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"We don't experiment with our patients!" An ethnographic account of the epistemic politics of (re)designing nursing work

Syb Kuijper [a,*], Martijn Felder [a], Stewart Clegg [b], Roland Bal [a], Iris Wallenburg [a]

[a] Erasmus School of Health Policy and Management, Erasmus University Rotterdam, Burgemeester Oudlaan 50, 3062, PA, Rotterdam, the Netherlands
[b] School of Project Management, The University of Sydney, 21 Ross St, Forest Lodge, NSW, 2037, Australia

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ABSTRACT

This article draws on ethnographic research investigating experimental reform projects in local nursing practices. These are aimed at strengthening nursing work and fostering nurses' position within healthcare through bottom-up nurse-driven innovations. Based on literature on epistemic politics and critical nursing studies, the study examines and conceptualizes how these nurses promote professional and organizational change. The research draws on data from two pilot projects to show how epistemic politics frame the production and use of knowledge within reform efforts. The study finds that knowledge produced through such experimenting is often not considered valid within the contexts of broader organizational transitions. The nurse-driven innovations fail to meet established legitimate criteria for informing change, both among stakeholders in the nurses' socio-political environment, as well as within the nursing community. The research reveals that the processes inadvertently reinforce normative knowledge hierarchies, perpetuating forms of epistemic injustice, limiting both nurses' ability to function as change agents and healthcare organizations' capacity to learn.

1. Introduction

In the summer of 2022, the Dutch Minister of Health, Connie Helder, attended a national conference of nurses to discuss their shared attempts to reform and empower nursing practice in the Netherlands. In her opening speech, Minister Helder stated that nurses desperately need to change healthcare to sustain the future of healthcare delivery: "Changes can only occur from within the profession. You know what is required. You are now in the lead. Use that well!"

The minister's call for change came at a moment of ongoing and persistent shortages in nursing staff (Lopez et al., 2022). The nursing workforce faces multifaceted issues, including an aging population and workforce, rising and increasingly complex healthcare demands, structural overload of work and limited career opportunities, as well as a lack of voice in healthcare decision-making (Buchan et al., 2022). The recent Covid-19 pandemic exacerbated the situation further as a dramatic increase in the number of nurses leaving the profession occurred (Nowell, 2022), underscoring the need for change and rapid policy strategies to recruit, support, and retain nurses (Costa and Friese, 2022; Jackson et al., 2020).

To counter these trends, pilot projects have been introduced in Dutch hospitals to make better use of nurses' ambitions and ideas to strengthen the nursing workforce and profession. In these pilots, nurses are reshaping and reorganizing their practices and working routines (Van Kraaij et al., 2022). Examples include the development and implementation of new nursing roles (e.g., supervising nurses and nursing assistants), enhancing the role and position of nurses in healthcare decision-making, altering working routines, and redesigning care practices to improve patient satisfaction, resource usage and increasing the quality of care.

To facilitate this 'movement of change,' a nationwide, government-subsidized action-oriented research program 'RN2Blend' was introduced, financed by the Dutch Ministry of Health. We contributed to this program through multi-sited participatory ethnographic research, facilitating, evaluating, and investigating how nurses implemented and ran pilot projects designed to improve nurse professionalization and retainment. We studied the pilots 'from within' by observing day-to-day nursing practices and by attending project meetings, as well as by co-organizing (national) events (e.g., webinars, conferences, festivals), designed to facilitate knowledge exchange and collective learning (Schuurmans et al., 2023).

In the sociological literature, situated and experimental innovations

* Corresponding author.
E-mail addresses: kuijper@eshpm.eur.nl (S. Kuijper), felder@eshpm.eur.nl (M. Felder), stewart.clegg@sydney.edu.au (S. Clegg), r.bal@eshpm.eur.nl (R. Bal), wallenburg@eshpm.eur.nl (I. Wallenburg).

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are widely recognized practices to promote organizational learning from inclusive, bottom-up forms of knowledge production (Kuhlmann et al., 2019; Regeer et al., 2016). Pilot projects, in turn, are typically conceptualized as specific time-spaces that allow for collective exploration and reflexive learning, facilitating a general openness 'to try out new things' in local practice (Clegg et al., 2005; Muniesa and Callon, 2007). From a critical viewpoint pilot projects can be seen as political episodes that enable social actors to introduce new ideas, gain support, leverage resources, and establish legitimacy around specific goals, interests, and novel decision-making structures (Ryghaug and Skjølsvold, 2021; Sørensen, 2013).

Through our extensive ethnographic examination of the pilot projects in the nursing program, we observed nurses expertly improvising, creatively innovating, and improving care practices in their daily nursing work. For instance, through skilful articulation work (Strauss, 1988) and first order improvisations (Edmondson, 2004) they aligned and improved complex systems of work. However, we also noticed that when nurses used this working style to navigate unfamiliar terrain in the pilot projects, they met a lot of resistance, both from other organizational actors and from their peers. In this paper, we seek to understand such dynamics from an epistemological perspective, examining how the experimenting approach was counteracted by an evidence-based approach which conditions were hard to meet in the rather underexplored territory of nurses' organizing and caring work. We show how gradually, as nurses were producing knowledge and pursuing professional ambitions in pilot projects, many of them began to question the legitimacy and validity of both their own roles and the experimenting approach used. Despite the minister's deliberate encouragement for nurses to engage in experimental learning and disrupt established routines and the status quo in healthcare, our ethnography demonstrates that, to this end, nurses' experimenting failed to meet established legitimate criteria for informing change. Instead, the projects paradoxically served increasingly to demonstrate the lack of legitimacy of nurses' expertise it was intended to remedy.

