



HAL
open science

The Meaning of Assessment in Higher Education and Research

Michel Robert

► **To cite this version:**

Michel Robert. The Meaning of Assessment in Higher Education and Research. SBC/SBMicro/CASS-RS Special Event, IEEE CASS Rio Grande do Sul Chapter, Jun 2021, Rio Grande, Brazil. lirmm-03279878

HAL Id: lirmm-03279878

<https://hal-lirmm.ccsd.cnrs.fr/lirmm-03279878>

Submitted on 6 Jul 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

The Meaning of Assessment in Higher Education and Research

June 30, 2021 1:30 PM (GMT-3)

www.youtube.com/cassriograndedosul



Prof. Michel ROBERT
former president of the
Université de Montpellier 2, France

After the talk, there will be a panel with the participation of:

- Prof. Raimundo Macedo, president of the Brazilian Computer Society
- Prof. Marcelo Lubaszewski, vice-president of the Brazilian Microelectronics Society
- Prof. Tiago Balen, Head of the Graduate Program on Microelectronics at UFRGS
- Prof. Avelino Zorzo, Computer Science Committee, Capes/MEC



The Meaning of Assessment in Higher Education and Research

Prof. Michel ROBERT
Université de Montpellier 2, France

June 30, 2021 1:30 PM (GMT-3)
www.youtube.com/cassriograndedosul



Universities today have to take up many challenges: massification of higher education, excellence in research and innovation, resources, attractiveness, rankings, impact, societal expectations ... The question of the autonomy of universities is essential: the articulation between the responsibility of states and that of institutions is the subject of much debate. It is therefore important to note a different practice of institutional autonomy depending on the country, as well as varying positions on the subjects of accreditation or performance measurement. The construction of the European higher education area that began some twenty years ago (Paris Sorbonne, Bologna) has led on the one hand to harmonizing national systems (graduate, post-graduate, PhD) to encourage mobility (ECTS credits) and on the other hand to promote quality assurance policies in training courses and universities. This is what led to the creation of assessment agencies based in particular on the same framework: the standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). These agencies can cover a national or regional scope and are themselves periodically assessed by Enq4 (Eqar register). This is the case in France with the HCERES (High Council for the Evaluation of Research and Higher Education). Faced with these different challenges, the question of assessment is central and is taking on an increasing role. The context of the organization of an evaluation is complex and alternates several parameters ranging from internal to external, from global to local, from qualitative to quantitative, from subjective to objective. The relationship between reviewers (peers) and institutions should be based on trust and lack of interests. The distance between assessment and decision-making, as well as the interface and mediation role of the assessment agency are essential. The evocation of "evaluation" leads to tensions because of the sensitive terms linked to history, culture and practices: measurement of individual or collective "performance", academic freedom and risk-taking... Don't researchers spend too much time being evaluated or evaluating articles in journals or conferences, projects, training courses, laboratories, institutions ... other researchers? The load induced by this "industrialization" of a very large number of expertises is about several hundred reports for a university in France every five years. The definition of the evaluation grain, that is to say of the components to be evaluated within a university (diplomas, faculties and schools, laboratories and research teams) can vary according to the countries and the practices. After a presentation and analysis of the main principles and limits of evaluation systems in the field of higher education and research (mainly in France and Europe) the presentation will situate the role of evaluation, its organization, its usefulness and its effectiveness. New alternatives will be proposed to better meet current expectations.

Michel ROBERT is Professor at the University of Montpellier (France), where he's teaching microelectronics in the engineering program. His research interests at the Montpellier Laboratory of Informatics, Robotics, and Micro-electronics (LIRMM) are design and modelisation of system on chip architectures. He is currently particularly interested in the optimization of data and energy flows in green datacenters. He is author or co-author of more than 300 publications in the field of CMOS integrated circuits design. He has supervised around forty doctoral theses. He chaired the IFIP WG 10.5 (International Federation for Information Processing) from 2007 to 2011. He served as director of the doctoral school, of the LIRMM research laboratory, then of the laboratory of excellence for digital solutions and modeling, for the environment and the living, before becoming president of the University of Montpellier (2012-2015). He has held various national responsibilities in monitoring and evaluation in higher education and research. He was Director of the Institutional Evaluation Department of the High Council for the Evaluation of Research and Higher Education (Hcéres) from 2016 to 2021. Michel ROBERT is author of a French-language book "The meaning of assessment in higher education and research", published in 2020 and downloadable at: <https://www.lirmm.fr/users/utilisateurs-lirmm/michel-robert>

See also:
<https://theconversation.com/debat-comment-repenser-évaluation-dans-l'enseignement-supérieur-146246>
<https://theconversation.com/la-realite-physique-du-monde-numerique-158884>
<https://theconversation.com/retablir-la-confiance-dans-le-debat-public-et-le-respect-du-citoyen-par-le-debat-numerique-110379>

After the talk, there will be a panel with the participation of:
Prof. Raimundo Macedo, president of the Brazilian Computer Society
Prof. Marcelo Lubaszewski, vice-president of the Brazilian Microelectronics Society
Prof. Tiago Balen, Head of the Graduate Program on Microelectronics at UFRGS
Prof. Avelino Zorzo, Computer Science Committee, Capes/MEC



<https://www.youtube.com/watch?v=r-yzrBgPBLg>

Key words : Assessment, peer review; terms of reference; standards, quality assurance



ABSTRACT

The meaning of assessment in higher education and research

Michel ROBERT

Université de Montpellier, France

Universities today have to take up many challenges: massification of higher education, excellence in research and innovation, resources, attractiveness, rankings, impact, societal expectations ... The question of the autonomy of universities is essential: the articulation between the responsibility of states and that of institutions is the subject of much debate. It is therefore important to note a different practice of institutional autonomy depending on the country, as well as varying positions on the subjects of accreditation or performance measurement.

The construction of the European higher education area that began some twenty years ago (Paris Sorbonne, Bologna) has led on the one hand to harmonizing national systems (graduate, post-graduate, PhD) to encourage mobility (ECTS credits) and on the other hand to promote quality assurance policies in training courses and universities. This is what led to the creation of assessment agencies based in particular on the same framework: the standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). These agencies can cover a national or regional scope and are themselves periodically assessed by Enqa (Eqar register). This is the case in France with the HCERES (High Council for the Evaluation of Research and Higher Education).

Faced with these different challenges, the question of assessment is central and is taking on an increasing role. The context of the organization of an evaluation is complex and alternates several parameters ranging from internal to external, from global to local, from qualitative to quantitative, from subjective to objective. The relationship between reviewers (peers) and institutions should be based on trust and lack of interests. The distance between assessment and decision-making, as well as the interface and mediation role of the assessment agency are essential.

The evocation of "evaluation" leads to tensions because of the sensitive terms linked to our history, our culture and our practices: measurement of individual or collective "performance", academic freedom and risk-taking... Don't researchers spend too much time being evaluated or evaluating articles in journals or conferences, projects, training courses, laboratories, institutions ... other researchers, given the load induced by this "Industrialization" of a very large number of expertises (several hundred for a university in France every five years).

The definition of the evaluation grain, that is to say of the components to be evaluated within a university (diplomas, faculties and schools, laboratories and research teams) can vary according to the countries and the practices.

The assessment of institutions has a cost and must have a recognized effectiveness. Attentive to these difficulties, the presentation will situate the role of evaluation, its organization, its usefulness and its effectiveness: does the assessment serve the chosen objective? Is it accepted by the assessed communities? What is its impact? What are the relevant grains in the evaluation of a structure? What new practices can we consider?

There is no one-size-fits-all ideal model for implementing an assessment. It depends on the history and the national context, the political issues and the specificities of the institution. The definition of the evaluation grain, that is to say of the components to be evaluated within a university (diplomas, faculties and schools, research entities) can vary according to the countries and the practices.

The assessment of institutions has a cost and must have a recognized effectiveness. Attentive to these difficulties, the presentation will situate the role of evaluation, its organization, its usefulness and its effectiveness: does the assessment serve the chosen objective? Is it accepted by the assessed communities? What is its impact? What are the relevant grains in the evaluation of a structure? What new practices can we consider?

There is no one-size-fits-all ideal model for implementing an assessment. It depends on the history and the national context, the political issues and the specificities of the institution. The definition of the evaluation grain, that is to say of the components to be evaluated within a university (diplomas, faculties and schools, research entities) can vary according to the countries and the practices

Taking into account different expectations from self management to centralized national control approaches, the choice of an assessment method depends on the maturity of the higher education and research system considered.

After a presentation and analysis of the main principles and limits of evaluation systems in the field of higher education and research (ESR), new alternatives will be proposed to better meet current expectations:

Recommendation 1

A visiting committee for the institution, and one for each department for research and education (graduate)

Recommendation 2

For research assessment, public authorities can organize national thematic panels by disciplinary fields based on shared indicators, and expert committees.

Recommendation 3

Implementation of Scientific Advisory Board (SAB) in each department (or equivalent) piloted by the university, following the procedures of the assessment agency. The institution then performs an analysis to compare the results with its strategy and internal processes, in its self-assessment report.

Recommendation 4

The use of a shared information system to analyze certified data updated each year is essential to evaluate certain activities such as undergraduate programs (student success and professional integration).

Recommendation 5

Develop a culture of internal quality assurance at all levels: a shared value; a collective responsibility of the whole community including students and administrative staff; a lever for harmonizing and coordinating practices within an institution (subsidiarity).

