Organisational Development Related to Performance Data Management in Learning and Teaching.
A Case Study of Six European Universities
Based on Benchlearning and Strategic SWOT Analysis

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What's in a name? That which we call a rose by any other name would smell as sweet.
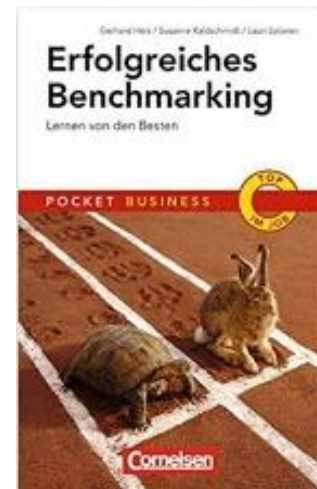
William Shakespeare
English poet and playwright
(1564-1616)

- **Background & motivation**
- **Case study & sample**
- **Goals & methodology of study**
- **Benchlearning of Performance Data Governance & Management (PDG/PDM) and strategic SWOT analysis**
- **Summary**

- Some limitations of the case study

Keywords: benchlearning; digital performance data management; evidence-based organizational change and development; higher education institutions; learning and teaching; performance indicators; strategy; SWOT analysis

- HE worldwide: increasing 'massification', **digitisation**, globalisation and **competition**, all under the condition of **decreasing resources**

- ➡ strong need in HEIs for **development-oriented quality management** (QM) and **evidence-based organisational change and development** (EBOCD) (e.g. Leiber, 2019b) to make HEIs fit for facing future challenges through **targeted strategy building and implementation**, particularly in **learning and teaching** (L&T)

    ➡   **Performance Data Governance (PDG)** &
            Performance Data Management (PDM)

- Thus, **case/field study of EBOCD in six European universities** related to their PDG/PDM models in L&T – universities from Austria, Belgium, Italy, Poland, Portugal and the United Kingdom cooperating in an EU-funded project for strategic partnership
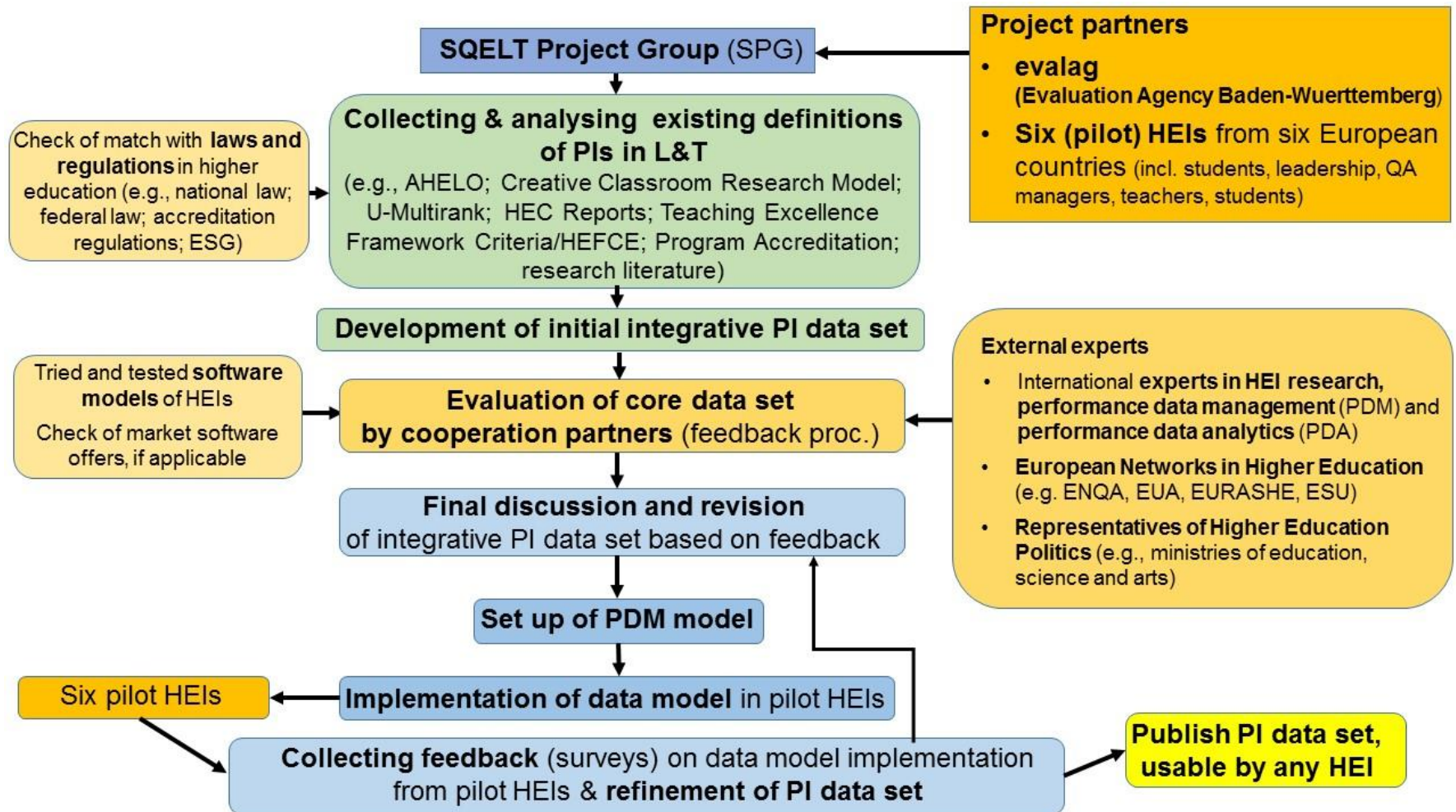
Case study and sample

