Leids Universitair Medisch Centrum

IAMSE

Utilizing Technology to support the changing teaching strategies

IAMSE Symposium: ***Current Challenges for the Medical Educator in Undergraduate Medical Education***

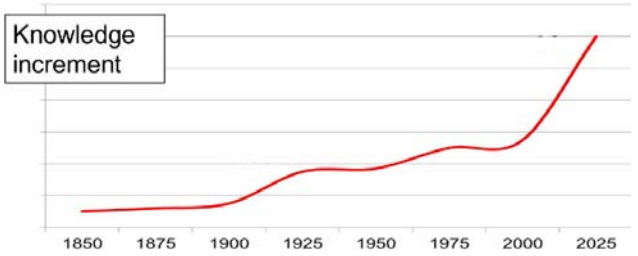
Peter GM de Jong

Center for Innovation in Medical Education

Leiden University Medical Center, NL

AMFEM 2018, MAZATLÁN

Changes in teaching medicine over the years



- Rapid growth of body (bio)medical knowledge
- Medicine has become much more sub-specialized
- Number of students increased
- New insights in teaching
  - Active learning, small group, team based
  - Competency-based approach of assessing students

Transitioning from being teachers to being educators:
from content experts to coach

<u>Lecturing and assessing is not enough anymore!</u>

The Roles of the Medical Teacher

1. *Information provider*
2. *Assessor*
3. Facilitator
4. Role model
5. Curriculum developer
6. Manager
7. Scholar
8. Professional

The Eight Roles of the Medical Teacher; The purpose and function of a teacher in the healthcare professions. Ronald Harden and Pat Lilley, 2018

Merrill's first principles of Instruction (2002)

(learning activities)

When is instruction effective?

1. Learning is promoted when learners are engaged in solving real-world **problems**.
2. Learning is promoted when existing knowledge is **activated** as a foundation for new knowledge.
3. Learning is promoted when new knowledge is **demonstrated** to the learner.
4. Learning is promoted when new knowledge is **applied** by the learner.
5. Learning is promoted when new knowledge is **integrated** into the learner's world.

Principles of Instruction

Margaryan's Principles on learning resources (2005, 2008)

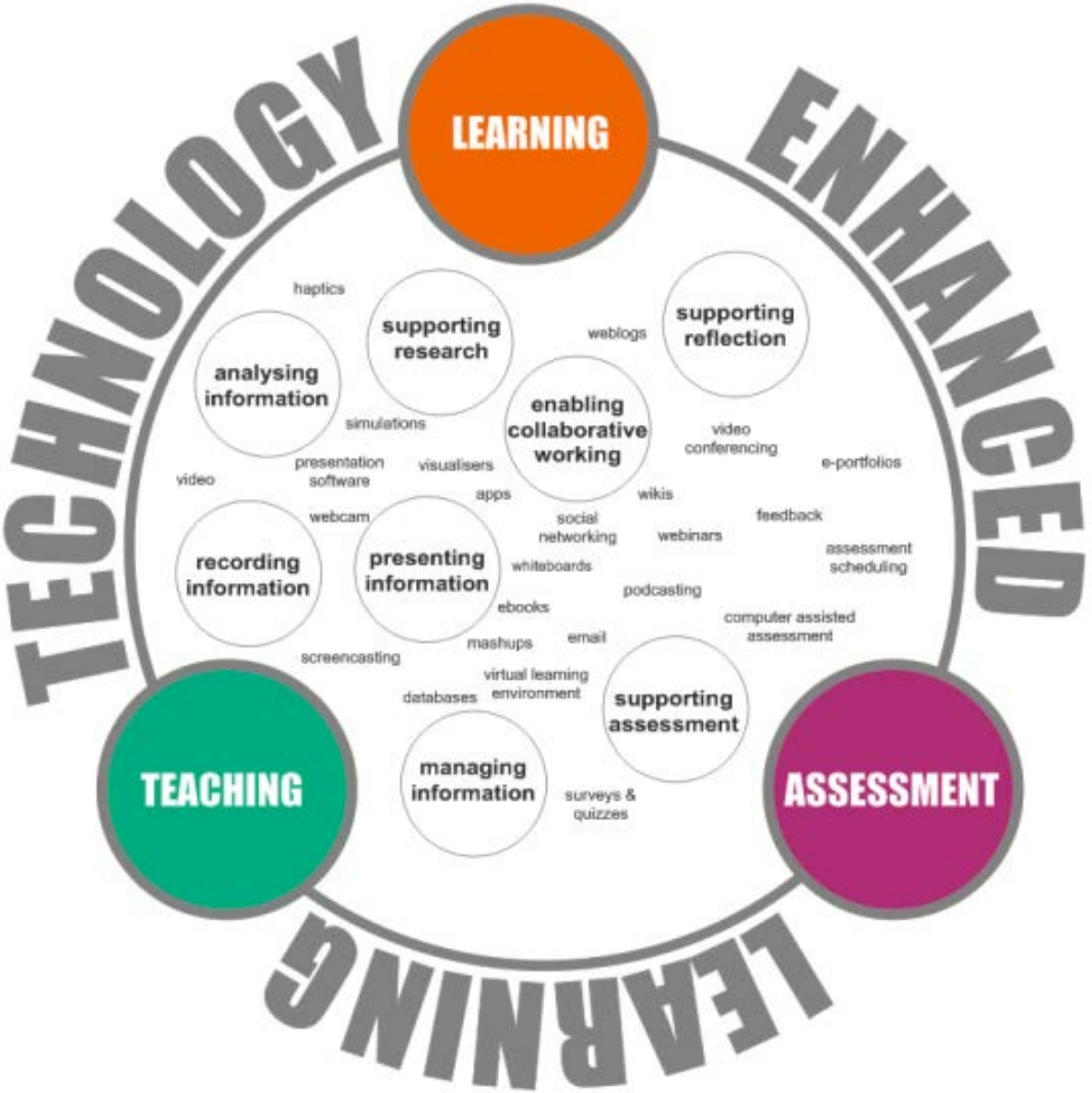
(learning resources)

