



# Inhalt – Content – Contenu

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1. What is “virtual learning”?
2. Analyzing the process of learning
3. Strengths and weaknesses of virtual learning
4. From e-learning 1.0 to e-learning 2.0

# 1. Virtual Learning

## What makes it different from “real-world learning”?

*Virtual learning* is

“the delivery of educational lessons using any of the technologies included in the expanded *virtual reality*” (Federation of American Scientists), the latter being a technology which allows a user to interact with a computer-based learning environment.

*Virtual learning* is

a special form of *e-learning*, which is

“Learning facilitated and supported through the use of information technology (IT) and communications technology (CT).  
(University of Bath, England)

# E-Learning: Solution of All Educational Problems?

When at the end of the 1990s first e-learning materials came to the market, there was big euphoria.

Some few years after, in particular politicians were very disappointed: there was no palpable money saving, since it turned out that

*e-learning courses could not simply replace real-world courses, Setting up e-learning courses is tedious, and time- and money consuming.*

Meanwhile – not least because of people who looked into the details of learning processes – e-learning has been improved by the increasing potentiality of web 2.0. Even a new term has been invented:

*e-learning 2.0* (in contrast to the previous type of e-learning that is now sometimes referred to as e-learning 1.0)

# e-learning 2.0

Stephen Downes (BA, MA, PhD in philosophy, specialist in online learning and new media at National Research Council, New Brunswick, Canada):

“What happens when *online learning* ...ceases to be like a medium, and *becomes* more like *a platform*? ...software ceases to be a type of content-consumption tool, where learning is "delivered," and *becomes* more like *a content-authoring tool*, where learning is created?”

The model of e-learning ... is turned on its head. Insofar as there is content, it is used rather than read— and is, in any case, more likely to be *produced by students* than courseware authors. And insofar as there is structure, it is more likely to resemble a language or a conversation rather than a book or a manual”.

(I am not very happy about that “definition”, which will be explained shortly.)

# e-learning?

Thus, it must be asked:

- Is e-learning still a type of learning (Yes, it is)
- Are there benefits of e-learning? (Yes, there are)
- If so, is it worth spending time and money for it? (Yes, it is)
- Which expectations might be satisfied, which might not?
- What could be done to avoid failures?
- How could committed individuals (like you) help to make the best from it and to form e-learning 2.0?
- What makes e-Learning courses different from real-world courses?

## 2. The Process of Learning

The above questions might be best understood by analyzing the process of learning.

Learning is a process in which the assessment of a given set of information and a list of potential consequences by that assessment are changed enduringly as the result of *comparative observation* or *comparison of actual experience with former experience*.

(see also Shuell's description of learning)

Thus, as a main part of learning, there is the

necessity to

*recognize something to be new,*      ⇒ *cognition!*

and to

*classify it as worth remembering it.*      ⇒ *affective dimension!*

# Learning

Thus, learning is a process of recognizing, and storage that needs:

- *rational and/or emotional attention* to an unknown aspect, *otherwise no classification* as being worth storing it
- *repetition* in order to recognize significance *otherwise no storage* in long-term memory (interconnection of nerve cells by plasticity).

