Introduction to the theme: Research and quality assurance

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Manager of the Quality Board

for Icelandic Higher Education

Quality Board
for Icelandic Higher Education

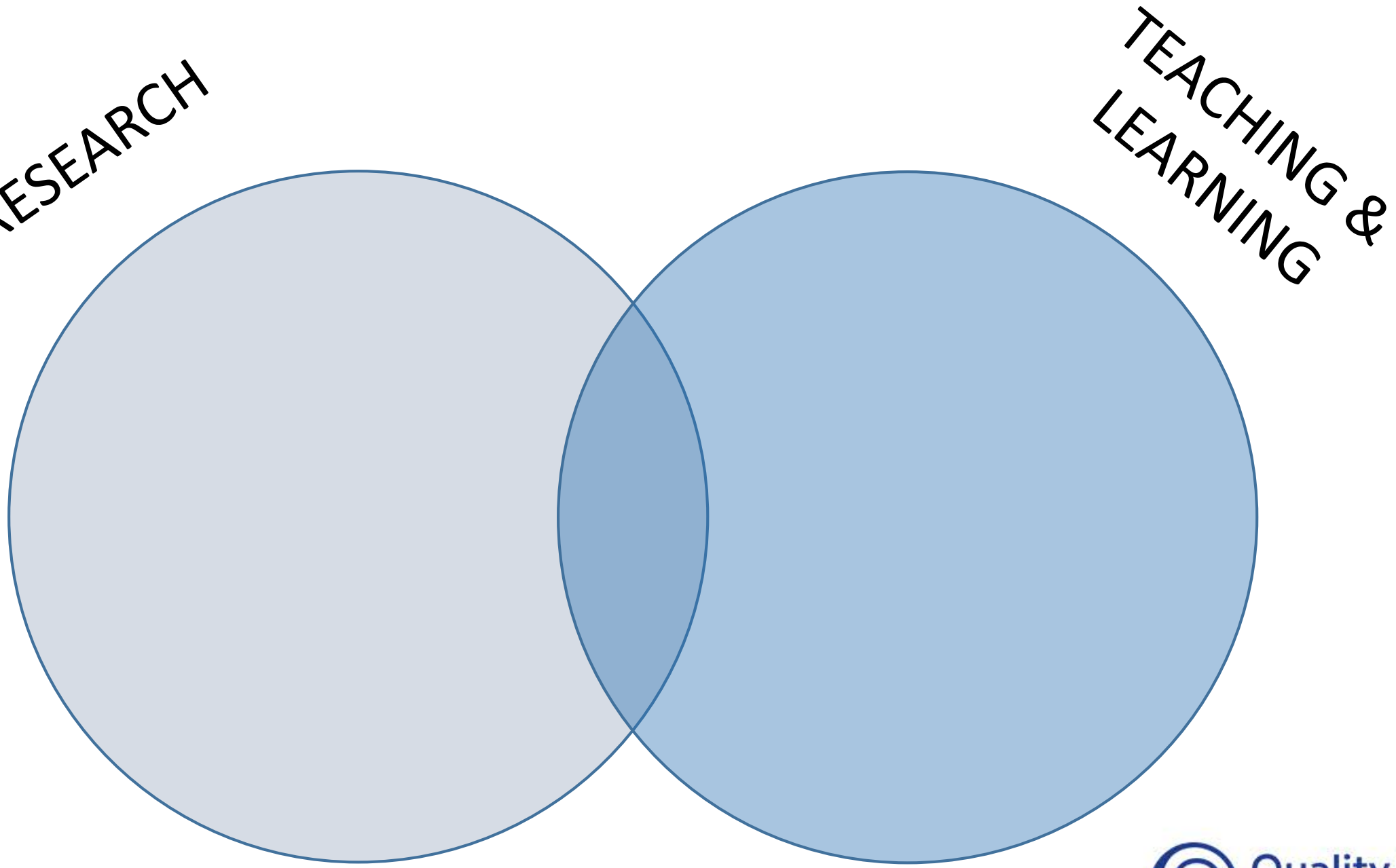
Overview

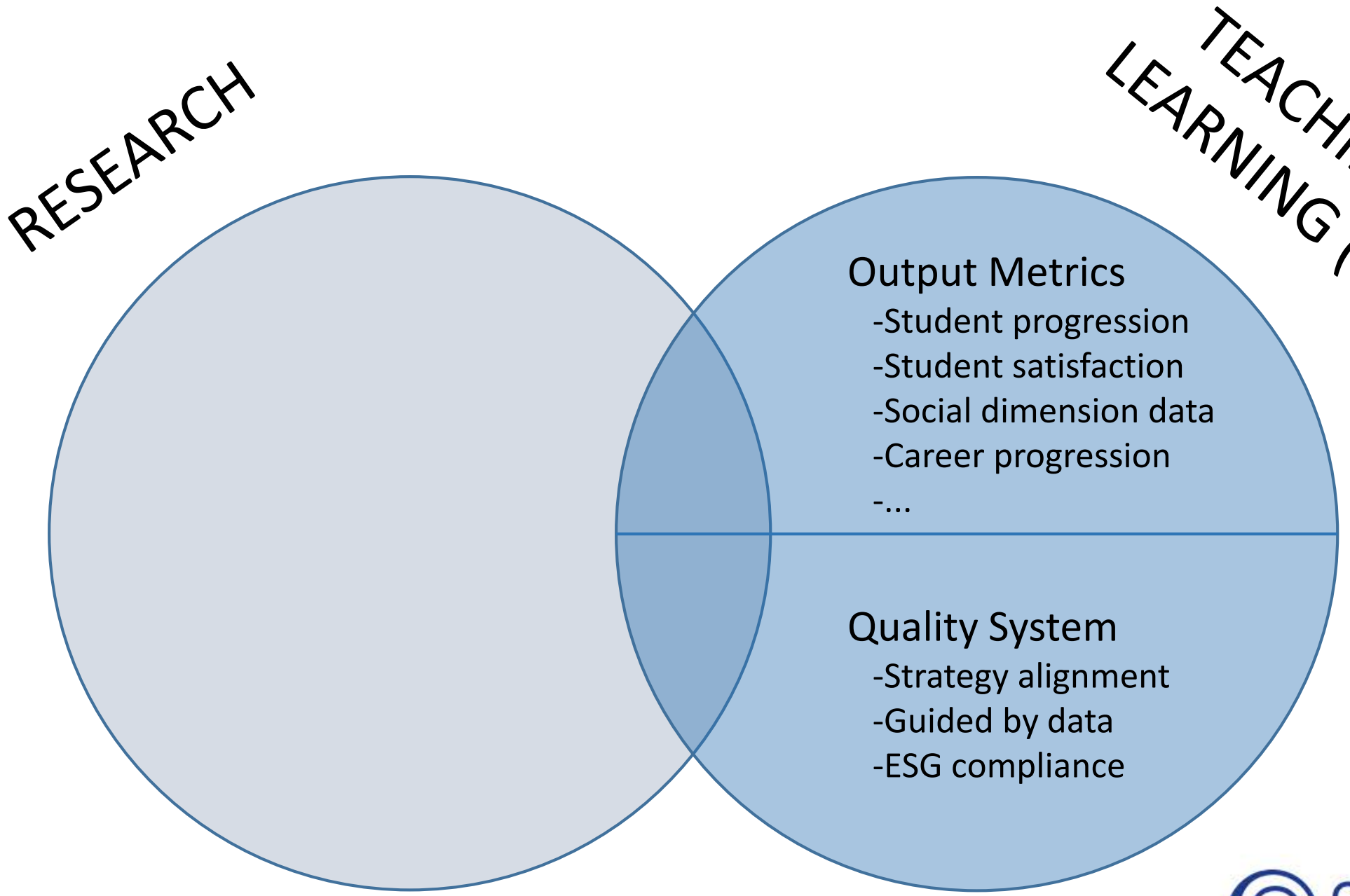
- What is Quality Management of Research, and how is it different from other common evaluations of research?
- Are there parallels and intersections with Quality Management of Teaching and Learning?
- Challenges and opportunities

Evaluation of Research

vs.

