Quality evaluation of education and learning

Juhani Anttila, Academician
International Academy for Quality (IAQ),
Aalto University, Department of industrial
engineering and management,
Helsinki, Finland
juhani.anttila@telecon.fi ,
www.QualityIntegration.biz

Kari Jussila, Senior Researcher
Aalto University, Department of
industrial engineering and management,
Espoo, Finland
kari.jussila@aalto.fi

October 27, 2015

1

The global commitment

UNESCO's Incheon Declaration (2015): The global vision for education towards 2030

"Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".

Commitment to quality education and to improving learning outcomes:

- Strengthening inputs, processes and evaluation of outcomes and mechanisms to measure progress
- Ensuring that teachers and educators are empowered, adequately recruited, well-trained, professionally qualified, motivated and supported within well-resourced, efficient and effectively governed systems

2

General approaches for <u>evaluating</u> and comparing educational activities and their results

- UNESCO EFA (Education for all). GEQAF (General education quality/diagnostic framework): The education system and learning environment; targets, structure and functioning of the education. LLECE (Latin American laboratory for assessment of the quality of education). SACMEQ (The Southern and Eastern Africa consortium for monitoring educational quality)
- OECD PISA (The programme for international student assessment): Assessment of the 15-year-old students' scholastic performance on mathematics, science and reading
- TIMSS (Trends in international mathematics and science study): Assessment of the fourth and eighth grade students' knowledge in mathematics and science, and PIRLS (Progress in international reading literacy study): Assessment of the 4th grade students' reading literacy
- EIU (The Economist intelligence unit) Learning Curve: Analysis of the educational systems in a broad sense
- The American Baldrige excellence framework (Education) and the European EFQM excellence model
- The Bologna process: Approach to ensure comparability in the standards and quality of higher education qualifications and university quality assurance
- EQAVET (the European quality assurance in vocational education and training)
- ISO standardization: ISO/PC 288 on the educational organizations management systems (ISO 21001 draft) (will supercede ISO 29990:2010, ISO/IEC CD 36001, ISO/WD 18420)
- National standardization, e.g. NP 4512:2012: A Portuguese management system standard fostering quality, innovation and technology in vocational education and training
- PHExcel: Quality tools for higher education review and improvement
- Various international and national assessments, classifications, and quality awards, related to universities, polytechnics, colleges, vocational schools, and educational programs