In this paper, we analyse this paradoxical situation by empirically examining how different forms of knowledge are used, valued, and legitimized in local nurse reform efforts, as well as their broader implications for fostering nurse professionalization and healthcare improvement and change. The research is informed by insights from the field of medical sociology and Science and Technology Studies (STS) on epistemic politics (Doing, 2004; Beaulieu et al., 2012; Sørensen and Traweek, 2022), evidence-based practice (EBP) (Broom and Adams, 2012; Timmermans, 2010) and organizational learning (Cunha and Clegg, 2019; Waring et al., 2016).

Building on the ethnographic study of two pilot projects, we provide insight into how epistemic politics framed the production and use of knowledge within local nursing practice, promoting certain pathways of action while hindering others – and the tensions that emerged from this. The central question guiding this research is to inquire *how epistemic politics have an impact on reforming nursing work.*

In answering this question, we aim to contribute to the growing body of critical sociological literature on nurse professionalization processes and epistemic politics in nursing (Allen, 2014; Betts, 2009; Ernst, 2020a; Ernst and Tatli, 2022; Hallam, 2012; Timmermans et al., 1998; Triantafillou, 2013), as well as the epistemic politics of reorganizing healthcare and improvement work more generally (Allen et al., 2016; Waring et al., 2016). We do so to deepen the understanding of the epistemological position and legitimacy of nurses (as well as the lack thereof) in fostering professional and organizational change, and how broader epistemic and institutional frameworks for evaluation within healthcare shape local improvement work and learning.

In what follows, we first discuss and review literature from the field of medical sociology and STS on epistemic politics and organizational learning through different (and more or less opposite) epistemologies: practice learning through experimenting, and the use of evidence-based practice (EBP), the 'holy grail' of evidence-based medicine in medical care (Timmermans, 2010). We then present the research design and methods, followed by an analysis and interpretation of the ethnographic data. We conclude with a critical discussion of the implications of the research for both nursing practice and critical sociological scholarship on nurses and nursing work.

2. Experimentation and experimental learning

Learning through experimenting is seen to unfold through iterative and shifting processes of improvisation, collective exploration and reflexive learning (Regeer et al., 2016; Tsoukas and Chia, 2002). In this view, innovation and learning are considered as laborious and emergent processes, requiring "space for experimentation, foolishness and randonnée" (Clegg et al., 2005 p. 157), rather than relying on fixed structures and predetermined measures to control and evaluate change processes. Experimentation and improvisation, defined as intentional and innovative actions taken in the moment in response to changing and uncertain organizational circumstances, are important sources for organizational learning (Cunha and Clegg, 2019; Hadjimichael and Tsoukas, 2023; Wiedner et al., 2020). By creating and reconfiguring novel designs and actions through trial and error and reflection, they embed learning in context.

Scholars identify convergent and divergent improvisations as two different approaches to learning. On the one hand, convergent improvisation concerns 'fixing' disruptions in organizational processes to keep systems functioning. Convergent improvisation (sometimes referred to as 'first order learning') primarily focuses on repair work to deal with problems that arise in the course of daily professional work. It can lead to new and improved routines and processes (e.g., Edmondson, 2004). On the other hand, divergent improvisations involve more systematic and deliberate exploration of new ways of working, problem solving and innovation. Divergent improvisation deliberately differs from current organizational processes and routines, often requiring cooperation between actors in various parts of healthcare organizations ('second order learning') (Cunha and Clegg, 2019).

As such learning challenge established ways of working, divergent improvisations are typically likely to provoke resistance as a part of the politics of change. Prior research has shown how learning, in practice, tends to be interwoven with local (power) dynamics, interests and (epistemic) legitimacy struggles within organizations (Nugus et al., 2010; Zuiderent-Jerak and Berg, 2010). Already existing institutional norms and values often have an impact on how knowledge gets produced and which knowledge counts as valid and valuable (Muniesa and Callon, 2007). Different actors involved in learning may uphold different epistemic realms, potentially questioning the legitimacy of experimenting (Chimenti and Geiger, 2023) and the credibility of the knowledge derived. Where there are distinct epistemic positions in a situation, decision-making and subsequent actions becomes framed by epistemic politics.

3. Epistemic politics

Epistemic politics refer to the processes through which knowledge and expertise are constructed, challenged, and legitimized in policies and practice. They do so by defining what forms of knowledge and expertise are privileged in the production of knowledge and decision-making. Different professional groups tend to validate and frame specific forms of knowledge and practice as legitimate (Carr and Obertino-Norwood, 2022; Perrotta and Geampana, 2020; Sheard et al., 2017). Consequently, certain actors are considered (more) legitimate producers of more legitimate knowledge, while others are marginalised or excluded (Beaulieu et al., 2012; Doing, 2004; Sørensen and Traweek, 2022; Zuiderent-Jerak, 2007).

Examples of research on epistemic politics include Doing's (2006) research on the identity work of 'scientists' and 'operators' in a physics laboratory setting. Scientists use technical knowledge to legitimize their

professional roles, allowing them to assert control within the laboratory. Similarly, Sørensen & Traweek (2022) researched academic work in two universities, focusing on how academic knowledge is produced within local institutional contexts. Informed by performativity studies, their research linked metrics, such as publication ranking systems, with the valuation of academic work. Hierarchies of academic expertise were influenced by the interaction effects of these, shaping practical outcomes of scholarly writing and authors' strategies in conforming with journal requirements. While these examples relate to the politics of scientific work, in this study the concept of epistemic politics is used to conceptualize knowledge work within the context of healthcare and organizational learning.