Evaluation of *Management* of Research


RESEARCH
TEACHING &
LEARNING



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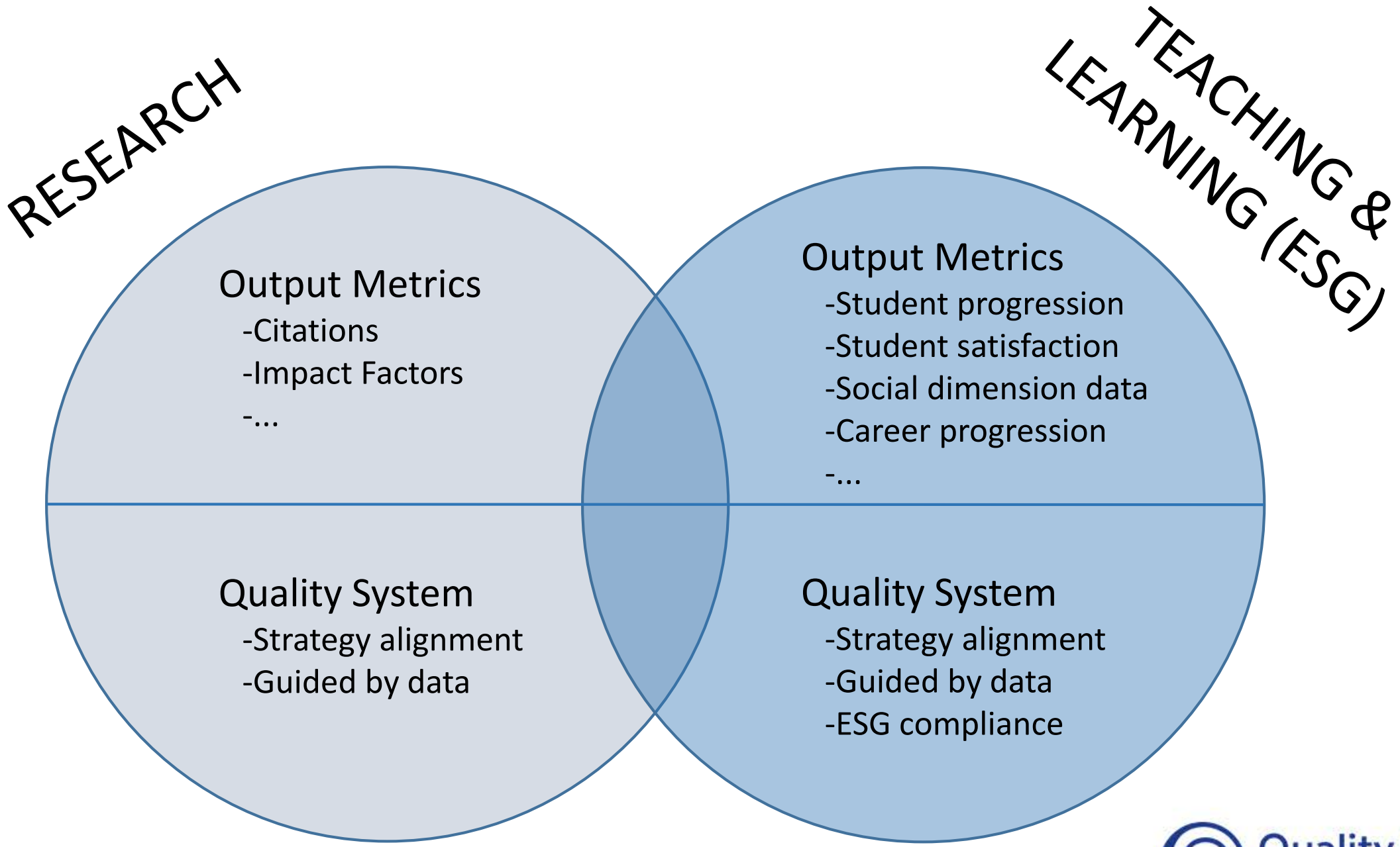

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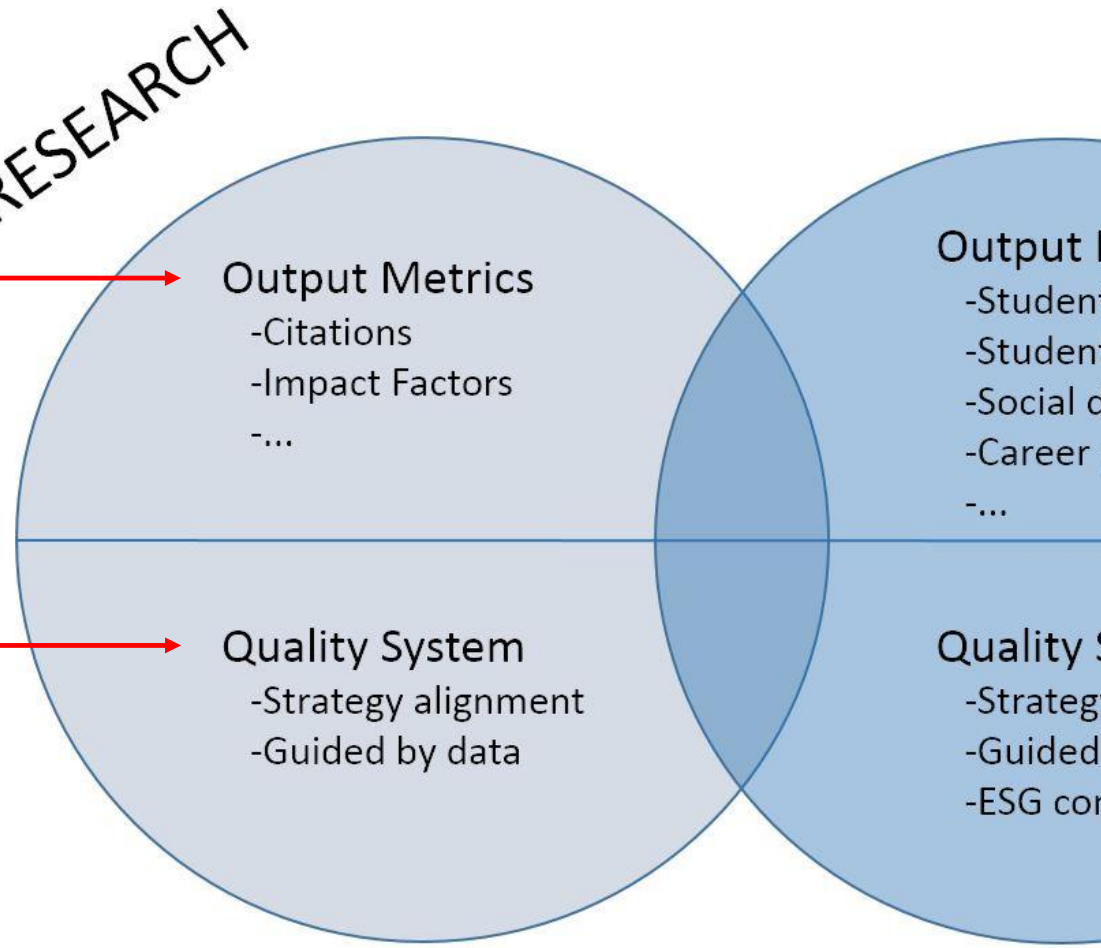
Bibliometric Evaluation of Research

Evaluation of *Management* of Research



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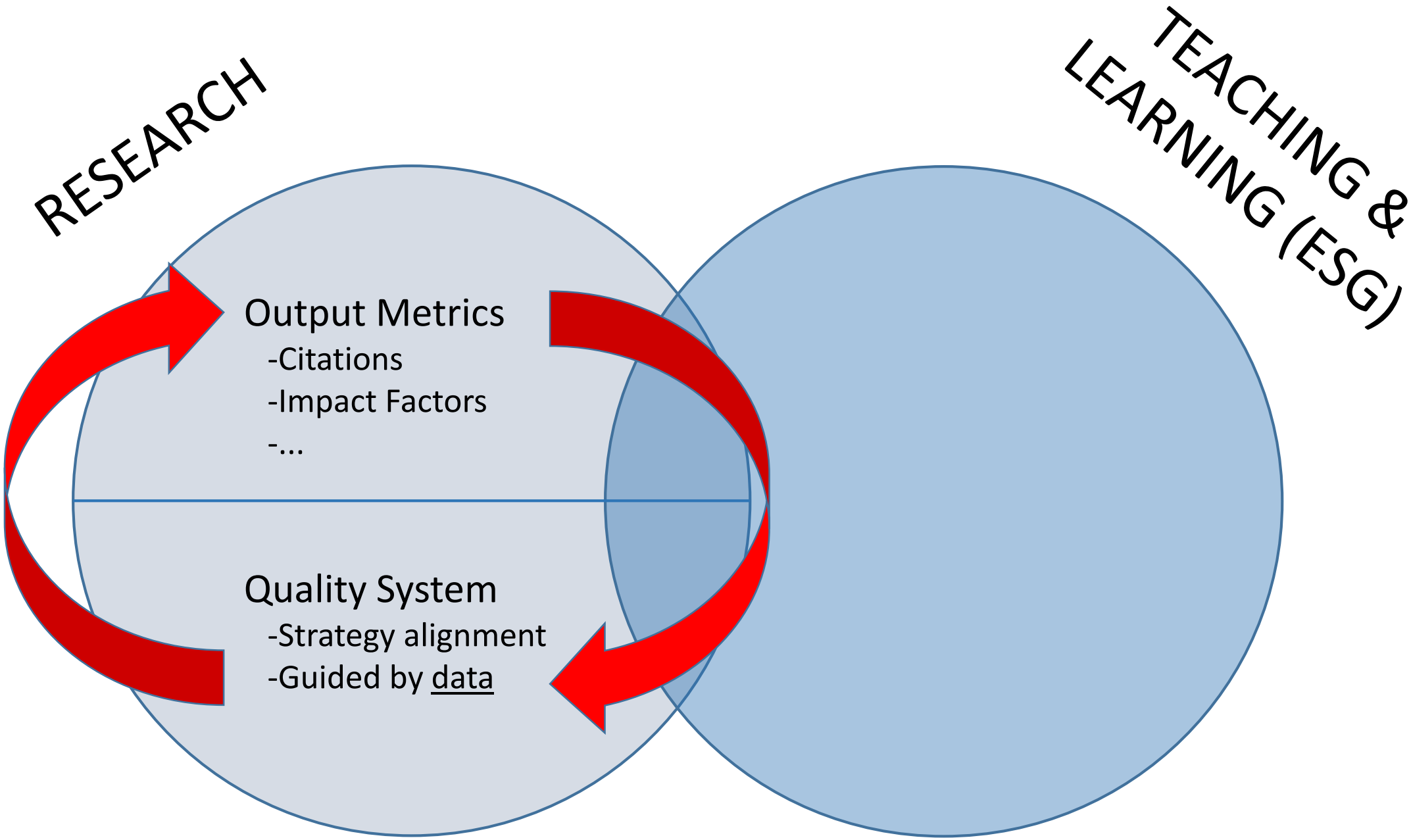
RESEARCH
TEACHING & LEARNING (ESG)
Output Metrics
-Citations
-Impact Factors
-...
Quality System
-Strategy alignment
-Guided by data