Country	University	Characteristics	No. students
Austria	Danube University Krems	Further education	9,000
Belgium	Ghent University	Comprehensive university	41,000
Italy	University of Milan	Comprehensive university	63,000
Poland	Jagiellonian University Kraków	Comprehensive university	44,000
Portugal	University of Aveiro	Natural, social, engineering, medical sciences; polytechnics profile; Public foundation under private law	15,000
UK	Birmingham City University	Health social, engineering sciences; business and law; art, media and design; Polytechnics roots	24,000
Germany	evalag	Evaluations, accreditations, counseling, HE research	n/a
Netherlands	Expert from Uni Leiden	–	–
Norway	Expert from Uni Oslo	–	–
Portugal	Expert from CIPES	–	–

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Goals and Methodology

Workflow (schematic main steps) of SQELT project (planning phase – not updated)

SQELT Project Group (SPG)

Project partners
- **evalag**
  (Evaluation Agency Baden-Wuerttemberg)
- **Six (pilot) HEIs** from six European countries (incl. students, leadership, QA managers, teachers, students)

Check of match with **laws and regulations** in higher education (e.g., national law; federal law; accreditation regulations; ESG)

Collecting & analysing existing definitions of PIs in L&T
(e.g., AHELO; Creative Classroom Research Model; U-Multirank; HEC Reports; Teaching Excellence Framework Criteria/HEFCE; Program Accreditation; research literature)

Development of initial integrative PI data set

Tried and tested **software models** of HEIs

Check of market software offers, if applicable

Evaluation of core data set by cooperation partners (feedback proc.)

External experts
- International **experts in HEI research, performance data management** (PDM) and **performance data analytics** (PDA)
- **European Networks in Higher Education** (e.g. ENQA, EUA, EURASHE, ESU)
- **Representatives of Higher Education Politics** (e.g., ministries of education, science and arts)

Final discussion and revision of integrative PI data set based on feedback

Set up of PDM model

Six pilot HEIs

Implementation of data model in pilot HEIs

Collecting feedback (surveys) on data model implementation from pilot HEIs & **refinement of PI data set**

Publish PI data set, usable by any HEI

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Goals and Methodology

- Two main goals: **individual benchlearning** at partner HEIs & **intensive case study** including **generic results** (e.g. SQELT Manual; publications) (e.g. Leiber, 2019a)

- Aims at **comprehensive set of performance indicators** (PIs) **for L&T** and their **PDG/PDM framework**

