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Paper

Title: Quality assurance of research: are UASs really that different?

Abstract

Quality assurance (QA) for practice-based research at Dutch Universities of Applied Sciences (UAS) differs from traditional research universities in several ways. The national UAS sector protocol for practice-based research (*Brancheprotocol Kwaliteitszorg Onderzoek*, or BKO) highlights the need for

research to have a concrete impact on professional practice and knowledge creation. While the BKO outlines four assessment standards, it does not specify the indicators for measuring impact beyond funding and human resources.

Saxion UAS has developed a new set of performance indicators based on the BKO standards and its strategic priorities, alongside implementing QA policies to promote a quality culture that enhances research impact. Changes include aligning internal QA practices with strategic goals, organizing QA around research clusters, defining roles for QA staff, and systematically incorporating user feedback. This approach aims to strengthen the connection between Saxion's research, education, and societal impact.

This paper discusses the theoretical framework guiding Saxion's quality culture approach, addressing formal structures and human dynamics (Verschuere et al., 2023). It examines how this framework informs QA policies, the implications for research group processes, and the role of indicators in supporting Saxion's mission of creating impact through practice-based research.

1. Introduction

UASs in the Netherlands and Assuring the Quality of their Research

QA of research conducted by UASs in the Netherlands and other countries faces unique challenges compared to established QA systems for traditional universities. This stems from the evolution of higher education in Europe, where policymakers from the 1960s to the 1980s emphasized institutional diversity to accommodate more students, leading to the emergence of binary or multi-type systems (OECD, 1973; Teichler, 2008). For example, Britain established polytechnics in the early 1960s, followed by France's *Instituts Universitaires de Technologie* and Germany's *Fachhochschule* (Kyvik, 1981). The Netherlands established its "colleges" in 1986. Initially, these sectors were deemed non-university alternatives to university education (OECD, 1991, 2006). However, their upgrade to higher education was always in the offing.

Dutch colleges were upgraded under the 1993 Higher Education and Research Act (*Wet op het hoger onderwijs en wetenschappelijk onderzoek*, or WHW¹). However, as a binary system, the difference between the two sectors is grounded in law. In contrast to "scientific education" and fundamental research provided at universities, the WHW (§ 1.3.1 and § 1.3.3) clearly describes UASs as institutions focused on "the transfer of theoretical knowledge and on the development of skills in close connection to professional practice", and their research as "[...] aimed at professional practice". Therefore, Dutch UASs conduct practice-based research that is distinctively different from traditional academic university research. UASs conduct demand-driven research to address real-world societal challenges in close collaboration with external stakeholders, such as industry and government or municipal agencies.

For a long time, there has been a putative belief that the quality of research could be measured against similar principles and framework across both types of institutions. However, this is questionable. Established frameworks are often better suited to assessing academic outputs than the impact of practice-based research. To this date, research is often still measured through citation and publication counts using bibliometric databases (Hazelkorn, 2021), with citation counts based on the Journal Impact Factor. At the same time, there is increased acknowledgment that focussing overly on high-impact journals and bibliometrics distorts research practices, risks overlooking important differences and hindering the production of new ideas. These concerns have been highlighted, *inter alia*, in the 2012 San Francisco Declaration on Research Assessment (Raff, 2013) and the 2015 Leiden Manifesto (Hicks et al., 2015). However, even these declarations address predominantly academic (fundamental) research rather than practice-based research. This further highlights the persistent challenge in designing meaningful quality assessment frameworks for UAS research.

Because of growing awareness, the debate on research excellence has broadened to include a stronger emphasis on societal impact, including in the context of practice-based research. Societal engagement and real-world contributions are now considered important aspects of research quality, although

¹ <https://wetten.overheid.nl/BWBR0005682/2024-09-01>

measuring societal impact remains complex. The focus is often skewed toward commercialization through patents and licensing, while broader societal and on-the-ground effects may be overlooked (Hazelkorn, 2021).

The historical elements mentioned heretofore point at the need for evaluation frameworks that transcend traditional academic metrics, to capture the full societal value of research. But this broader view of impact exposes the potential incongruity between goals and outcomes of QA practices. QA in research serves two main purposes: (a) to uphold and improve research produced by knowledge institutes, and (b) to demonstrate to external stakeholders—such as accreditation agencies, governments, and society—that the research is relevant and a sound investment. However, traditional QA systems rooted in academic standards do not effectively reflect the nature of practice-based research, raising doubts about their fitness for purpose.

