



THE 3P LEARNING MODEL

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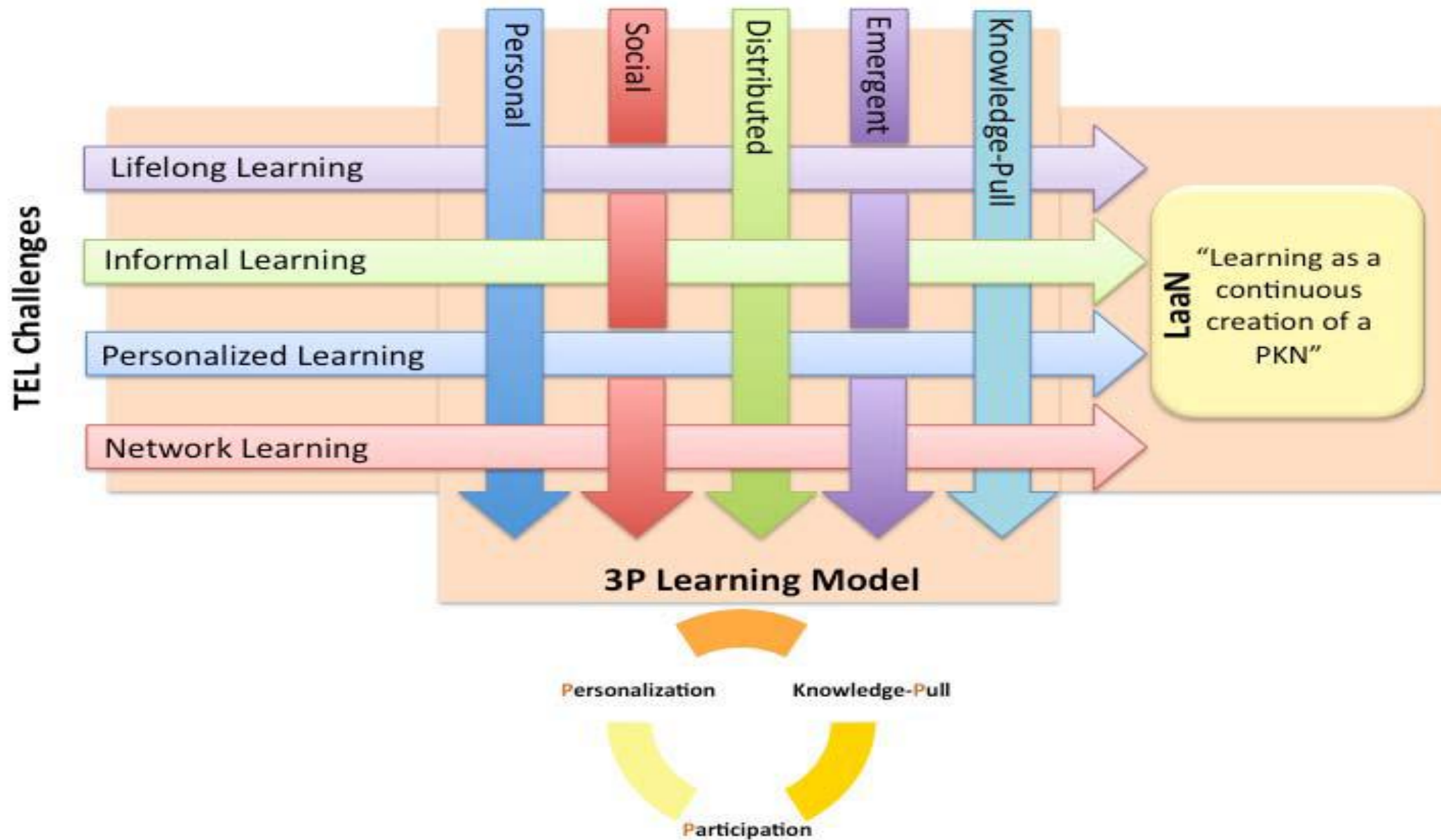
3P =

Personalization

Participation

Pull knowledge

Success Factors for TEL Models



ASSUMPTIONS ABOUT KNOWLEDGE AND LEARNING

Knowledge is personal and learning is self-directed in nature. Tobin (2000), for instance, states: "All learning is selfdirected. The learner may not have control over what is taught, but the learner always has control over what is learned"

Knowledge and learning are social in nature and it resides in networks (Downes, 2006; Siemens, 2006).

Knowledge is distributed and ubiquitous in nature and learning is now happening in a world without boundaries.

Learning is emergent: must be the **product of self- organization, not centralized control:** "a dynamic two-way flow of power and authority based on information, knowledge, trust and credibility enabled by interconnected people and technology" (Husband: 1999).

Learning is **driven by knowledge-pull:** In a learning model based on knowledge-push, the information flow is directed by the institution/teacher. In a learning model driven by knowledge-pull, **the learner navigates toward knowledge.**

ASSUMPTIONS ABOUT (DISTRIBUTING) KNOWLEDGE DEVICES

Collectively there are countless ways to use a personal mobile device to support learning.

