How are enhancements to learning with educational technology considered?
And how can this be used to improve the quality of teaching with educational IT?

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Learning & Teaching with Technology in Higher Education

- **Aims of the project**

- To provide a review of evidence-based practice in learning and teaching with technology in higher education

- To examine what evidence exists to illustrate that technology is enhancing learning and teaching practices in HE

- To examine what evidence teachers use and what evidence they generate

Varying conceptions

- **Operational improvement**
  - ➤ providing greater flexibility for students
  - ➤ making resources more accessible

- **Quantitative change in learning**
  - ➤ increased engagement or time-on-task;
  - ➤ improved test scores or assessment grades

- **Qualitative change in learning**
  - ➤ promoting reflection on learning and practice
  - ➤ deeper engagement
  - ➤ richer understanding

Varying approaches

Replicating existing teaching practices

   a. An element of conventional teaching replicated and delivered to students via some form of technology

   b. A comparison of different technologies for delivering the same teaching

Supplementing existing teaching

   a. Making available versions of existing teaching that students can access and use whenever they want

   b. Developing additional learning resources or tools

Transforming the learning experience

   a. Re-design of learning activities to promote active learning

   b. Effective use of TEL activities for richer learning

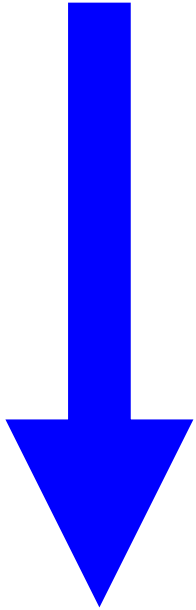# The 4-stage model of evaluation

Effectiveness evaluated at four progressively challenging levels (Kirkpatrick, 1976)

- **Reaction**
  - to what degree participants react favourably
- **Learning**
  - to what degree participants acquire the intended knowledge, skills, attitudes, confidence and commitment

The 4-stage model of evaluation

Effectiveness evaluated at four progressively challenging levels (Kirkpatrick, 1976)