Consequently, this paper argues for two key advancements in evaluating UASs' research. First, the establishment of a "UAS-fit-for-purpose" evaluation framework that assesses the societal impact of practice-based research while linking it to UASs' core missions—teaching and knowledge development. Historically, research at UASs was seen mainly as supporting teaching but now aims for broader societal impact.

Second, cultivating a quality culture within UASs that recognizes the distinct value of practice-based research is essential for this "UAS fit-for-purpose" QA model. As the concept of fitness for purpose evolves, the institutional quality culture must embrace research as a vital component, ensuring continuous improvement through collaboration, self-reflection, and dialogue among internal and external stakeholders. This culture acknowledges that practice-based research has equal but distinct value compared to traditional academic research, informing teaching, enriching professional practice, and addressing societal needs.

Towards a national Framework to assess impact

Frameworks for evaluating societal impact in applied research have been developing for over 25 years. In 2007, several Dutch organizations² initiated the ERiC project to create methods for assessing societal impact, moving beyond traditional academic evaluations to broader societal relevance. This project promoted context-driven indicators and evaluated interactions between researchers and societal stakeholders. Similarly, SIAMPI framework (2009-2011) emphasized the importance of these interactions in generating meaningful change³. These frameworks laid the groundwork for evaluating applied research at UASs, shifting the focus from traditional academic outputs to broader societal contributions.

By 2009, the need for a more sector-specific approach led to the introduction of the BKO at HBO-Raad, to evaluate practice-based research by external independent peers and experts every six years⁴. However, only the fifth standard in the BKO and its successor (2016-2022) specifically addressed quality assurance in practice-based research. The latest BKO version integrated this standard into the others, emphasizing a development-oriented protocol that aligns with UAS research missions.

The BKO model has evolved to better reflect the practice-based nature of UAS research and address differences from research universities. The current framework focuses on professional relevance and

² The Council of Higher Professional Education (*Hoger Beroepsonderwijs Raad*, HBO-raad; now known as the Association of Universities of Applied Sciences [*Vereniging Hogescholen*, VH]), the Royal Netherlands Academy of Arts and Sciences (*Koninklijke Nederlandse Akademie van Wetenschappen*, KNAW), the Netherlands Organisation for Scientific Research (*Nederlandse Organisatie voor Wetenschappelijk Onderzoek*, NWO), the Association of Collaborating Dutch Universities (*Vereniging van Samenwerkende Nederlandse Universiteiten*, VSNU; now known as Universities of the Netherlands [*Universiteiten van Nederland*, UNL]), and the Rathenau Institute, a research institute based in The Hague.

³ The SIAMPI framework was developed by a European consortium led by the Rathenau Institute, and including the Dutch Royal Netherlands Academy of Arts and Sciences (*Koninklijke Nederlandse Akademie van Wetenschappen*, or KNAW); the Spanish National Research Council (*Consejo Superior de Investigaciones Científicas*, or CSIC); the House of the Sciences of Man (*Maison des Sciences de l'Homme*, or MSH), a French research institute; and the University of Manchester in the UK. <http://www.siampi.eu/642.bGFuZz1FTkc.html>

⁴ https://www.vereniginghogescholen.nl/Brancheprotocol_Onderzoek_2023-2028, accessed October 10th, 2024

societal impact, including standards to recognize UASs' roles in regional and professional contexts (Saxion Research & Graduate School, 2023).

While the BKO includes basic indicators on funding and human resources, it does not prescribe specific indicators for measuring societal and professional impact. Instead, it allows individual UASs the flexibility to define their own indicators related to contributions to professional practice, education, and research. As UASs primarily tackle problems from the professional field, the BKO's evaluation mechanisms continue to evolve to capture these unique contributions.

2. A new quality culture?

Building a quality culture around research evaluation in UASs has historically been challenging. Research quality was not inherently embedded in UAS staff's culture as research groups started making it necessary to draw inspiration from external best practices only by the turn of the century. Saxion chose to adapt the KU Leuven model as a useful framework for creating a quality culture in research. The model, as shown in Figure 1, connects the formal elements of quality assurance to the human dynamics, both at individual and group level, through the connecting elements of leadership, communication and participation.