NOT about ranking or evaluation based on data (points on a continuum)

- National list of research excellence

1. University A (260 points)
2. University B (258 points)
3. University C (195 points)
- ...

RATHER how are universities using data internally to continuously improve?

- University A
  - Quality System of Research
    - Selection of indicators
    - Benchmarks/goals
    - Information management
    - Active feedback loops
    - Data-based decision-making

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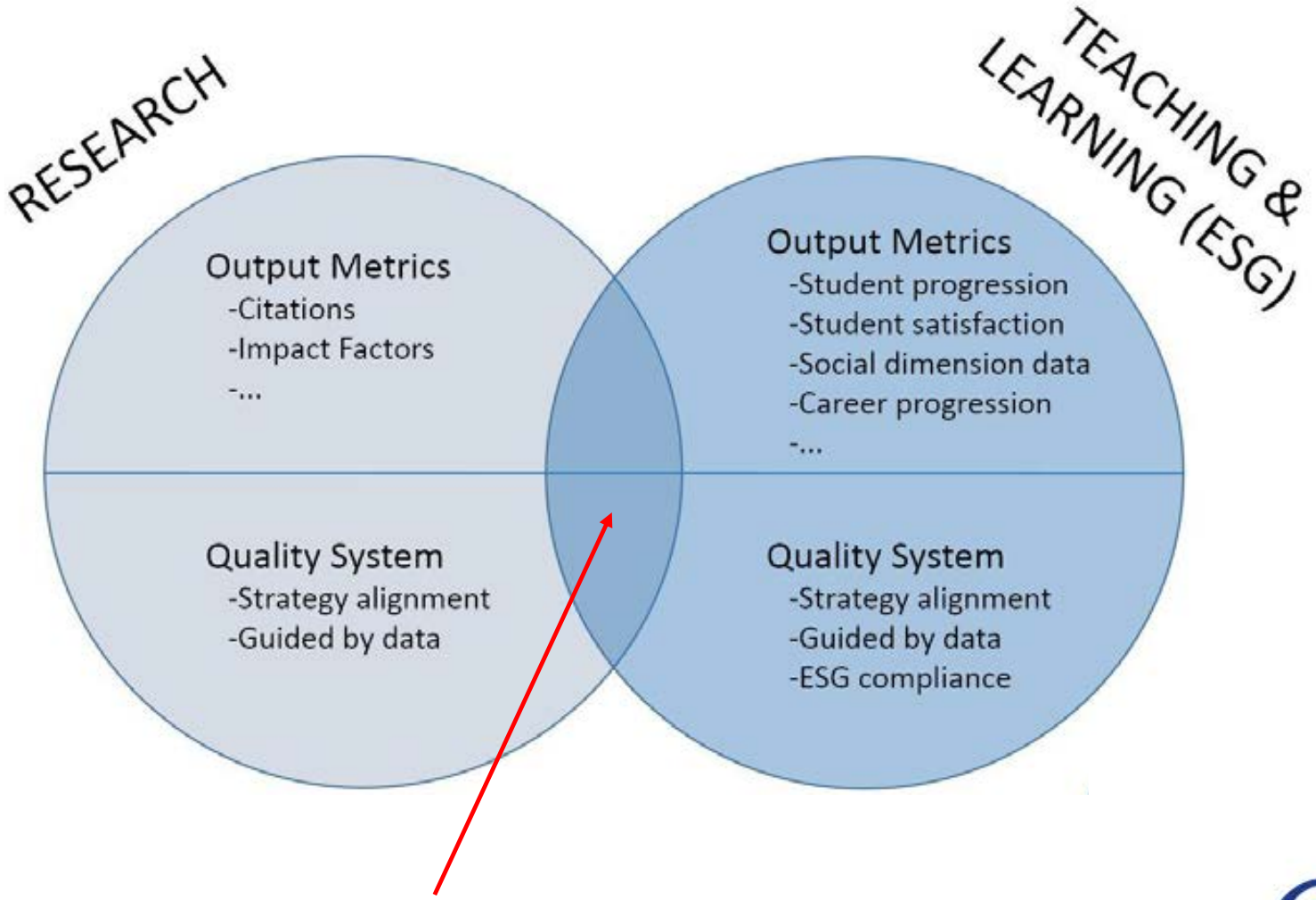
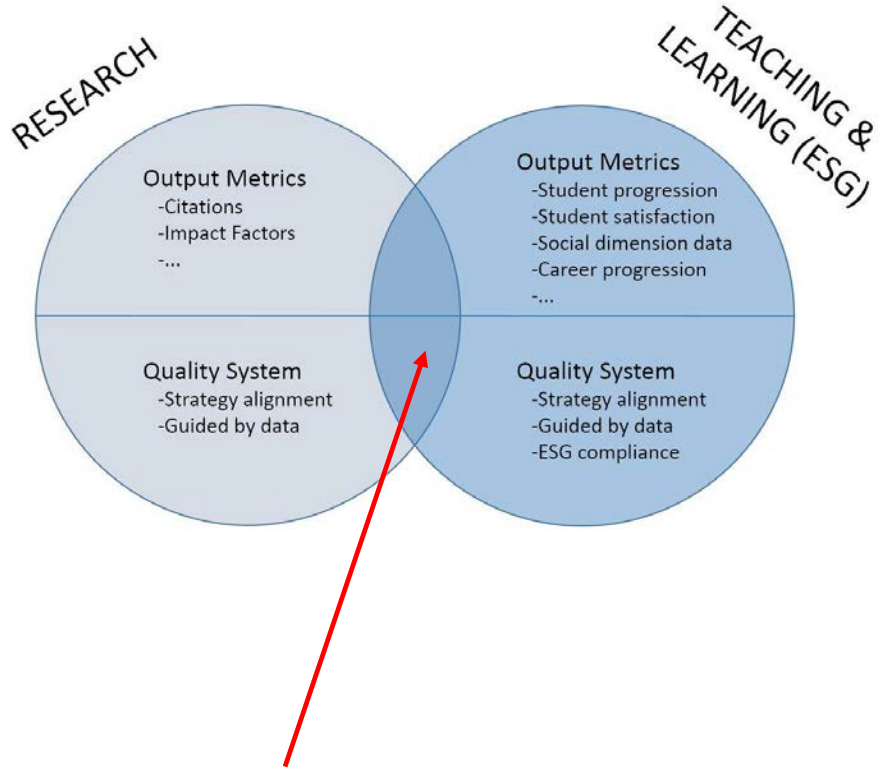
Intersection of Research + Teaching & Learning