Recommendation 6

"A successful self-assessment for a useful external assessment".

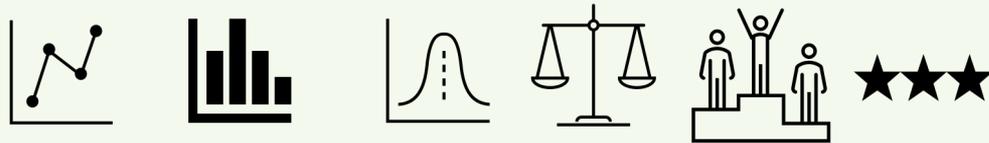
The assessed institution must position itself. What is your strategy? What demonstration do you make of its implementation and effectiveness? Situation and comparisons to other institutions?

Recommendation 7

The essential role of independent assessment agencies, and the opening of borders to foreign agencies to stimulate and harmonize international good practices.

THE MEANING OF ASSESSMENT IN HIGHER EDUCATION AND RESEARCH

MICHEL ROBERT
UNIVERSITÉ DE MONTPELLIER, FRANCE



SBC/SBMicro/CASS-RS Special Event
YouTube Live @ IEEE CASS Rio Grande do Sul Chapter
<https://www.youtube.com/cassriograndedosul>
1:30 PM (Brasilia Time, GMT-3), Wednesday, June 30, 2021

PRELIMINARY REMARKS

- ✓ THE ANALYSIS PRESENTED HAVE TO BE ADAPTED TO THE PARTICULAR CONTEXT OF EACH COUNTRY
- ✓ THE MAIN COARSE GRAIN STUDY IS THE INSTITUTION LEVEL (UNIVERSITY)
- ✓ THE OTHER THINNER GRAINS ARE OBVIOUSLY CONNECTED :
DEPARTMENTS/FACULTIES, RESEARCH LABS, ACCREDITATION OF UNDERGRADUATE AND GRADUATE DIPLOMAS, TEACHERS & RESEARCHERS ...

*THE MEANING OF ASSESSMENT
IN HIGHER EDUCATION AND
RESEARCH*

1-CONTEXT

*The eco-system of higher
education and research
institutions*

2- ASSESSMENT

3- QUALITY ASSURANCE

4- CONCLUSION

✓ Faculties and universities have been places of **knowledge development and transmission** from their origins...

... But since the last century, organizational models have become more complex : **resources, ranking, management ... assessment !**

➤ Universities have **common characteristics** such as the organization of student training programs (undergraduate, graduate, PhD) ...

➤ Universities have **many differences**: *size, organization, selection of students, registration fees, economic model, autonomy, role of state and region, selection-appointment of the rector ...*



L'EGLISE ET L'UNIVERSITÉ DE LA SORBONNE D'APRÈS UNE GRAVURE DU XVIII^e SIÈCLE.
Sorbonne, Paris (1253)



Evaluation of research bodies in France
Faculté de médecine de l'Université de Montpellier (1220)

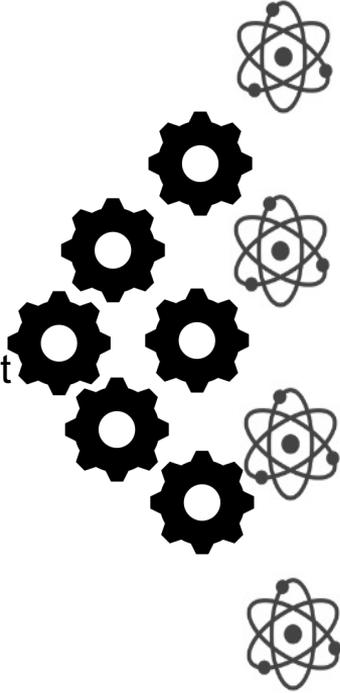
CONTEXT : EVALUATION & COMPETITION

- **HIGHER EDUCATION AND RESEARCH INSTITUTIONS (UNIVERSITIES) CHALLENGES:** MASSIFICATION OF HIGHER EDUCATION, COMPETITION, EXCELLENCE IN RESEARCH AND INNOVATION, RESOURCES, ATTRACTIVENESS, RANKINGS, IMPACT, SOCIETAL EXPECTATIONS ...
- **UNIVERSITIES HAVE DIFFERENT HISTORIES AND ORGANIZATIONS :** THE LEVEL OF **AUTONOMY** IS DEPENDING ON THE COUNTRY, AS WELL AS VARYING POSITIONS ON THE SUBJECTS OF ACCREDITATION
- **SENSITIVE TERMS :**
 - ✓ *Measurement of individual or collective “performance”*
 - ✓ *Academic freedom and risk-taking...*
 - ✓ *Assessment / Control*
- **ASSESSMENT : WHY ? WHO ? WHEN ? HOW ?** **TIME SPENT AND COST ?** 

DON'T RESEARCHERS SPEND TOO MUCH TIME BEING EVALUATED OR EVALUATING ARTICLES IN JOURNALS OR CONFERENCES, PROJECTS, TRAINING COURSES, LABORATORIES, INSTITUTIONS ... OR OTHER RESEARCHERS ?

**HIGHER EDUCATION AND
RESEARCH INSTITUTIONS
FROM FINE GRAIN TO
COARSE GRAIN**

Governance
Management



users: students ...



University



Departments, Faculties ...



Programs & Diploma
(undergraduate, graduate, PhD)



Laboratories



Professors, Researchers
Other staff

CONTEXT

- ✓ **Observation 1** : the practice of **peer review** of research corresponds to international standards and shared practices

RESEARCHERS : peer review

IDENTICAL IN ALL COUNTRIES

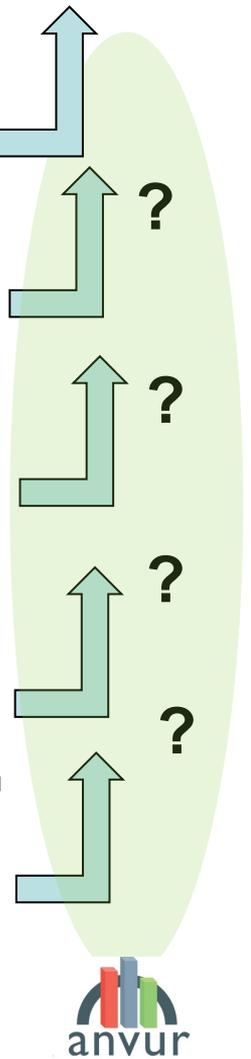
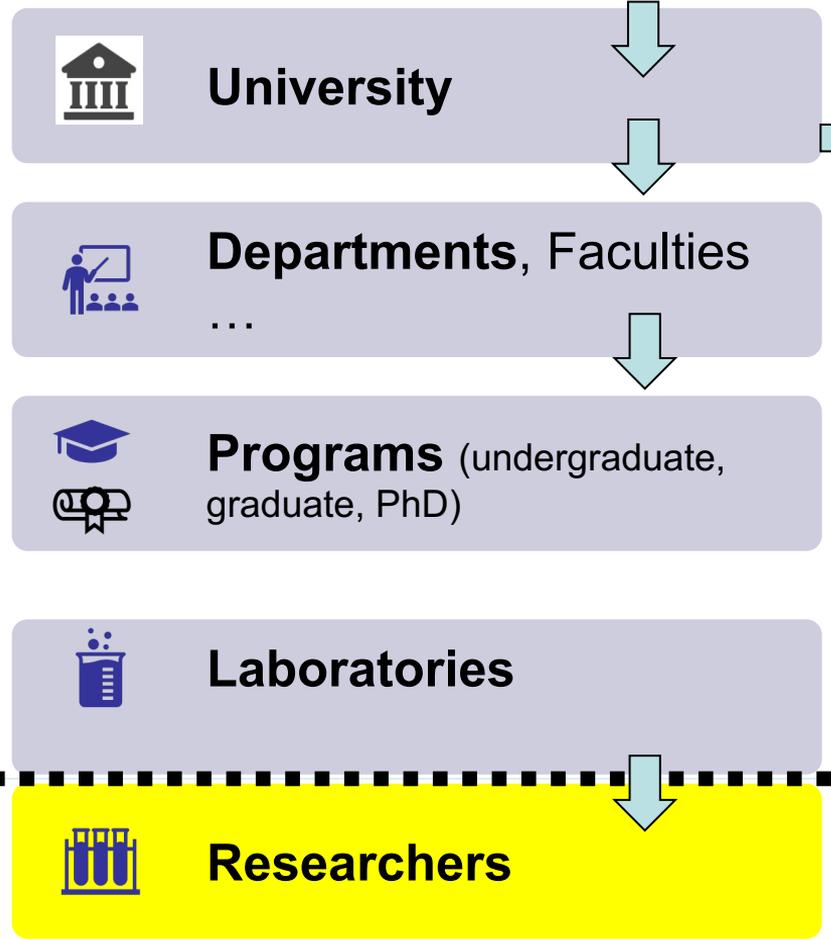
- INTERNATIONAL
- NATIONAL
- LOCAL

✓ **JOURNAL & CONFERENCE**

✓ **PROJECT**

✓ **DISTINCTION**  

✓ **IMPACT**  



CONTEXT

- ✓ **Observation 2** : on the other hand, the **assessment of institutions** is not homogeneous and practices vary from country to country
- ✓ **Observation 3** : in Europe, practices are shared in the field of **quality assurance**.