Research into epistemic politics frames issues of the interconnectedness of power relations, the opportunities for voice and organizational control as central to complex processes knowledge work. Organizationally, certain forms of knowledge can become privileged over others, while others are treated as marginal (Fricker, 2007). According to Doing (2006 p. 315), "*negotiations and antagonisms/contests over who has what kind of access to different epistemic realms are also justifications for who should be in charge of whom and what.*" Hence, epistemic politics not only involves debates on knowledge (production) but also who has legitimate authority and control over (future) actions and learning.

Significantly, struggles for legitimacy and control are shaped and guided by the institutional context in which they unfold. In healthcare, EBM as both a clinical and policy doctrine tends to dominate the framing of quality and safety of care. This, in turn, validates medical and safety science as the most valuable and legitimate knowledge to guide interventions, while potentially side-lining other perspectives, voices, and forms of learning (Zuiderent-Jerak et al., 2009). In this paper, we are concerned with the question of how such politics works out in the context of nursing efforts to change practices and policies in healthcare.

4. Epistemic politics in nursing

The core epistemic politics in nursing relate to plural dominant knowledge systems concerning how nursing is practiced and understood. Traditionally, nursing has been viewed as a feminized care-giving occupation or vocation (Baumann et al., 1998; Ernst, 2020b; Yam, 2004). The strong emphasis on the nurturing aspect of nursing work reinforces stereotypes of nursing as a "feminine" profession and as relatively "un-skilled" labour (Hallam, 2012; Hoeve et al., 2014). The complexity of nurses' professional skills and knowledge often goes unrecognized, both among nurses and by many other disciplines in the health service, thereby overlooking nurses' situated and knowledgeable organizing work performed to enhance and integrate care delivery (Allen, 2014), a long-standing issue that continues to hinder nurses' position within the healthcare hierarchy, lessening their participation in decision-making processes (Croft and Chauhan, 2021).

In recent years, there has been a strong push to strengthen and legitimize the knowledge nurses possess in two ways. First, in accordance with dominant medical and safety paradigms, there is an approach that involves promoting evidence-based practice (Ernst, 2020b; Salhani and Coulter, 2009). Informed by the 'gold standard' in the medical profession of randomized clinical trials and evidence-based medicine (Timmermans, 2010), EBP is increasingly regarded as a privileged way to establish nursing as a scientific and research-based profession with more authority, autonomy and prestige vis-à-vis other healthcare professionals, quality managers and policy makers (Triantafillou, 2013). Consequently, EBP has become an authoritative source of knowledge, guiding not only the daily work of nurses but also decision-making and innovation processes more generally (Betts, 2009; Ernst and Tatli, 2022).

Second, and slightly in contrast to the former, a critical nursing approach proposes an alternative route to strengthening the epistemic claims of nurses by emphasizing the importance of tacit, situated, and relational knowledges in nursing work and nurse professionalism (e.g., Allen, 2014; Krone-Hjertstrøm et al., 2021; Kuijper et al., 2022). Nurses are seen to draw on an assemblage of skills and knowledge, including informal knowledge, skills, and experience (Strauss, 1988; Traynor, 2009; Vernooij et al., 2022). Scholars argue that tacit knowledge enables nurses to make rapid and accurate decisions in complex and unpredictable situations, for instance, by 'feeling' that a patient is deteriorating before the vital signs demonstrate a clinical issue (Dresser et al., 2023). Consequently, tacit knowing links closely to professionals' improvisational work. Critical nursing literature makes visible this often unnoticed and unspoken tacit work, legitimizing the knowledge produced through such work.

While critical scholarship generally recognizes the capacity of EBP for clinical decision-making and medical treatment, it also raises concerns about relying solely on technical solutions to healthcare problems and innovation while obscuring healthcare's social, cultural and political dimensions (Jones et al., 2019). Furthermore, the evidence-based paradigm has been criticized for relegating healthcare professionals' clinical experience and expertise beneath the authority of evidence derived from the literature, coupled with a tendency to overlook the local preferences and values of both patients and practitioners (Greenhalgh, 1999). EBP is seen to affect the use of knowledge in local nursing practice empirically, by defining what knowledge (production) is considered valid and legitimate. The privileging of EBP can lead to tactic, relational and organizationally contextual knowledge being slighted. Hence, EBP is seen to reinforce dominant hierarchies in healthcare (Broom and Adams, 2012) through its alignment with dominant normative frameworks for admissible evidence in healthcare (e.g., Berwick, 2005).

To conclude, the view that there is a political dimension to knowledge production and evaluation processes in local nursing practice is supported by the literature. Recognizing this allows us to examine and understand how epistemic politics shape and inform change processes, as well as the credibility and authority of nurses in their role as change agents. Before discussing our empirical findings, we will first outline our methods.

5. Methods

5.1. Data collection

In this article, we focus on pilot projects implemented in two general hospitals in the Netherlands. These pilot projects took place amidst growing workforce issues of retention and satisfaction, forcing healthcare managers, policymakers, and politicians to explore new ways to reform and reorganize nursing care. In the Netherlands, as part of broader workforce optimization and retention strategies, hospitals are reorganizing nursing work and developing new nursing roles to foster healthcare resilience (van Kraaij et al., 2022). In this context, hospital directors (supported by the Ministry of Health and nursing associations) encourage frontline nurses to develop and strengthen their practice and position through innovative plans and pilot projects (e.g., van Schothorst et al., 2020; van Kraaij et al., 2022).