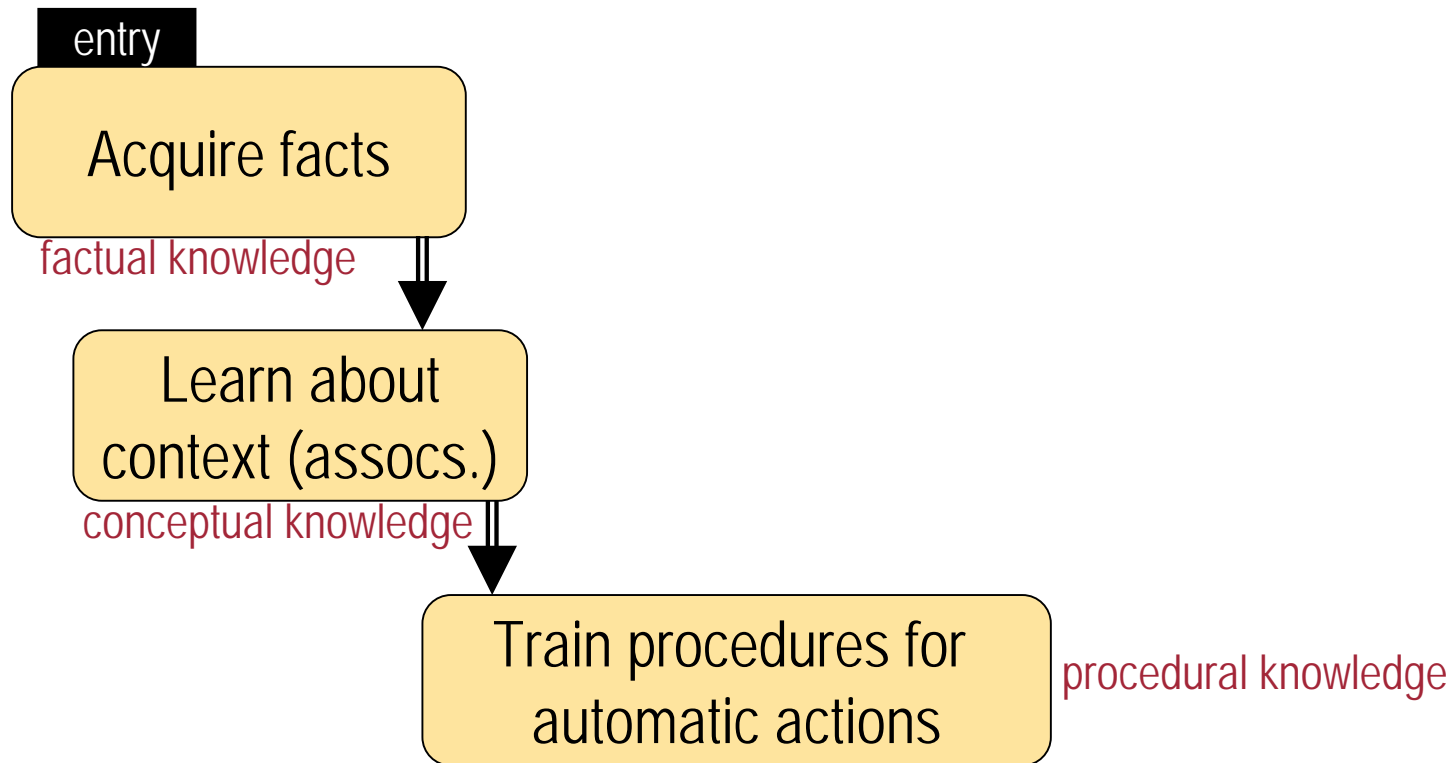
Exception: event with extreme emotional stimulus

( Learning is thus a process. It is not a “platform”, nor is it a “content-authoring tool”. Insofar, Downes’s explanation is not a definition, it rather describes some ideas to implement learning in a social context.)