Learning is promoted:

1. When learners contribute to **collective knowledge.**
2. When learners **collaborate** with others.
3. When learners are provided **different** ways matching personal learning needs.
4. When learning resources are **authentic**/from real world settings.
5. When learners receive expert **feedback** on their performance.

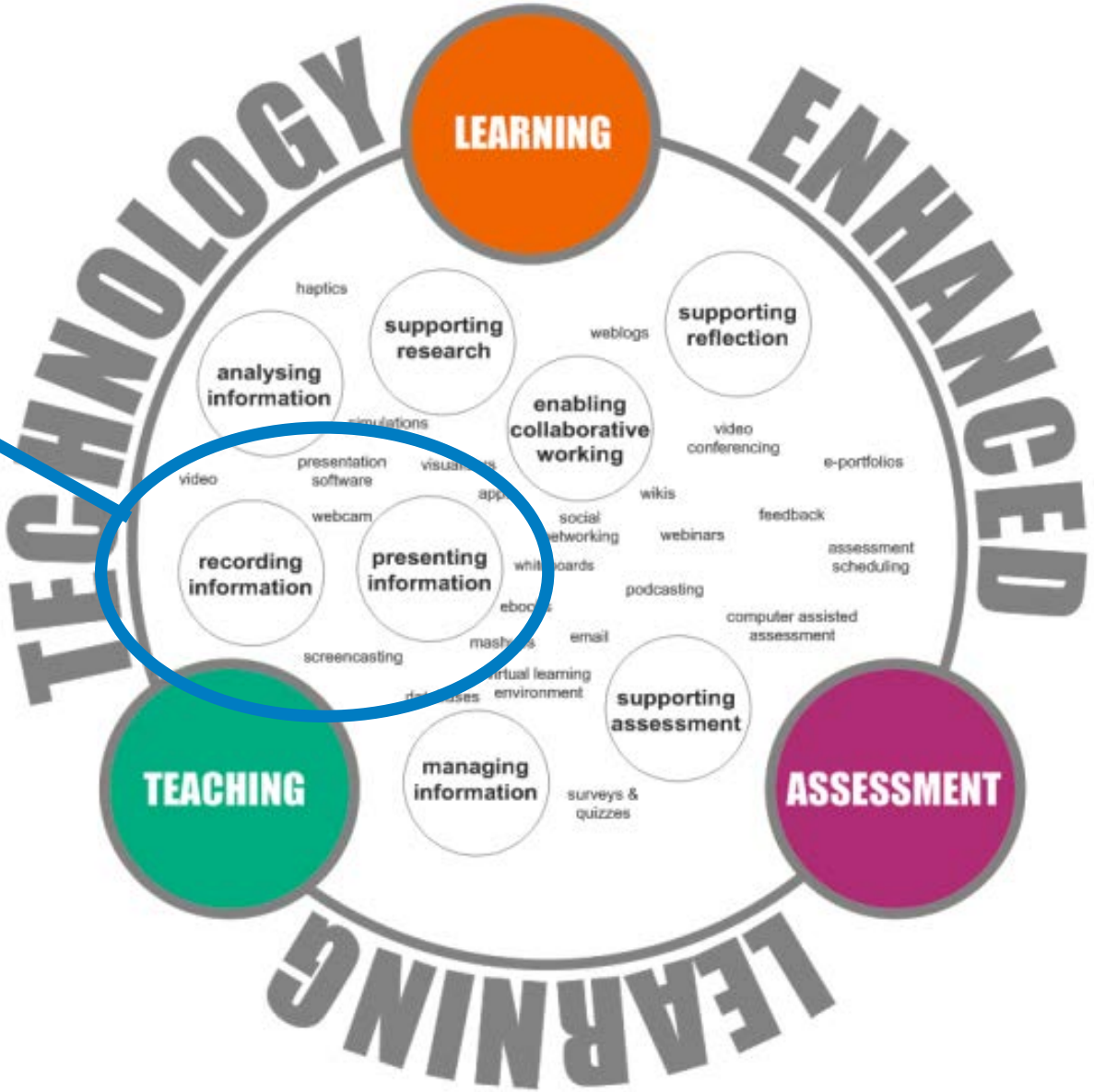
How can technology support these strategies?