3

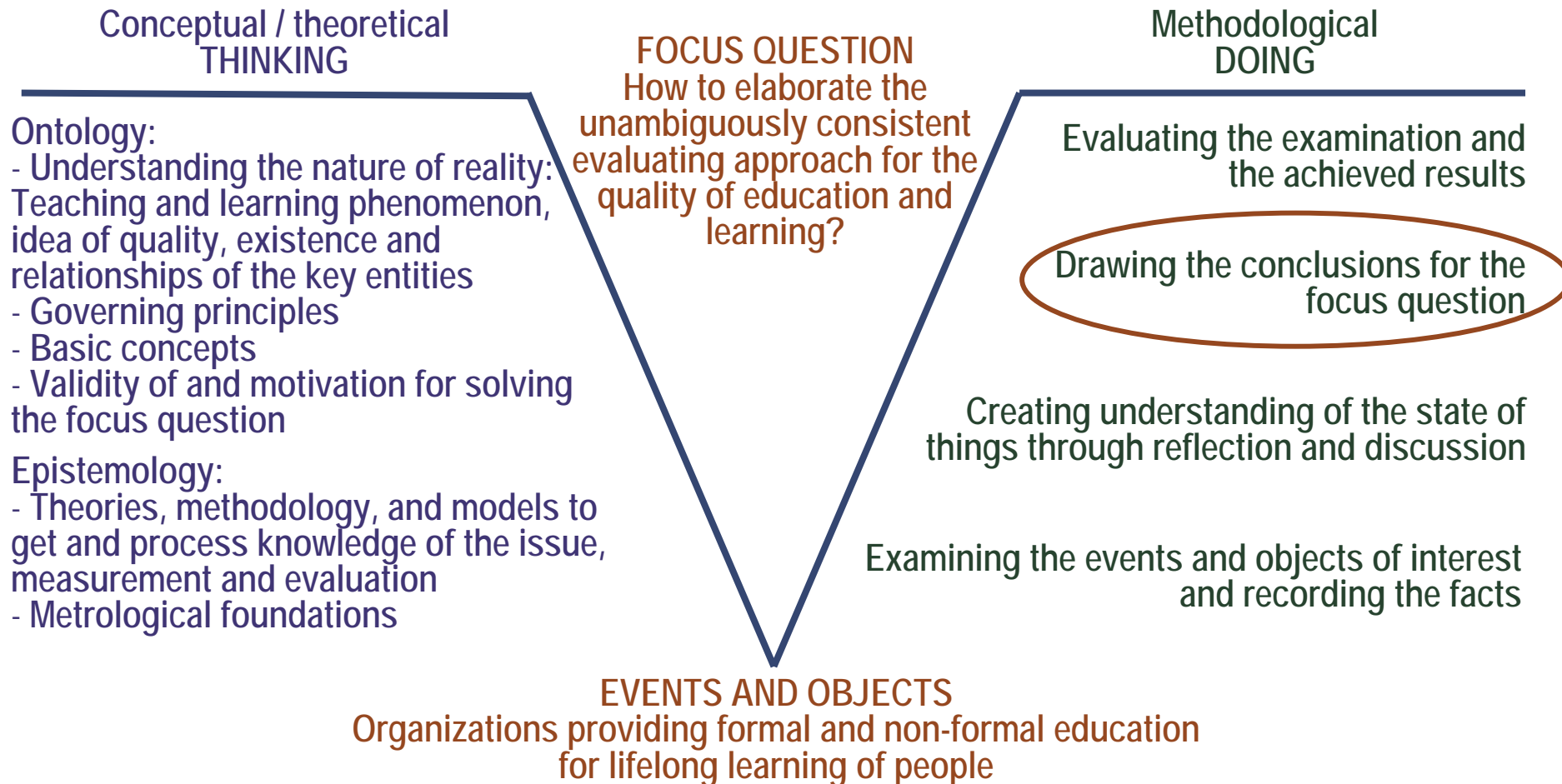# Approaches to the quality of education and learning and their evaluation are inconsistent and confusing

Education, quality and evaluation are looked in the approaches through a variety of lenses that causes confusions and raises questions:

- What is the purpose of the evaluations?
- What is the scope of the evaluations with regard to educational and quality aspects? The approaches range from very narrow and detailed to comprehensive, and some even are superficial.
- How is the quality concept understood?
- Who does perform the evaluation and whose interest is considered?
- How and for what are the evaluation results used?
- What are the effectiveness and efficiency of the evaluations?
- What are the consequences of wrong, insufficient or incorrectly directed evaluations?

The existing situation is a consequence of (1) the difficulties of considering profoundly the educating/learning phenomena, (2) the lack of awareness of the professional quality concepts and principles in education, and (3) the lack of metrological foundation of the evaluations.

The situation can be solved only through deriving the approaches from the profound knowledge of the ontological and epistemological basis of education and learning, quality and metrology

4

From theory to practice for the quality evaluation of education and learning ("Vee heuristics")

Conceptual / theoretical THINKING

FOCUS QUESTION
How to elaborate the unambiguously consistent evaluating approach for the quality of education and learning?

Methodological DOING

Ontology:
- Understanding the nature of reality: Teaching and learning phenomenon, idea of quality, existence and relationships of the key entities
- Governing principles
- Basic concepts
- Validity of and motivation for solving the focus question

Epistemology:
- Theories, methodology, and models to get and process knowledge of the issue, measurement and evaluation
- Metrological foundations

Evaluating the examination and the achieved results

Drawing the conclusions for the focus question

Creating understanding of the state of things through reflection and discussion

Examining the events and objects of interest and recording the facts

EVENTS AND OBJECTS
Organizations providing formal and non-formal education for lifelong learning of people

5

Sound metrological basis to the effective teaching / learning performance management