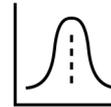
The Bologna process led to the creation of the ENQA, which today brings together around fifty European agencies focused mainly on higher education.

ENQA = European Association for Quality Assurance in Higher Education



CONTEXT

- ✓ **Observation 1** : the practice of **peer review** of research corresponds to international standards and shared practices
- ✓ **Observation 2** : on the other hand, the **evaluation of institutions** is not homogeneous and practices vary from country to country
- ✓ **Observation 3** : in Europe, practices are shared in the field of **quality assurance**. The Bologna process led to the creation of the ENQA, which today brings together around fifty European agencies focused mainly on higher education.
- ✓ **Observation 4** : we must also consider the massive processing of data on a global scale, to measure performance, compare and classify !



INTERNATIONAL UNIVERSITY RANKINGS

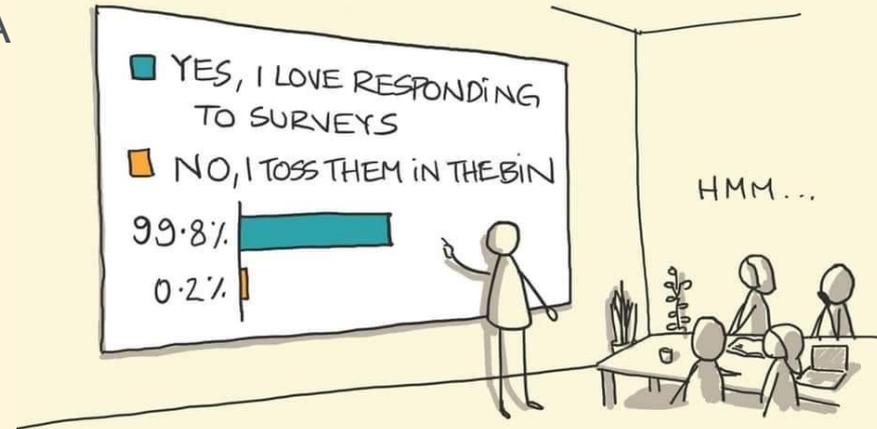
THE LIMITS OF THE USE OF DATA, INDICATORS, AND STATISTICAL TOOLS



- THE SHANGHAI RANKING HIGHLIGHTS THE PROGRESS AND GROWING WEIGHT OF ... CHINA IN SCIENCE AND TECHNOLOGY RESEARCH THROUGH MAINLY **QUANTITATIVE** CRITERIA

- A CLASSIFICATION OF INTERNATIONAL RANKINGS IS NECESSARY TO BETTER DISTINGUISH THOSE BASED MAINLY ON THE MEASUREMENT OF **INDIVIDUAL SCIENTIFIC PERFORMANCE**, SUCH AS THE SHANGHAI RANKING (PUBLICATIONS, DISTINCTIONS...) AND THOSE MORE ORIENTED TOWARDS THE COLLECTIVE PERFORMANCE OF INSTITUTIONS INCLUDING **ALL UNIVERSITY MISSIONS**

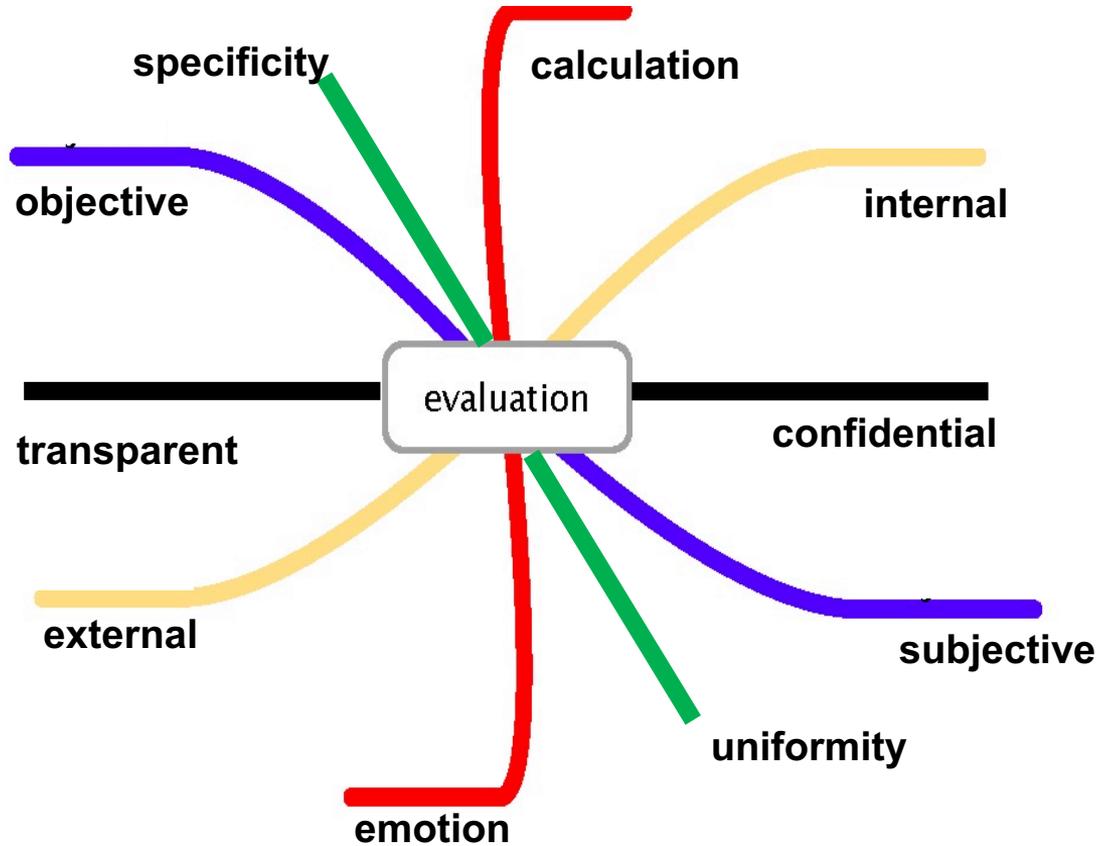
SAMPLING BIAS



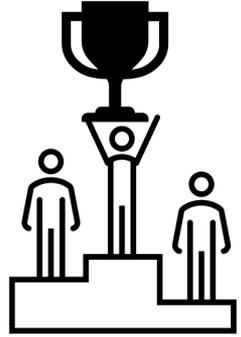
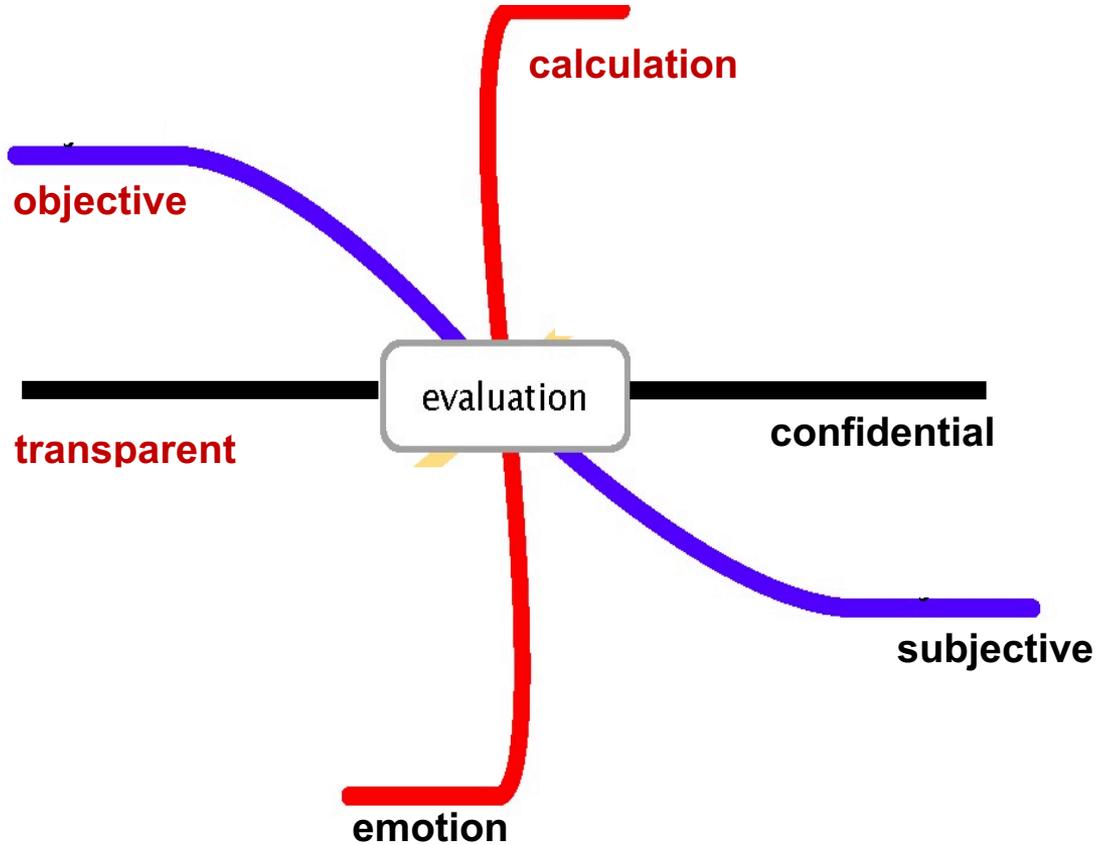
" WE RECEIVED 500 RESPONSES AND FOUND THAT PEOPLE LOVE RESPONDING TO SURVEYS "