- Builds on **available models of (D)PDG/(D)PDM in L&T**, a **literature analysis**, **benchlearning** and **surveys** with respect to (D)PDM models of **sample HEIs**, and **external experts**' knowledge

- Builds on various PI models (e.g. AHELO; Creative Classroom Research Model (Uni Leuven); **U Multirank**; HEC Reports; TEF/HEFCE; Program Accreditation; **NSSE Engagement Indicators**; **QILT** (Australian Quality Indicators for L&T); …)

- Contributes to **'Research on Indicators of Teaching Quality'** recently recommended to the European Parliament (Wächter et al., 2015)
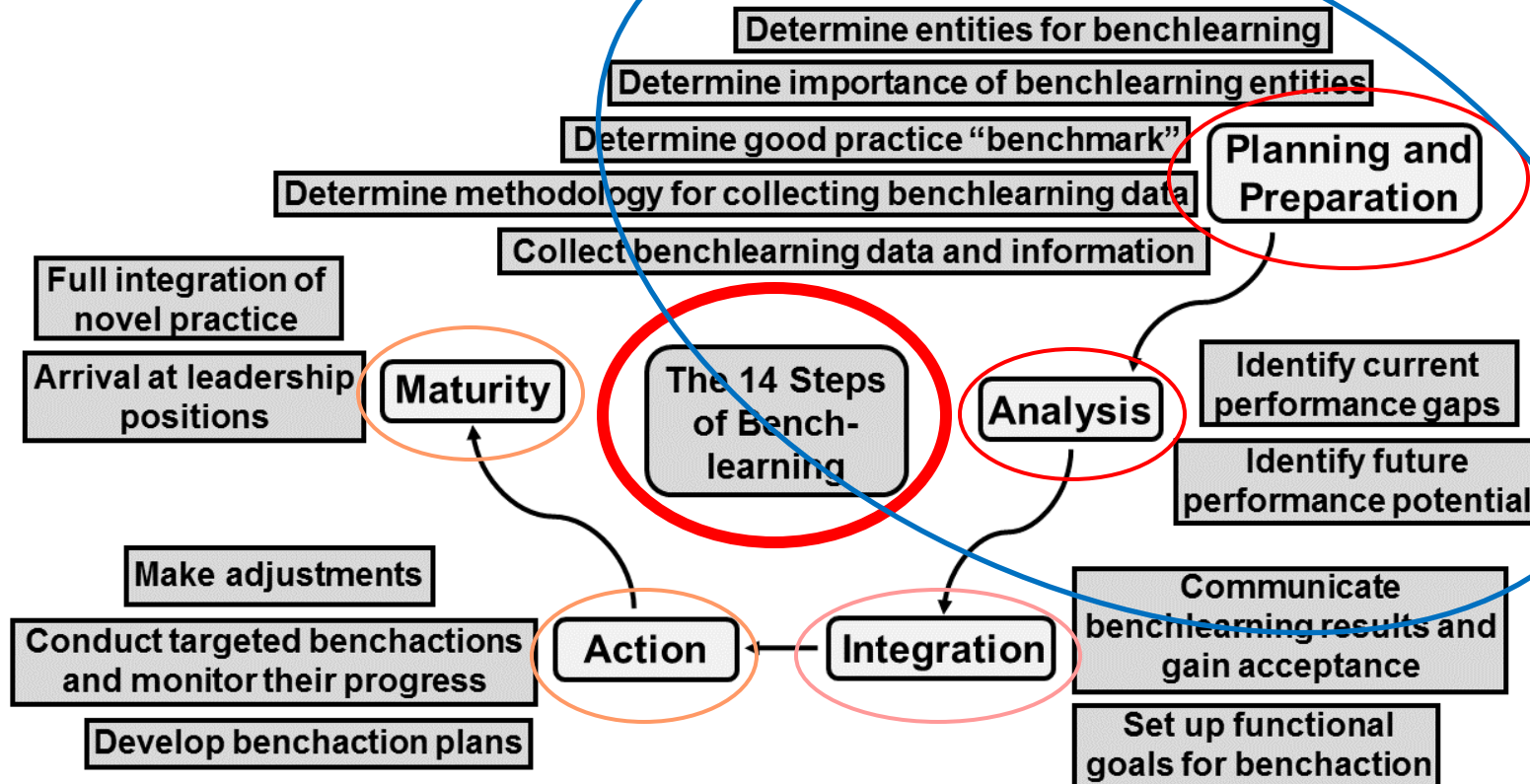
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https://www.evalag.de/sqelt/