**Quantitative indication of teaching / learning performance:**
- Phenomena to be considered from the interest of teaching / learning and their characters
- Measures / indicators, characteristics, quantities
- Metrics, units of measure
- Numerical values and value range of the quantity

Practicalities of performance management:
- Targets / required values, observed values
- Meters, gauges, means to measure / observe the quantity
- Measurement, assessment technique
- Uncertainty
- Conclusions, decisions and actions based on measurements
- Approach and practices for performance improvement

6

From fact-based evaluation to knowledge-based action

The performance reality of the educational organization and processes
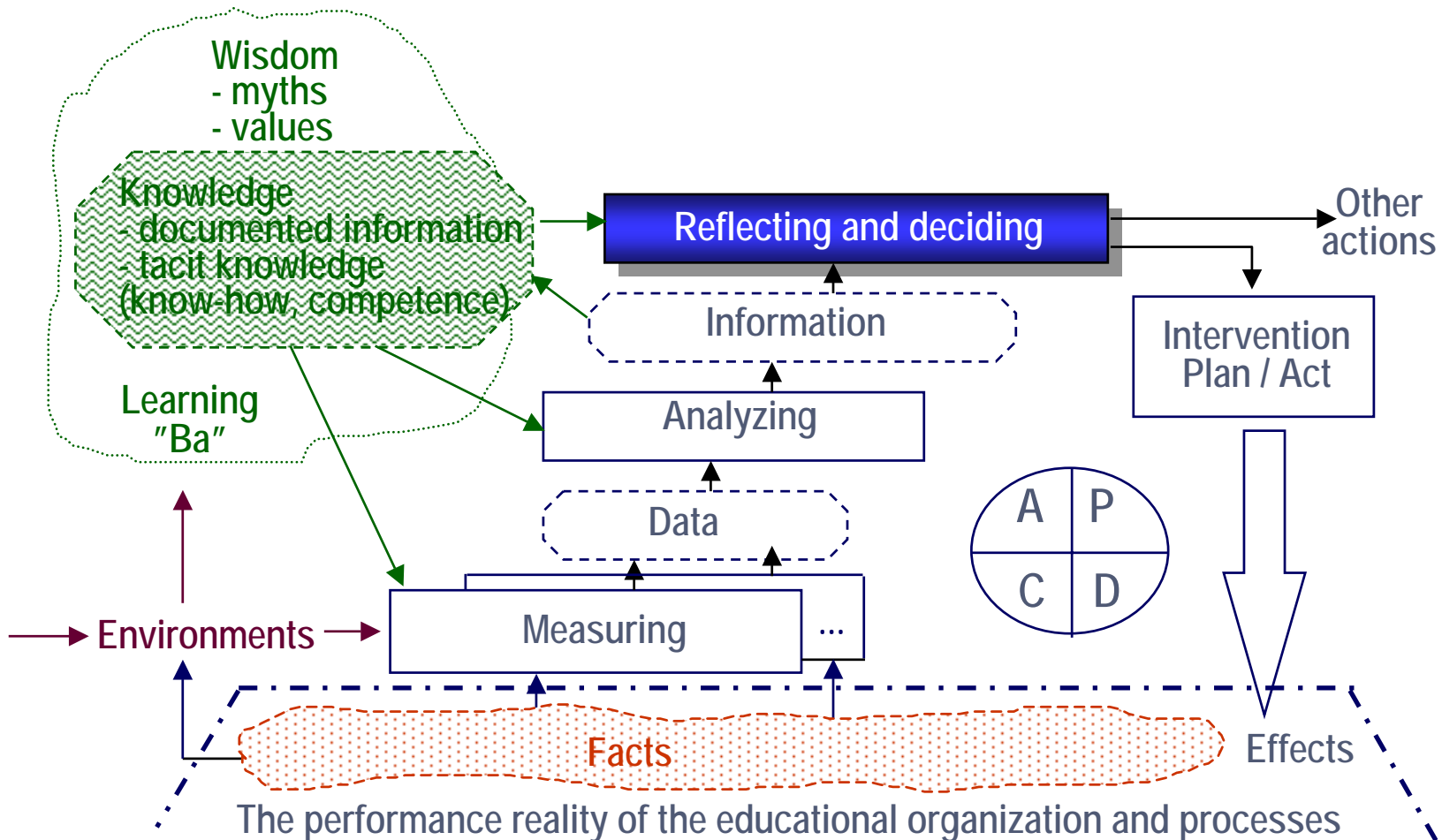
Performance measurements for education management – Need of information for management