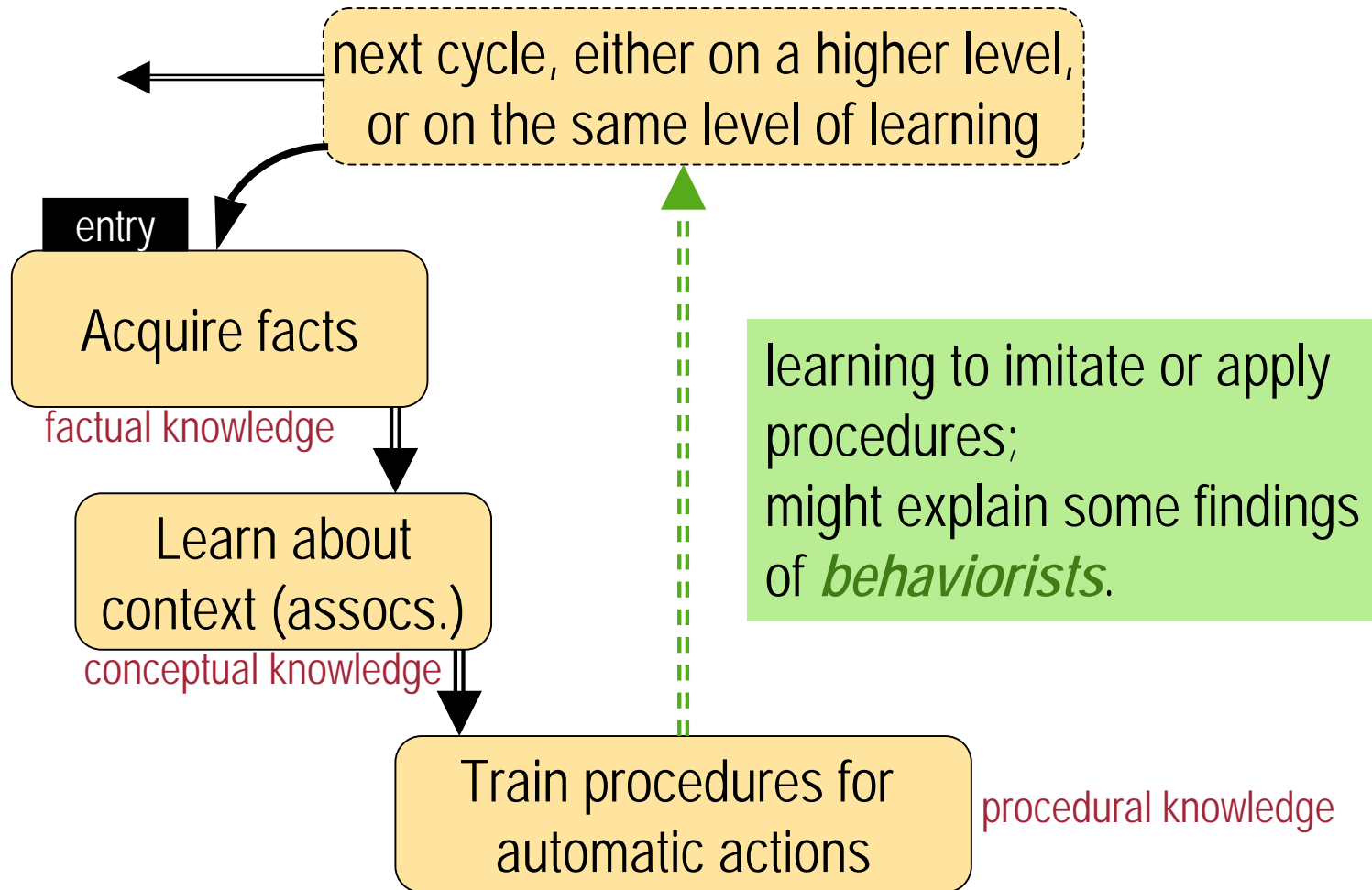
But that’s not yet all.

