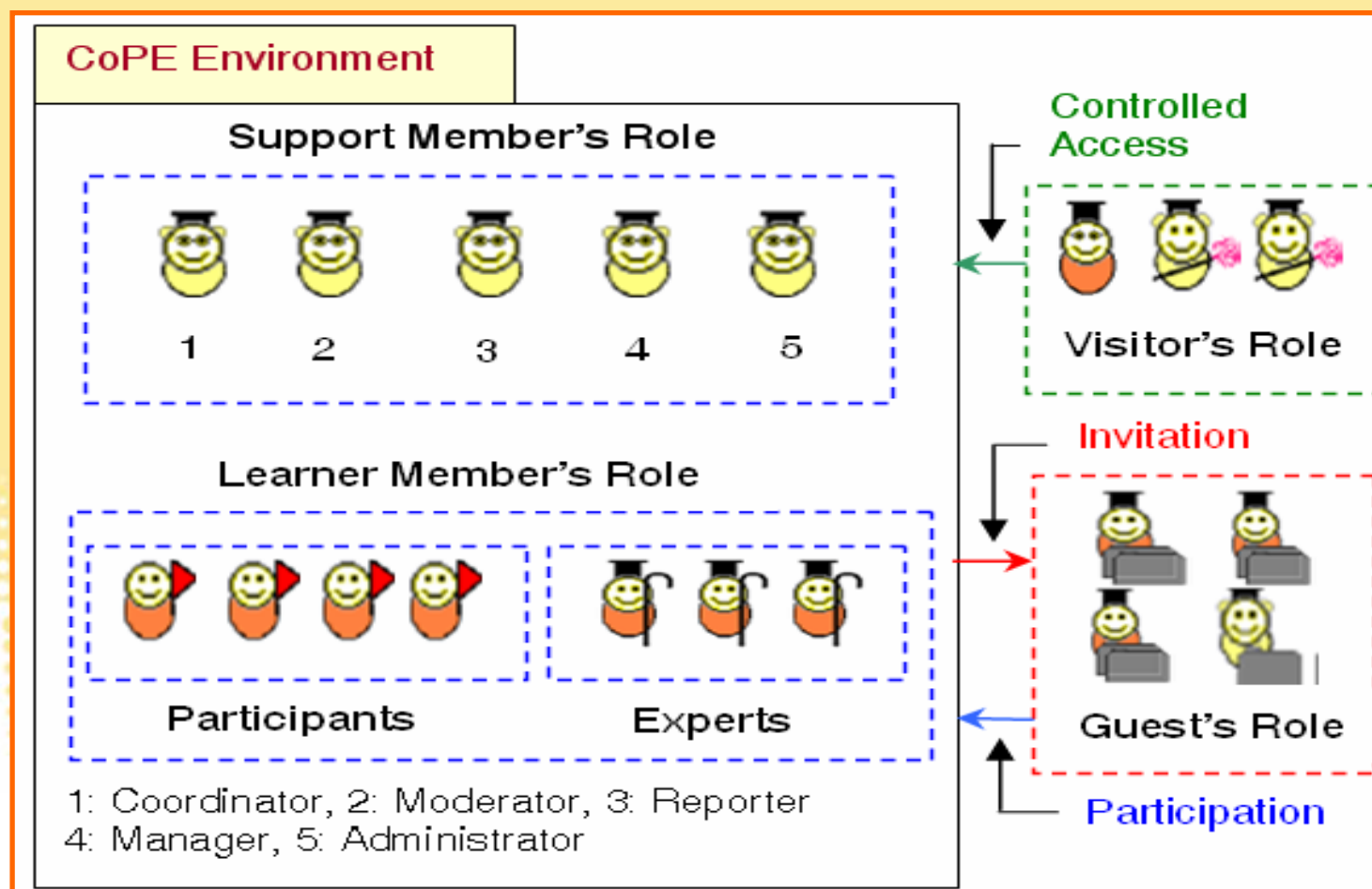
■ **Activities:**

▪ CoPEs members carry out joint activities to exchange techno-pedagogical information.

▪ Activities correspond to the stages of learning life cycle.

CoPE Activities

Analysis Activity
- Feasibility Study;
- Discussion of learning objectives;
- Definition of learning needs in terms of public target, prerequisites, organizational and financial considerations.

Design Activity
- Specification of the tasks to explicitly identify pedagogical intentions and put in place active learning situations;
- Resources selection and verification of contents;
- Discussion of roles and allocation of partitions;
- Modeling of learning scenarios;

Implementation Activity
- Choice of relevant LMS;
- Applet realization in order to activate the interactivity;

Utilization Activity
- Utilization guide and elaboration;
- Systems' evaluation and correction of eventual residual errors:

Life Cycle of Online Learning System

Analysis

Design

Implement.