- **Reaction**
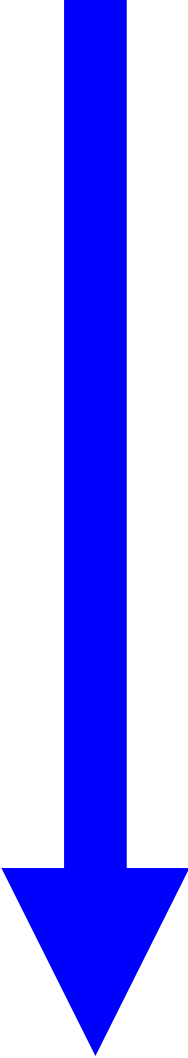 – to what degree participants react favourably
- **Learning**
  – to what degree participants acquire the intended knowledge, skills, attitudes, confidence and commitment
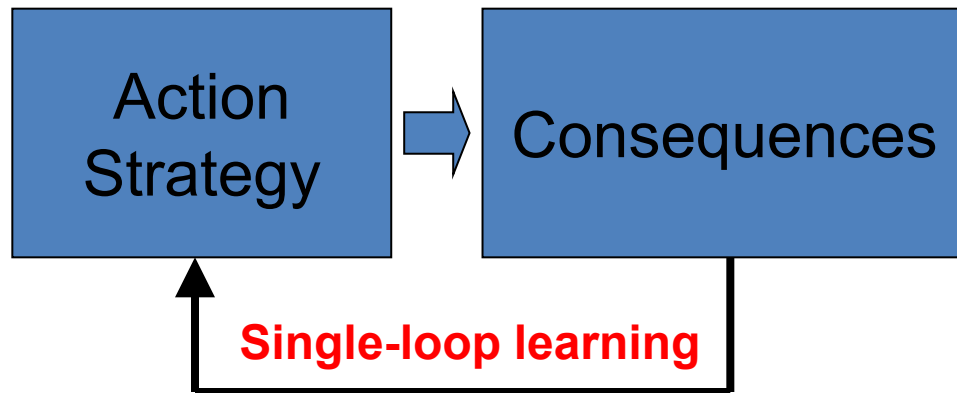- **Behaviour**
  – to what degree participants apply what they learned to their situation
- **Results**
  – to what degree targeted outcomes are achieved as a result
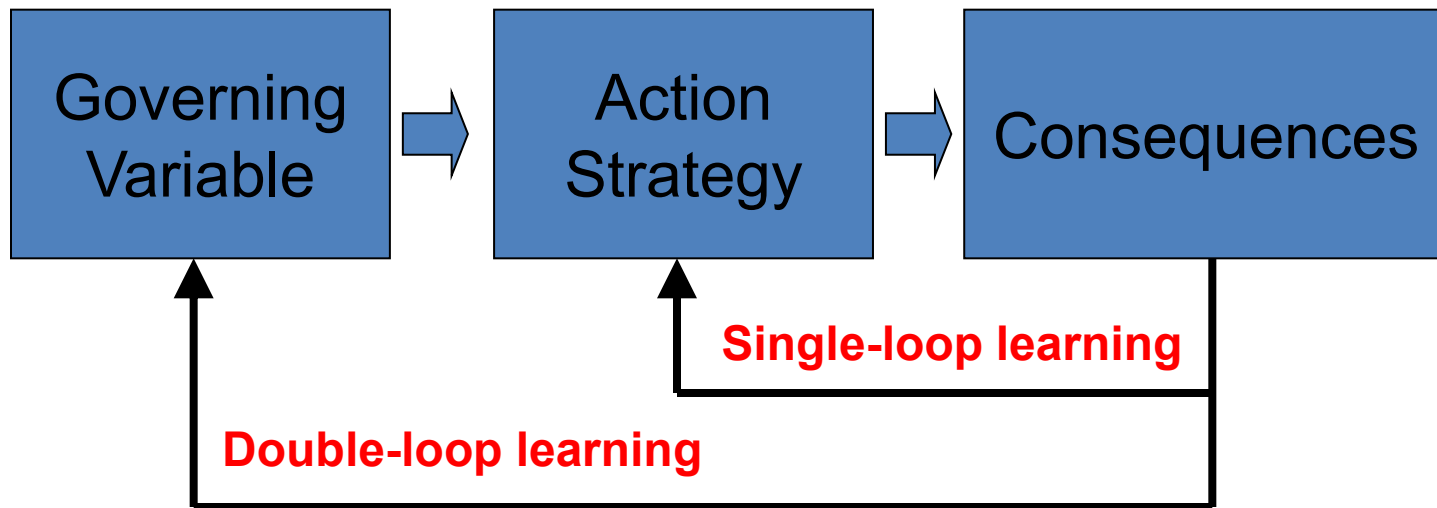
Modelling the solution or the problem?

| Action Strategy | → | Consequences |

Single-loop learning

Single-loop organisational learning – develops a strategy based on a set of circumstances
i.e. *modelling the solution*.

Modelling the solution or the problem?

| Governing Variable | → | Action Strategy | → | Consequences |

**Single-loop learning**

Double-loop learning

Double-loop organisational learning – examining the underlying goals, strategies, assumptions to detect modifications in an organisation's underlying policies and practices
 i.e. *modelling the problem*.

Technology or Pedagogy?