Technology Enhanced Learning

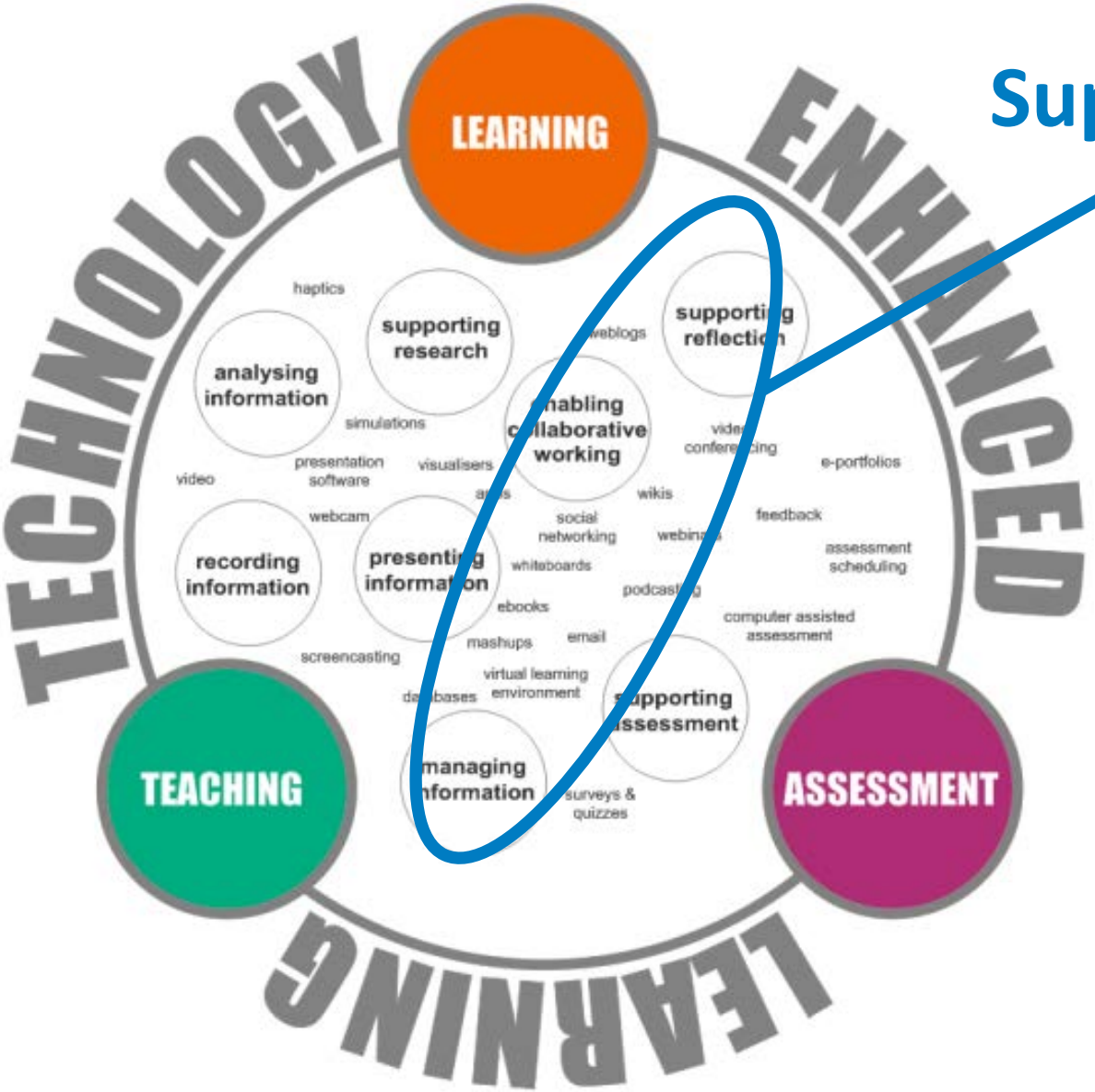


Technology Enhanced Learning

Present