Utilization

Maintenance

Acquisition Phase

Utilization Phase

Components of a learning situation (3)

■ **Environnement:**

▪Use of a specific environment intended to CoPEs.

▪Use of a generic environment intended to CoPs.

■ Use of an LMS environment type.

▪Use of an ad hoc environment.
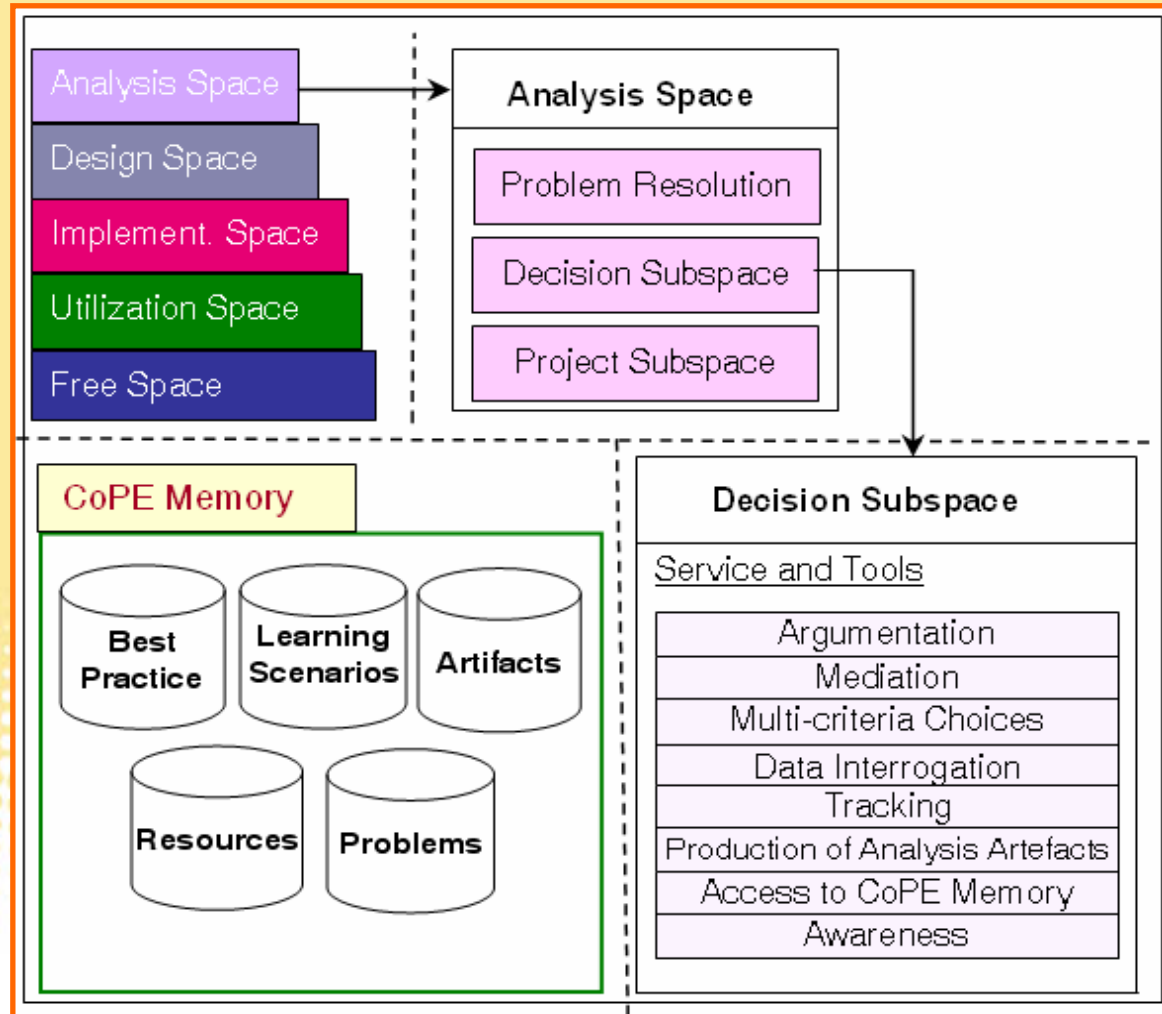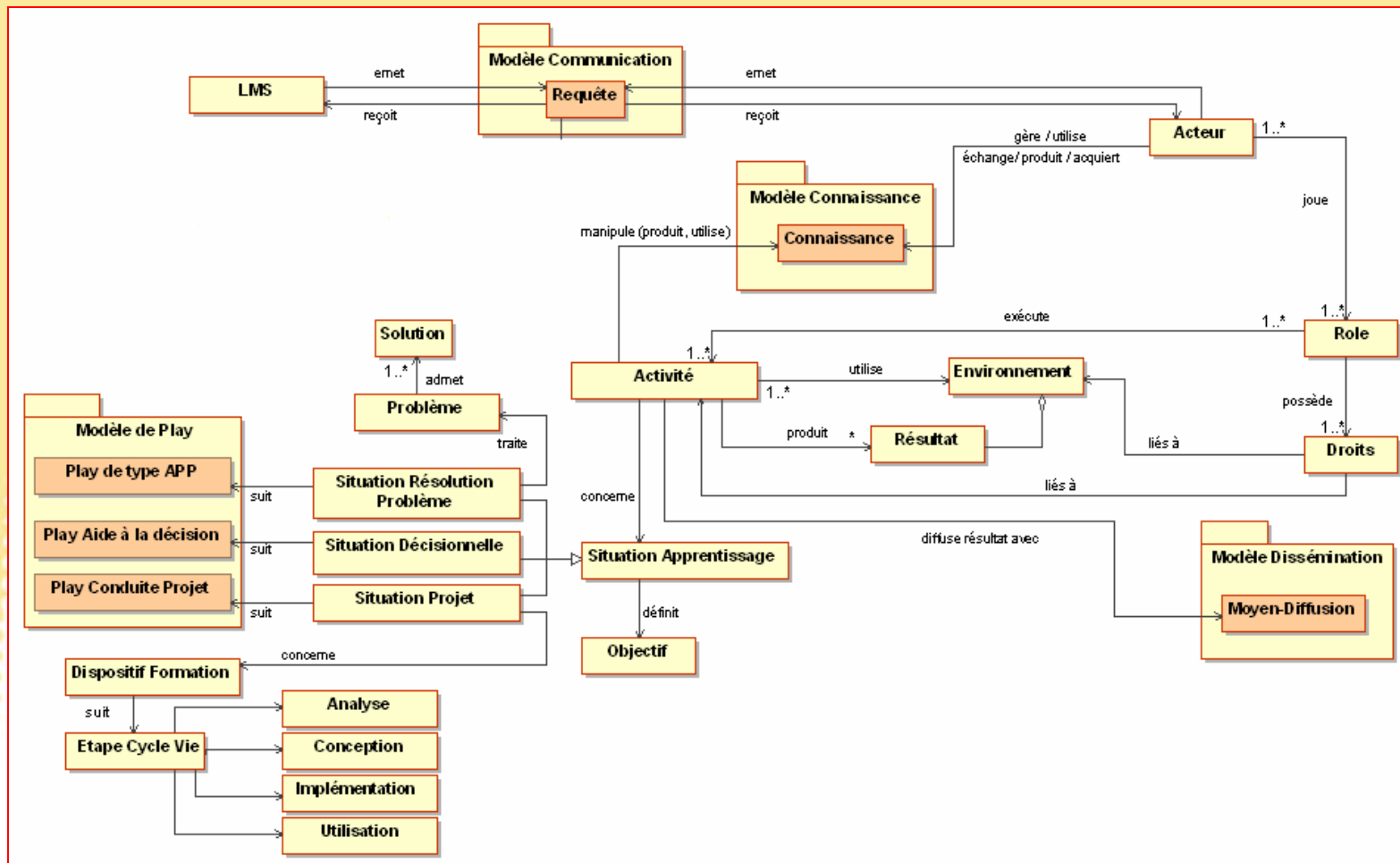
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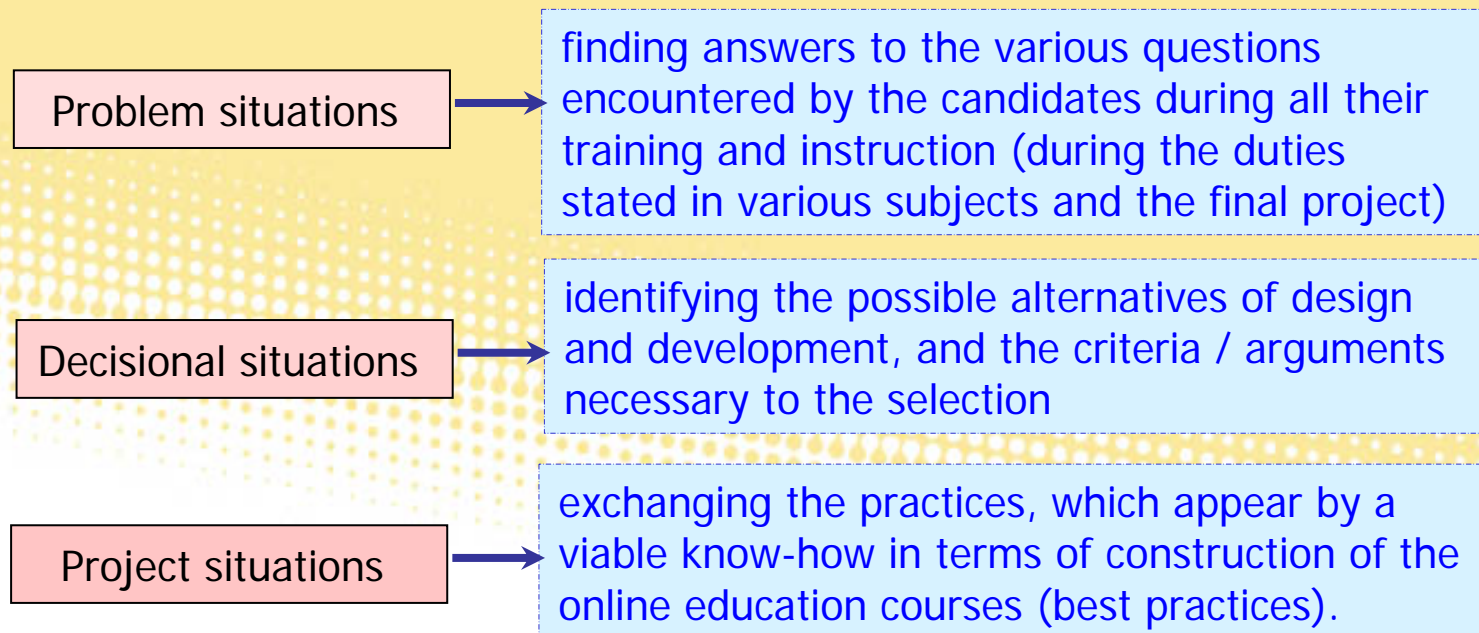- **Conclusion and perspectives**

