

Project QUAIME

Computer based or traditional CME ?

A comparison of knowledge gain and learning efficiency

Peter A. Henning

Institute for Computers in Education I.C.E
Hochschule Karlsruhe

eLearning in Continuous Education

eLearning = de-facto standard for continuous education in the corporate regime

- **SAP University 2003:**
 - eLearning saves 25 –35 % of time resources
 - eLearning saves 30 – 45 % of financial resources
- **Robert Bosch GmbH 2002:** Introduction of a new management software tool . Employee training by WBT (Web Based Training) or traditional seminar.
 - Subjective evaluation of training results:
 - Traditional learners felt themselves to be better prepared for using the new system than eLearner
 - Objective evaluation of training results through automated monitoring of a test system.
 - Average fault quote 61% for participants of traditional courses
 - Average fault quote 24% for eLearners

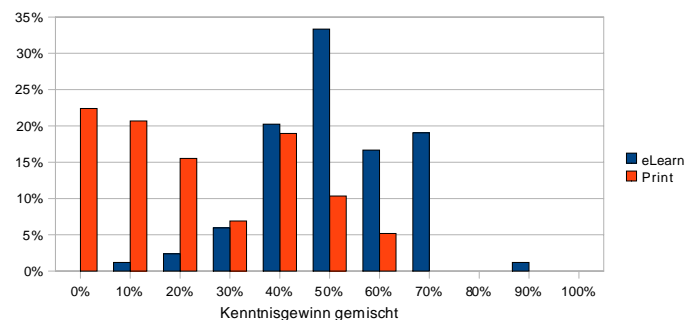
Can one use eLearning in continuous *medical* education
with similar gains in efficiency and/or quality ???

Project QUAIME - Description

- Target groups: **general physicians** and **neurologists**
- eLearning platform and didactical course quality assessed separately to be state of the art
- **Quality:** Divide each group at random into eLearners and printLearners
 - Test the entry knowledge in each group with questions very similar to the final CME questions, but orthogonal to them
 - Provide each group with at least two learning modules
 - As online eLearning module for eLearners
 - As printed material for printLearners
 - Test the final knowledge by asking CME questions
 - Results – individual results, but anonymously so:
 - Individual knowledge gain as fraction of the maximal result
 - Fraction of participants that have not passed the CME test
- **Efficiency:** Ask participants for individual assessment of time savings and motivation.
- Project partner: **QUAIME AG**, September 1, 2007 – June 30, 2008. See poster.

Quality in CME

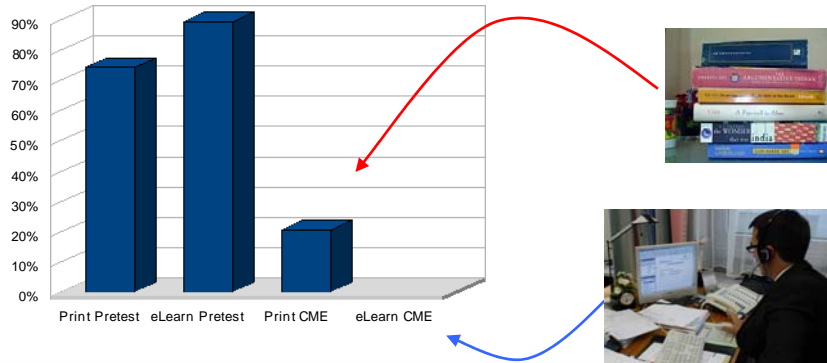
Ensure significance for each target group and module separately
Mixing of results to obtain overall estimates



25 % average individual knowledge gain for printLearners
50% average individual knowledge gain for eLearners

Failure quote

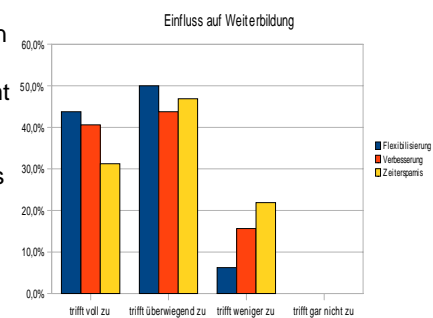
- High fraction of entry test failures: 70% - 85% of participants
- **Learning** reduces test failures
 - From 70 to 20% in case of printed material
 - From 85 to 0% in case of electronic Learning module



Efficiency in eCME

Questions asked:

- eLearning gives me more flexibility in CME => 93.8% positive
- eLearning leads to an improvement of CME => 84.4% positive
- eLearning – the internet based educational format of QUAIME – has saved me time => 78.1%
- eLearning was fun => 100% positive
- eLearning has made learning easier => 78.1% positive



- Computer usage to gather new information => 68.7% often or very often



Summary

- eLearning results in higher individual knowledge gain than the study of printed material
- eLearning reduces the failure quote for CME tests to **ZERO** as compared to 20% when using printed material
 - higher average quality – objective measurement
- eLearning results in higher flexibility of the educational process – even if technological obstacles have to be taken into account
- eLearning results in time savings for the educational process
 - higher efficiency – subjective assessment

Yes, eLearning in continuous *medical* education produces similar gains in efficiency and/or quality as in other areas of adult learning.