Outputs of project											
O20 Questio-nnaire	O1 6 Bench-learning Reports	O3 6 Baseline Reports	O4 Compre-hensive PI Set	O5 Compre-hensive PI Set	O6 Compre-hensive PI Set	O7 Evaluation Report	O8 PDM/ Learning Analytics Ethics	O9 Compre-hensive PI Set	O10 6 Endline Reports	O11 PDG/ PDM Manual	O12 Publica-tions

"Path-breaking research is, by definition, exploratory" (Gerring, 2004, p. 349).

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Benchlearning of PDG/PDM and its areas

Determine entities for benchlearning

Determine importance of benchlearning entities

Determine good practice "benchmark"

Determine methodology for collecting benchlearning data

Collect benchlearning data and information

Planning and Preparation

Full integration of novel practice

Arrival at leadership positions

Maturity

The 14 Steps of Bench-learning

Analysis

Identify current performance gaps

Identify future performance potential

Make adjustments

Conduct targeted benchactions and monitor their progress

Develop benchaction plans

Action

Integration

Communicate benchlearning results and gain acceptance

Set up functional goals for benchaction

Universally applicable **"best practice is a myth"** (Fernie and Thorpe, 2007, p. 328)

Benchlearning is a way of monitoring and assessing the strategies and performance of an organization against comparable, good-practice competitors; it includes an ongoing performance improvement strategy and change management process

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Benchlearning of PDG/PDM and its areas

Dimensions of benchlearning object

- Performance data **governance** (PDG)
- **Participation** of stakeholders
- Performance data **management** (PDM)
- **Performance indicators**, simple and non-simple (SPIs/PIs)
- **Learning Analytics**
- **IT** resources and software solutions
- Human and financial **resources**
- **Ethics** of (D)PDG and (D)PDM
- **Policy framework** of university

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Strategy matrix for SWOTs of a selected area of analysis/dimension of BL object

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	Weaknesses (W) (clearly defined; prioritised)				Opportunities (O) (clearly defined; prioritised)				Threats (T) (clearly defined; prioritised)			
	1.	2.	3.	...	1.	2.	3.	...	1.	2.	3.	...
Strengths (S) (clearly defined; prioritised)	**Strengths-based strategies to overcome weaknesses (S/W)**				**Strengths-based strategies to take advantage of opportunities (S/O)**				**Strengths-based strategies to avoid threats (S/T)**			
1.												
2.												
...												
Other measures	**Measure-based strategies to overcome weaknesses (M/W)**				**Measure-based strategies to take advantage of opportunities (M/O)**				**Measure-based strategies to avoid threats (M/T)**			
1.												
2.												
...												

Revised after (Leiber, Stensaker & Harvey, 2018, p. 355, Table 3)

Strategy matrix "aims at **utilising strengths to overcome weaknesses, exploit opportunities and avoid threats**" (Leiber, Stensaker & Harvey, 2018, p. 355).

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SWOTs of PDG and its strategy matrix

SWOTs of PDG

Strengths	Weaknesses
1. **Recognition** on institutional level/by leadership of the importance of performance data, (simple and non-simple) PIs and their analysis and interpretation, particularly in **L&T** (at certain sample HEIs) 2. **Recognition** on institutional level/by leadership that staff and other stakeholders need to be able to access PDM data and information in appropriate and responsible ways (at certain sample HEIs) 3. **Meta-strategic** decision to build a HEI-wide PDM system that works for all relevant stakeholders in appropriate ways (at certain sample HEIs) 4. **Willingness o**f leadership and staff to establish organisational structures and processes aimed at optimizing the processing and presentation of the collected performance data and information (e.g. installation of de-bureaucracy team; consolidation of IT works) (at certain sample HEIs) 5. Established and accepted educational strategy underpins PDG (at certain sample HEIs)	1. No (well-)developed PDG at the institutional and/or faculty/department levels (at certain sample HEIs) 2. **No or poor representation of PDM in mission statements on various organisational levels** 3. **Performance data and information is mainly, if not exclusively used for reporting (accountability towards HE politics and the public), less for the enhancement of performance** (at certain sample HEIs) 4. **Lack of leadership commitment to PDM**
Opportunities	**Threats**
	1. A failing coordination between the goals of the HEI's management and the goals of the faculties with respect to PDM