sketchplanations

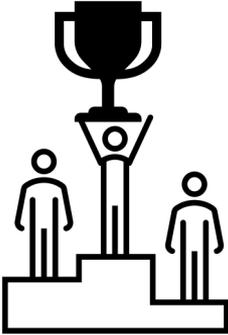
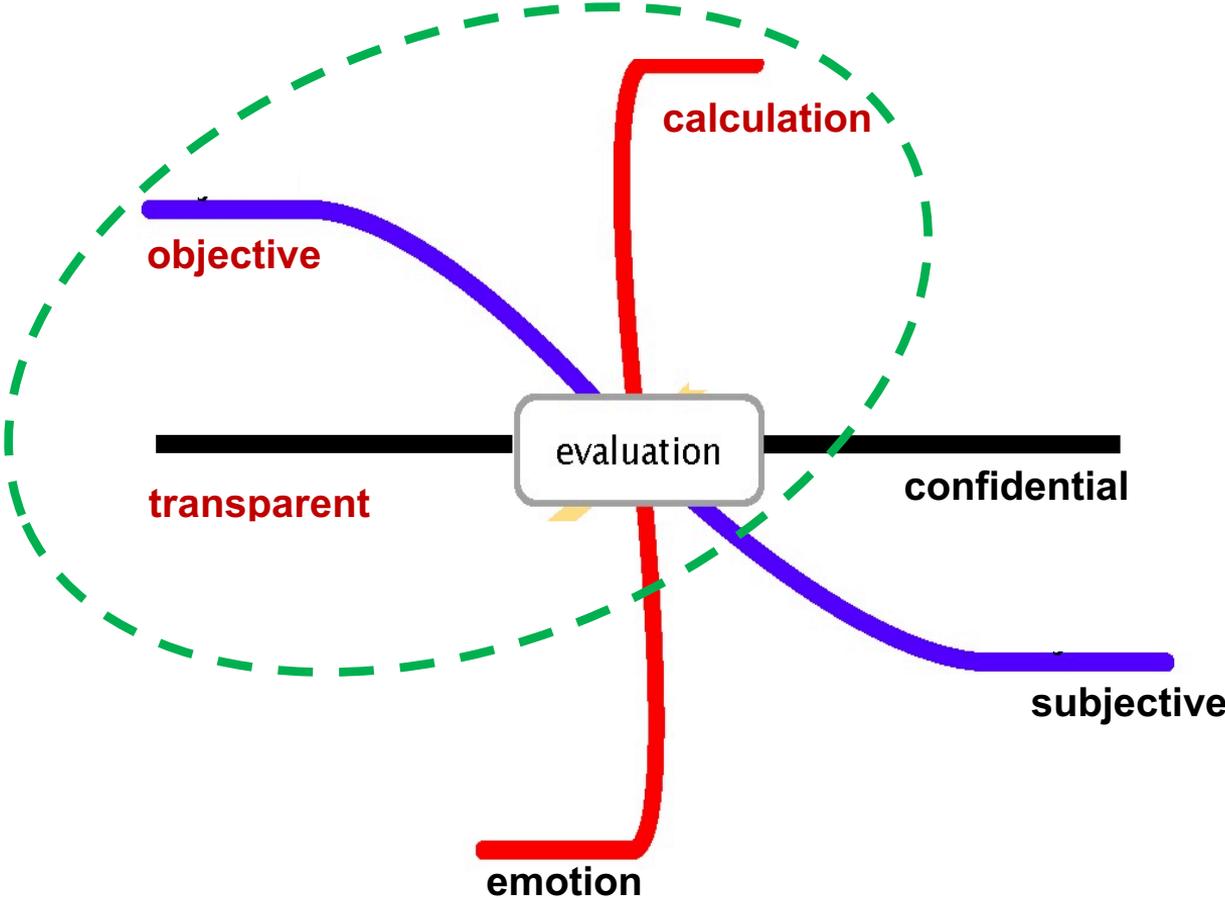
CONTEXT: MEETING DIFFERENT EXPECTATIONS



EXAMPLE : « EXCELLENCE ! » « WE ARE THE CHAMPION ! » WHY ?



EXAMPLE : « EXCELLENCE » « WE ARE THE CHAMPION ! » WHY ?



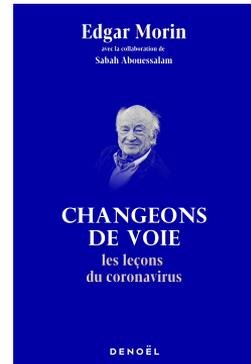
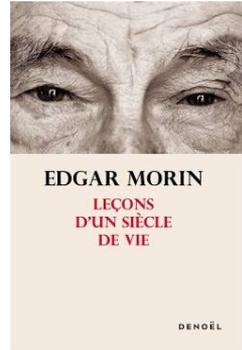
TODAY : COMPLEXITY, UNCERTAINTY ...

▪ CONTRIBUTION OF HUMAN SCIENCES ... COMPLEX THINKING

« ... FROM BIRTH, ADAPTATION TO THE OUTSIDE WORLD OCCURS THROUGH TRIAL AND **ERROR**, AND CONTINUES THROUGHOUT LIFE.

KNOWLEDGE CANNOT BE BUILT WITHOUT A **RISK OF ERROR**. BUT **ERROR** PLAYS A POSITIVE ROLE WHEN IT IS RECOGNIZED, ANALYZED AND OVERCOME ... »

EDGAR MORIN. "LESSONS FROM A CENTURY OF LIFE, MAY 2021"



TODAY : COMPLEXITY, UNCERTAINTY ...

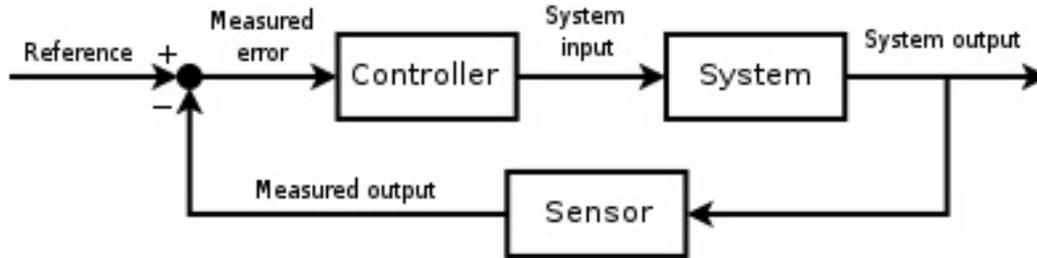
▪ CONTRIBUTION OF HUMAN SCIENCES ... COMPLEX THINKING

« ... FROM BIRTH, ADAPTATION TO THE OUTSIDE WORLD OCCURS THROUGH TRIAL AND **ERROR**, AND CONTINUES THROUGHOUT LIFE.

KNOWLEDGE CANNOT BE BUILT WITHOUT A RISK OF ERROR. BUT ERROR PLAYS A POSITIVE ROLE WHEN IT IS RECOGNIZED, ANALYZED AND OVERCOME ... »

EDGAR MORIN. "LESSONS FROM A CENTURY OF LIFE, MAY 2021"

▪ APPLICATION TO AUTONOMOUS SYSTEMS



Model : closed-loop (feedback) control

Accept error to progress !



EDGAR MORIN
LEÇONS
D'UN SIÈCLE
DE VIE

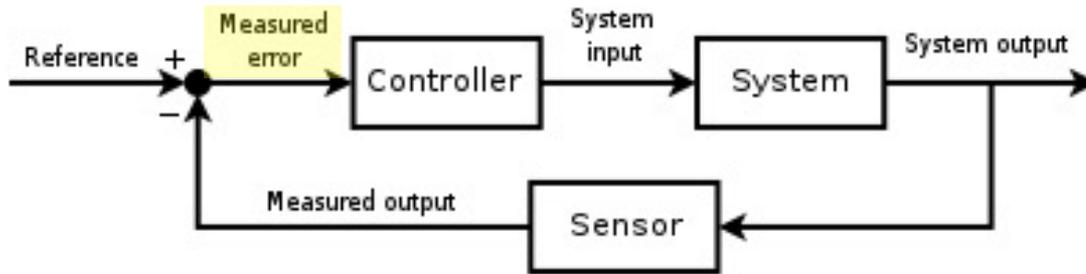
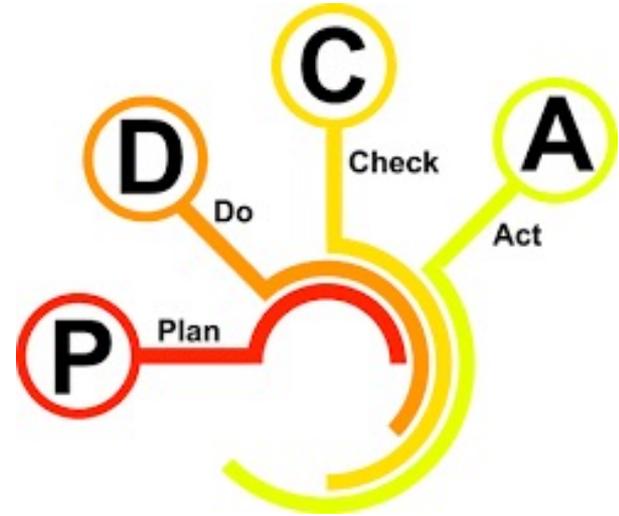
DENOËL



Development of Quality Assurance in Higher Education



Deming wheel



Model : closed-loop (feedback) control

Accept error to progress !