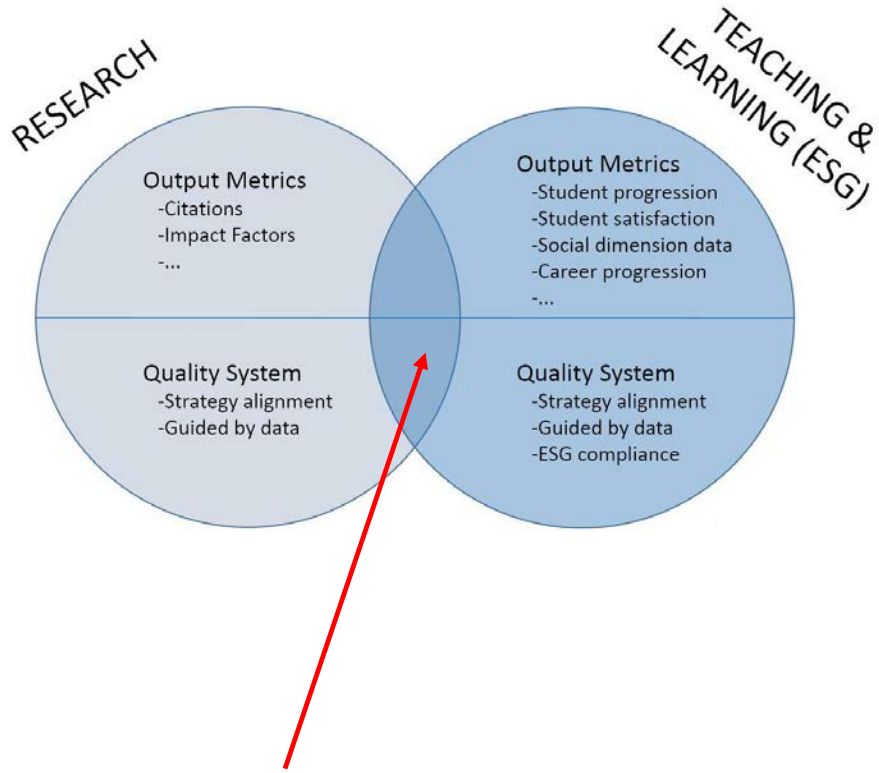
Intersection of Research + Teaching & Learning

- ESG
  - 1.1: Quality assurance policies are most effective when they reflect the relationship between research and learning & teaching
  - 1.5: A supportive staff environment … encourages scholarly activity to strengthen the link between education and research
  - 1.9: Regular monitoring, review and revision of study programmes … include the evaluation of … the content of the programme in the light of the latest research in the given discipline



Intersection of Research + Teaching & Learning

- Hyllseth
  1. Teaching takes place in accordance with the most recent research results
  2. The programme is linked to a research environment
  3. Research-based teaching is offered by full time employed teachers with research competencies
  4. Research-based teaching is offered by active researchers in the discipline
  5. Research-based teaching implies that students take part in training in scientific method in cooperation with a practicing researcher



Challenges and opportunities

- No ESG for management of research quality
- Existing frameworks for intersection of research and teaching & learning
  - ESG
  - Hyllseth
- There already is an overlapping mandate in many countries
  - Research Councils, etc.
- An opportunity to enhance research quality without overemphasis on (often controversial) indicators

Thank you!

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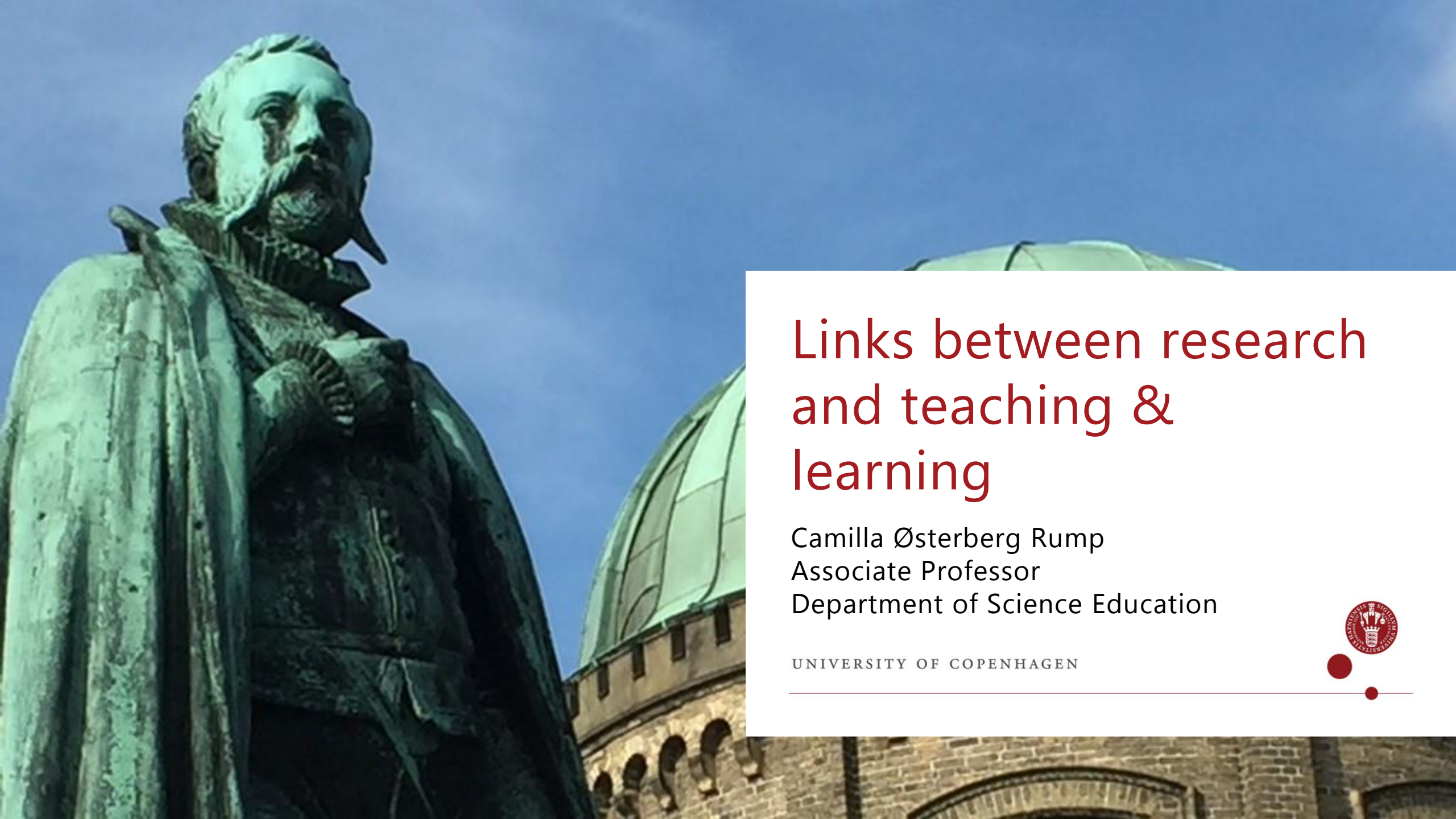


Links between research and teaching & learning

Camilla Østerberg Rump
Associate Professor
Department of Science Education

UNIVERSITY OF COPENHAGEN

Agenda

- Why do we want to link teaching to research in higher education?
- Important research on links between teaching and research
- A story of research teaching integration in two different contexts
- Teachers' and students' rationales when linking teaching and research
- What types of research–teaching integration supports student learning?

Why do we want to link teaching to research in higher education?

- Open the socrative app –
- or go to http://b.socrative.com/login/student/
- or go to http://socrative.com/ - choose 'student login'
- Room number: **642618**
- Please answer the question:

Why do we want to link teaching to research in higher education?

Linking research and teaching

"In contrast to the apparent academic myth that research productivity and teaching effectiveness are complementary constructs, results of the present investigation—coupled with the findings of the Hattie and Marsh (1996) meta-analysis—provide strong support for the typical finding that the teaching-research relation is close to zero."

Marsh & Hattie, 1998

How can we teach in ways in which we experience a positive relation between teaching and research?