Strategy matrix and its recommendations for organisational development

	W			O	T
	1.	2.	3.	1.	1.
S	S/W			S/O	S/T
1.	**Establish shared understanding of the various purposes** (evaluate; control; budget; motivate; promote; celebrate; learn; improve) **of PDM at institutional leadership level and across the largely autonomous institutional (sub-) units**	**Introduce PDG in HEI's strategy documents** (e.g. mission statements, structure and development plans) **on various organisational levels**	**Develop focus on performance enhancement (instead of reporting and controlling)**	n/a	–
2.					–
3.					**Establish working communication and coordination channels between HEI management and the faculties with respect to strategy building**
4.					
5.	–				
					–
M	M/W			M/O	M/T
	...			...	...

Basis for EBOCD recommendations – issues to be clarified

PDG domains	Domain decisions	Potential roles or locus of responsibility
Data principles and responsibilities: clarifying the role of performance data (PD) as an asset and the responsibilities	What are the uses of performance data (PD) for the organisation (i.e. the university)? What are the mechanisms for communicating organisational uses of PD on an ongoing basis? What are the desirable behaviours for employing PD as assets? How are the opportunities for sharing and reuse of PD identified? How does the regulatory environment influence the organisational uses of PD?	PD owner, individual and organisational PD producer/supplier PD processor and dresser (e.g. ranker) PD steward PD custodian PD consumer Organisational PD committee/council
Data quality including data processes and technology: establishing the requirements of intended use of PD	What are the standards for PD quality with respect to accuracy, timeliness, completeness and credibility? What is the strategy for establishing and communicating PD quality? How will PD quality as well as the associated strategy be evaluated?	PD owner, individual and organisational PD subject matter expert PD quality manager PD quality analyst
Data interpretation: establishing the semantics of PD to make it interpretable	What is the program for documenting the semantics of PD? How will PD be consistently defined and modelled so that it is interpretable? What is the plan to keep different types of meta-PD up-to-date?	Organisation PD architect Organisation PD modeller PD modelling engineer PD architect Organisation architecture committee
Data access: specifying access requirements of PD	What is the organisational value of PD? How will risk assessment be conducted on an ongoing basis? How will assessment results be integrated with the overall compliance monitoring efforts? What are PD access standards and procedures? What is the program for periodic monitoring and audit for compliance? How is security awareness and education disseminated? What is the program for backup and recovery?	PD owner, individual and organisational PD beneficiary Chief information security officer PD security officer Technical security analyst Organisation architecture development committee
Data life cycle: determining the definition, production, retention and retirement of PD	How is PD inventoried? What is the program for PD definition, production, retention, and retirement for different types of PD? How do the compliance issues related to legislation affect PD retention and archiving?	Organisation PD architect Information chain manager

Framework for PDG, adopted from (Kathri & Brown, 2010, p. 149) with revisions

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SWOTs of PIs and its strategy matrix

SWOTs of SPIs and PIs

Strengths

1. **Improvement-oriented conceptualisation of existing SPIs of L&T** (at certain sample HEIs)
2. **High comparability of SPIs in national HE system because of Ministry-driven standardization** (at certain sample HEIs)
3. **Close-to-complete HEI-specific set of SPIs** (at certain sample HEIs)

Weaknesses

1. Not all SPIs that could be relevant for L&T quality improvement at the HEI are defined and/or collected and/or used (at certain sample HEIs), e.g. lack of teachers' view points in the PI sets, gap in the L&T environment PIs; broad topic of student assessment is not looked at
2. Existing SPI collection fails to adequately address current needs of the HEI (at certain sample HEIs) (e.g. because PIs are policy-driven)
3. Quality of SPI data and information is often questionable (e.g. collection through faculty and processing by staff; various mechanisms for collecting data/information) (widespread; at certain sample HEIs)
4. SPIs are numerous (at certain sample HEIs) which makes understanding and handling complicated