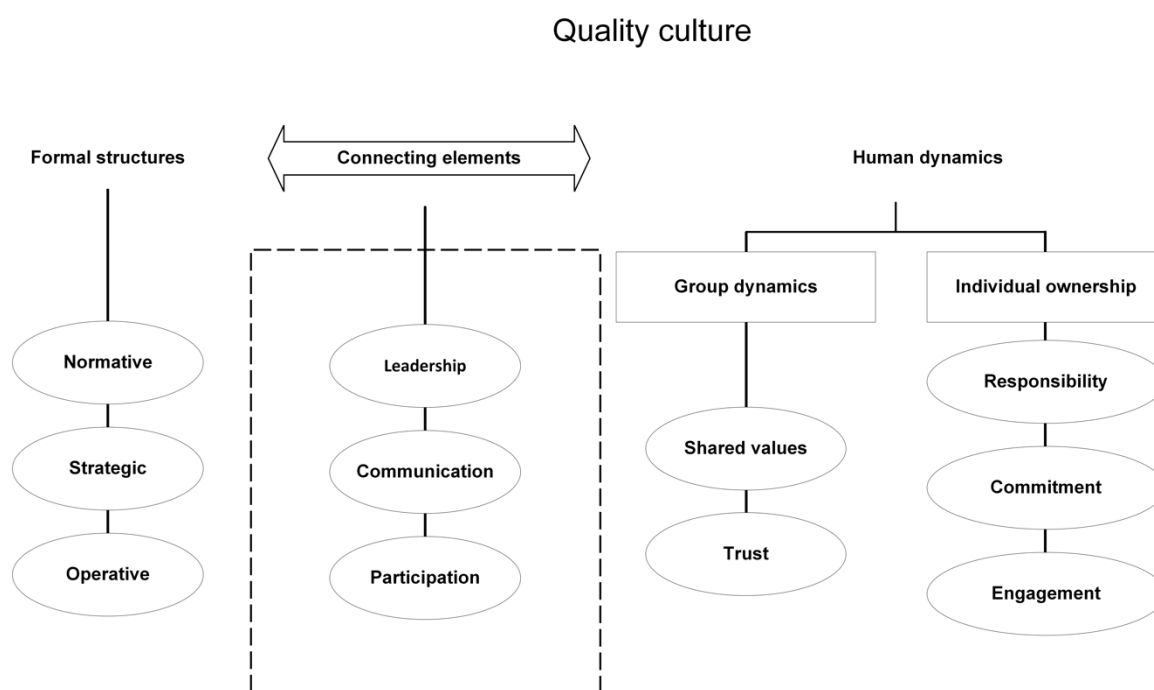


Figure 1. Quality culture as described by Verschueren (2023)

In keeping with the BKO, QA at Saxion has been integrated into daily operations rather than treated as a separate function, requiring co-production with research groups (*lectoraten*) to shape a strong quality culture. KU Leuven's framework provides a comprehensive method for fostering continuous quality development. It integrates self-reflection, collaboration, and dialogue among stakeholders, ensuring that quality development remains dynamic and responsive. This approach is highly relevant to UASs, which must balance impact on professional practice and broader society, education and the research domain. It provides the input for policies aimed at both formal and dynamic QA. The former are geared towards compliance and accountability, while the latter emphasize continuous quality improvement, which enhances the impact of practice-based research.

Saxion adapted this framework, originally designed for quality of education, to make the concept of a quality culture more tangible for all stakeholders. Until then, the *formal* structures had been the most visible aspect of QA, reducing it to a bureaucratic exercise with limited effect on research impact. The

shift towards a more dynamic QA process and the emphasis on quality culture made the understanding of quality as continuous improvement more evident.

Simultaneously, Saxion developed the Quality Map Research Saxion (*Kwaliteitskaart Onderzoek Saxion*, or KOS). The KOS is an example of a tailored QA system that integrates strategic goals with performance indicators expressly designed for practice-based research (SRGS, 2023). It is an important tool in both formal and dynamic QA; its development touches upon all elements of the quality culture model. The policies developed according to Verschueren *et al.*'s (2023) model and the new basic indicators for QA are described in the Saxion Handbook for Quality Assurance.

