Global Challenges and Quality Assurance of Engineering Education

Assessment and Continuous Quality Improvement

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The views, **opinions** and concepts expressed in the article are the **sole responsibility** of the **author**
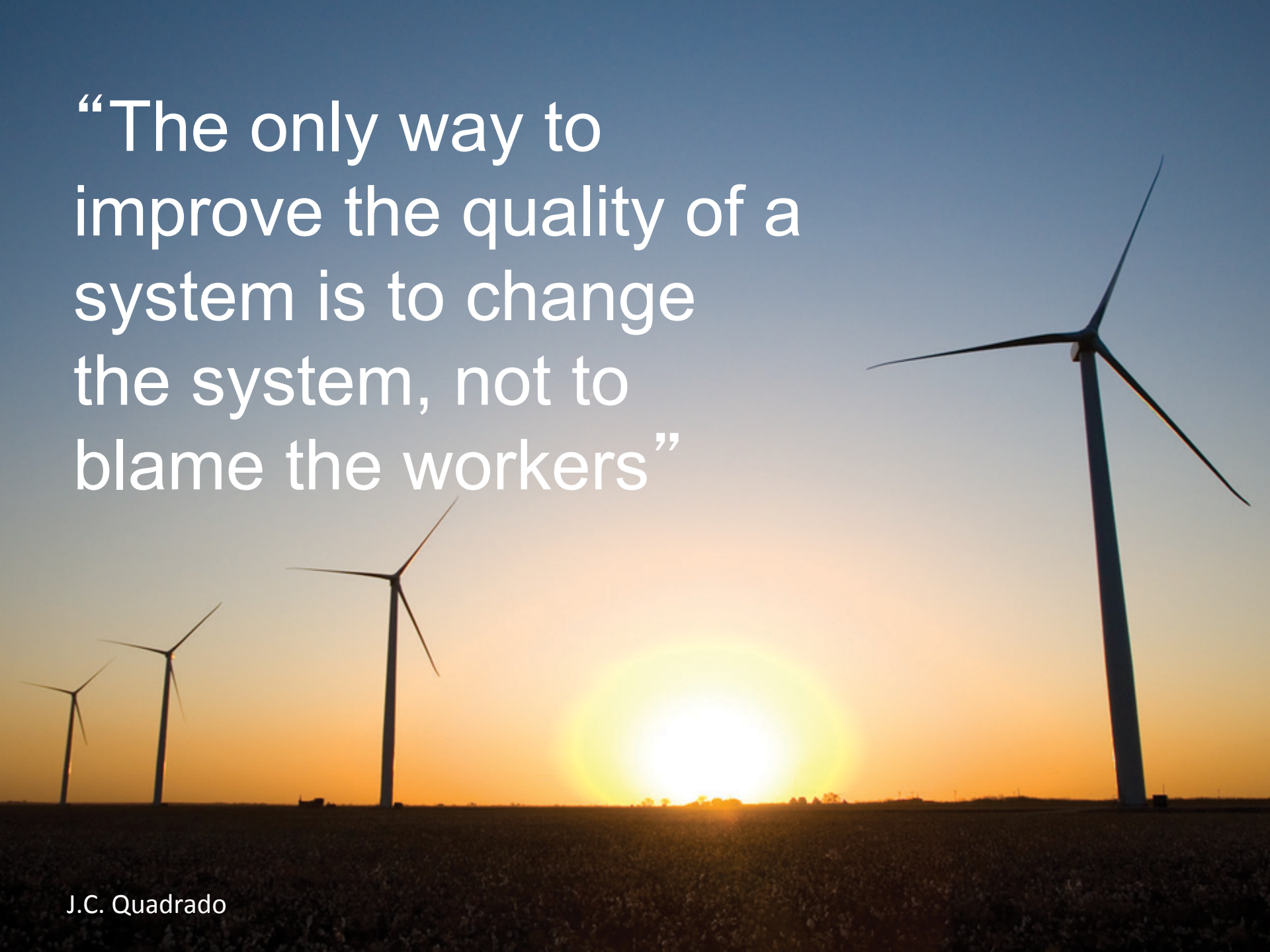
Higher education issues