- *Trajectory*
- *Data*
- *Indicators*
- *Standards*
- *Steering*
- *Management*



1-CONTEXT

*The eco-system of higher education and
research institutions*

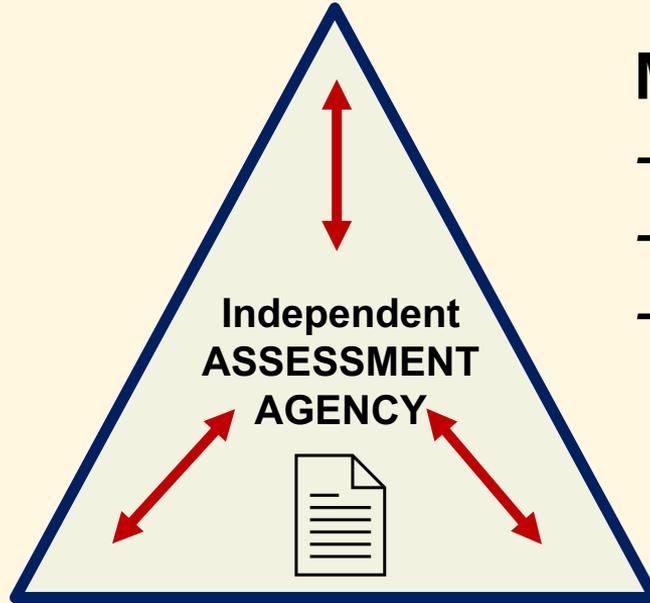
2- ASSESSMENT

3- QUALITY ASSURANCE

4- CONCLUSION

QUALITY ASSURANCE AGENCY: POSITION

**PUBLIC AUTHORITIES
GOVERNMENT**



INSTITUTION

**USERS
STUDENTS
PARTNERS**

Mandate of the assessment :

- *Perimeter ?*
- *Objectives ?*
- *Recipients of the results ?*

ASSESSMENT METHODOLOGY : SELF-EVALUATION, ON-SITE VISITS, EVALUATION REPORTS

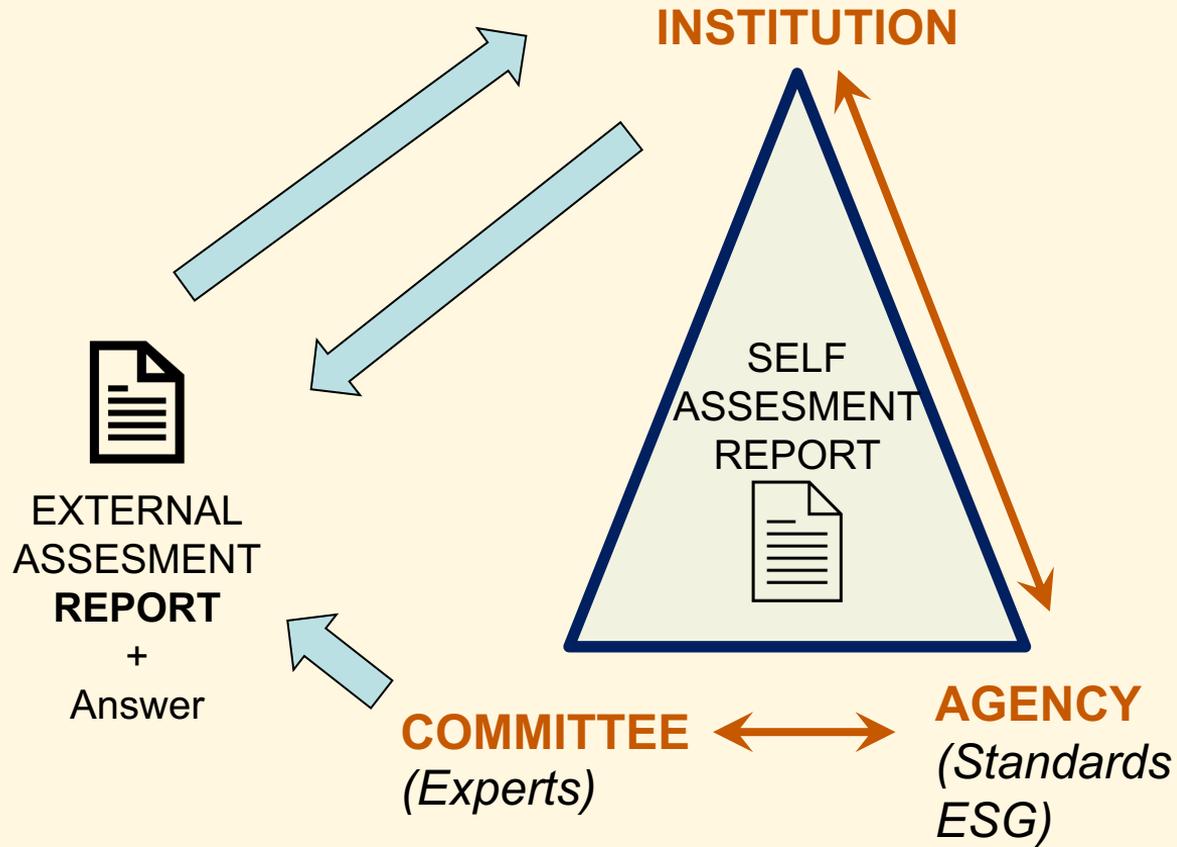
- EACH ENTITY IS **EVALUATED EVERY X YEARS.**

$$1 < X < 8$$

ENTITY = RESEARCH UNIT, TRAINING COURSE, UNIVERSITY & SCHOOL

- EACH EVALUATION IS BASED ON A **SELF-EVALUATION PRIOR TO THE ASSESSMENT OF THE ENTITY BY AN AGENCY**
- ALL ASSESSMENTS ARE **PEER REVIEW** SYSTEM (EXPERTS) FOR QUALITATIVE EVALUATION COMPLETED BY ANALYSIS OF QUANTITATIVE DATA AND USE OF INDICATORS WITH AN ON-SITE VISIT
- ASSESSMENTS AIM TO IDENTIFY **STRENGTHS & WEAKNESSES** IN ORDER TO FORMULATE **RECOMMENDATIONS** FOR IMPROVEMENT
- ALL EVALUATION REPORTS ARE SENT TO THE ORGANIZATIONS EVALUATED SO THAT THEY CAN **ADD THEIR REMARKS BEFORE PUBLICATION**

INSTITUTION ASSESSMENT : PRINCIPLES



ASSESSMENT: OBJECTIVES

- The distance between **assessment and decision-making**, as well as the interface and mediation role of the assessment agency are essential
- **Transparency** of assessment relies on website publication of :
 - ✓ *Standards and methods*
 - ✓ *list of experts and their positions*
 - ✓ *evaluation reports*
- The relationship between reviewers (peers) and institutions should be based on trust and **no conflict of interests**

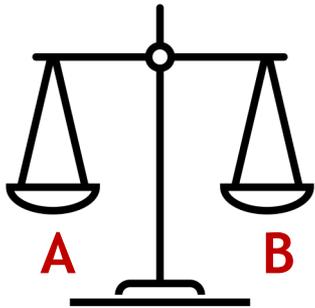
ASSESSMENT: OBJECTIVES

A OR/AND B ?

A - ASSISTING EVALUATED ENTITIES IN THE CONTINUOUS IMPROVEMENT OF THEIR PRACTICES

B - PROVIDING CLARIFICATION FOR DECISION-MAKERS

- Public Authorities (financing, recognition of qualifications)
- Others stakeholders : local Authorities, companies, families...



A > B Autonomy ... but expectation of the country ?

A < B Centralized national management but
- bureaucracy ?
- Acceptance of the communities concerned ?

➤ TERMS OF REFERENCE

STANDARDS

INTERNAL

➤ SELF-ASSESSMENT

EXTERNAL

➤ PEER REVIEW

ON-SITE VISIT

➤ REPORTS



➤ ACCREDITATION

(UNDERGRADUATE, GRADUATE, PHD)



University



Departments, Faculties

...