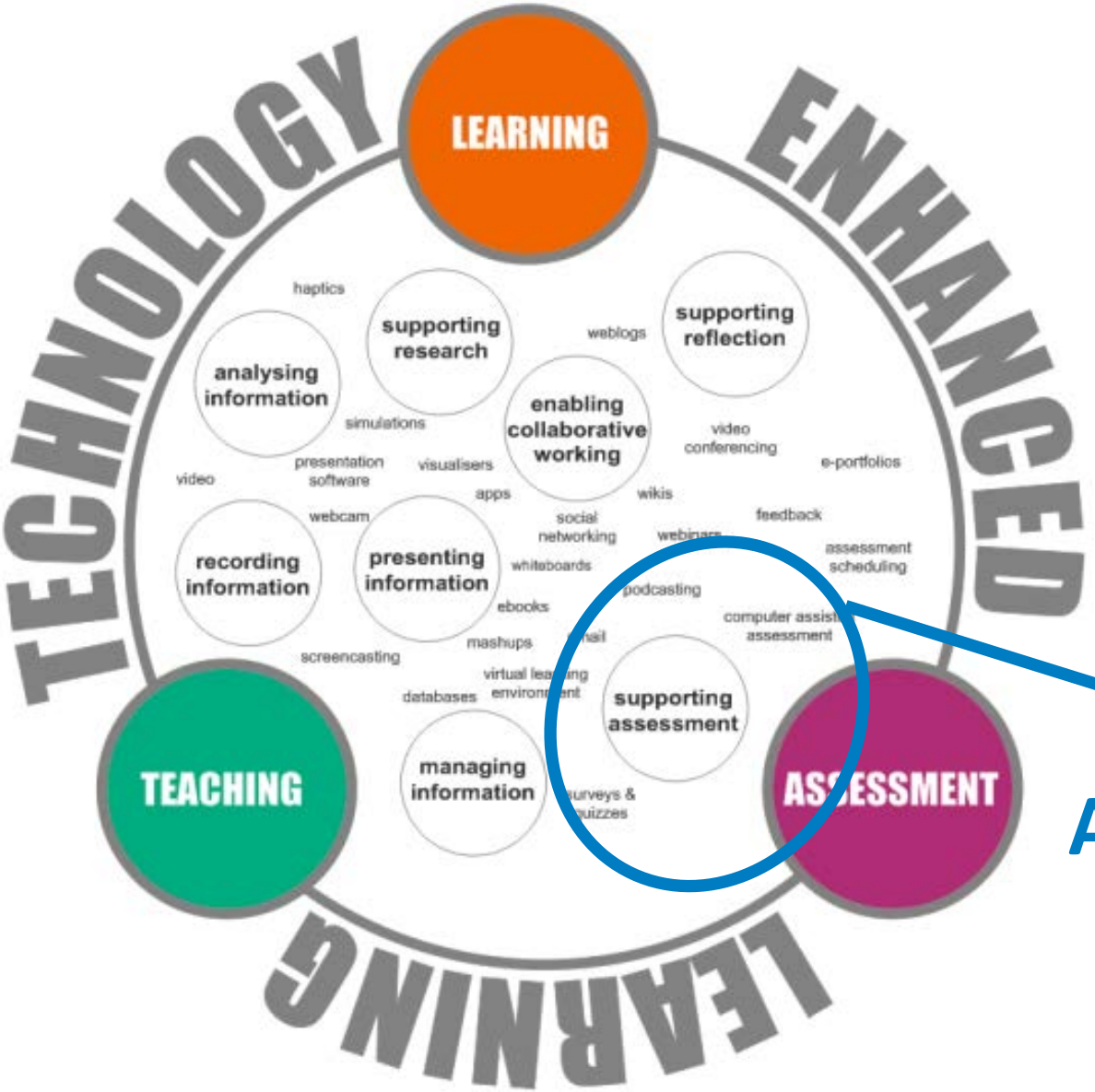


Technology Enhanced Learning



Support

Technology Enhanced Learning