- Globalization and economic challenges and future workforce needs

- More diverse, older student body

- More remedial needs

- Pipeline issues in S&T fields

- Greater emphasis on external funding

- Less state and federal funding

- Facilities: new and repair needs

- Accreditation

- Access, equity

- Accountability (quality of graduates, use of resources)

- …

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"The only way to improve the quality of a system is to change the system, not to blame the workers"

J.C. Quadrado

Challenges and opportunities for improving higher education

Challenges

- Tradition
  - Teaching
  - Academic/administrative processes
  - Tenure
  - Student/faculty/administration inertia
- Little space/interest for change
- Little/no accountability
- University administrators with little/no management experience
- …

Opportunities

- New faculty, new energy, new ideas
- Good benchmarking models out there
- Globalization
- Partnerships to accelerate rate of change
- Technology
- …

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How to improve quality in higher education?

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Improvement happens when an institution's leadership takes advantage of all the outcomes and process assessment findings and mobilizes the institution to action.

Strong leaders also recognize that quality improvement is a continuous process that proceeds from one assessment cycle to the next without interruption.

QUALITY CULTURE

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Drivers for improvement

- Internal
  - Institution wants to grow, excel
  - Compete with best, recruit the best
  - Use resources effectively
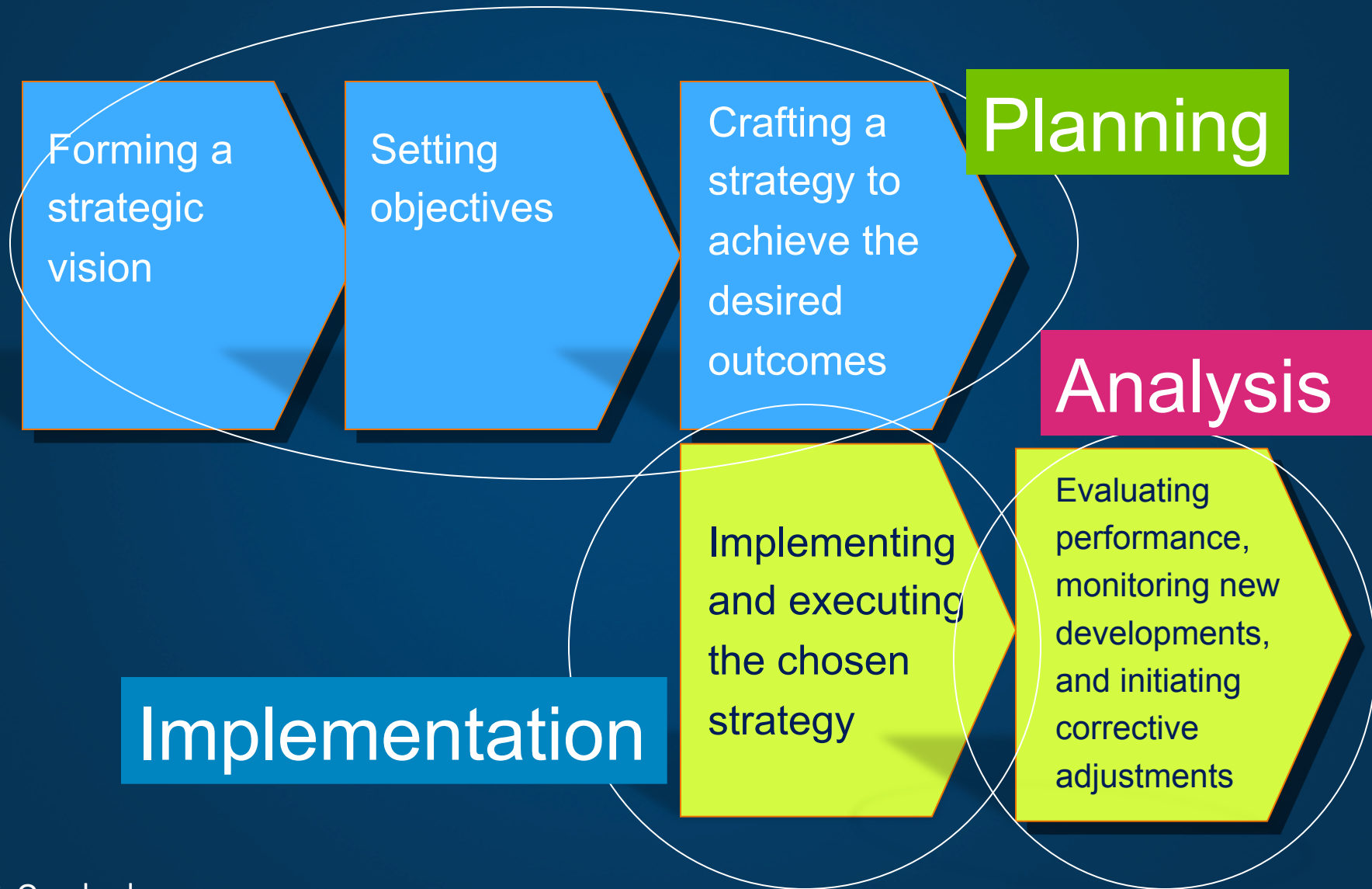 - Increase research
  - Respond to country's needs
  - …
- External
  - Government/stakeholder accountability
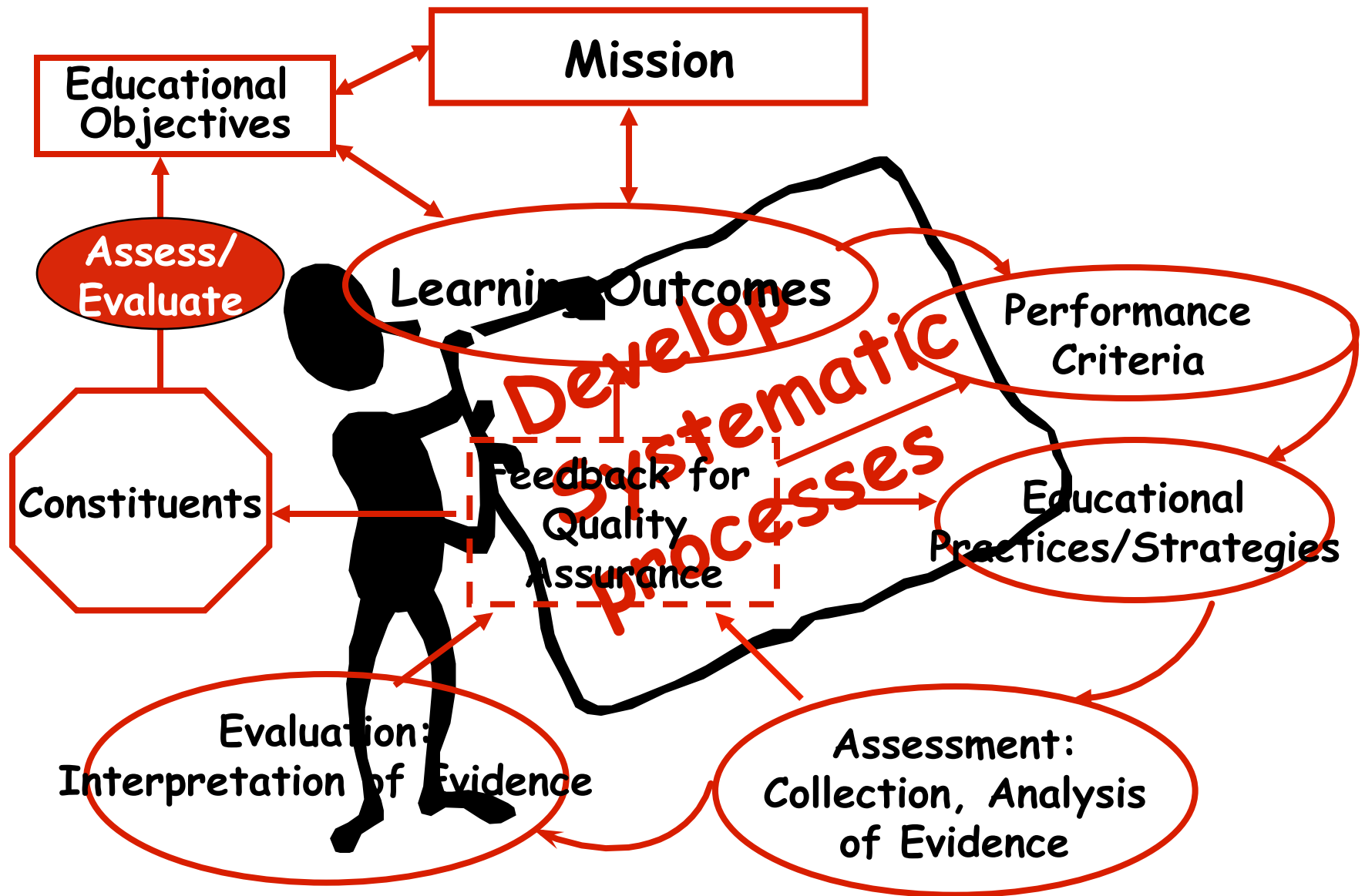 - Competitiveness
  - Accreditation
  - …