Programs & Diploma

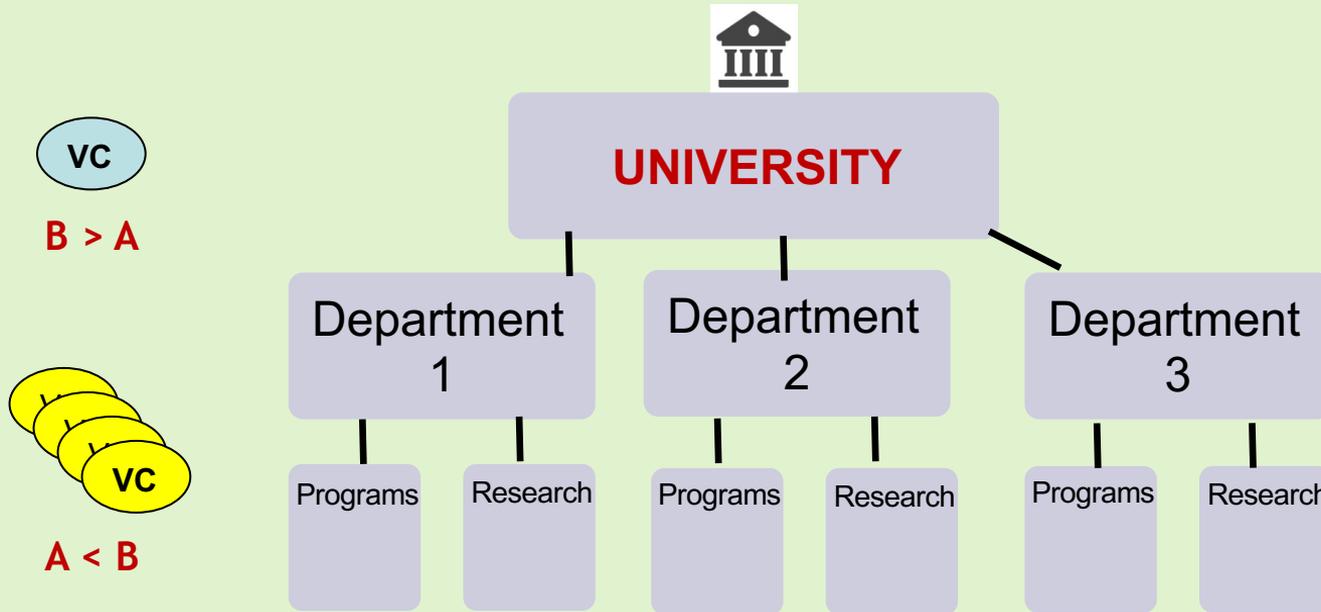


Laboratories



Researchers

MOST POPULAR MODEL



VC = VISITING COMMITTEE

Open question: should the evaluation of the quality of research in a disciplinary field be done at the **local** level with the **visit of a committee of peers**, or at the **national** level?

FRANCE : HIGH COUNCIL FOR EVALUATION OF RESEARCH AND HIGHER EDUCATION (HCÉRES)

✓ **STATUS** : public service mission

- Independent administrative authority that acts in accordance with the international standards and ESGs
- The evaluation is mandatory for each Higher education Institution (HEI) which is funded by the French State

✓ **ORGANISATION**

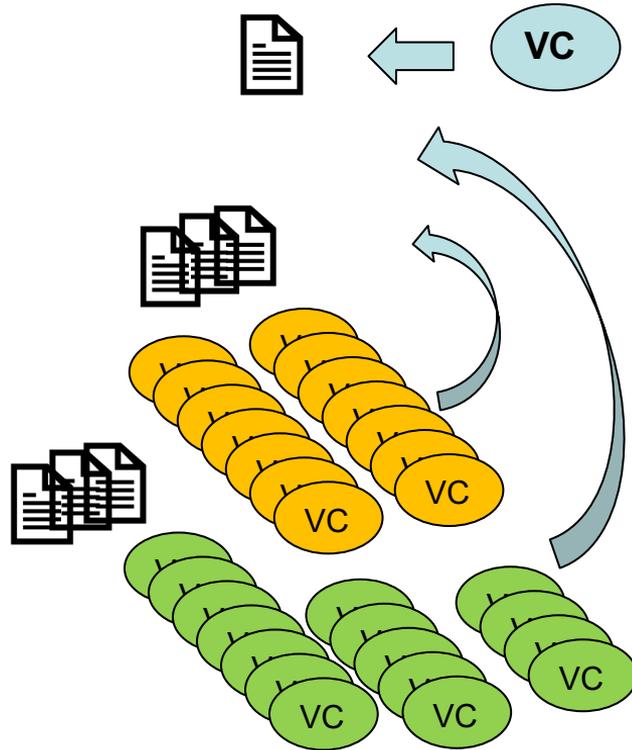
- High Council Board of HCERES : members representing the stakeholders of Higher Education & Research
- Evaluation departments
- Observatory of science & technology (studies & statistics)
- Scientific integrity OFFICE

➤ **Different Standards for external evaluation : institutions, research, education**
(graduate, undergraduate, PhD ...)





Local level



 **250**
Higher education and
research institutions

 **5500 Programs**
(undergraduate,
graduate, PhD)

 **2500**
Research entities

S.A.B

✓ Load induced : large number of expertises for a given university every five years.

Evaluation of research entities

The evaluation **standard** for research entities establishes the requirements relating to the content of the research entity's **self-evaluation report**, and the requirements for the **external evaluation report** produced by the panel of expert **peers**.

The methodology is based on the following key principles

- A **qualitative** evaluation carried out by peers with a **visit** of the research entity
- An evaluation takes into account the multiplicity of missions, the **diversity of research** and, where applicable, the complexity of its multidisciplinary dimension
- An evaluation which is based on **observable facts** and the assessment of their value for each criterion

The standard describes three evaluation criteria

- The **quality of research activities and products** : production of knowledge, reputation and attractiveness, Interactions with the economic, social and cultural environment, and with the health sector, Involvement in research-based training
- The organisational structure and general activities of the research unit
- The five-year strategy and development plan

Observable facts

Research activities, like the products that result from them, are diverse and their evaluation methods vary according to the research communities.

Hcéres asked the communities to define both the scope, the quality indices and, if necessary, their hierarchy (for example, the scientific work and the conferences do not have the same value according to the disciplinary fields)

This work led to the production by each scientific sub-field of Guides of research products and research activities.



ITALY: ANVUR



National level



University



Departments, Faculties

...



Programs & Diploma
(undergraduate, graduate, PhD)



Laboratories



Researchers

A < B



ANVUR FINE GRAIN + PERFORMANCE ANALYSIS

UK : Teaching Excellence Framework

- The teaching excellence framework (TEF) is a system that assesses the quality of teaching in universities in England.
- The framework was introduced by the government in 2017 to provide a resource for students to judge teaching quality in universities and to increase the importance of teaching excellence (and bring it into line with research excellence) when rating institutions. It is important to note that currently the TEF analyses only undergraduate teaching.

<https://www.timeshighereducation.com/student/blogs/what-tef-results-teaching-excellence-framework-2019#survey-answer>

UK : Research Excellence Framework

- The research excellence framework (REF) is the system for assessing the quality of research in UK higher education institutions.
- Principles :
 - ✓ Accountability of establishments, responsible for preparing and selecting their data, and providing the necessary proof
 - ✓ An objective centered on the **quality** of scientific production (each researcher being able to present at most 5 articles published in the reference period)
 - ✓ A link between **evaluation and funding** with a rating system. The expert panels rate each element of the submission from 1 to 4 stars
 - ✓ Assessment weighting: quality of research results (**60%**), impact of research (**25%**), research support environment (**15%**)



A < B

REF : Panel criteria and working methods

https://www.ref.ac.uk/media/1084/ref-2019_02-panel-criteria-and-working-methods.pdf

Example

Unit of Assessment 11: Computer Science and Informatics

84. The UOA includes the study and evaluation of methods for acquiring, storing, processing, communicating and reasoning about information and interactivity in natural and engineered systems, as characterised by the **Association for Computing Machinery (ACM) Computing Classification System, 2012 Revision** <https://www.acm.org/publications/class-2012>. The sub-panel expects submissions in this UOA to include contributions from ACM categories *hardware, computer systems organisation, networks, software and its engineering, theory of computation, mathematics of computing, information systems, security and privacy, human-centered computing, computing methodologies, and applied computing*. The field is characterised by strong theoretical foundations and systematic application of analysis, design, experimentation and evaluation.

85. The sub-panel expects that the **majority of the research activity** submitted will have made a direct contribution to the UOA as characterised above, either by contributing **new methods and knowledge** or through **innovative applications** of state-of-the-art methods to challenging problems in other disciplines. Consequently, the sub-panel welcomes submissions containing interdisciplinary outputs that make contributions to other areas as well as computer science and informatics, though outputs that apply routine computational methods may be better returned elsewhere.



A < B

APPROACHES FOR THE ASSESSMENT OF INSTITUTIONS

- ANALYSIS BASED ON COMPLIANCE VERIFICATION

VERIFY THE IMPLEMENTATION OF ORGANIZATIONAL ARRANGEMENTS FOR ACTIVITIES, SPECIFIC MANAGEMENT MEASURES, MANAGEMENT TOOLS, RESULTS MONITORING

- THE ASSESSMENT STARTS FROM AN **IDENTIFIED MODEL** AND **VERIFIES THE COMPLIANCE OF ITS IMPLEMENTATION** BY THE ENTITY
- IT IS OFTEN ADOPTED BY **HIGHLY CENTRALIZED SYSTEMS** MADE UP OF ENTITIES WITH LITTLE AUTONOMY
- THE PUBLIC AUTHORITY VERIFIES THE DEPLOYMENT OF DEFINED MEASURES

OR

- PERFORMANCE ANALYSIS

- ANALYSIS OF THE **RESULTS OF THE ACTIVITIES** OF THE EVALUATED ENTITY
- DEFINE A SET OF **DATA AND INDICATORS TO ASSESS THE LEVEL OF RESULTS** OBTAINED BY THE ENTITIES EVALUATED, AND COMPARED (RANKINGS)
- THIS APPROACH HAS A **NORMATIVE** CHARACTER THROUGH THE CHOICE OF DATA AND INDICATORS MEASURED.