Developing an instrument for evaluating research-based teaching

Research-teaching integration (RTI) in large classes at the faculty of SCIENCE

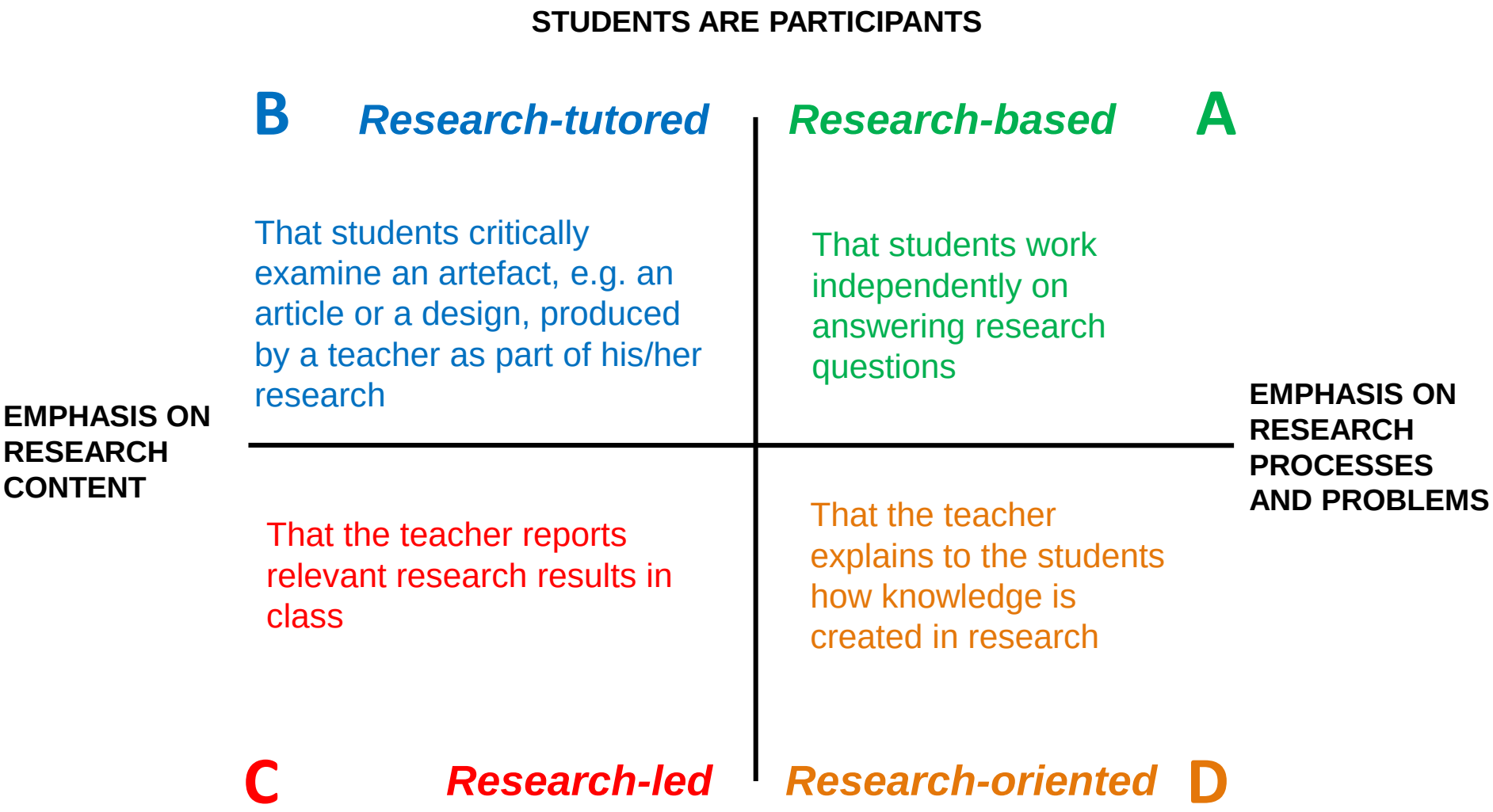
- **Biochemistry**, module, 7½ ECTS, 2nd year of B.Sc., approx. 100 students: From 'cook book' exercises to more open-ended labs ('make your own cook book)
- **Landscape architecture**, throughout 1st year of B.Sc., approx. 60 students: Students produce colour charts for the colours of selected Danish tree species throughout the course of a year.
- (Mathematics, 7½ECTS, approx. 160 students: From doing calculations to proving theorems)

Instrument for evaluating RTI units

- General instrument – to work in all disciplines
- Measure specific initiatives
- Handed out pre and post, i.e. ask for importance, not experiences

- Idea of instrument (hypothesis):
  1. If students experience the RTI initiative to be beneficial, then afterwards, they will find RTI more important (generally)
  2. They will find exactly those types of RTI they have met through the initiative more important (specifically)

How *important* is it for you, that the following elements are present in your program?



Test of instrument: Biochem & Landscape

N = 15 Biochemistry	
Students work independently on research questions	↑
Take part in developing research techniques (e.g. lab techniques, design practices, etc.)	↑
Read articles or the like made by the teacher	↑

N = 29 Landscape	
Students and teachers together make inquiries into a problem	↓
Students work independently on research questions	↓
Take part in a research project done by a teacher of the programme	↓

Biochemistry

1. Experienced importance rise
2. Specifically for the types of RTI they have met

Landscape architecture

1. Experienced importance *falls*
2. Specifically for the types of RTI they have met

The instrument works as intended!

Why doesn't it (RTI) work for the landscape architecture students, when it works for the biochemistry students?

- Open the socrative app –
- or go to http://b.socrative.com/login/student/
- or go to http://socrative.com/ - choose 'student login'
- Room number: **642618**
- Please answer the question:

Why doesn't it (RTI) work for the landscape architecture students, when it works for biochemistry students?

Student' and teacher's experiences of RTI and coproduction of knowledge

Based on work by Tine Damsholt and Marie Sandberg

Models for integrating teaching and research

- Graduate seminar/Teachers presenting their own research
- Budding genius/Apprenticeship
- Graduate slave/Students being put to work by the teacher
- Directed community/Students as co-researchers – the collective project

Method

- Ethnographic study based on ‘students as partners’, i.e. research-teaching integration.
- Students conducted all interviews, observations and basic analysis.

Students' rationales – development oriented:
It is crucial to be able to contribute to the development of one self, the discipline and the research

…for me, in any case, it was really inspirational to be told that no one had done this before. It is ok to makes mistakes here, as there is no answer sheet (…) for me, this means that learning is, in itself, an important aspect. It is not the answer in and of itself but the act of doing it that is important. (…) Research; it is the whole process. Even if you do not end up with what you thought you would – that is a result in itself; then you know what it is that you don't know. It is motivating. I like the thought of the process being the important element. It is the journey, not the destination

(Informant 41, Physics).

Students' rationales – job oriented:
Future job opportunities are crucial, and therefore it is important to pass exams

I love researchers! I think that what they do is awesome. But I can only be bothered to read the results. I am not very interested in the process (…) The less [of the teachers'] half-finished work that is involved, the happier I am.

(Informant 16, Religious studies).

There is a risk that what you are teaching is wrong. (…)You might waste people's time if you discover that your research project does not come to fruition in the way that you had imagined. Then all of the students might have followed along with something that was a dead-end. It is risky when you don't know what you will end up with

(Philosophy student, ethno-raid).

Students' rationales – application oriented

It is crucial to get tools, knowledge, and insight which can be applied in practice and make a difference outside the university

It was very textbook – where we just had to: 'Now we will do this, just because we have to learn it'. Then you do some work purely for the sake of your own learning and then I think that I am much more committed if someone else will use it too. Much more. It makes a huge difference for me if someone will be using what I am doing, compared to if I just – I am just writing it so that I can learn something for myself. Then I am not as committed

(Informant 34, Biology).

Risk of disappointment – application oriented

I was really pumped about it and said yes to do, the project and then···I wasn't really involved in deciding what it ended up being about, but it is definitely motivating if you can be involved in doing some research or something ***that will actually be used for something****. I think it is really important. (···) that there is some new knowledge, but I feel like we were just asked to do grunt work. So now we just have to sit and analyse some soil profiles for him so that he has some data. I don't really know···yes, I am a bit disillusioned about it right now*

(Informant 40, Geography and Geoinformatics).

Students' rationales – profession oriented
It is crucial to get access to a specific profession

You should have seen me when I was allowed into the laboratory. I mean, it really means a lot because it is, hands-on. You go to school and you go to school and you go to school and you write the same paper that thousands of other students have written before you and I have always felt that that was awful. "Yeah, yeah, we can do that" but we don't gain anything by doing it! It feels like a test of manhood, in some ways, this project [The informant straightens his/her back when the words 'test of manhood' are mentioned] *I am grown up enough to be able to do this!*

(Informant 48, Geology)

If not relevant – profession oriented

We both want to be upper-secondary school teachers (…) and I think perhaps that sometimes this very research-based [teaching, i.e. FUI] *can be a bit narrow and very specific, but that is not very relevant to what we are going to be doing later*

(Danish student, ethno-raid)

Students' research rationales

- *Development-oriented rationale*: RTI is interesting but becomes particularly relevant when the students are thereby able to contribute to the development of the subject and science, even when this takes them down previously untrodden paths or detours.
- *Job-oriented rationale*: RTI can be relevant in relation to the future labour market (as it gives students the newest knowledge and methods, for example) but this must not be at the expense of the focus of the course and its relevance to exams.
- *Application-oriented rationale*: RTI is relevant if it gives students hands-on experience, methods and process tools that can be translated into practice and make a difference outside of the university environment.
- *Profession-oriented rationale*: RTI is relevant when it becomes a way to enter a profession and an essential aspect of actually becoming a practitioner of that profession.

Landscape vs. Biochemistry

- Students' rationales – education for profession
- Public view on science
- Ownership – who benefits from this? (Chang)
- First year: Renegotiation of reasons for entering
- Student evaluation of teaching ratings and student learning are not related (Uttl, White, & Gonzalez (2017))

Teachers' rationales – the separation rationale

Research and teaching are qualitatively different and separated in two opposing practices

So you might say that on the theoretical level, it fits perfectly well (…) but on the practical level it is an awful fit [laughs].

Intuitively – yes. The answer should be yes (laughs) – but I cannot think of a concrete example of how, in my type of research, how could the students contribute to that? I mean […] in the teaching in the context of a course and the teaching activities of a course, I cannot think of how they could contribute.