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Continuous quality improvement in higher education means

- Striving for excellence through planning, execution and continuous evaluation
    - Strategic planning at all levels
    - Outcomes and performance assessment at all levels
    - Using data for decision-making
    - Linking planning to resource allocation

- Involving all stakeholders, especially those that collaborate in multiple dimensions (hiring students, research, etc)

- Seeking program and institutional accreditation for public accountability and employer confidence

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Roadmap for Excellence

Forming a strategic vision

Setting objectives

Crafting a strategy to achieve the desired outcomes

Planning

Analysis

Implementing and executing the chosen strategy

Evaluating performance, monitoring new developments, and initiating corrective adjustments

Implementation

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Assessment for Quality Assurance

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Accreditation is one way to ensure quality

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What is Accreditation?

Accreditation is a process of external quality review created and used by higher education to scrutinize colleges, universities and programs for quality assurance and improvement.

Judith S. Eaton, President, US CHEA

The process aims to assure both quality and accountability, in the public interest.

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Roles of accreditation

- Assure quality in education

- Allow access to external (federal) funds

- Ease transfer of courses and programs

- Employer confidence

Outcomes-based accreditation focuses on

- Learning, not teaching
- Students, not faculty
- Outcomes, not inputs or capacity

"It's not what you have but what you do with it."

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What are some of the results and benefits of continuous quality improvement and accreditation?

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Results and benefits of continuous quality assurance and accreditation

- **Fosters excellence** in education through the development of principles and guidelines for assessing educational effectiveness

- Presents an **objective method** to identify strengths, vulnerabilities, and opportunities for program improvement

- Demonstrates that the **program meets or exceeds minimal educational standards** or criteria acceptable to that profession (program accreditation)

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Results and benefits…

- Provides the general public (as taxpayers), students, parents, and institutions with the information to measure the value of programs and the knowledge that the accredited program has achieved an appropriate level of organisational competence;

- Confirms that programs are responsive to their particular regional, social, professional, cultural, and institutional context;

- Offers information to faculties and schools to identify areas for development and for providing evidence to senior institutional administrators of resource deficiencies.

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Example:

- Computer Engineering Program at University X has identified an increased in enrollment as one of its strategic goals.

- ChE Program at University Y wants to explore possible solutions to increase degree productivity.