Ethnographic data was collected from a dialysis department at hospital A and a surgical department at hospital B (pseudonyms are used to protect the anonymity of the participants and participating organizations). We conducted ethnographic case studies to gain detailed empirical understandings of the dynamics at work in the pilots. We studied the pilot projects 'from within,' meaning that we observed both the day-to-day work in the two departments and specific pilot project activities, as well as participating in different knowledge exchange initiatives. Our approach was driven by the recognition that the work done in the pilots was part of broader (knowledge) activities shaped by the social symbolic and institutional contexts of organizations (Lawrence et al., 2011; Lawrence and Phillips, 2019) as well as by epistemic legitimacy struggles in the field of nursing (Ernst and Tatli, 2022). Using

this approach allowed us to construct a situated and relational account of nurses' change project efforts.

The two pilot projects that we investigated had similar designs. Both were in operation for a period of one year, at the start of which project teams were formed to lead the projects in conjunction with nurse ward managers. The project teams met on a regular basis, discussing their progress and the implementation of interventions, both amongst themselves, with the team leaders and in collaboration with learning networks within the hospital. The hospital management selected the respective wards to be pioneers in exploring and evaluating new ways of working for the broader organization. From a managerial perspective, the selection of the nursing wards was motivated by the aim of resolving pressing local issues (such as high nurse turnover, poor job satisfaction, and limited career opportunities) for which no standard solution existed.

The first and second author engaged in participant observation at the two hospitals. We observed nurses working in various roles, including students, vocational, and bachelor trained nurses, for over 180 h during different shifts, including day and night shifts. During these observations, both formal interviews (N = 21) and informal 'chats' were conducted. The formal interviews covered topics such as the nurses' perspectives on professional development, the objectives and progress of the pilot programs, and the challenges and opportunities presented by the pilots. In addition, we conducted interviews with the nurse managers involved (N = 5) to discuss and further explore these topics. Additionally, we attended more than 25 h of project meetings and presentations to gain insight into specific pilot project activities. After conducting our observations, we wrote individual fieldnotes that were subsequently discussed collectively.

Our participation in the pilot project encompassed closely tracking pilot project progress by working closely with local nursing staff, managers, and administrators. Based on our observations, we organized several sessions, both within and between the two hospitals, to engage key stakeholders in discussions about the pilot's advancement, objectives, and goals. Additionally, insights from our research were shared through presentations, both within and outside the hospitals, and through professional and academic conferences and publications.

Furthermore, as part of the broader nursing program, we organized and participated in several knowledge sharing initiatives (N = 6), including webinars, festivals, and conferences. Notes were taken and reported in observational reports. During these events, we engaged with and informally interviewed different professionals, hospital managers and experts, conversationally. Subsequently, we conducted formal interviews with relevant experts in the field (N = 9) to explore further the emerging themes identified in our research. In these interviews, we deepened our understanding of the institutional and epistemic landscape of (Dutch) nursing practice, of nurses dealing with and training for (un)certainty and discussed how local reforms relate to ongoing debates about and efforts to improve nurse professionalization. The data that has been gathered is summarized in Table 1 below.

Table 1
Methods and respondents.

Fieldwork site	Methods and respondents
Hospital (2)	Observations of daily nursing work (180 h) Observations of pilot project meetings and activities (25 h) Member checks and focus groups (N = 6, 10 h) Formal interviews nurses (N = 21), nurse managers (N = 5)
Knowledge sharing activities (N = 6)	Observations and participation in knowledge sharing activities (32 h)
Formal interviews with expert (N = 9)	Professors of Nursing (N = 4) Leading figures Dutch associations for nurses (N = 5)

5.2. Data analysis

We used abductive methods for our data analysis, allowing us to make several iterations between data and theory. Abduction is particularly useful for studying complex controversies and problems (Tavory and Timmermans, 2014). Initially, we coded our material inductively and identified key themes such as 'uncertainty,' 'improvisations,' and '(evidence-based) knowledge.' We member-checked our findings through informal conversations, interviews, and focus groups at the wards (Heller, 2019). Through these member-checks and ongoing observations, additional and recurring themes emerged, encompassing uncertainty and insecurity related to authority, jurisdictions, and the legitimacy of experimenting. This led us to compare our findings to insights from the literature on epistemic politics and develop new codes to capture dynamics in the field, including codes such as 'voice', 'control' and 'negotiations of legitimacy.' The coding process is summarized in Table 2.

The initial coding was led by the first author, and subsequent interpretation sessions with all co-authors were held. The coding evolved as we built on these discussions. Collectively, the authors each employed and refined themes and codes for data analysis, followed by additional sessions to discuss and compare perspectives. All quotes and excerpt were translated from Dutch. To maintain anonymity, we used pseudonyms in the paper. Ethical permission was obtained through the internal review board of the Erasmus School of Health Policy and Management.

6. Results

The research findings are presented in two sections. The first section provides insight into how an experimenting improvisational approach that was intrinsic to nurses' daily work was used to inform learning during the pilot projects' initial phases. The second section describes how evidence-based practice gained increasing prominence in the pilot projects, ultimately clashing with the experimenting approach. It shows how the underlying epistemic politics embedded as elements of the power relations in the hospitals created barriers to change processes and hindered nurses in their role as change agents.