(Informant 72)

Teacher rationales – the entirety rationale

From a ideal perspective, research and teaching flow together into one practice

RT

And then I thought, I now have 60 students, I can decide on my own what they should do, they must be introduced to Nano, that is, a whole lot of techniques. To be able to use the techniques, you have to have something to measure, so why can't they just as well make a new material, which they can meassure afterwards? I you make a new material, which you measure by all these advanced techniques, make sure that the measurements have a sufficiently high quality, well, then it is research. And the first year was a trial, if it worked, and it did. And the great test came the year after, then, because if something is to be a research project, that you have to build on top of what you did the year before, and so on. And we could! We succeeded; we found something new, and so we have done until last year, where we got the first real research results.

[Informant 79]

Teachers' rationales – the investor rationale

There is a means-to-an-end relationship between research and teaching in practice, where research is the end.

R⟷T

Because, it is not so that in a Bacherlor's project, they like in practice come and try something they have learnt something about before. All is new, actually. They have had some training in the lab, they have had some training in using different apparatus. Now it is serious business, really, preferably they should do all the mistakes on their own, and if there is no one to catch them, when they do these mistakes, then they don't learn from them, actually. Typically it is an enourmous investment to have a Bachelor's student, which then pays off, if they stay to do their Master's thesis as well, because then they are able to do they basic stuff, then you can add another layer.

(Informant 79)

Summing up – teacher's perspectives

- The *separation rationale:* RTI is considered an unrealistic ideal. Since research and teaching is experienced as qualitatively different practices, teaching can not in practice feed into research for real.
- The *entirety rationale:* RTI is a matter of course. The possibility for insights to flow in both directions is viewed as a natural thing, since teaching is experienced to being an extension of research.
- The *investor rationale:* RTI is viewed as an investment of resources. Teaching only pays off to research, if investments are done in the right manner.
- The *learning rationale* does not have RTI as an ideal, since teaching unequivocally exists for the sake of student learning. Research can be a resource, which can be drawn upon in teaching for the sake of learning.

What kinds of RTI are good for student learning?

- Healey inquiry – or guided inquiry (biochemistry)
  Grand-ma's law: 'Those who work are the ones who learn'
- Problem based learning
- Project oriented learning
- Opportunities for students to engage independently in *research or research like activities* ('doing as a researcher') which they find meaningful and motivating to engage with.
- Employability: Knowledge consumers - or knowledge producers? Specific 'fitness for purpose' new knowledge.
- Innovation?

References

In T. Damsholt, H.N. Jensen, & C. Ø. Rump (ed.): *Videnskabelse på Universitetet – veje til integration af undervisning og forskning.* ***Knowledge Creation at University: Ways to integrating teaching and research***. Copenhagen: Samfundslitteratur:

- Damsholt, T., & Sandberg, M. (2018). 'Det gør en kæmpe forskel for mig, at nogen skal bruge det, jeg laver'. Studerendes motivationer og udfordringer ved integration af forskning og undervisning. **'It makes a huge difference to me, that someone needs what I do'. Students' motivation and challenges when integrating teaching and research**.
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Chang, H. (2005). Turning an undergraduate class into a professional research community. *Teaching in Higher Education,10*(3)

Uttl, B., White, C. A., & Gonzalez, D. W. (2017). Meta-analysis of faculty's teaching effectiveness: Student evaluation of teaching ratings and student learning are not related. *Studies in Educational Evaluation*, *54*, 22-42.

Healey, M., Jordan, F., Pell, B., & Short, C. (2010). The research–teaching nexus: a case study of students' awareness, experiences and perceptions of research. *Innovations in Education and Teaching International, 47*(2), 235-246.

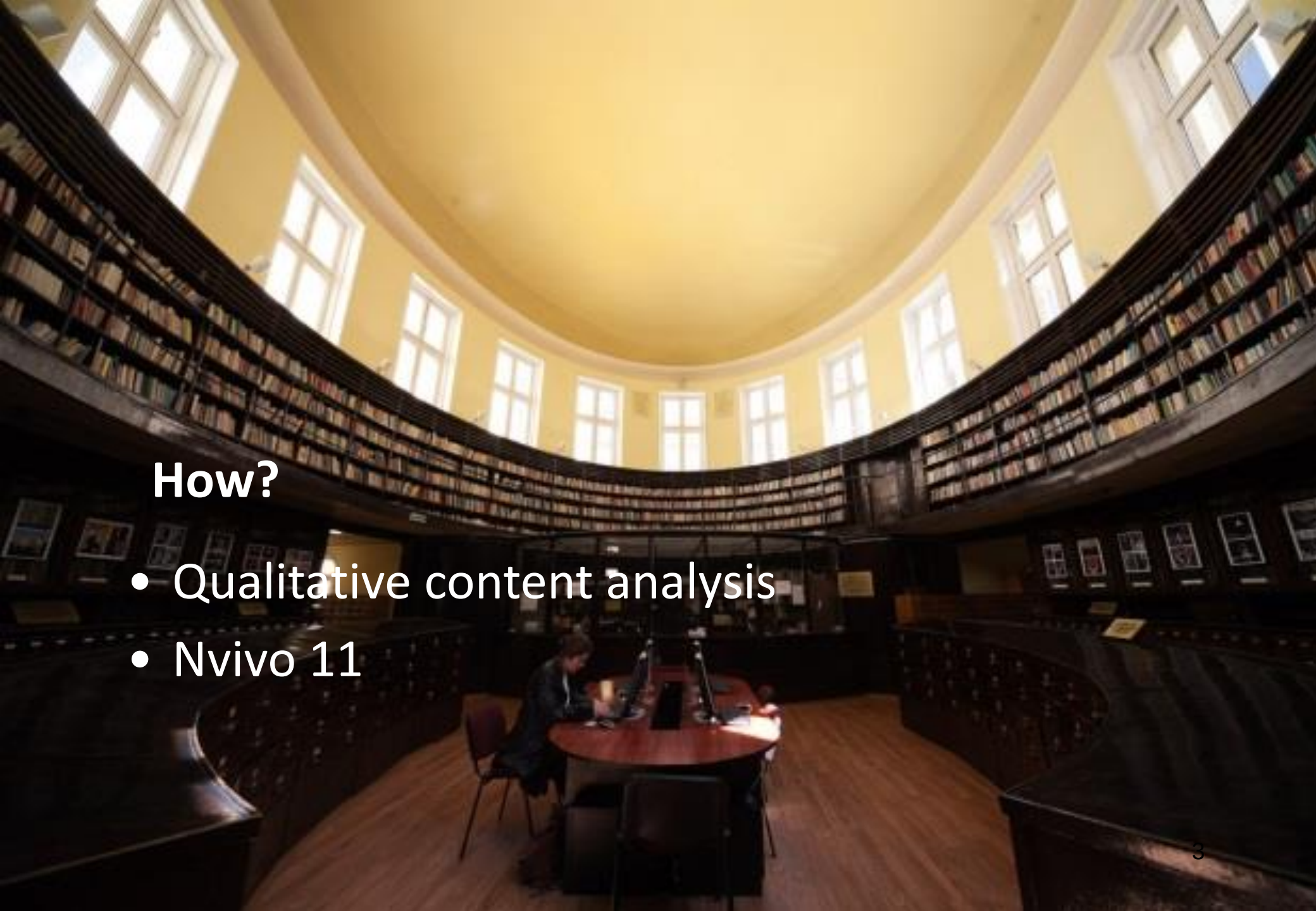
Quality management of UAS RDI in Finland