3. New indicators for practice-based research

Before 2024, Saxion used nine key performance indicators (KPIs) for the evaluation of research activities (see Table 1). Indicators 1 and 2 were mandatory based on Standard 2 of the previous BKO. Indicators 3 to 9 were related to the BKO's fourth Standard, i.e. the impact of practice-based research.

Table 1. *Previous KPIs Saxion*

Quality standard of previous sector protocol	Category	Key performance indicator
2: The way the unit is organised, the deployment of people and resources, and the internal and external collaborations, networks, and relationships enable the achievement of the research profile.	General	1. Financial means for research 2. FTE and number of researchers
4: The research centre is sufficiently relevant in the areas of: • professional practice and society; • education and professionalization of teachers; • knowledge development within the research domain. The research has a sufficient impact on the aforementioned areas.	Professional practice and society at large	3. Products developed for the professional practice and society at large 4. Satisfaction of professional practice
	Education and professional development of teaching staff	5. Products for education 6. Professional development of
	Knowledge development within the research domain	7. Dissemination 8. Publications 9. Funding awarded

The KPIs listed in Table 1 were based on the previous BKO, provided insights into the performance of the research centres, and were used in quality control. However, a number of internal and external motives justified the redefinition of these indicators.

First, the KPIs were only related to two BKO standards. No indicators addressed the mission and vision, their relevance and currency, the quality of the research process, compliance with the Netherlands Code of Conduct for Research Integrity, or the presence and use of quality instruments (Standards 3 and 5 from the previous BKO). Moreover, for indicators 3, 5, 6, 7, and 8, performance was measured solely by counting products, without considering their nature. Products for professional practice can range from quickly made small artefacts to complex prototypes developed over years. A mere tally of these products does not account for their potential differences in impact. Hence, these KPIs offered limited insights into the research groups' performance, contributing to their aversion to using them. Thirdly, external evaluation panels and research centres identified the need for more differentiated indicators. The panels noted that the uniformity of the nine KPIs did not reflect each centre's specific ambitions, while the centres called for tailored indicators to enhance their profiles strategically. Therefore, the change was realised through a shift from a general set of KPIs for all research centres to a basic set for everyone, supplemented by optional indicators developed by each cluster.

Furthermore, the VH established a new BKO. The main adaptations compared to the previous one include switching Standards 2 and 4, with Standard 2 now focused on the impact of practice-based research and Standard 4 addressing people and resources. The new BKO uses a three-point rather than a four-point assessment scale and incorporates QA (Standard 5) into the other standards.

These changes require a careful reconsideration of the current KPIs, especially considering that the new BKO applies to a six-year assessment period for the research centres. Redefined KPIs are expected to remain effective throughout the duration of this BKO, (2023—2028).

Development process

A working group consisting of heads of research centres, researchers, and QA staff was responsible for redefining the KPIs. The process began with the goals of the research centres, which reflect the institutional strategy. These goals were then translated into key success factors and KPIs, which research centres and clusters can use to manage their activities in alignment with Saxion's continuous improvement methods to enhance the quality and impact of research. Moreover, stakeholders can be informed about the quality and impact of Saxion's research.

The working group redefined the KPIs based on the four standards of the BKO 2023-2028, incorporated the goals outlined in the institutional strategic plan and established critical success factors for practice-based research at Saxion. Figure 2 provides an example of how these indicators were developed, and elaborates on one of the three impact areas of Standard 2, namely the contribution to professional practice and society at large.