7. Experimenting and improving nursing practice

> "In order to continue providing high-quality care in the future with an expected shortage of specialized [dialysis] nurses, it is necessary to investigate the work processes that need to be changed. Nurses must take the lead in this to come up with innovations that improve quality of care for [dialysis] patients and strengthen nurses' position within the organization. The project team [comprised of nurses from the department] plays a leading role in the pilot project. The team creates the conditions for the implementation of the pilot, motivates the nursing team, and is responsible for learning and experimenting on the work floor." (Internal document, hospital A, September 2022)

The excerpt comes from the implementation plan for the pilot project at hospital A. The plan reflects the Minister of Health's statements (outlined at the beginning of the paper) emphasizing how nurses should lead change in their departments. The plan positioned an experimenting approach as central to changing nursing work processes during the initial pilot projects' stages. In the pilots, nurses in the project teams were responsible for selecting and improving local work processes:

> Together with Jana, the team leader, I carefully arrange the chairs in a large circle. The first meeting of the pilot project team is about to begin. As the nurses come in, I count fifteen in attendance. Jana takes the floor, "Today, our goal is to identify themes for the pilot and to form corresponding working groups." In the discussion that follows, nurses share their ideas and concerns. As the discussion continues, three themes emerge – enhancing expertise (clinical reasoning),

Table 2
Overview coding process.

First order codes	Second order codes	Aggregate themes
Ad hoc repair work Articulation work Unplanned action Creativity Openness to deviate from routines and rules	Improvisation in daily care work	Creative experimental work done to foster imaginative, and nurse driven learning
Identifying areas for innovation and improvement Implementing learning infrastructures Gathering input from nursing teams Creating support Training and peer supervision	Bottum-up/nurse driven learning	
Role development Restructuring care routines Collective reflection Refining interventions New job profiles and competences Quality boards Situated issues and improvement work	Experimenting	
Involvement other professionals Compelled to uphold established safety and regulatory standards Accounting for actions	Barriers to divergent/ second order improvisation work	Determining and negotiating the boundaries of experimenting
Unfamiliar terrain Deferred decision-making Resistance to uncertain outcomes	Uncertainty	
Nurses want firm evidence Best practices Tools Measurements Seeking legitimacy	Evidence-based decision making	Institutionalized methods, norms and values as barriers for improvement work, knowledge legitimacy battles
Wait-and-see attitude project teams Rendering experimenting discursively illegitimate Skepticism within nursing teams	Problematizing experimenting	
Criticism Hierarchical enforced boundaries Competing interests and demands Turf issues Lack of support within the team Lack of support within the broader organization	(Lack of) legitimacy and authority of nurses	Politics of change, epistemic politics of improvement work
Top-down decision making Emphasis on numbers Compelled to enforce ideas and vision Interference in learning Power relations Disinterest	Voice and control over learning, negotiations of legitimacy	

professional role differentiation, and increasing patient participation in their dialysis care. The nurses form three working groups to explore the themes and refine them to address specific challenges faced by the nursing unit (Fieldnotes, hospital A, September 2021)

The field note conveys how the experimenting approach taken in the pilots granted nurses considerable autonomy in designing and implementing interventions. The project team collectively decided on specific work themes and developed a strategy for potential interventions. Nurse-driven bottom-up learning was encouraged, in which nurses drew on situated local organizational knowledge to tackle specific nursing unit challenges and issues:

> Our team can't seem to agree on what makes a 'healthy' work schedule. Some of my colleagues like to work during the day, while others prefer night shifts. And then there are those who prefer to work four consecutive shifts, while others don't. It's been causing a lot of tension, so our [pilot] working group is working on a new schedule that offers more flexibility, allowing people to sign up for certain shifts they prefer. We started by identifying specific complaints and issues with the old schedule and we're now trying out the new one to see if it works better. We'll be making changes along the way to make sure everyone is satisfied (Interview, nurse, hospital A, August 2021)

The nurse described how the project team worked on improving shift working conditions through the experimenting approach. The project team collated issues encountered by the nursing team, searching for actions to resolve the issues identified. More flexible approaches to work, gradually refined through ongoing improvements, were introduced. These interventions, given the challenges that the nursing unit encountered in retaining and recruiting new staff, were especially important. Flexible work schedules are a critical factor in nurse retention (Buchan et al., 2022).

8. Improvisation and nursing work

An approach of collectively searching for solutions parallels the practice-based mode of improvement and learning intrinsic to nurses' daily care practices. In the various nursing departments, we often observed an experimenting style of working and learning. Nurses used a proactive and resourceful attitude in fixing and enhancing care practices in the course of their daily work. Such knowledgeable and ad hoc improvisational work, or 'translational mobilization' (Allen, 2014), which points out the coordination and organization of constellations of sociotechnical networks in which patient trajectories unfold, created 'convergent improvisations' (Cunha and Clegg, 2019), and are the heart of nursing work and professionalism. This, we also observed in our fieldwork:

> As the day shift draws to a close, Marie assists a patient about to go home. The patient is given his second chemotherapy of the day, which he can take home to administer through his "Portocath" [a medical device implemented beneath the skin to draw blood and administer treatments like intravenous fluids or chemo]. The chemotherapy is in a balloon that needs to be carried in a flashy shoulder bag provided by the pharmaceutical company. However, the bag is too small for the balloon to fit. This is a problem because the patient is eager to leave, and Marie needs to attend to other patients before her shift ends. Marie cuts off the end of the bag, places the balloon inside, and wraps it all up with duct tape. (Fieldnotes, hospital B, January 2022).

The example illustrates the importance of nurses' immediate situated responses to problems arising in daily care. An experimenting approach, as a way of improvising creative and feasible solutions to deal with immediate problems, is a critical aspect of mundane nursing practice. As this example reveals, improvisation takes considerable rapid thinking

and creativity, resting on tacit and situated knowledge. It comprises a combination of specialized organizational and clinical knowledge and skills that nurses use to resolve problems and improve care practices amidst unpredictable settings (Allen, 2014, Kuijper et al., 2022). Leveraging this knowledge, Marie, the nurse, balanced both the organizational conditions (workflows, demand patterns, recourse availability), the technical issue (the balloon not fitting into the bag), professional values (timely care, patient-centred care, patient safety) and the patient's needs (who wanted to go home) and ad hoc resolved an emergent disruption in the care process with implications for healthcare quality and maintenance.