- When the student learning experience had been **'transformed'** the main driver has been the **redesign of the learning and teaching**

- Teachers' differing conceptions of teaching and learning with technology are an important influence (Price & Kirkwood, 2013; 2014)
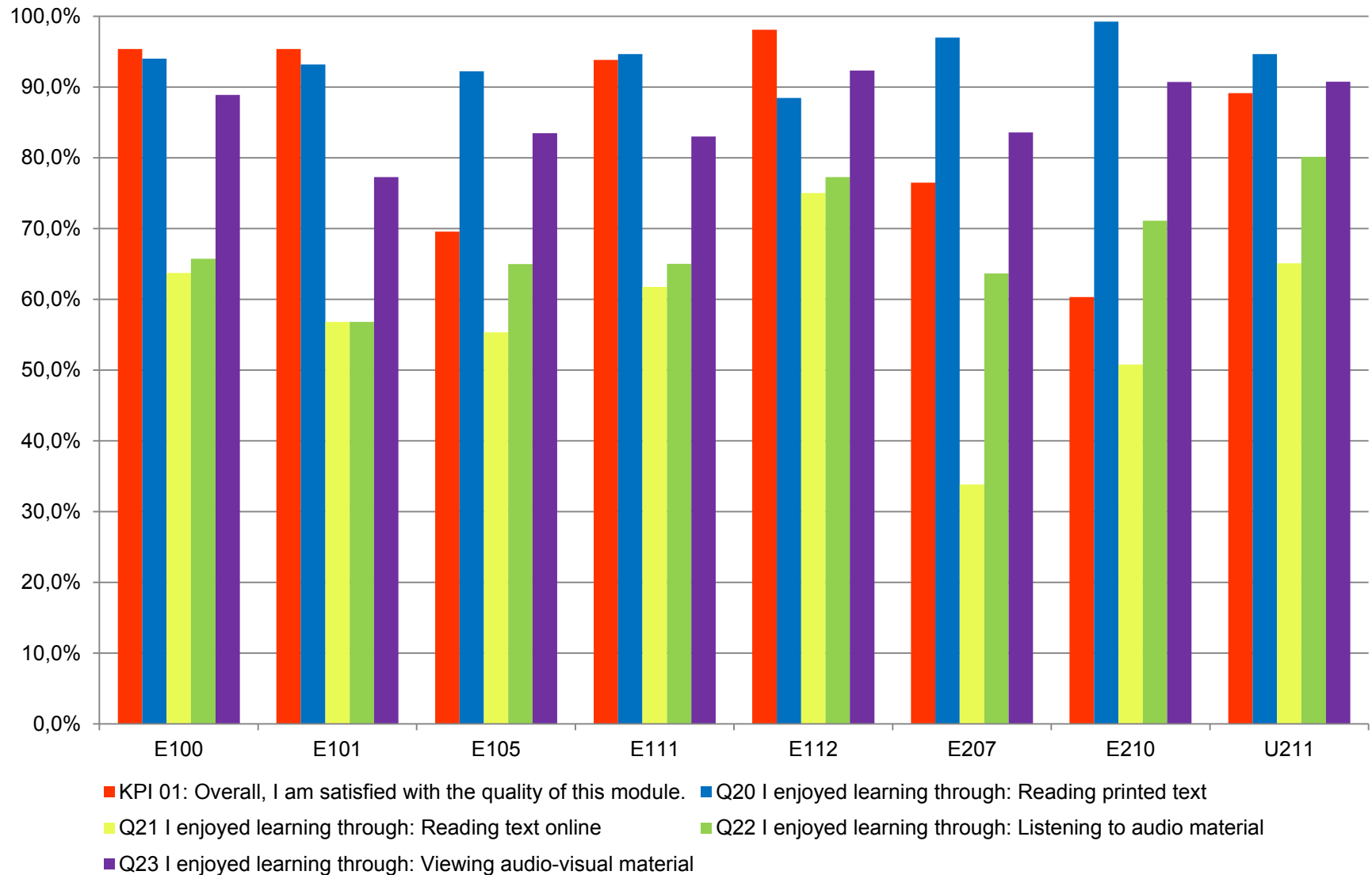
Technology is not a silver bullet
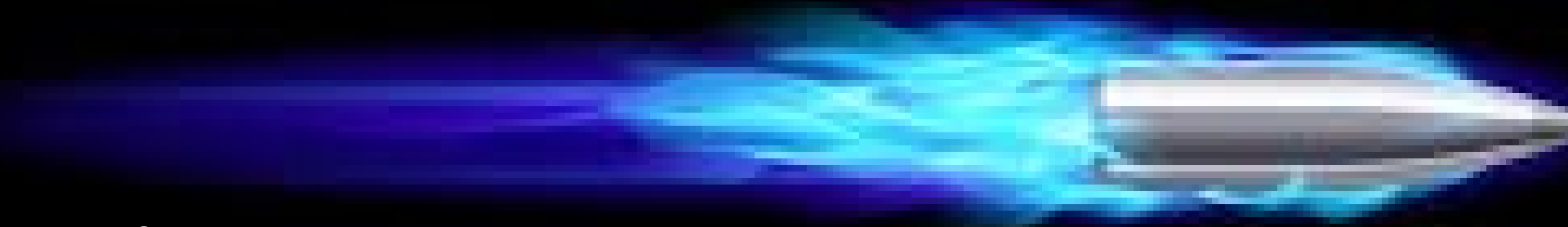
Its not a panacea