# Cycles of Learning

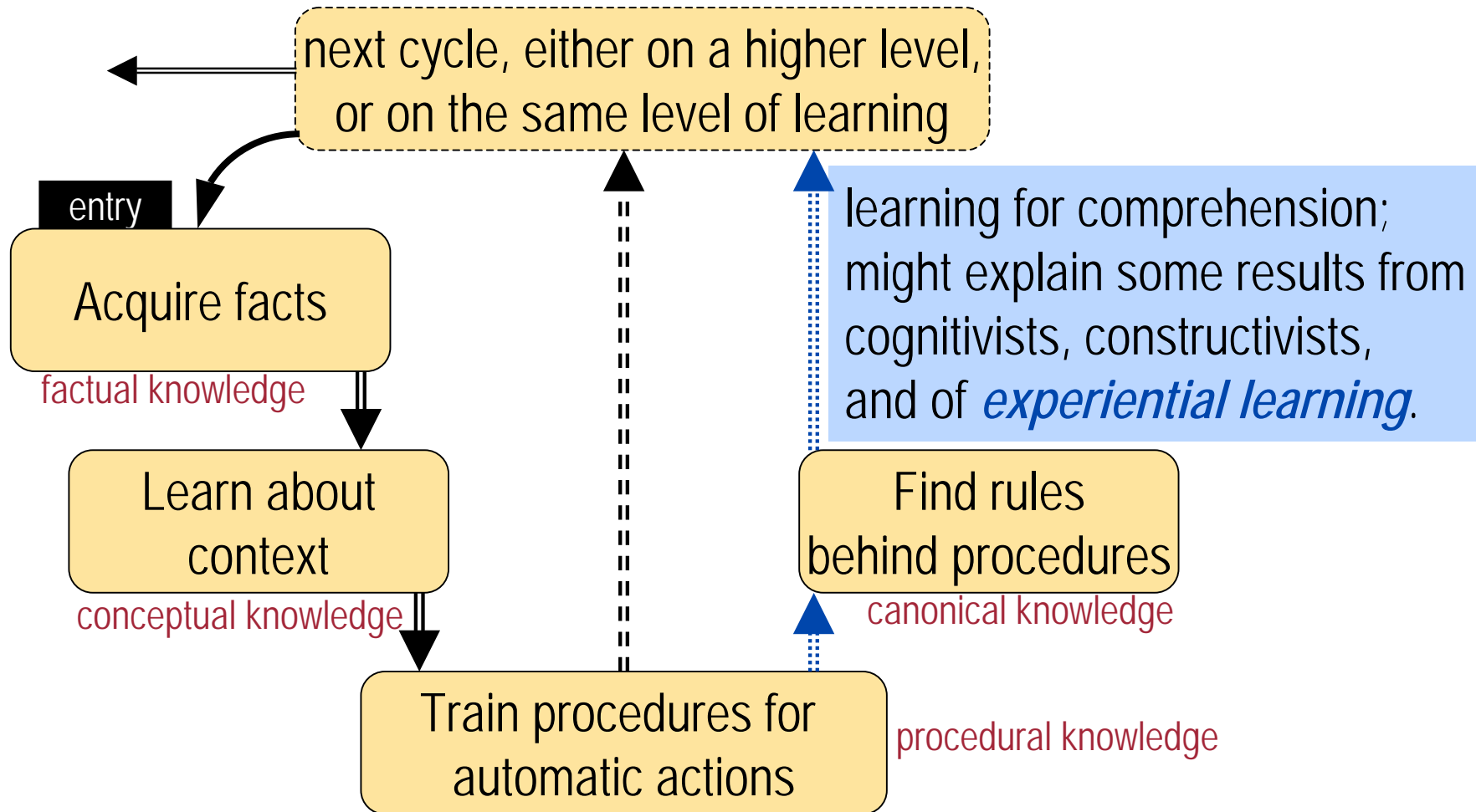
Learning is done in iterative and cyclic steps:



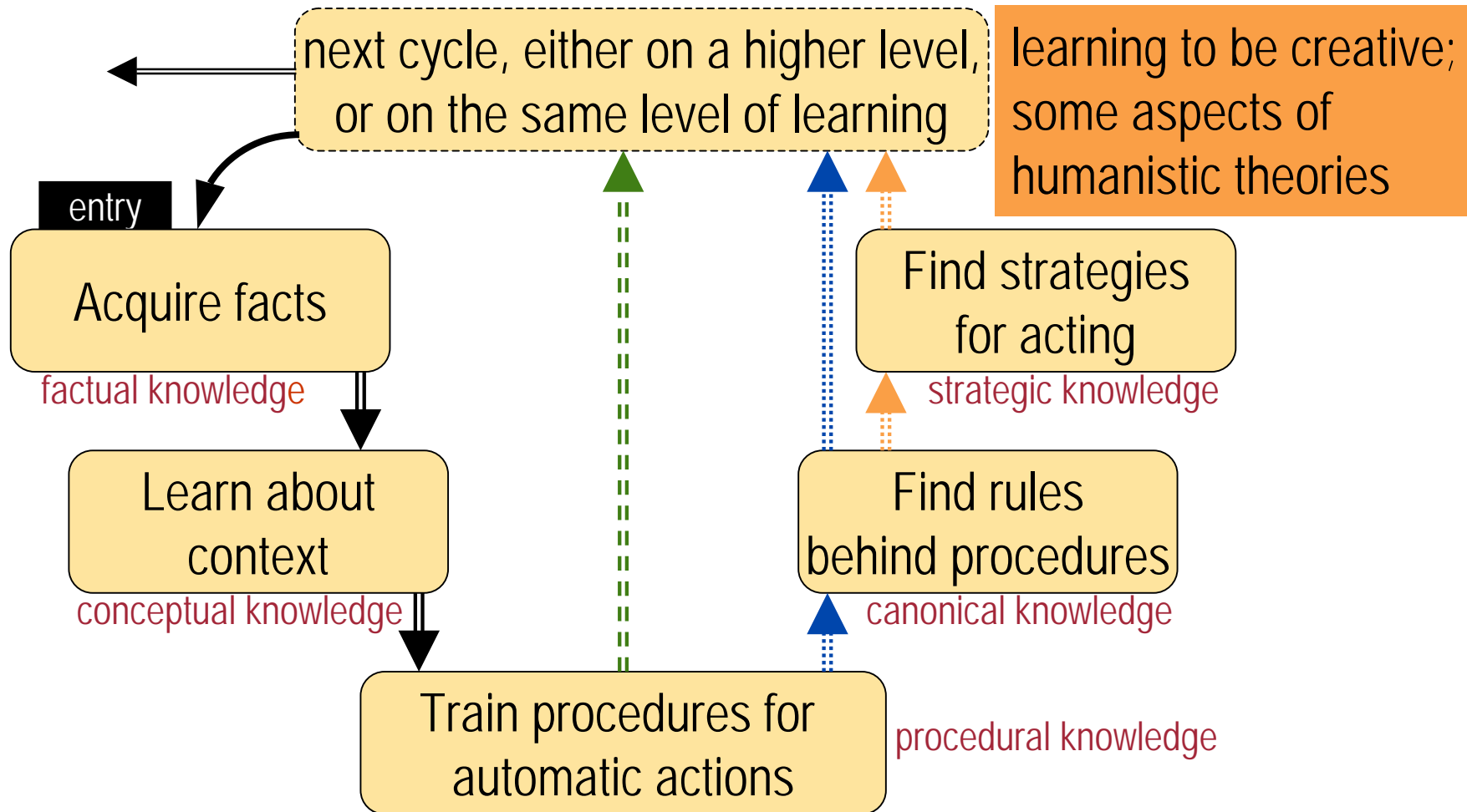
# (Too) Many People Think This Would Complete the Cycle



# Learning to Understand



# Learning to Be Creative



## 3. Strengths and Weaknesses of e-Learning

### Which Parts of the Learning Process Might Be Supported by IT/CT Means?

IT/CT means might help

- in the rational part of the process of cognition,
- in those parts of learning that need repetition,
- in acquiring factual knowledge
- in acquiring conceptual knowledge
- in acquiring procedural knowledge (training)
- partly in acquiring canonical knowledge

# Where are the Weaknesses of e-Learning?

However, non-interactive IT/CT means are *not so well suited* for

- imparting canonical knowledge

They are *certainly not supporting*

- acquisition of strategical knowledge
- the *affective dimension of learning*

Having that in mind, we are now able to understand any *acceptance problems of e-learning (1.0)*, and why e-learning 2.0 might help to overcome them!

# Some Consequences

- Still, learners prefer face-to-face courses rather than teletutoring, even if they like working with IT/CT-means
- In spite of round-the-clock mentoring by eMail or learning-platforms, learners need individual face-to-face contact, at least from time to time
- Learners need *social contacts* to their fellow-learners

These statements might be explained by the affective dimension of learning, in particular while acquiring canonical and strategic knowledge! They explain, why e-learning 1.0 hasn't such a large acceptance, and why including social contacts is necessary, thus (potentially) leading to e-learning 2.0.

## 4. From e-learning 1.0 to e-learning 2.0

E-learning is developing. Here is a list of some forms of e-learning:

### *Computer-based training (CBT)*

acquisition of *factual, conceptual and procedural knowledge*, which is supported by use of a computer.