We observed nurses continuously drawing on this knowledge, navigating challenges encountered in daily care provision. Observing daily care work reveals the intricate work performed by nurses coordinating and aligning complex systems of work. The process of 'articulation work' (Strauss, 1988) involves ensuring that "people, resources, and knowledge are effectively configured and ordered across time and space" (Vernooij et al., 2022 p. 299), as illustrated in the following example:

> As the multidisciplinary meeting ended, Laura, a nurse, immediately turns to a medical resident named Naomi and asked, "Are you rounding on unit 3 today?" Naomi gives a nod of affirmation. Laura continues, "Mrs. van de Bee lost a significant amount of blood when she came home on Tuesday. She thought it was just her vest getting wet, but it turned out her stent was leaking. Just a heads up, her vital signs might be a bit skewed. We noticed it this morning, but she seems fine." (Fieldnotes, hospital A, October 2021).

In fragmented care systems, nursing work needs to be alert to the treatment process (Allen, 2014). Various forms of knowledge combine, such as familiarity with organizational routines, procedures, and clinical expertise, as well as understanding the patient's socio-psychological circumstances. The data highlights nurses' emergent coordination work ensuring a 'smooth' continuation of care across different staff members (Allen, 2014, Kuijper et al., 2022). Importantly, such improvisational work emerges not to disrupt the healthcare system but rather to repair and sustain its operation, typically performed in a manner that goes unnoticed (Vernooij et al., 2022).

9. Making visible the experimenting approach

In a similar vein, the experimenting approach initially enabled nurses to explore innovative ways of working in the pilots. Working collaboratively on current routines, nurses were able to identify areas for improvement and implement new approaches, in successful interventions. These interventions were, however, closely tied to the nurses' working situation (Klemsdal and Clegg, 2022); as such, they were developed outside the wider organizations' oversight. The situatedness of the improvements, grounded in practices, had consequences for the visibility and legitimacy of nurses' experimenting work. How nurses sought to restructure their daily routines and introduce new roles and responsibilities in hospital B to enhance their practice, provides an example:

> Do you know what's interesting? The role of day coordinator is so new, we only recently implemented it, but it has become essential in no time. The other day, we were without one due to low staff numbers, and it was like missing a piece of the puzzle. Esther explains how they used the pilot to implement the role: "The day coordinator is responsible for coordinating things like bed management, break scheduling, and chairing the daily start meeting, as well as supporting and directing colleagues. We had to figure out what this role was all about. And let me tell you, it is not as simple as it sounds. As a day coordinator, you're not directly working with patients and there was a danger, for example, that you would end up doing various unpleasant tasks when things were slow. But we found ways to overcome that." (Interview, nurse, hospital B, January 2022).

Nurses on this ward decided to implement a new daily structure, including the creation of a 'day coordinator' role, restructuring the daily start and handover procedures, using quality boards as a tool for improvements. As this example illustrates, these interventions required incrementally adjusting and defining interventions and role development, drawing on local and situated knowledge (e.g., of daily rhythms of the ward, current routines, and teamwork), reflexively monitoring the introduction of the day coordinator through sharing experiences in the team.

The interventions' success, including the introduction of new and flexible work schedules, is partially attributable to the fact that they did not require legitimacy and support from actors outside the nursing team. Despite being part of explicit learning through the pilot projects, the interventions maintained rather than disrupted more widely vested organizational routines and hierarchies, minimizing the politics associated with reorganizing work. One consequence was that the legitimacy of the knowledge developed in the pilots remained rather limited, mainly concerning the nursing team. As such, it was epistemically invisible in the organization, despite the considerable efforts made by the involved nurses to establish local legitimacy and ensure that new practices were viewed favourably by their fellow nursing colleagues. The importance of this was made clear:

> Nurses are quick to judge. No matter what we send out, they just reject it without even reading it. Trying to make changes is a constant battle. It's all about choosing the right words and finding the right timing. We can easily get shut down if we're not careful. (Interview, nurse, hospital B, January 2022)

Nurses knew how to create situational legitimacy by 'choosing the right words and finding the right timing.' It worked the more self-contained within nursing routines were the changes. However, as the scope of legitimacy expanded, to include other healthcare professionals within the hospital, as nurses began to challenge and incorporate broader organizational processes and vested interests, creating and maintaining legitimacy became increasingly challenging, as we will elaborate in the following section.

10. Challenging experimentation and evidence-based nursing

As the pilots progressed and broadened in their implications, nurses found it increasingly difficult to push for change through the experimenting approach. In this section, we examine how nurses' creative and innovative work became challenged both among nurses themselves (as indicated in the quote above) and among engaged stakeholders, when interventions initiated by nurses were 'divergent improvisations' (Cunha and Clegg, 2019) presenting structural changes that were more disruptive and challenging of broader organizational processes. Consequently, nurses increasingly limited the experimenting approach to local, convergent, and 'invisible' changes.