Photo-sharing could be a route to informal learning and then formal learning with others.

Usability of mobile devices is learner- and context-dependent.

EXAMPLES OF DEVICES TO BE USED (I)

Social/community interaction

The use of use social apps on the phone (e.g. Facebook)

Being part of microblogging communities, e.g. Twitter mobile Internet access

Browsing websites

Reading news

EXAMPLES OF DEVICES TO BE USED (II)

Multimedia uses

Watching movies and TV shows

Listening to audio books, podcasts, and vodcasts location-based activity

Using GPS to find places

Using location-based services user-created content

Filming an event to create a resource

Creating podcasts

I. PERSONALIZATION

- ✓ Effective and efficient learning **needs to be individualized –personalized and learner-controlled.**
- ✓ Needs adaptivity and adaptability.
 - **Adaptivity:** the **ability to modify course materials** using different parameters and a set of predefined
 - **Adaptability:** the **possibility for learners to personalize the course materials** by themselves (Burgos et al., 2007).

PERSONAL SYSTEMS: WHICH SYSTEMS CAN BE USED?

Systems that help **learners take control of and manage their own learning**. This includes providing support for learners to:

set their own learning goals;

manage their learning; managing both content and process;

communicate with others in the process of learning and thereby achieve learning goals.

(van Harmelen, 2006)

DESIGN CORE QUESTION PERSONAL SYSTEMS

Core question using systems and devices: How to personalize what has to be learned?

When answering the design core question you can use:

- **1. Intelligent Tutoring Systems**
- **2. Adaptive Educational Hypermedia**
- **3. Adaptive Educational Web-based Systems (Kravcik et al., 2005) (= mostly a combination of 1 and 2)**

What do these systems mean? What are design questions to be answered? (see next slide)

AD 1. INTELLIGENT TUTORING SYSTEMS

- ✓ Is educational software **containing an artificial intelligence component**
- ✓ **Collecting information on a particular student's performance**, the software can make inferences about strengths and weaknesses, and can suggest additional work (Hafner, 2004).

AD 1: INTELLIGENT TUTORING SYSTEMS: FIVE MAJOR COMPONENTS → QUESTIONS TO BE ANSWERED

- a) **Domain knowledge:** What is general information about the domain which the learner has to know?
- b) **Information that is specific to each individual learner:** What is information that is specific for each learner which has to be followed and provided feedback about?
- c) **Model of the teaching process:** Describe the teaching process as a model you use? What are principles beneath the teaching process? What are the steps/activities?
- d) The **communications module** which controls interactions with the learner: **How to communicate with the learner and about what precisely?**
- e) **The expert model** which is a model of **how someone skilled in a particular domain represents the knowledge:**
What is the skill to be learned? What are specific activities within that skill? How exactly to do these activities and why do them in a specific way?

AD 2: ADAPTIVE EDUCATIONAL HYPERMEDIA

The domain of an adaptive educational Web-based system is represented by a **hierarchy of concepts**

Question: Is there a hierarchy in the concepts the learner has to learn? How does that look like?

the learner model stores a numeric value for each concept in the hierarchy indicating **to what extent the learner has mastered the topic** (De Bra, 2002).

Question: How to measure the mastering of the topic by the learner?

Technically, what most adaptive educational Web-based systems do in terms of adaptation of the learning material is **link annotation and link hiding** (Kravcik et al., 2005).

Questions:

- 1) When has the learner to see what when checking his/hers progress?**
- 2) What are possible explanations you give when something the learner has done is good, partly good or wrong?**
- 3) What are possible recommendations you give?**

COMBINING SYSTEMS AND DEVICES

Systems	Devices	
	Social/community interaction devices	Multimedia uses
Intelligent Tutoring Systems		
Adaptive Educational Hypermedia		
A combination of 1 and 2		

2. PARTICIPATION: FOCUS ON PERSONAL NETWORKS

knowledge ecology:

a complex, knowledge intensive landscape that emerges from the bottom-up connection of personal knowledge networks

knowledge ecologies are characterized by emergence and self-organization

Two types:

- a) being active participants in **the practices of social communities**
(Wenger, 1998: 4).
- b) Personal horizontal connections: **each of us is at the center of our very own personal knowledge network**

Question: what does the learner prefer? A or B or both?

3. KNOWLEDGE-PULL: FOCUS ON PERSONAL NETWORKS

providing learners the **access to a plethora of tacit/explicit knowledge nodes** and hand over control to them to select and aggregate the nodes the way they deem fit, to **enrich their personal knowledge networks**.

Questions to be answered by the learner (the teacher can give options)

- a) What are persons you as a learner can relate to in order to learn more about this subject?
- b) What is for you as a learner an online niche community of practice you want to be part of when learning passionate about this subject?