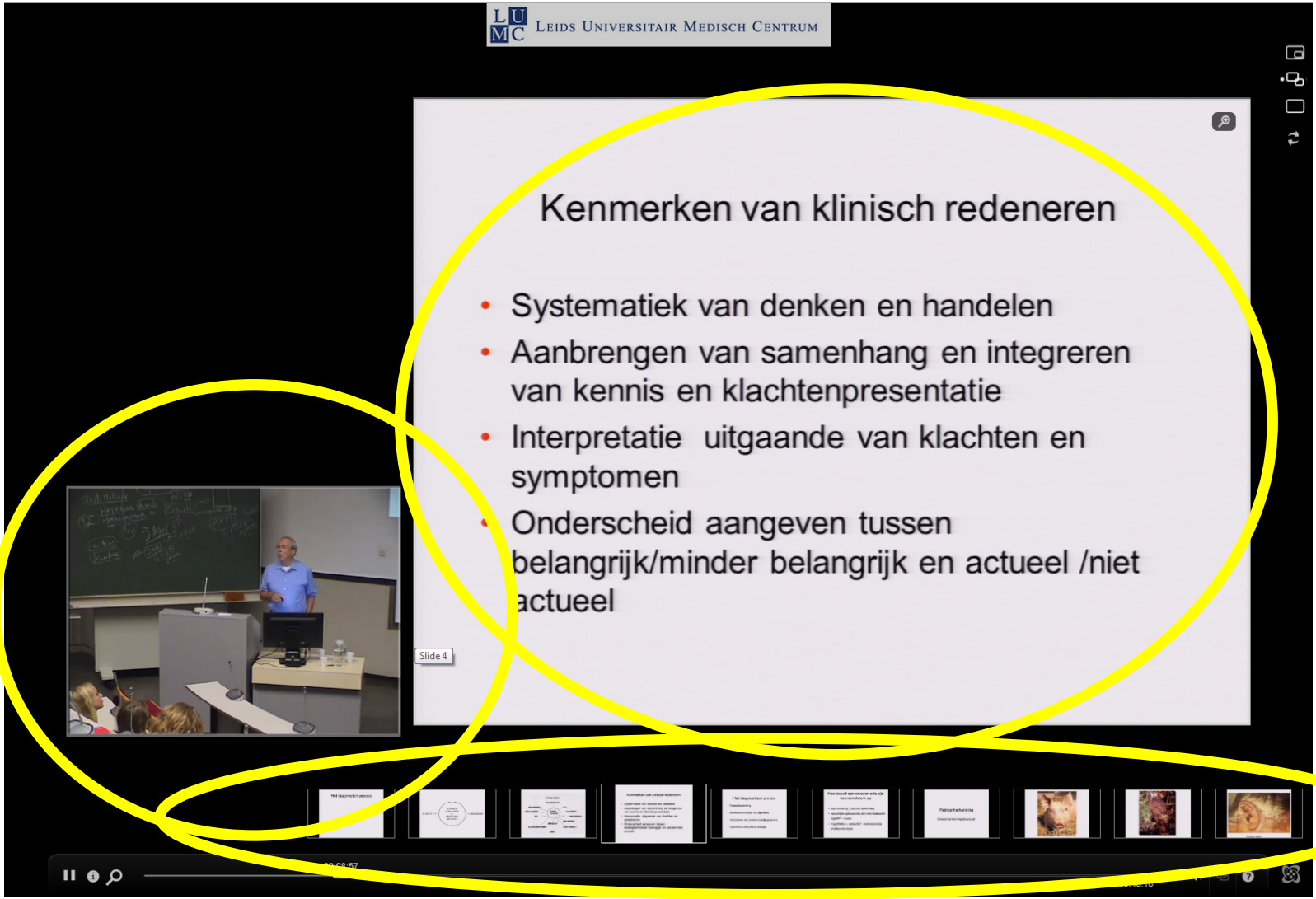


Some examples

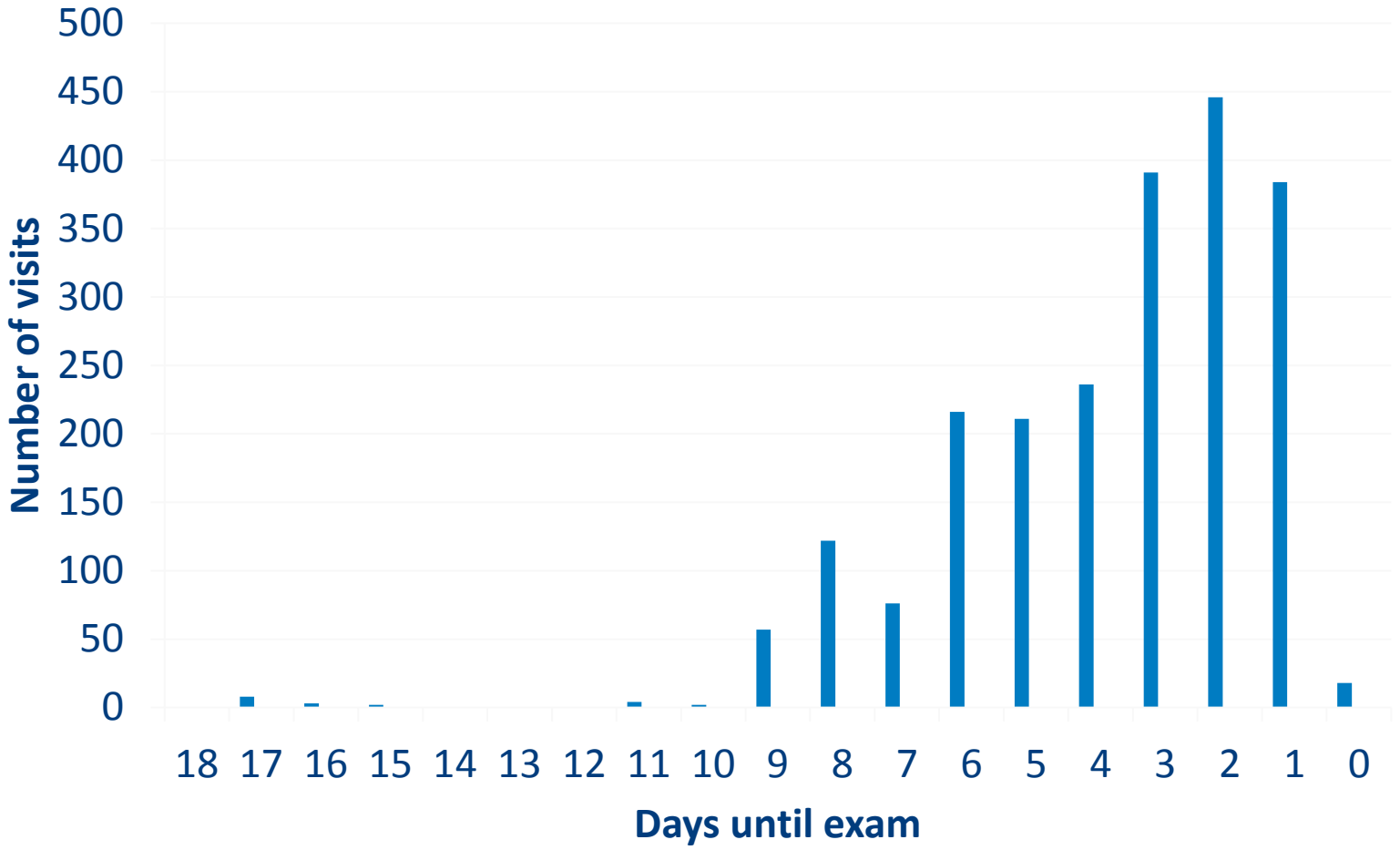
Recorded lectures & Flipping the Classroom