Attending several project meetings across both hospitals over time revealed changes in interventions nurses aimed to implement. There was a shift in the forms of knowledge used and validated in the pilots. We observed an increasing tendency toward an evidence-based approach, as illustrated in the following vignette derived from observing a project meeting in hospital A:

> I showed up at the meeting room where the project team and the nurse manager gathered to evaluate and discuss the implementation of nursing assistants on the ward. The meeting began with Juliet, one of the nurses and leaders of the project addressing the nurse manager: "Basically, we feel like we are running into a brick wall. The issues at hand are so complex." A heated discussion ensues, in which the team discusses the importance of measuring future actions and incorporating best practices, "preferably we should conduct some

complexity measurements" one of the nurses argues, "however, to be honest we have no idea how to do that." The two nurses then turned to me and asked me whether there are any tools or best practices available. Unaware of such tools, I replied by mirroring that the pilot also allows for experimenting and trying things out. After a moment of silence, Helen, another nurse, concludes my contribution by stating: "Yes, but hey, we do not experiment with our patients!" (Fieldnotes, hospital A, October 2021).

The proposed introduction of nursing assistants to the nursing ward, these nurses felt, required something different to changing established and formal operating procedures (e.g., safety regulations and standards, changes in medication administration). Furthermore, the nurses perceived that the involvement of other healthcare professionals, such as physicians, managers, and HR officers, was required for such changes, which they perceived as potentially disruptive to established routines, standards, and regulations. Considering the many unknowns, nurses felt that reorganizing nursing roles would make it difficult to predict and hence to take responsibility for the outcomes of proposed interventions. The situational experimenting approach, they felt, did not suffice in cases of a broader and 'divergent' organizational transition.

Furthermore, the example conveys ongoing epistemic politics at work and makes explicit the norms framing the pilot projects. Our attempt as participatory ethnographers to highlight the opportunities for experimenting within the pilot was met with a fierce "we don't experiment with our patients!" The nurse's outcry underlines the risks of experimenting that involves breaking with current routines and task distributions and engaging various other actors. Venturing into uncertain outcomes with potential consequences for patient safety and quality of care led nurses to shift epistemic realms and enact EBP narratives. These were familiar and legitimate means with which to navigate uncertainties accompanying change processes and to account to stakeholders outside their nursing teams (Carr and Obertino-Norwood, 2022).

Nurses repeatedly expressed experiencing a particular sense of fragility in their authority when acting beyond the boundaries of their immediate work environment:

There are certain things we can do within our own team that don't need a lot of changes, but other interventions involve many different parties, and it can be unpleasant and demotivating to coordinate with them all. Despite our efforts, we receive constant criticism. That is especially frustrating because we don't get much feedback or help from our own team. (Interview, nurse, hospital A, February 2021)

The epistemic shift to EBP was observed by actors in the field as progress in the pilots slowed down. For instance, at one of the project meetings, the team leader at hospital B provided feedback to the project team, highlighting this change:

It seems like you [the project team] are all persistently searching for frameworks and scientific proof. In our department, we typically think in terms of standards and rely heavily on protocols: how much of something is needed, how to handle a particular problem? However, there may be times when you can make a decision by simply saying, 'we'll do it this way'. (Fieldnotes, quoted nurse team leader, hospital B, February 2022)

The emphasis on EBP, as a way for nurses to establish greater legitimacy and authority vis-à-vis other healthcare actors (Betts, 2009; Ernst, 2020b; Salhani and Coulter, 2009), is echoed in our broader study. Experts, policy makers, and healthcare managers alike consistently promoted the importance of EBP to elevate the role of nurses within the field of healthcare, highlighting how local epistemic disputes and politics are shaped and guided by broader institutional contexts in the field of healthcare. This is illustrated in an interview with a leading nurse figure in the Netherlands:

I have been trying for years for nurses to have more voice and a seat at the table in shaping agendas and decision-making. But that also means that the nurses who are selected to speak on our behalf must be able to speak up and have a solid understanding of the evidence. They must understand what a 'pico' [a framework for formulating clinical and evidence-based research questions] and 'outcome' are and when they matter most. This requires knowledge and therefore more nurses who can do more than just insert an IV, administer medication and bathe patients. (Interview, expert, March 2022)

Such a view of nurse professionalization reflects an ideological reorientation in the nursing field, encouraging nurses to use evidence-based practice to inform decision-making processes and actions (Traynor, 2009). The expert's argument shows a clear understanding of what it means to be taking on nurse leadership roles. These roles, enacted amongst other clinicians, mean that, ideologically, in terms of legitimate discourses in use, scientific and methodological knowledge was the key to fostering nursing roles. In the expert's view it is essential for nurses to have a solid foundation in scientific training and knowledge with which to assert themselves as credible experts in decision-making. They should articulate their expertise in line with medical knowledge systems, thereby strengthening their professional expertise, credibility, and legitimacy.

11. Knowledge legitimacy struggles in pilot practice

As the pilots unfolded, clashes increasingly surfaced between the nurses local experimenting approach and the dominant use of evidence-based knowledge within the field of healthcare (Broom and Adam, 2013). These clashes posed challenges to nurses' credibility within the wider socio-political context of the pilots, as well as the value of the experimenting approach in enforcing change. To illustrate the politics involved, the following excerpt of a meeting between hospitals A's project team and board of directors serves as an example:

Today, Anna and Susan, two nurses from the project team, provide an update on the pilot project's progress to two members of the board. The nurses use some sheets to discuss the interventions they have implemented, and progress achieved in the pilots up to this point, such as reorganizing quality workgroups and role development efforts. When they finish, Floor, one of the members of the board, says "nice presentation!" She continues, "But it is not entirely clear. What are your expectations, what are your goals, where do you want to be in a year?" After some hesitation, Susan replies and talks about the objectives to increase patient and staff satisfaction. There is a moment of silence, and Susan quickly adds, "But maybe that's difficult to measure and research." Floor responds, "Yes, those goals are not really clear or 'SMART.' I mean, patient satisfaction can be quantified, for example by stating that it is currently at 7.0 and our objective is to reach at least 7.4. My concern is that it we're all now focused just on trying things out, but upon reflection we may realize that it has not achieved any meaningful results." (Fieldnotes, hospital A, January 2021)