- Steps

  Gather data

  Develop plans

  Assign budget

  Assess outcomes

  Re-engineer
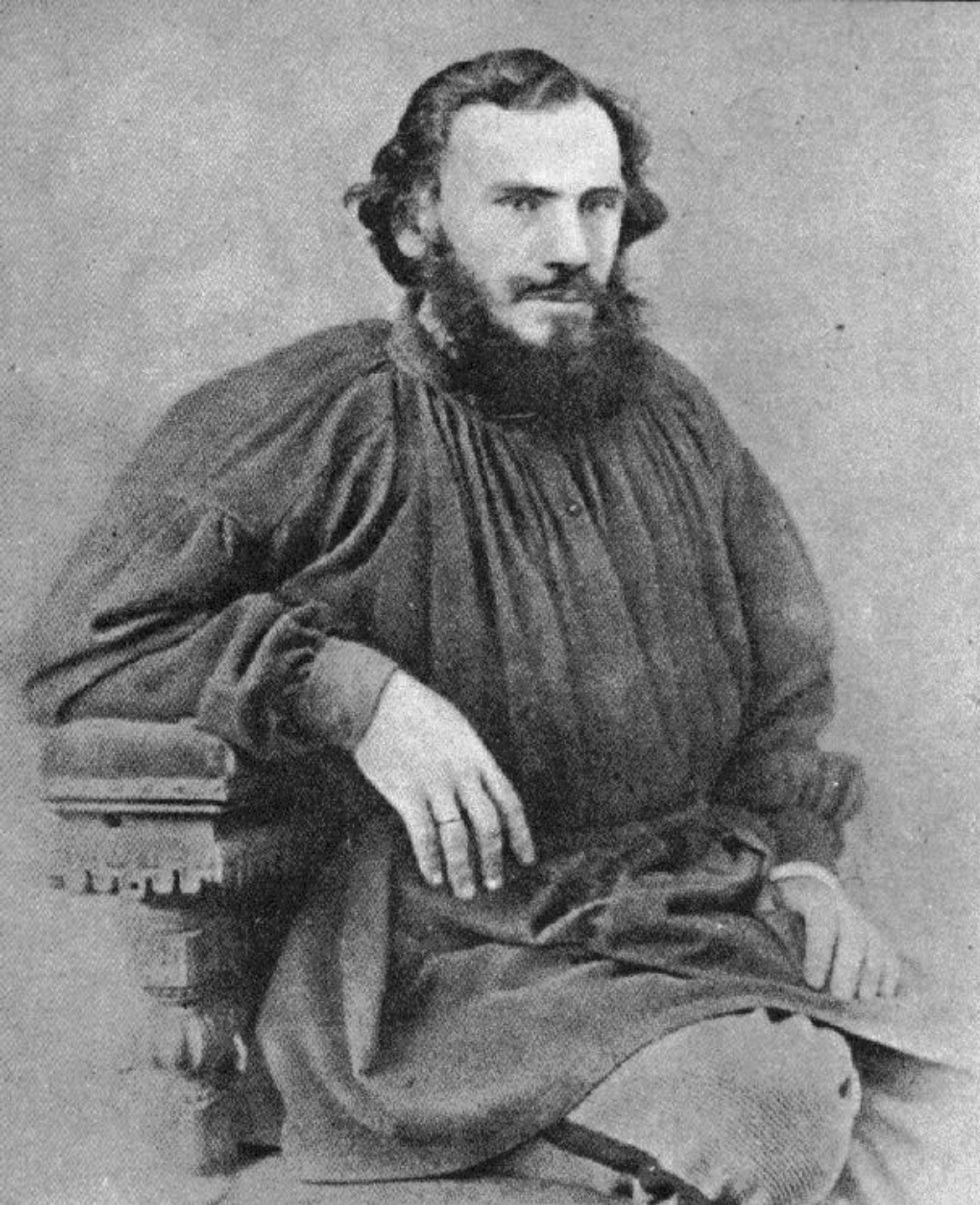
"Everyone thinks of changing the world, but no one thinks of changing himself."

Lev Nikolayevich Tolstoy

"He who stops being better stops being good."