Case study: Concepts and Definitions of a CoPE (1)

- CoPE developed and realized within the framework of the project of distance education **CoseLearn** "Switzerland Cooperation"

- Promote e-learning in a number of French-speaking countries in Africa.

- CoseLearn program leads to the professional diploma *MIEL* of "*International Master in E-learning*".

- **Actors :**
  - principal actors of the project (Professors, Tutors, Administrators)
  - master candidates (university teachers, computer center Engineers)

- **Roles :**
  - members of support : teachers ensuring the training, technicians in charge of the technical administration of the system .
  - learning members : Participants (Candidats), Experts (tutors).
  - Invited members.

Case study: Concepts and Definitions of a CoPE (2)

- **Activities :** cover the four types of activities.
- **Technical environment :**
    - the CoPE uses the LMS Moodle
    - This solution offers the advantage of natural coupling (CoPE $\leftrightarrow$ practice of e-learning)
- **Learning Situations :**

Problem situations	$\rightarrow$	finding answers to the various questions encountered by the candidates during all their training and instruction (during the duties stated in various subjects and the final project)
Decisional situations	$\rightarrow$	identifying the possible alternatives of design and development, and the criteria / arguments necessary to the selection
Project situations	$\rightarrow$	exchanging the practices, which appear by a viable know-how in terms of construction of the online education courses (best practices).

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  - Conclusion
  - Perspectives

Conclusion

- **<u>Rappel</u>:** The problem posed concerns the **capitalization of technopedagogic knowledge** (knowledge, know-how) in the E-learning domain .

- Considering the **advantages** resulting from the emergence of **CoPs**

- Extend the application of the Communities of Practice (CoPs) to the E-learning domain. (LINC'07, IWAISE'08)

The proposed category called **CoPE** is considered the center of reflection of techno-pedagogic practices and promotes **collaborative and cooperative learning**.

Perspectives

- The feasibility of exchanges **(LMS⇔CoPE)** is conditioned by a **formal modeling of learning situations** in their both sides. The IMS-LD language permits to model only the learning situations for LMS. Accordingly, a language of specification of learning situations within CoPEs is more than necessary.

- We plan to provide a **specification language** of the learning scenarios in CoPEs. This language will be based on **IMS Learning Design (IMS-LD)** ⟶ **WEBIST'08**

- realize the **CLD-Generator** and **CLD-Player**, in order to automatically generate the learning scenarios in CoPEs and integrate the appropriate information in the LMS.

Communities of Practice of E-learning "CoPE" – Definition and Concepts

Thank you for your attention