OR

- QUALITY ASSURANCE

*THE MEANING OF ASSESSMENT
IN HIGHER EDUCATION AND
RESEARCH*



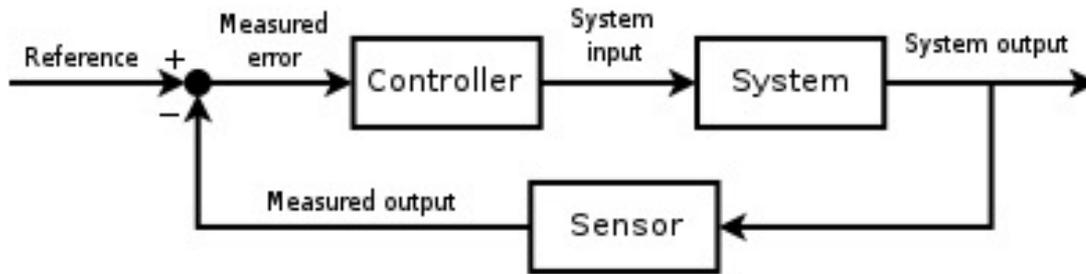
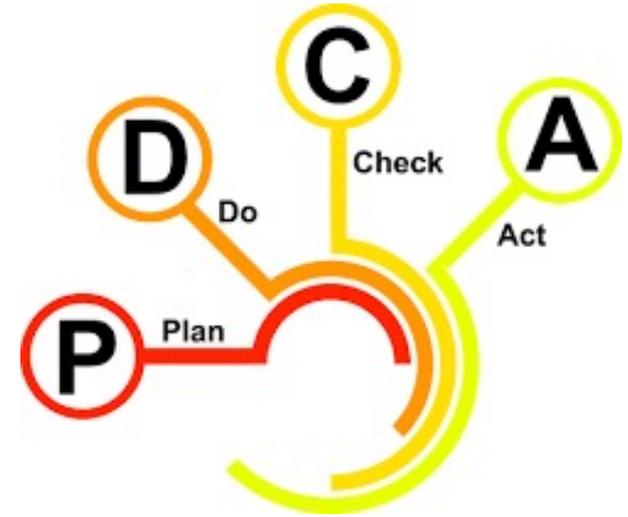
1-CONTEXT

2- ASSESSMENT

3- QUALITY ASSURANCE

4- CONCLUSION

Development of Quality Assurance in Higher Education



Model : closed-loop (feedback) control

Accept error to progress !

- *Trajectory*
- *Data*
- *Indicators*
- *Standards*
- *Steering*
- *Management*

QUALITY ASSURANCE

*ASSUMPTION : THE EVALUATED ENTITY HAS A GREAT LEVEL OF **AUTONOMY***

- ENTITY DEFINES THE **QUALITY ASSURANCE STRATEGY**
- ENTITY ORGANIZES THE VARIOUS **INTERNAL AND EXTERNAL EVALUATION MECHANISMS NECESSARY FOR THE MANAGEMENT AND MONITORING** OF ITS ACTIVITIES
- THE **EXTERNAL ASSESSMENT CONSISTS IN ANALYZING THE QUALITY POLICY AND ITS TOOLS** IN ORDER TO CONFIRM WHETHER THEY GUARANTEE AN EFFICIENT DEVELOPMENT OF THE EVALUATED ENTITY
- AN INSTITUTION DEVELOPING A QUALITY ASSURANCE APPROACH MUST IN ITS SELF-ASSESSMENT REPORT :
 - **Explain its strategy**
 - **Demonstrate its implementation and effectiveness**
 - **Compliance with the Standards and Guidelines for Quality Assurance (ESG)**

INTERNAL QUALITY ASSURANCE



EUA PUBLICATIONS 2015



Trends 2015: Learning and Teaching in European Universities

BY ANDRÉE SURSOCK

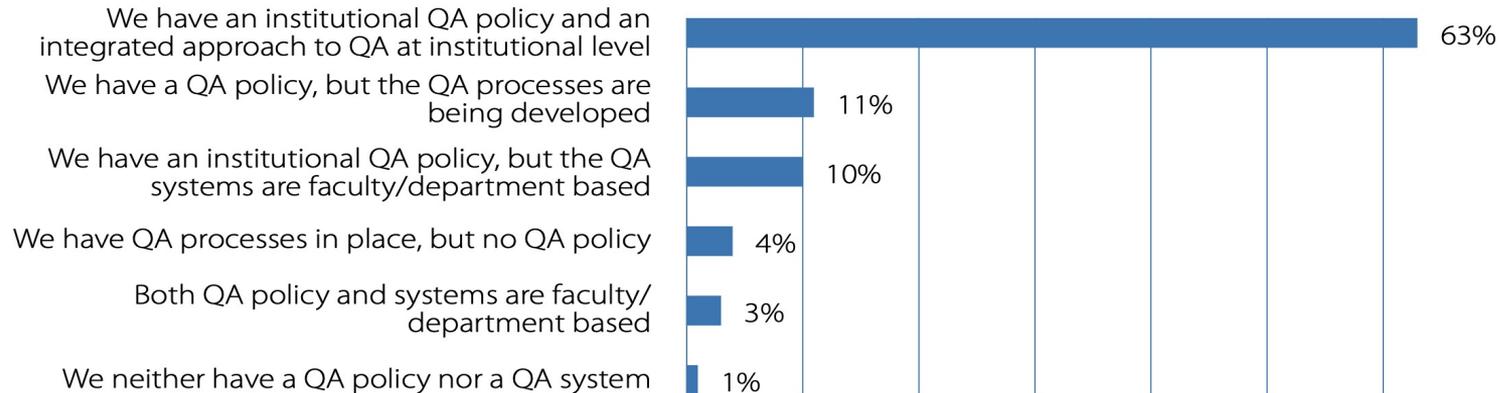


« AT THE **INSTITUTIONAL LEVEL**, THE MOST IMPORTANT CHANGE DURING THE FIRST DECADE OF THE 21ST CENTURY WAS IDENTIFIED AS **THE DEVELOPMENT OF INTERNAL QUALITY ASSURANCE PROCESSES**: 60% OF THE 2010 TRENDS RESPONDENTS RECOGNISED IT AS A **MAJOR INSTITUTIONAL DEVELOPMENT “IN THE PAST TEN YEARS”**, WHICH PLACED IT AS THE **TOP CHANGE DRIVER FOR INSTITUTIONS IN EUROPE** »



Figure 9: Does your institution have an institutional quality assurance policy and system? (Q51)

Institutional quality assurance policy and system



DOMAINS & STANDARDS FOR EXTERNAL ASSESSMENT OF AN INSTITUTION

- **INSTITUTIONAL POSITIONING AND STRATEGY**
- **GOVERNANCE AND MANAGEMENT (INCLUDING QUALITY ASSURANCE STRATEGY)**
- **RESEARCH AND EDUCATION**
- **STUDENT FOLLOW-UP AND SUCCESS**
- **INTERNATIONAL RELATIONSHIPS**
- ...

European Association for Quality Assurance in Higher Education (ENQA)



In Europe, the tendency is to favor the approach of analyzing quality policy at the level of the institution, in direct connection with the expectations of ESGs

- ✓ ENQA contributes to the maintenance and enhancement of the quality of European higher education
- ✓ ENQA is a major driving force for the development of quality assurance across all the Bologna Process signatory countries
- ✓ ENQA members are higher education quality assurance agencies based in the European Higher Education Area (EHEA)
- ✓ In order to become a member of ENQA, agencies must demonstrate their compliance with the **Standards and Guidelines** for Quality Assurance in the EHEA (ESG)
- ✓ Around **50 agencies** are applying for ENQA
- ✓ The activities of these agencies are variable: assessment adapted according to the expectations of the country, consulting, international ...



A > B

- ✓ **Belgium:** overall institutional assessment strongly focused on the analysis of the quality policy of establishments and based on the ESGs.



A > B

- ✓ **Switzerland:** assessment by **AAQ** focusing exclusively on the analysis of the quality assurance system and leading to institutional accreditation. *(The external evaluation of the activities of the establishment, which is obviously part of the strategy of the institution, is his responsibility)*



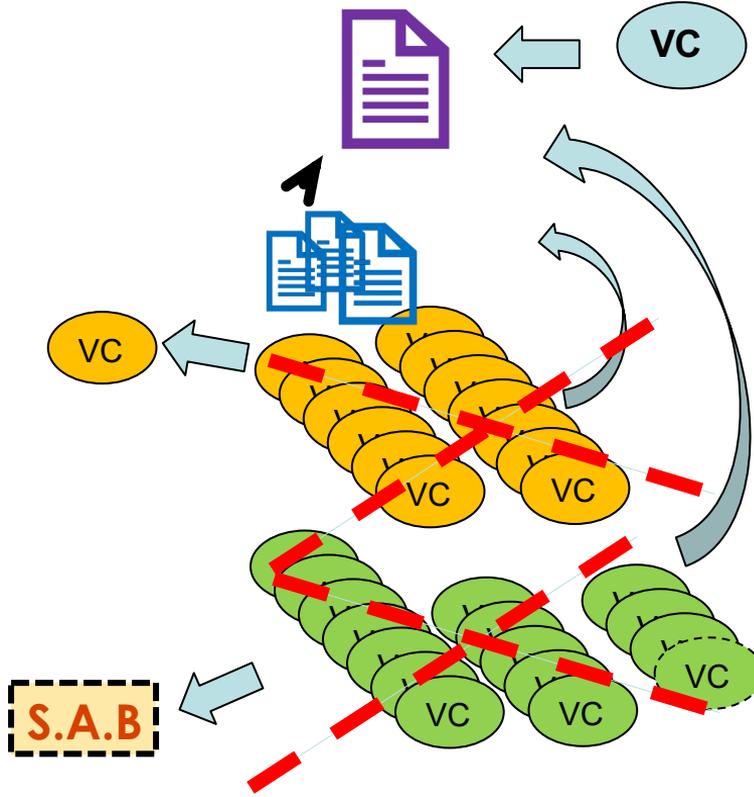
A > B

- ✓ **Finland:** Institutional assessment focuses on the tools put in place by the institution to maintain and develop quality.