Oliver Cromwell

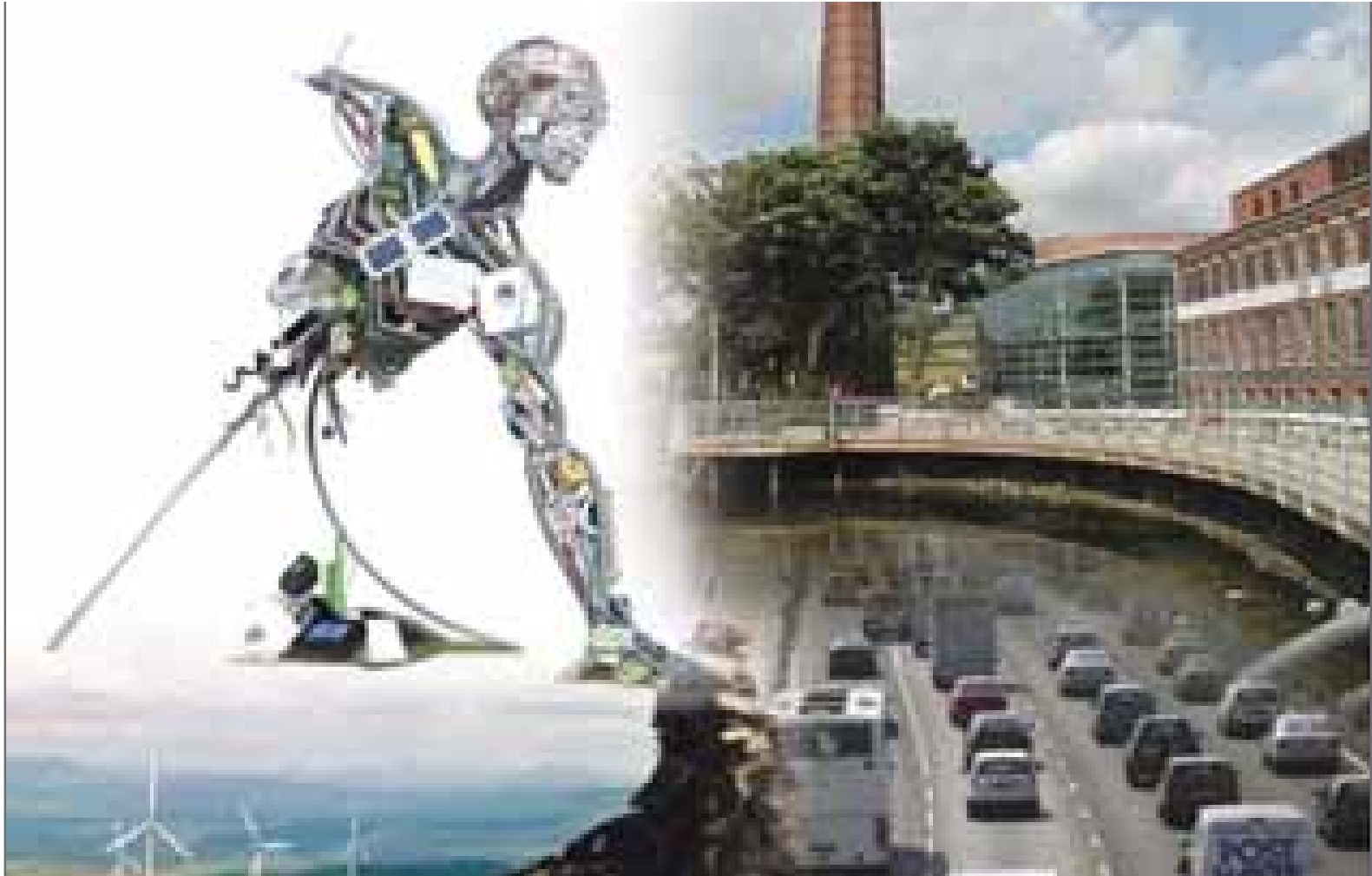*There is always room for improvement…*

Final Reflection

How effectively am I using outcomes assessment as a tool to improve student learning, my course, my program, my university?

Thank You   Спасибо!

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