6 September 2018

Matti Kajaste
Counsellor of Education

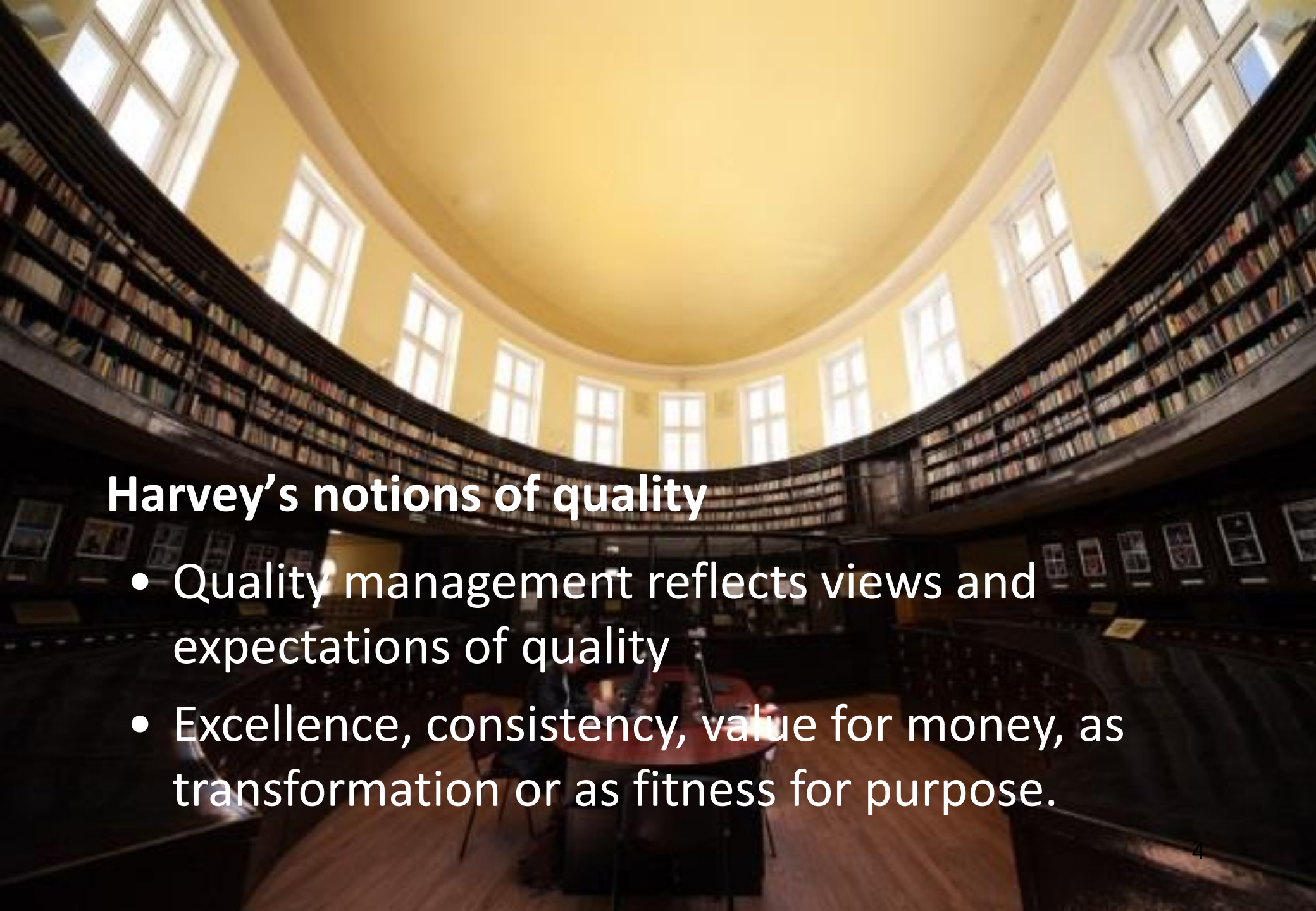
Ministry of Education and Culture
Ministère de l'Éducation et de la Culture

Name of UAS	Year of publication	Language used
Kymenlaakso UAS	2012	Finnish
Novia UAS	2012	Swedish
Jyväskylä UAS	2013	English
Mikkeli UAS	2013	Finnish
Kajaani UAS	2015	Finnish
Vaasa UAS	2015	English
Häme UAS	2016	English
Centria UAS	2016	Finnish
Lahti UAS	2016	English
Laurea UAS	2016	English
Satakunta UAS	2016	Finnish
Savonia UAS	2016	Finnish
Seinäjoki UAS	2016	English
Tampere UAS	2016	English
Turku UAS	2016	Finnish



How?

- Qualitative content analysis
- Nvivo 11



Harvey's notions of quality

- Quality management reflects views and expectations of quality
- Excellence, consistency, value for money, as transformation or as fitness for purpose.

Main findings

RDI and strategies

- Strong willingness to focus RDI into select focus areas. Loosely defined though.
- Strong attempts to increase RDI volume and external funding
- RDI strategies connect well to regional strategies
- Lot of attention to project proposal acceptance and development

Indicators

Mostly Minedu indicators

External stakeholder feedback

Working time spent on RDI

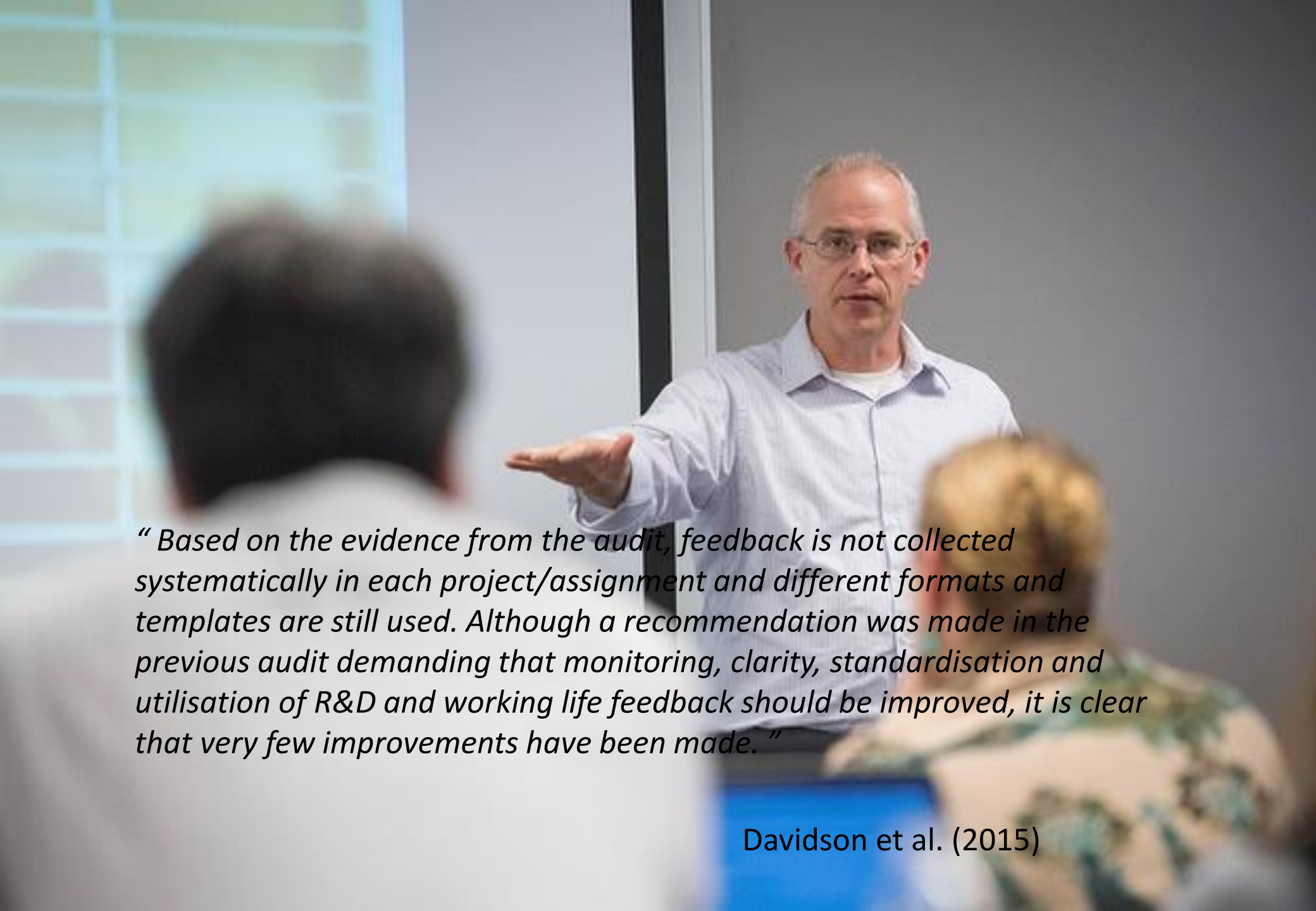
Only very few indicators on quality of output

Organization of RDI

- RDI management team
- RDI unit as a support structure
- RDI itself often embedded in educational units
- Laurea & Centria returned RDI into a dedicated units

Project quality management

- Only very few examples of learned lessons transfering from project to project
- An arsenal of tools used in most UASs to make sure the project runs smoothly



“ Based on the evidence from the audit, feedback is not collected systematically in each project/assignment and different formats and templates are still used. Although a recommendation was made in the previous audit demanding that monitoring, clarity, standardisation and utilisation of R&D and working life feedback should be improved, it is clear that very few improvements have been made. ”

Davidson et al. (2015)