- Useful for looking back in case of absence
- Useful for exam preparations
- Useful for preparation another class (flipped classroom)

Recorded lectures & Flipping the Classroom

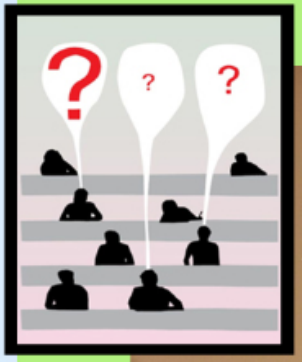


Recorded lectures & Flipping the Classroom



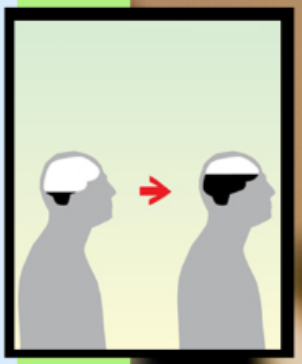
Audience Response Systems

Five Scenario Model



Scenario Knowledge
Pre-test
Adapt level of lecture

Scenario Lecture-on-Demand
Student driven lecture



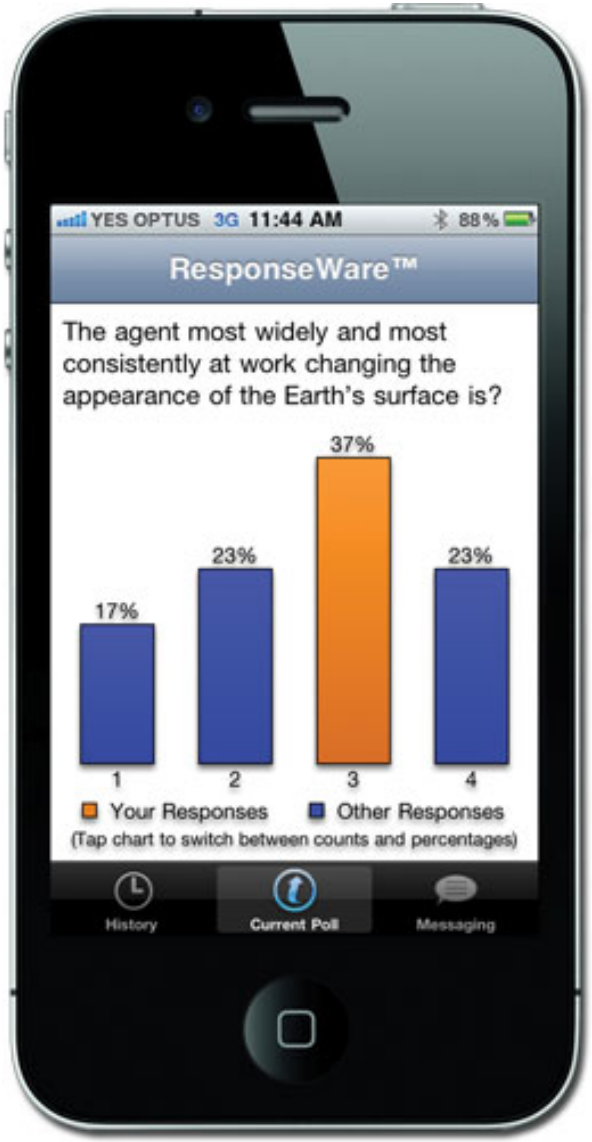
Scenario Knowledge Transfer
Pre-test and post-test