It won't make teaching and learning better in and of itself

Student Satisfaction and Perceptions of Technology

Legend:
- KPI 01: Overall, I am satisfied with the quality of this module.
- Q20 I enjoyed learning through: Reading printed text
- Q21 I enjoyed learning through: Reading text online
- Q22 I enjoyed learning through: Listening to audio material
- Q23 I enjoyed learning through: Viewing audio-visual material

Student Satisfaction and Perceptions of Assessment

Legend:
- KPI 01: Overall, I am satisfied with the quality of this module.
- Q33 Clear understanding of what was required to complete the assessed work
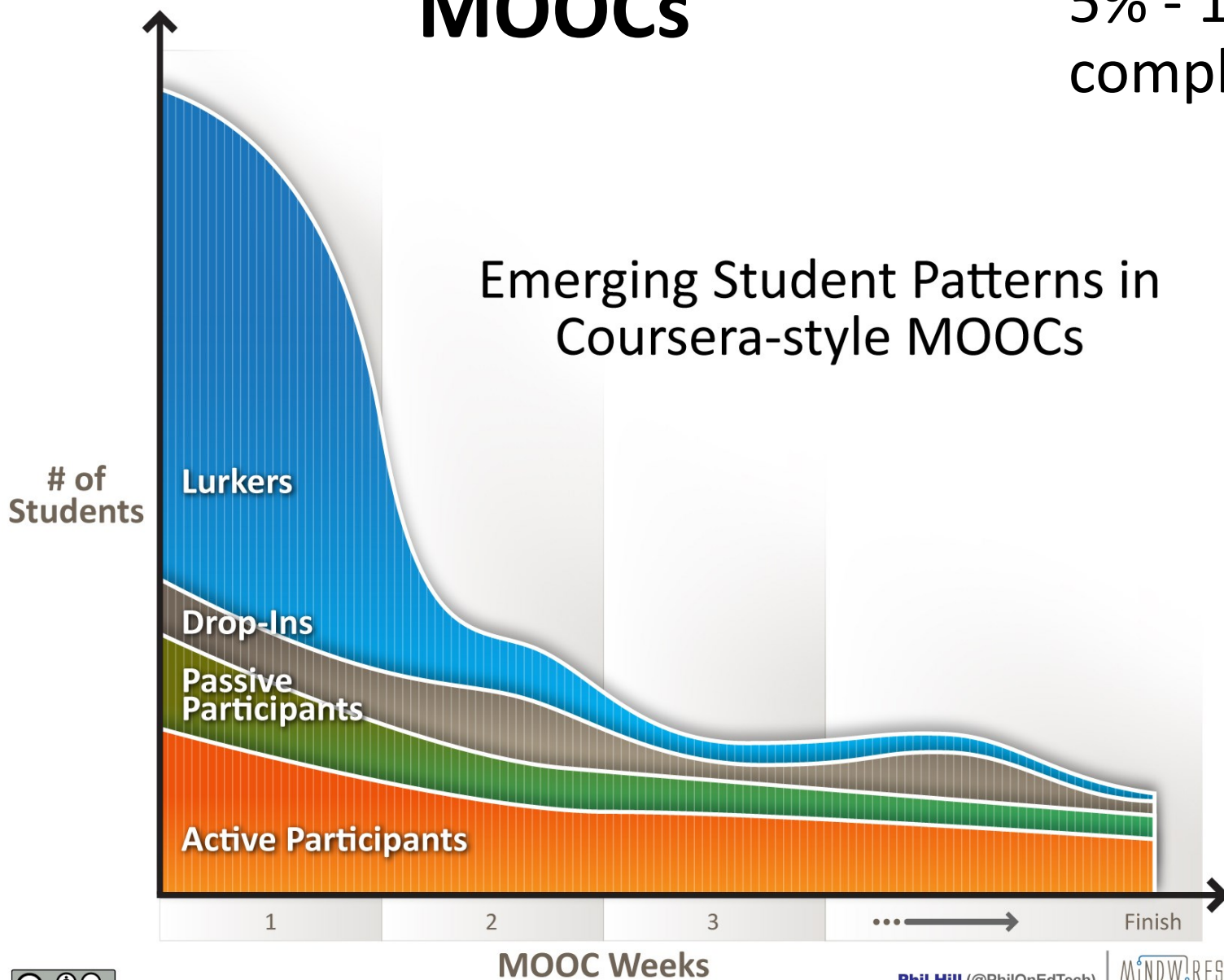- Q34 the assessment activities supported my learning
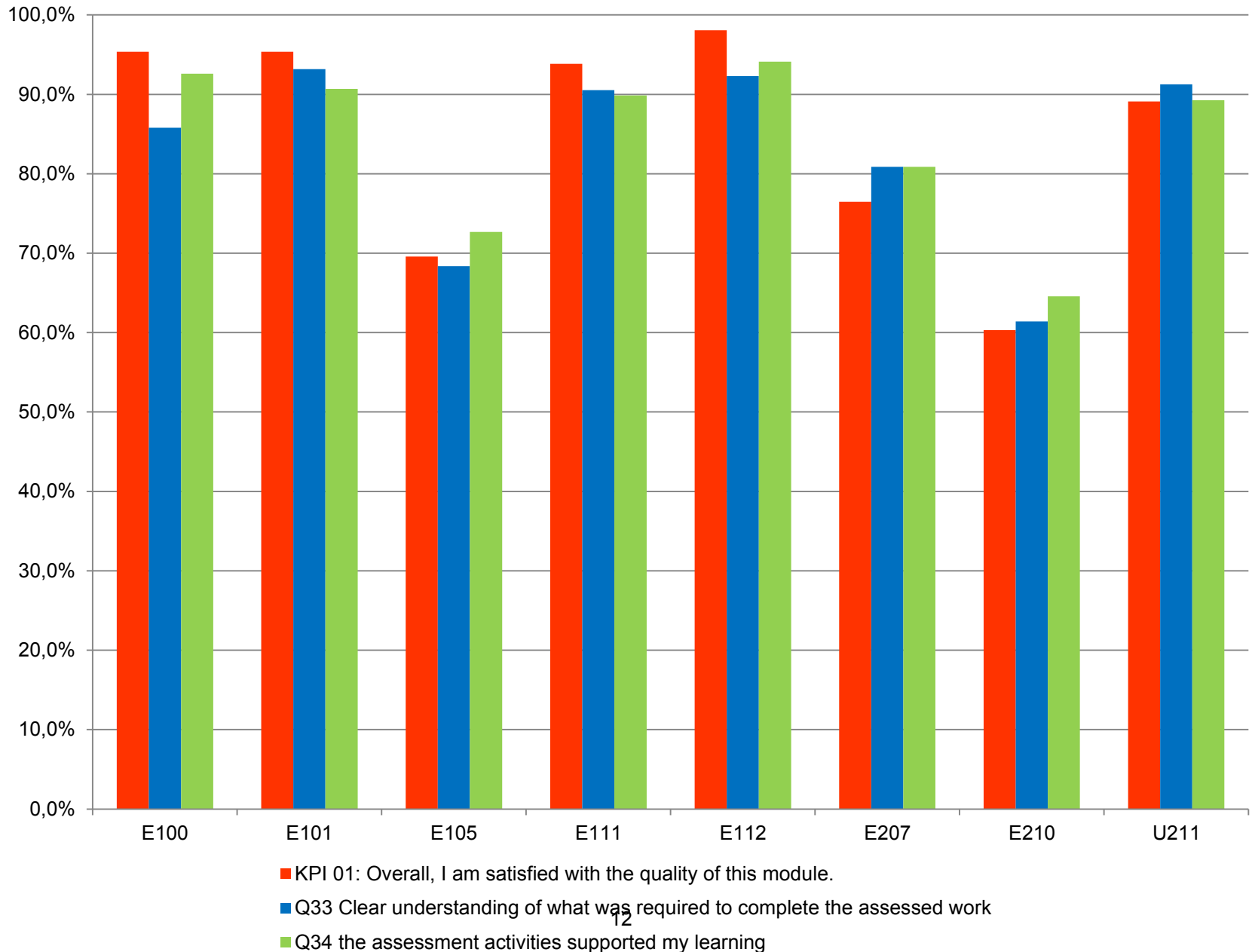
The Significance of Assessment