A > B

- ✓ QANU (Quality Assurance for **Netherlands** Universities) is an independent quality agency that conducts activities in the field of external quality assurance, commissioned by universities in the Netherlands. The assessment procedures follow a defined framework, but are managed by the institution *(composition of the visiting committee for example)*



250
Higher education and
research institutions

5500 Programs
(undergraduate,
graduate, PhD)

2500
Research entities

Trend : simplification, integrated assessment, + performance

✓ Undergraduate Programs : national data observatory & data analysis

- Excellent
- Very good
- Good
- Average
- Poor

*THE MEANING OF ASSESSMENT
IN HIGHER EDUCATION AND
RESEARCH*

1-CONTEXT

*The eco-system of higher
education and research
institutions*

2- ASSESSMENT

3- QUALITY ASSURANCE

4- CONCLUSION

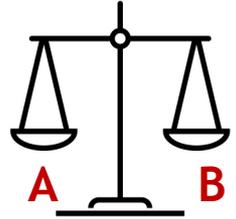
CONCLUSION AND RECOMMENDATIONS

✓ The assessment of institutions has a cost and must have a recognized effectiveness!
... *Try to simplify!*

✓ **Different expectations** : from **self management** to **centralized control**

A > B Autonomy ...

A < B Centralized national management ...



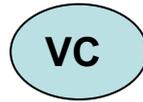
✓ The choice of an assessment approach depends on the maturity of the higher education and research system considered

✓ There is no one-size-fits-all ideal model for implementing an assessment. It depends on the history and the national context, the political issues and the specificities of the institution

✓ The definition of the evaluation grain, that is to say of the **components to be evaluated within a university** (diplomas, faculties and schools, research entities) can vary according to the countries and the practices

CONCLUSION AND RECOMMENDATIONS

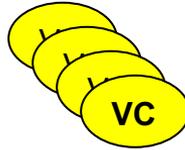
VISITING COMMITTEE



University

✓ Recommendation 1

A **visiting** committee for the institution ($A > B$) and one for each department ($B > A$) for *research and education (graduate)*



Departments, Faculties

...



Programs & Diploma
(undergraduate, graduate, PhD)

SAB



Laboratories



Researchers

CONCLUSION AND RECOMMENDATIONS

- ✓ **Recommendation 2**: For research assessment, public authorities can organize **national thematic panels** by disciplinary fields based on shared indicators, and expert committees (ex: INRIA in France ; CAPES Post-Graduate assessment in Brazil ...)
- ✓ **Recommendation 3**: Implementation of **Scientific Advisory Board (SAB)** in each department (or equivalent) **piloted by the university**, following the procedures of the assessment agency. The institution then performs an analysis to compare the results with its strategy and internal processes, in its self-assessment report.
- ✓ **Recommendation 4**: The use of a shared information system to analyze **certified data updated each year** is essential to evaluate certain activities such as **undergraduate programs** (student success and professional integration).
- Open question : the limits of indicators to assess performance and make comparisons *Creativity ? Risk taking ? Disciplinary specifics ?*
- *Only a peer judgment can be relevant !*

CONCLUSION AND RECOMMENDATIONS

- ✓ **Recommendation 5**: **Develop a culture of internal quality assurance at all levels**
 - A shared value
 - A collective responsibility of the whole community including students and administrative staff
 - A lever for harmonizing and coordinating practices within an institution (subsidiarity)

- ✓ **Recommendation 6**: **The assessed institution must position itself**
 - what is your strategy?
 - what demonstration do you make of its implementation and effectiveness?
 - Situation and comparisons to other institutions

A successful self-assessment for a useful external assessment !

- ✓ **Recommendation 7**: **The essential role of independent assessment agencies, and the opening of borders to foreign agencies to stimulate and harmonize international good practices**

CONCLUSION

- Faculties and universities **have been and are** places of knowledge development and transmission from their origins
- The perfect assessment process does not exist !
- An evaluation model cannot be frozen : an adaptation of the rules is necessary according to the specific contexts of each country



University rhyme with Eternity !

SOME REFERENCES



[HTTPS://WWW.ENQA.EU](https://www.enqa.eu)

[HTTPS://WWW.ENQA.EU/MEMBERSHIP-DATABASE/](https://www.enqa.eu/membership-database/)



[HTTPS://WWW.ANVUR.IT/EN/HOMEPAGE/](https://www.anvur.it/en/homepage/)



[HTTPS://AAQ.CH/FR/](https://aaq.ch/fr/)



[HTTPS://WWW.QANU.NL](https://www.qanu.nl)



[HTTPS://WWW.REF.AC.UK](https://www.ref.ac.uk)



[HTTPS://WWW.HCERES.FR](https://www.hceres.fr)

MICHEL ROBERT IS AUTHOR OF A FRENCH-LANGUAGE BOOK “THE MEANING OF ASSESSMENT IN HIGHER EDUCATION AND RESEARCH”, PUBLISHED IN 2020 AND DOWNLOADABLE AT:

[HTTPS://WWW.LIRMM.FR/USERS/UTILISATEURS-LIRMM/MICHEL-ROBERT](https://www.lirmm.fr/users/utilisateurs-lirmm/michel-robert)

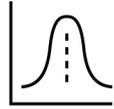
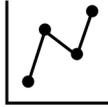
[HTTPS://THECONVERSATION.COM/DEBAT-COMMENT-REPENSER-LEVALUATION-DANS-LENSEIGNEMENT-SUPERIEUR-146246](https://theconversation.com/debat-comment-repenser-levaluation-dans-lenseignement-superieur-146246)

[HTTP://WWW.ESRAQ.FR](http://www.esraq.fr)

THE MEANING OF ASSESSMENT IN HIGHER EDUCATION AND RESEARCH

MICHEL ROBERT

UNIVERSITÉ DE MONTPELLIER, FRANCE



1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

THANKS FOR YOUR ATTENTION !

The Meaning of Assessment in Higher Education and Research



Prof. Michel ROBERT
former president of the
Université de Montpellier 2, France

June 30, 2021 1:30 PM (GMT-3)

www.youtube.com/cassriograndedosul

After the talk, there will be a panel with the participation of:

- Prof. Raimundo Macedo, president of the Brazilian Computer Society
- Prof. Marcelo Lubaszewski, vice-president of the Brazilian Microelectronics Society
- Prof. Tiago Balen, Head of the Graduate Program on Microelectronics at UFRGS
- Prof. Avelino Zorzo, Computer Science Committee, Capes/MEC



MICHEL ROBERT (BORN 1957; PHD :1987) IS PROFESSOR AT THE UNIVERSITY OF MONTPELLIER (FRANCE), WHERE HE'S TEACHING MICROELECTRONICS IN THE ENGINEERING PROGRAM. HIS PRESENT RESEARCH INTERESTS AT THE MONTPELLIER LABORATORY OF INFORMATICS, ROBOTICS, AND MICRO-ELECTRONICS (LIRMM) ARE DESIGN AND MODELISATION OF SYSTEM ON CHIP ARCHITECTURES.

HE IS AUTHOR OR CO-AUTHOR OF MORE THAN 300 PUBLICATIONS IN THE FIELD OF CMOS INTEGRATED CIRCUITS DESIGN. HE HAS SUPERVISED AROUND FORTY DOCTORAL THESIS. HE CHAIRED THE IFIP WG 10.5 (INTERNATIONAL FEDERATION FOR INFORMATION PROCESSING) FROM 2007 TO 2011. HE SERVED AS DIRECTOR OF THE DOCTORAL SCHOOL, OF THE LIRMM RESEARCH LABORATORY, THEN OF THE LABORATORY OF EXCELLENCE FOR DIGITAL SOLUTIONS AND MODELING. FOR THE ENVIRONMENT AND THE LIVING, BEFORE BECOMING PRESIDENT OF THE UNIVERSITY OF MONTPELLIER(2012-2015).

HE HAS HELD VARIOUS NATIONAL RESPONSIBILITIES IN MONITORING AND EVALUATION IN HIGHER EDUCATION AND RESEARCH. HE WAS DIRECTOR OF THE INSTITUTIONAL EVALUATION DEPARTMENT OF THE HIGH COUNCIL FOR THE EVALUATION OF RESEARCH AND HIGHER EDUCATION (HCÉRES) FROM 2016 TO 2021.

MICHEL ROBERT IS AUTHOR OF A FRENCH-LANGUAGE BOOK "THE MEANING OF ASSESSMENT IN HIGHER EDUCATION AND RESEARCH", PUBLISHED IN 2020 AND DOWNLOADABLE AT: [HTTPS://WWW.LIRMM.FR/USERS/UTILISATEURS-LIRMM/MICHEL-ROBERT](https://www.lirmm.fr/users/utilisateurs-lirmm/michel-robert)