Scenario Skills
Simulation of reality
Class makes choices

Scenario Opinion
Anonymous
Safe environment

Photography: Ivar Pel

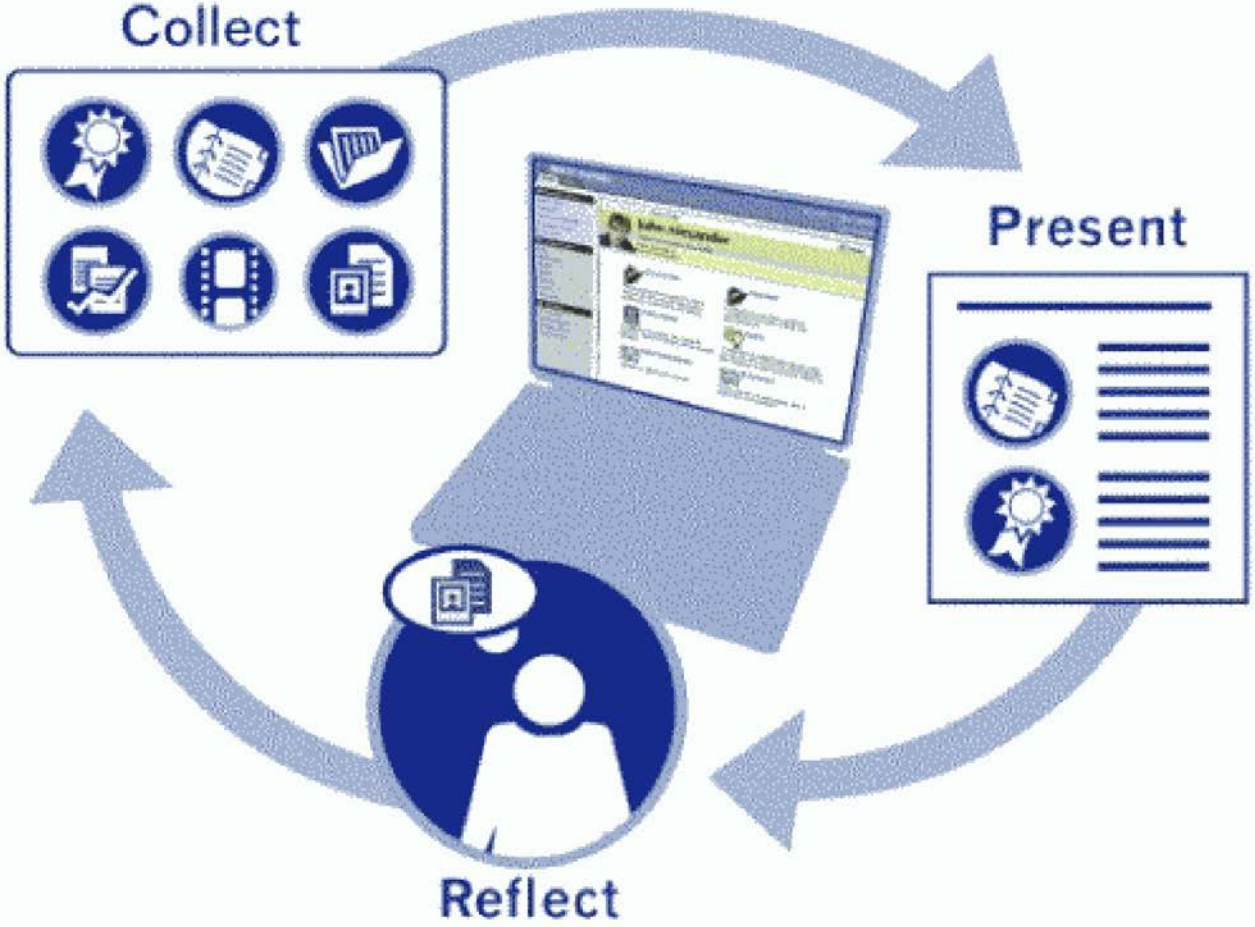
Audience Response Systems

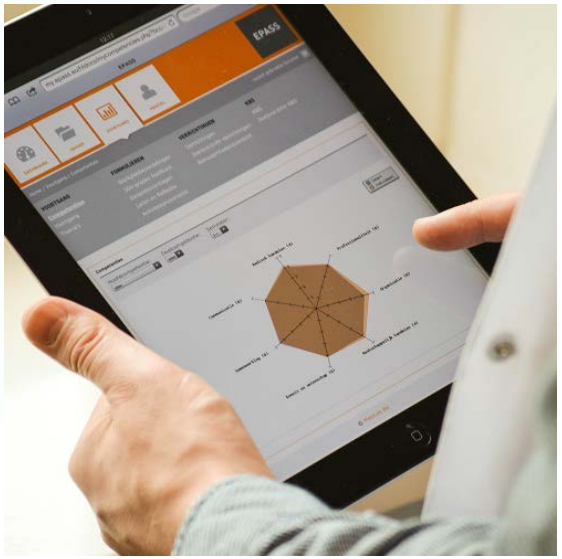


Podcast

Use audio recordings to explain anatomy and pathology

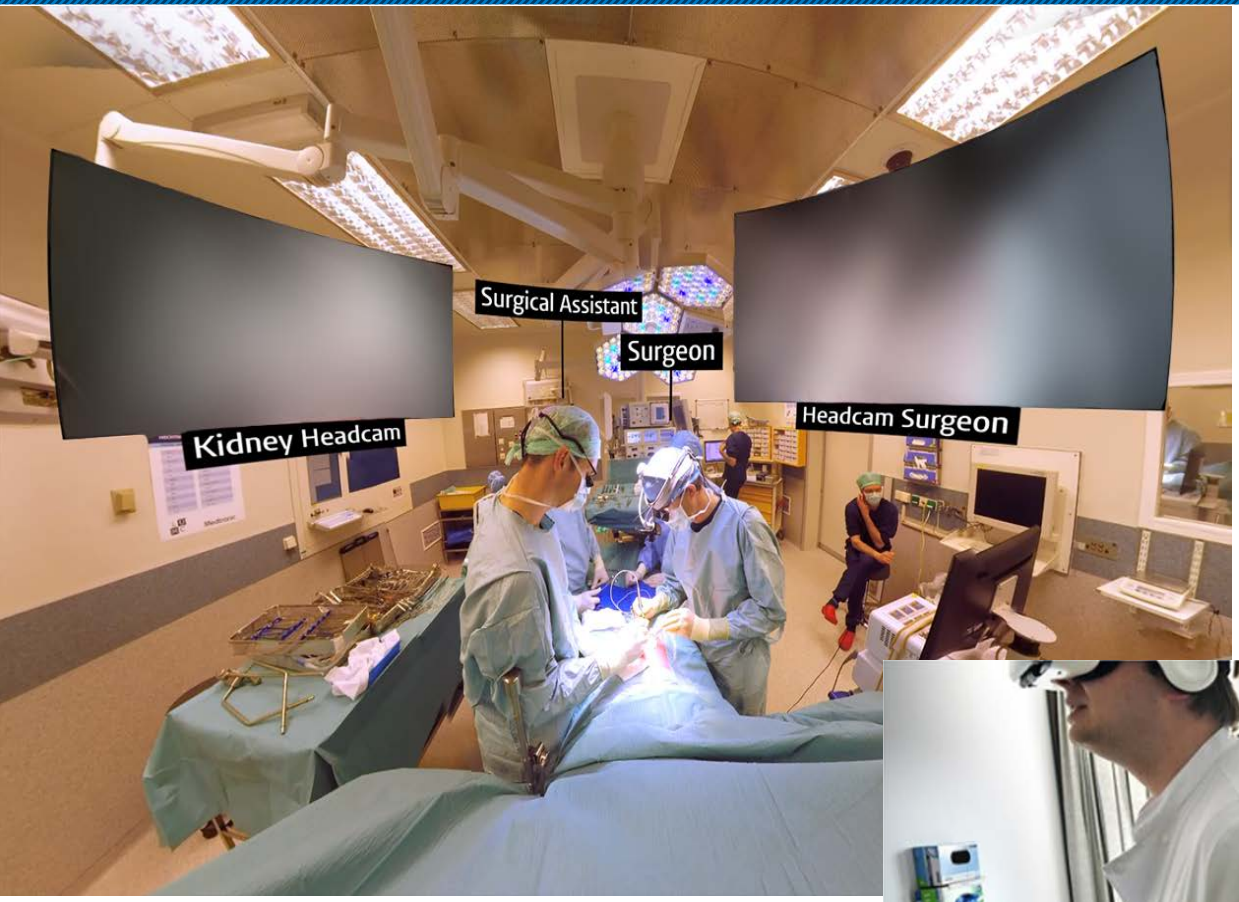
ePortfolios





Virtual and Augmented Reality

Virtual and Augmented Reality



Leidse geneeskundestudenten gebruiken vr-brillen om zich voor te bereiden op de praktijk. | beeld Marcel van den Bergh

Summary

Technology can help the teacher and the student

- To make teaching and learning time and place independent
- To make teaching and learning more active
- To make students collaborate

Questions?

Peter GM de Jong
Leiden University Medical Center
Leiden, The Netherlands

p.g.m.de_jong@lumc.nl