This might range from a simple repository of lecture notes to a collection of entrance tests, lecture notes, drill exercises and tests for the assessment of learner's performance.

### *Computer assisted instruction (CAI)*

CBT enhanced by a system guiding learners through the course material and recording learners' performance for later assessment.

It is usually more interactive than simple CBT. By increased interactivity, preparation for the acquisition of canonical knowledge is facilitated.

# From e-learning 1.0 to e-learning 2.0, part 2

## *Web-based training (WBT)*

is computer-based training delivered over the internet. Because of its access to internet-based data bases, there is much larger space for one's own initiative, and thus for the *acquisition of canonical knowledge*.

Some advanced forms of WBT use *chat-rooms* and *discussion-forums* and further means to bring learners into contact with other learners. Thus, the *affective dimension of learning* is partly addressed.

# From e-learning 1.0 to e-learning 2.0, part 3

## *Learning Management System (LMS)*

is web-based training enhanced by means for managing and supporting learners' progress.

Advanced learning-management systems contain means for facilitating *guidance of learners by instructors or mentors*.

This is greatly *enhancing the affective dimension* of learning.

## *Blended Learning*

A blend of e-Learning and face-to-face learning methods, mostly of a learning-management system and of face-to-face learning. An optimum way of combining the advantages of e-learning and face-to-face learning, since it includes the *social aspect* of learning.

# Bringing in the social dimension by IT/CT-means

All means that add the *affective dimension* into the learning process improve the effectiveness of learning. This is normally done by including means that evoke a feeling of companionship. Some known means are:

- *wikis*: websites or similar online resource which allows users to add and edit content *collectively*. See <http://www.google.de/>  
Example: wikipedia
- *blogs*: (short for weblogs). These are journals being frequently updated and intended for general public consumption. Blogs generally *represent the personality* of the author or the Web site. They usually include philosophical reflections, opinions on the Internet and social or political issues.

See <http://www.google.de/>. Example: Ms. Merkel's video-podcasts

# Bringing in the social dimension by IT/CT-means

- **podcasts**: a method of publishing files to the Internet, allowing users to subscribe to a feed and receive new files automatically **by subscription**, usually at no cost. See <http://www.google.de/> .  
Example: video-podcasts of German chancellor, Dr. A. Merkel.
- **shared content** like in YouTube (free online video-streaming), flickr (shared photos), or del.icio.us (sharing bookmarks concerning different subjects). See <http://www.google.de/> .
- **Newsgroups and discussion forums**: A public place where messages are posted for **public consumption and response**. See <http://www.google.de/> .
- **Chatrooms and video-phoning**: Public live-discussions via Internet by using either keyboard or a camera.

# Consequences for Individuals

This evolution has consequences to individuals also, to learners as well as to instructors/mentors, since both groups must *acquire competencies* that twenty years ago did not yet belong to the standard competences, neither of learners nor of instructors:

1. Competencies to use digital computers and standard office software, and to successfully connect a PC to the internet.
2. For more modern learning-management systems: competency to use media (in the wider sense) like head-sets, chat-rooms, discussion forums, video books etc.
3. Ability to manage own pace of learning.

Sometimes, the first competency is called “digital competency”, while the second one is called “media competency”. The third ability is replacing responsibilities that classically were taken by teachers.

# Novel Competencies Required

## From Instructors

- Digital and media competencies.
- Competency to feel the needs of learners.
- Ability to manage a very incoherent group of learners.

## From Course Content Providers

- Ability to foresee difficulties that learners experience in web-based courses.
- Competency to activate the affective dimension in learning.

# Outlook

Our societies are in a process of changing. We are facing a change *from a production-based society toward a knowledge-based society.*

The logical consequence is that possibly our high-schools and universities are no longer in a position to educate the number of learners that are needed to keep our states competitive, for some years.

Therefore, our societies need to offer novel ways of higher education. This is virtual learning.

For a success of virtual-learning offerings, a shift of educational paradigms is necessary.

This is where individuals like *you are needed.*