Purpose of the performance measurements:

- Research activities for getting new knowledge

- Acquisition of information for planning processes and activities, and organizational structures

- Controlling operations and processes
  - Performance monitoring
  - Determination measurements
  - Verification measurements, hypothesis testing (AQL / LQ)
  - Validation testing

- Measurements for problem solving and performance improvement: Kaizen, breakthrough and learning

- Measurements for quality assurance

8

Evaluation of educational <u>organizations and processes</u> are different from the evaluation of <u>learning outputs</u>

Evaluating the quality of an education providing organization as a whole:

- <u>Internally focus</u> on the effectiveness and efficiency of the organization's quality management, i.e. management of the organization and its processes with regard to quality of education and learning
- <u>Externally focus</u> on the educational output and the satisfaction of the learners and the other interested parties

Evaluating the quality of learning achievements as output of the teaching/learning processes:

- Focus on the development in learner's own potential and creativity through the changes that have happened in the learner including cognitive, behavioral and neuroscietific perspectives.
- Learning achievements may represent results on different levels of deepness and be considered as a single loop or double loop learning.
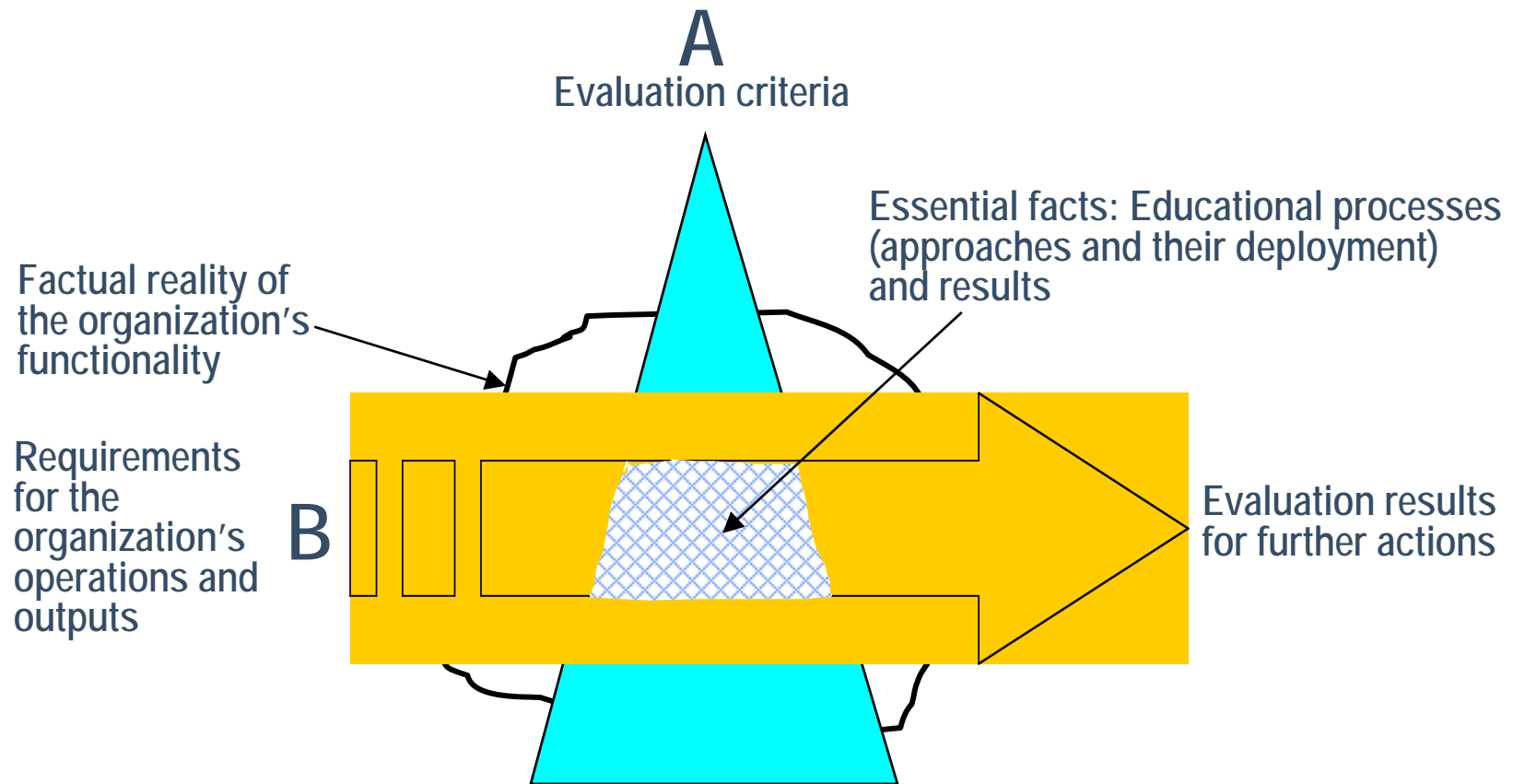
9