Project quality management

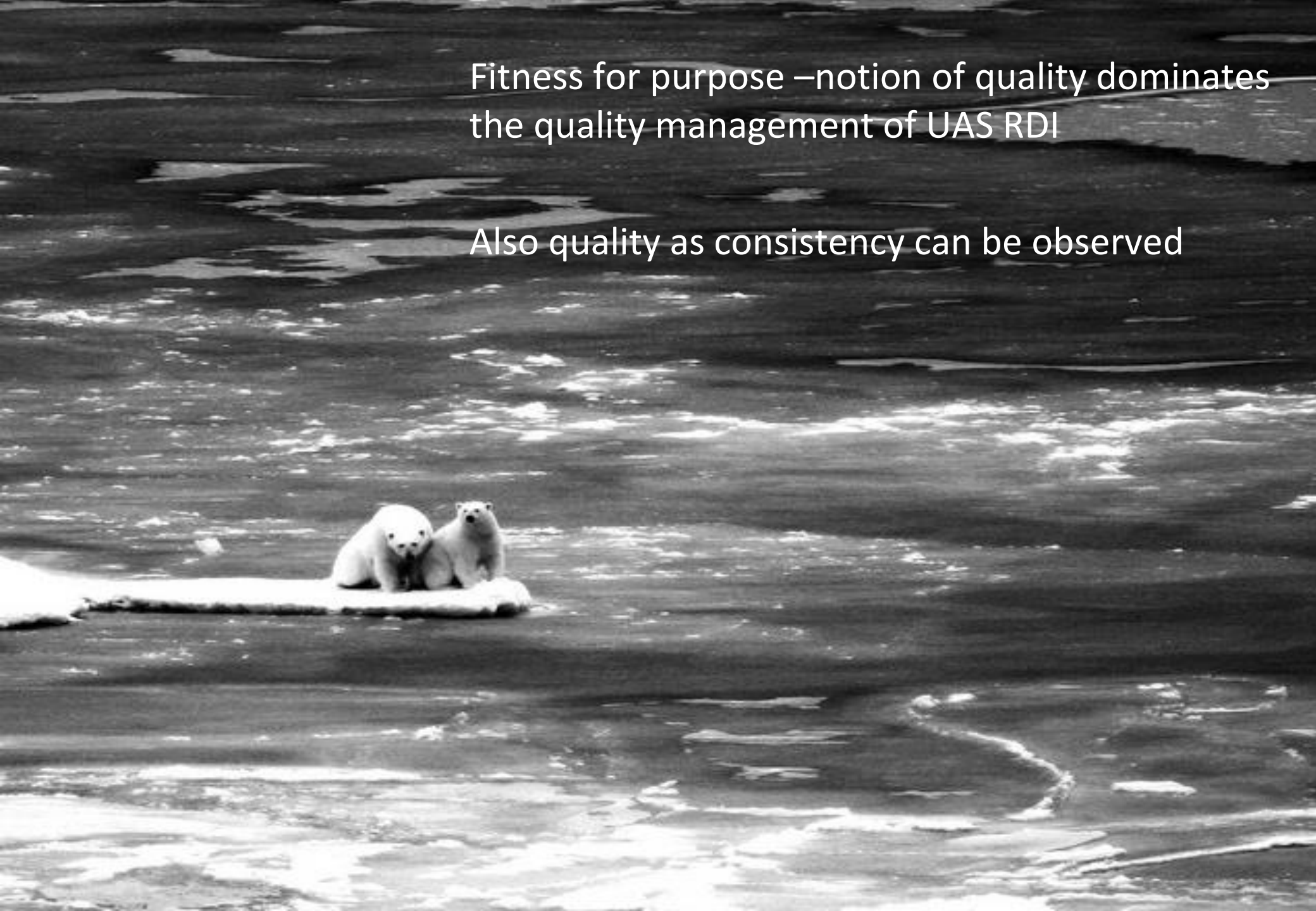
- Stakeholders utilised broadly in project planning, execution and evaluation
- Advisory boards so far underutilised resource in RDI quality management

RDI-education integration

- Management has a strong willingness to integrate education and RDI
- Quality management supports: Possibilities of integration are explored early
- Students not aware of projects conducted with external funding
- Integration intended to enrich education, not RDI

- Tools, approaches and notions of quality utilised in QM of RDI are quite similar across the sector
- Clear emphasis on the process of the RDI and especially project management

- Significant advances from the first round of audits
- The importance of external funding visible also in audits
- Strong pressures to show the quality, performance and impact of RDI activities



Fitness for purpose –notion of quality dominates the quality management of UAS RDI

Also quality as consistency can be observed

Ministry of Education and Culture

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Timo Aarrevaara 6.9.2018

NOQA Conference and Annual Meeting

Session 2
Assessment of quality systems for research

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Pohjoisen puolesta – maailmaa varten

The Professions in Arctic Societies (ProSoc)
http://www.ulapland.fi/prosoc

Research evaluation

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Institutional research evaluation based on legislation

> “The universities must evaluate their education, research and artistic activities as well as the effectiveness thereof. The universities must also regularly participate in external evaluations of their activities and in quality assurance systems. The universities must publish the results of the evaluations they have organised.”
> (Universities Act section 87, amendment 1302/2013)

The institutional research assessments will enhance impact, quality and internationalisation

Idea: enhancement
Practice: policy driven
Impact: governance and performance management

Benefits of institutional research evaluation

- further internationalisation and modernisation
- ensuring the international competitiveness
- ensuring adequate financing
- greater cooperation between higher education institutions

Other evaluands:

- A report entitled *The State of Scientific Research in Finland is prepared and launched* by the Finnish Academy every second year

- Steering by resource based funding formula and impact (performance negotiation)

Definition from Hansen 2005; Stensaker & Harvey 2011; Geschwind et al. 2018.

Three views for research evaluations

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Resource

- the increasing use of incentives, government funding formula, performance contracts and in universities' internal allocation (as managerial practice)
- Also, historical-based internal allocation models
- Growing role of publication forum (as an academic practice)

Process

- enhancement-led principles to reach universities' strategic goals
- The panel's role is crucial
- Major role of bibliometric analysis in the search of excellence
  - The methods cover only some of the disciplines efficiently
- future driven development, no sanctions

Actors

- the growing strength of performance management in institutional practices and stakeholders role in governance within universities

⇨ have profoundly changed the status, role and conditions of academics

Intepretation of research evaluation objectives

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Resource

University of Vaasa (2014)

- To compare status of research in international level and develop research activities
- To identify potential research groups leading to outstanding results
- Strong focus on publication output of researchers and academic unit research profiles

Process

Tampere University of Technology (2017)

- to identify potential world's best research communities (RC)
- transform good RCs into excellent RCs
- RCs' new pertinent and high impact research questions in their fields - potential and sustain existing excellence

Actors

University of Tampere (2014)

- up-to-date knowledge and perspectives on the current status and potential of the research in comparison to the international level in the respective fields
- To reach this end recommendations and ideas on how to further strengthen the research quality and the scientific and societal impact of research

FINNUT-PERFECT interviews 2016

- what does performance management means to respondents
- how much freedom do respondents have to decide about their performance when it comes to teaching, research and performance
- conflicting demands of academic work
- discussion on performance targets and performance data to define performance management tools

Analysis by NVivo with the concepts of performance, performance data, hierarchy, academic freedom, institutional autonomy and stakeholders' impact

FINNUT co-ordinated by Agder University,
NRF funded project 2015-2017

FINNUT interviews (FIN): resource

Historical-based internal allocation lacks incentives
“If there were mechanisms for incentives, this might have an impact on performance.. Now the university lacks this instrument.” academic, flagship, medicine

“There was a research evaluation, and [based on the evaluation report] there was a reorganization of research education. Funding was cut and the resource base was changed to the responsibility of the university.”
Professor, regional university, medicine

FINNUT interviews (FIN): process

Indicators are tools for management
“The publication forum indicators.. They are the mainstream.” academic leader, flagship

And they are recognised as being hands-on
“Our processes are in good condition, the knowledge transfer works fine, and our core tasks move on. However, if there are leaks in the process, we will get feedback from university management more or less officially.” manager, regional university

FINNUT interviews (FIN): actors

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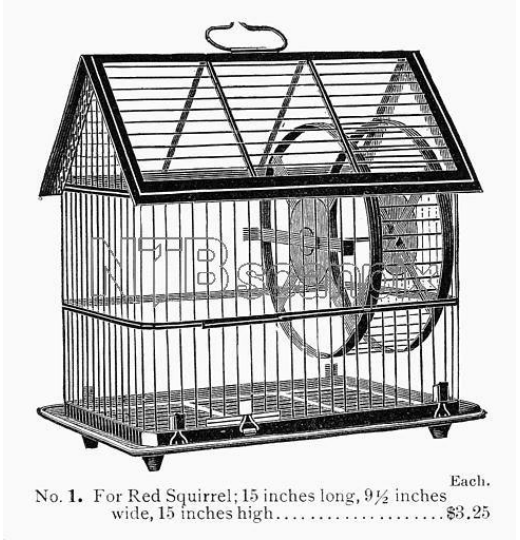
The work in the academy has changed into more focused direction of institutional strategies
“The International panel [in research assessment] paid attention to the way we try to do everything. We have to focus more and to pay attention to establishing profiles.” Flagship, academic leader

The research evaluations set the level for performance
“It is not possible to assess in academic work if a person does not work harder and harder. Otherwise it is not possible to get tenure in the University.” professor, regional University, social sciences



Conclusions

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- Two directions to research in universities: research is for “complex and emergent” (TuT 2017), research assessment reports written for internal and external stakeholders
- There is a tension between stakeholders’ growing demand for open science and discipline-based bibliometrics
- Assessment as a tool for funding instruments
- Assessment as tool to enhance evidence-based decision-making