- Assessment very often defines the ***de facto*** curriculum for students i.e. those aspects which learners attend to

- If ICT use is not integrated with the assessment, is it often unused and undervalued

- The **assessment** and how it is designed is one of the most powerful teaching tools for directing student learning

MOOCs

5% - 10% completion

Emerging Student Patterns in Coursera-style MOOCs

# of Students

Lurkers

Drop-Ins

Passive Participants

Active Participants

| 1 | 2 | 3 | •••⟶ | Finish |

MOOC Weeks

Phil Hill (@PhilOnEdTech) MINDWIRES delta initiative

http://www.e-learn.nl/media/blogs/e-learn/delftx/studentPatternsInMoocs2.jpg?mtime=1362837514

The pedagogy-technology cascade

Conceptions of teaching

Approaches to teaching

Approaches to teaching with ICT

Assessment practices

Student approaches to learning

Learning outcomes

"Good teaching may overcome a poor choice in the use of technology, but technology will never save poor teaching: usually it makes it worse." (Bates, 1995)

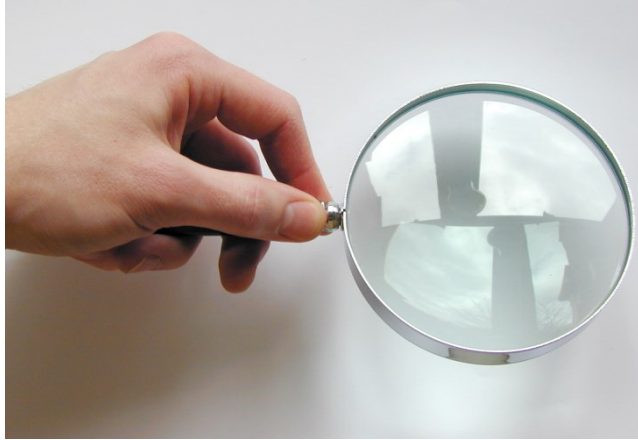# The corner stones of educational ICT

Organisational change

Quality enhancement

Continuing academic development

Curriculum development

Student development

Different agendas?

- **Efficiency** – existing processes carried out in a more cost-effective, time-effective, sustainable or scalable manner. [management and administration of courses]

- **Enhancement** – improving existing processes. [supporting/replicating existing teaching and learning practices]

- **Transformation** – radical, positive change in new or existing processes. [teaching done differently to achieve better learning outcomes]

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