Opportunities

1. **Introduction of additional SPIs in L&T and completion towards close-to-complete, HEI-specific set** (e.g. filling gaps; completing profile such as continuing education and Lifelong Learníng)
2. More transparency through use of internal SPIs (at certain sample HEIs)
3. **Availability of more data and information on social impact of HEI performance after integration on national students survey** (at certain sample HEIs)

Threats

1. Development of SPIs that do not adequately grasp a certain HEI performance
2. Danger of reducing PDM to only quantitative SPIs

Strategy matrix and its recommendations for organisational development

	W				O	T	
	1.	2.	3.	4.	1.	1.	2.
S	S/W				S/O	S/T	
1.	–	–	–	–	–	–	–
2.	–	–	–	–	–	–	–
3.	–	–	–	–	–	–	–
	Complete collected and used SPI set (HEI-specific)	Evaluate performance monitoring needs of HEI and revise existing SPI set accordingly	Implement QA of data acquisition and stratify methodology of SPI collection and processing	Evaluate SPI set for possibilities of reducing according to HEI profile and needs	Complete SPI set towards close-to-complete HEI-specific set	Evaluate SPI set for adequate representation/ grasp of HEI performance	Complement SPI set with set of qualitative (non-simple) PIs

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Other most prominent/frequent weaknesses and threats

- **Complicatedness of decision-making processes** because of institutionalized understanding of open-ended knowledge-based deliberative decision-making and acting in the collegial university of academics *(cannot be completely overcome)*) [W-SP]

- **Little joined-up working in PDM within the HEI** (at certain sample HEIs) [W-SP]

- Low involvement of users in the design and validation processes of the PDM-suggested improvements to be implemented (at certain sample HEIs)) [W-SP]

- **Relevant PI data and information is not available to every relevant stakeholder** (at certain sample HEIs) [W-SP]

- There is a **bottleneck in communication** as performance data and information are accessible only to a few people (at certain sample HEIs) [W-PDM]

- **Lack of integrated PDM system** (e.g. data warehouse) of all PIs, instead **parallel island solutions**, i.e. numerous performance data and information is stored locally and in unstructured forms which makes it difficult to use it systematically and on an operational level (at certain sample HEIs) [W-PDM]

- **Dependence of performance data reporting on the commitment of programmes' directors** (at certain sample HEIs) [W-PDM]

Other most prominent/frequent weaknesses and threats

- **Not all SPIs/PIs** that could be relevant for L&T quality improvement at the HEI **are defined and/or collected and/or used** [W-SPIs/PIs]

- **Existing SPI/PI collection fails to adequately address current needs** of the HEI (at certain sample HEIs) [W-SPIs/PIs]

- **Quality of SPI/PI data and information is often questionable** (e.g. collection through faculty and processing by staff; various mechanisms for collecting data/information) (widespread; at certain sample HEIs) [W-SPIs/PIs]

- **Development of SPIs/PIs that do not adequately grasp a certain HEI performance** [W-SPIs/PIs]

- **Danger of reducing DPDM to only quantitative SPIs** [W-SPIs/PIs]

- **Learning Analytics is in its very early infancy** (at most sample HEIs) [W-LA]

- **Various uncoordinated and/or incompatible software solutions in DPDM are used in the HEI** (at certain sample HEIs) [W-IT]

- **Resources allocated for the implementation and sustainability of the DPDM model are not enough** (at certain sample HEIs) [W-RES]

- **Implement and develop DPDM system in spite of limited resources and underfinancing** (at certain sample HEIs) [T-RES]

- **Raise third-party funding and/or research projects for DPDM implementation and development** [T-RES]

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Other most prominent/frequent weaknesses and threats

- **Privacy concerns related to PDM models are not recognized** ("no sensibility for ethical issues") (at certain sample HEIs) [W-ETH]