Two perspectives of evaluating an organization's performance: Strategic and operational

Strategic evaluations are fundamentally divergent from operational evaluations but the both are needed and they must be consistent with each other:

– Strategic evaluations relate to the management decisions for enhancing organization's core performance and to the associated change programs, and are measured against the organization-wide development targets.
- Self-assessments are the key strategic evaluation activities by utilizing:
    – Excellence models: Focus on organizational learning, process refining and integration
    – Maturity models: Focus on fulfilling prescribed performance criteria

– Operational evaluations relate to the daily control, diagnostics and performance improvement of the organization's everyday operations, and for quality assurance, which are carried out in the organization's processes and measured against organization's operational performance indicators.
- Operational evaluation methodologies include:
    – Performance monitoring
    – Internal auditing

Such practices are not widely and consistently considered or established in the field of education.

10

Perspectives to the performance and evaluation of an educational organization

A
Evaluation criteria

Essential facts: Educational processes (approaches and their deployment) and results

Factual reality of the organization's functionality

Requirements for the organization's operations and outputs

B

Evaluation results for further actions

11

Warnings of human performance testing and evaluations and rewarding people on the basis of the results

- Strong criticism has been presented against standardized evaluations of people, including learners, teachers and leaders or workers of the educational organizations:

  - People don't have to be ranked in terms of standards. The assessment is artificial, and ranking is harmful and destructive in developing learner's own potential and creativity. This creates an "economic man" and "human capital," what you can sell on the market*.
  - Standardization of education and the outcomes-based education represent neoliberalism in education. An example is the well-known GERM (Global Education Reform Movement)**.
  - Evaluating and rewarding people by quantitative measurements or merit rating nourish short-term performance, annihilates long-term planning, builds fear, demolishes collaboration, nourishes rivalry and politics. It leaves people bitter, crushed, bruised, battered, desolate, despondent, dejected, feeling inferior, some even depressed, unable to comprehend why they are inferior***.

- Standardized evaluations are neither according to the quality principles that require the consideration of the real, genuine and individual needs and expectations.

- Superficial evaluations may not bring up negative risks and impacts of bad education and learning. An acute issue is the neurodegenerative impacts of the modern information technologies on the mind****.

Conclusions: Striving for consistency in evaluating quality of education and learning

As the conclusion we can summarize the following recommendations for the consistent evaluations of the quality of education and learning:

- Consider quality in education and learning evaluations in the professional way especially recognizing the real genuine needs and expectations

- Evaluate educational organizations' capabilities and abilities (processes) and learners' learning results (process outputs); understand organizations as manageable systems and learners as rational, non-rational (mental) and irrational (spiritual) personalities

- Clarify the purpose of evaluation

- Understand the general metrological principles of measurements and evaluations.

- Ensure the suitable evaluation methodology

- Make clear what to do with the evaluation results for improving quality of individuals, organizations and the society

13