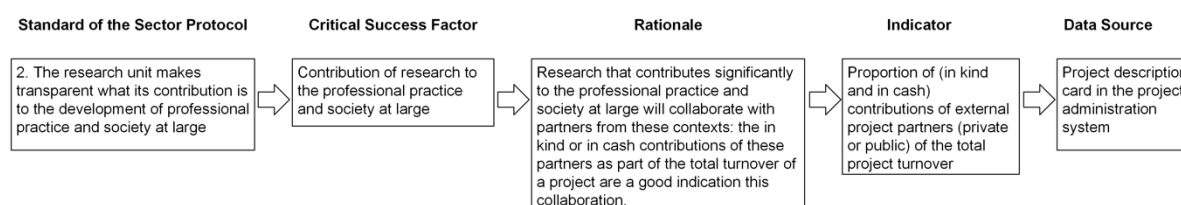


Figure 2. Example development of indicator

For each of the four standards, the working group established critical success factors and operationalised them through indicators. The group developed ten basic indicators and provided guidelines for additional optional indicators, resulting in a comprehensive draft set. Feedback from the institution's Presidency, the research centres, the schools' presidents, QA staff, and other stakeholders was gathered during participatory meetings and used to produce the final list of indicators presented in Table 2. These meetings were imperative for gaining consensus on the indicators and subsequently applying them to research assessment, as the involvement of all staff engaged in research fosters a commitment to a quality culture.

Table 2. List of basic performance indicators

Quality standard of previous sector protocol	Basic performance indicator
1. The research unit has a relevant, ambitious and challenging research profile and research programme.	1.1 The percentage of project volume contributing to the focus areas of Saxion as part of the total project volume
	1.2 The percentage of project volume contributing to the regional strategic agenda of Saxion as part of the total project volume
2. The research unit makes transparent what its contribution is to the development of professional practice and society at large, of education, and of the research domain.	2.1 The in kind and in cash contributions of external partners compared the total project volume
	2.2 The contribution to education through different educational activities (guest lecture, supervision of assignments, supervision of thesis, etc.)

-
- 2.3 The percentage number of hours dedicated to research as part of the total number of hours available
-

3. The research unit's research complies with the standards applicable in the field with regard to conducting research.

3.1 The result of the integrity dialogue

3.2 The results of the peer reviews

4. The way in which the unit is organised, the deployment of people and resources, and the internal and external partnerships, networks and relationships, make it possible to achieve the research profile.

4.1 The primary, secondary and tertiary funding sources

4.2 Amount of FTE and number of people

4.3 Presence of a quality system

The precise definition of basic and optional indicators marked the start of the second phase: operationalising the measurement for an accessible dashboard. A second working group, consisting of research centre directors, a researcher, QA staff, and business information personnel, was formed to refine and operationalise these indicators for visualisation in the Power BI platform. They defined each indicator, outlining its critical success factor, rationale, variables, and data source. Throughout this process, the group held regular meetings with stakeholders, resulting in further refinements.

One of the principles of the QA policies is that QA must contribute to the impact of Saxion's practice-based research. Thus, the indicators are not part of a performance measurement system that includes specific targets or norms. Instead, they serve as the starting point for meaningful reflection and discussion within the research groups and with Saxion's management and presidency. For this purpose, the working group developed a reflection tool with questions on each indicator, covering topics such as control, steering, learning, and improvement (Behn, 2003)). These discussions take place at different organisational levels.

4. Lessons learnt

The development of the new QA policy described in this article yields four key lessons learned. First, it is important to start from a clear foundation, transcending mere external and internal accountability purposes. The contribution of QA to the impact of research, particularly in the context of UASs, must be explicitly understood.

Second, because the definitions of impact and the methods for measuring it vary significantly in both the literature and at UASs, the indicators used at Saxion are, in fact, conditions for achieving impact. If these conditions are not met, the likelihood of achieving impact—whether short- or long-term—is diminished. For instance, research contributions to education within the institution are necessary to achieve an impact on education. This does not preclude broader discussions about impact; however, it implies that the responsibility for quality research does not lie *prima facie* in QA policies—it is primarily the responsibility of the research groups.

Third, the continuous involvement of all stakeholders is necessary for effective QA of research and for securing broad support for QA processes within the institution. This involvement should be facilitated by a clear definition of purpose. Research centre leaders, researchers, school presidents as well as the institution's presidency, QA and project support staff must all have opportunities to provide feedback at every stage of the process.

Lastly, performance indicators should not be viewed as the end of QA processes. Quite the reverse, their value is recognised as the beginning of the 'QA story' (see also Huisman and Stensaker (2022) and Sharvashidze *et al.* (2023)). They can be part of the narrative of QA at an institution rather than an instrumental way to shape how performance is governed.

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