- **Privacy concerns** (e.g. teacher evaluations; students' satisfaction; students' study success) **limit accessibility of performance data and information** *(cannot be avoided)* [T-ETH]

- **Different subject areas of the HEI are under different ministerial authorities** (e.g. medicine and other faculties) (at certain sample HEIs) [W-POL]

- <u>**Available performance data and information is partly not analysed or analyses not published "because of policy decisions"**</u> (at certain sample HEIs) [W-POL]

- <u>**Imbalance towards policy-driven PIs**</u> (at certain sample HEIs) [W-POL]

- **Ministry-driven PI sets which do not entirely fit the HEI's profile and needs** (at certain sample HEIs) [T-POL]

- **Ministry-driven changes in PDM of HE could restrict the autonomy of HEIs and faculties, e.g. in the context of PDM relating to debates about student fees, value for money etc.** (at certain sample HEIs) [T-POL]

- **"Hidden agendas" of HE politics for PDM** (e.g. policy-driven sets of PIs) (at certain sample HEIs) [T-POL]

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Comprehensive PI set for L&T in HE

Leiber, Theodor. (2019) "A general theory of learning and teaching and a related comprehensive set of performance indicators for higher education institutions." *Quality in Higher Education* (forthcoming/in press).

Abstract

… performance indicators are an indispensible element … learning and teaching quality in higher education should be approached in a holistic way, namely across the four subdomains of learning and teaching environment, teaching processes, learning processes, and learning outcomes and their assessment. Performance indicators related to these areas must align with a synoptic understanding of learning and teaching comprising behavioural, information processing, cognitive, social (constructivism) and humanistic theories of learning. Selected issues from a comprehensive set of about *280 performance indicators for learning and teaching* are presented and contextualised. The indicators set resulted and emerged from critical reflection of research literature and *explorative surveys* of various informed and engaged stakeholders, from *14 public European universities*, and a *general theory of learning and teaching*.

- Benchlearning and strategic SWOT analyses exhibit the need of several EBOCD initiatives to further develop, improve and refine the PDM models of the case study universities

- Thus, PDG & PDM in L&T have the following organisational transformation needs:

  – Procedures of data processing and communication, software platforms and responsible bodies for collecting and interpreting PIs must be (further) developed to improve quality as well as usability and accessibility of data and information. Particularly, there is a need for better organizing PDM systems that avoid multiple island solutions and unnecessary resources' consumption.

  – The 'real' performance monitoring needs of HEIs must be balanced with various policy demands originating from traditional disciplinary attitudes as well as from education politics.

– Processes, bodies and human resources for fostering participative responsibility for PDM including more efficient decision-making of collegial bodies must be established.

– Educational strategies (mission, values, vision) must be established, including the prospects and ambiguities of PDM and Learning Analytics.

- Currently, the following success factors of PDM can be identified: justifiable belief in success promises of PDM; leadership engagement; reflected information ethics; financial climate. All of them are only present in rudimentary ways, or not at all, in the case study HEIs.

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Some limitations of the case study

Limitations of SQELT project

- SQELT project **limited in time** (33 months) and **money**

- **Time window too short for** PDG/PDM-related **EBOCD**

- Impact analysis more explorative than strict before-after comparison

- Fluid stakeholder participation in HEIs (particularly students)

- …

Limitations of Benchlearning

- Danger of **viewing BL as a one-time project**; **focusing on quantitative output data**; self-mirroring; emulating, mimicking competitors; fostering rat race

- **Organisations' inability** of readiness and flexibility **to implement change; inability of transparency and communication**; fear of detecting and exposing weaknesses (and threats)

- Problem of **complexity** and costs

- …

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Some limitations of the case study

Limitations of SWOT analysis

- SWOT analysis **may lack links to an implementation phase**

- SWOT analysis **may use unclear and ambigious words and phrases**

- Can inform strategic decisions but does not necessarily automatically offer solutions

- Though it is relatively cheap and focuses on the most important factors, SWOT analysis cannot replace more in-depth research

- SWOT execution becomes complicated if factors are uncertain or many-sided with respect to the four factor types of strengths, weaknesses, opportunities and threats

- SWOT analysis does not prioritise issues

- …

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