The nurses presented their work in the change project to the hospital board during a meeting that took place against the backdrop of post-pandemic discussions, highlighting the importance of nurse involvement in healthcare decision-making and critical nurse leadership (Kuijper et al., 2022) in the context of a strong nursing profession. In contrast, however, the excerpt illustrates that the work accomplished, and the knowledge and experimenting methods used in the pilot were not valued by the members of the board of directors. Their focus was on measuring interventions to prove their effects, as represented by Floor. Although the potential benefits of measurements should not be disregarded, the board's emphasis on numbers and evidence-based evaluation overshadowed the contributions of the nurses and the experimenting approach used – and silenced the nurses.

Furthermore, the language used in response to the proposals (e.g., 'nice presentation', 'just trying things out', lack of 'meaningful results') demonstrated the prevalent normative values, revealing a glimpse of the discursive practices whose legitimacy articulated top-down control and authority over the pilot project and the knowledge production processes (Doing, 2006). For the board, evidence-based knowledge was the valid foundation informing actions relating to change. From this perspective, experimenting could be dismissed and characterized as 'not really clear.' The nurses could be seen as derelict in not incorporating evidence-based evaluation for proper, 'SMART' decision-making.

The episode shows the fragile authority of the nurses involved in the pilots once findings were articulated in the wider hospital system. This mirrors a broader observation within our study that once experimenting applied not just to local and daily nursing practice but to wider organizational contexts, nurses often lacked the voice, interpretative resources, and credibility to legitimize their divergently improvised knowledge. Instead, there was a strong tendency for interventions to be measured for actions and proposed changes to be validated and legitimized. These tendencies reinforced the lack of support nurses received for an experimenting approach within their own teams. In addition, due to pressures exerted by actors in the broader organization to conform to the norm of using evidence-based knowledge to inform change, their proposals were not persuasive. As a result, pilot projects stagnated because there was limited legitimated evidence available to reorganize nursing practice. Consequently, nurses gradually lost confidence in their ability to bring about meaningful change.

12. Discussion

The Minister charged nurses with a significant responsibility to ensure the reform of nursing practice in the Netherlands. For nurses to assume this leadership position, our ethnography has shown, it became necessary for them to consider and navigate epistemic politics if they were to lead the reorganization of nursing care in response to growing workforce issues.

Our research question was how epistemic politics have an impact on reforming nursing work. The analysis shows that while the experimenting approach was key during the initial phases of the pilots, it increasingly lacked the necessary legitimacy to drive change in the context of broader organizational transitions, both among engaged stakeholders and the nursing community. The analysis that nurses made, one that was realist in context, led them to shift to different epistemic repertoires in situations of uncertainty and in attempts to maintain and safeguard legitimacy among their peers and in those areas of healthcare organizations where, traditionally, they had less voice.

Our findings draw attention to underlying institutional power relations. They reveal how claims made by actors, including CEOs, within nurses' socio-political environment were skewed in terms of the agenda set by the Minister. Nurses' ability to generate knowledge through experimenting was limited because of institutionalized norms. These norms linked power, knowledge and learning in ways that favoured dominant actors' authority over the nurses. It did so by undermining the legitimacy of the knowledge claims that they made through the a priori legitimization of only certain types of knowledge, types that formed the intellectual capital valued institutionally.

In hospitals, clinical trial-based knowledge is the 'north star' for legitimacy. Evidence-based practice and its apparatus of protocols appears to be a handy discursive device for disregarding other forms of knowledge and methods of learning. Consequently, dominant hierarchies of knowledges were reinforced, while experimenting as a valid means to effect change was easily dismissed. Knowledge claims generated through alterative epistemologies were slighted, leading to the reproduction of the 'invisibilities of nursing work' (Allen, 2014).

The ongoing epistemic politics in nursing reform efforts, as identified in this study, tend to perpetuate forms of epistemic injustice (Fricker, 2007) by favouring certain knowledge and knowledge production methods in healthcare organizations over others. Fricker (2007) identified two types of epistemic injustice: testimonial and hermeneutical injustice. Testimonial injustice occurs when the credibility of a speaker is undermined due to identity prejudice on the part of the hearer. In the context of this study, testimonial injustice can explain how nurses' contributions to knowledge production processes may be underrated because of preconceptions about their identity. Other healthcare actors, such as CEOs or physicians tend to perform condescendingly in their treatment of nurses' knowledge, not because of the merits of what nurses say or do but rather due to the preference for forms of knowledge substantively different from that produced by the nurses' pilot projects.

Hermeneutical injustice, in turn, refers to a type of injustice that occurs when actors are unable to articulate and make sense of their own expertise, experience and identity due to a lack of interpretative resources. Our study presents compelling issues in this regard. Our findings highlight how nurses often lack the interpretative resources to articulate and make sense of the knowledge and expertise that underpins their experimenting in terms that dominant authorities would recognise as legitimate. This, in turn, creates barriers for nurses to validate and legitimize experimenting in organizational settings where certain, and often more powerful, actors can determine what knowledge is considered legitimate and which knowledge can be ignored. As specialized tacit and situated knowledge as knowing remains poorly understood in practice and policy, we suggest the need for alternative conceptual resources for talking, thinking about, and engaging in experimenting. Without the institutionalization of such resources, nurses are likely to continue facing challenges in accounting for and legitimizing their work and expertise in their organizations.

The irony is that the lack of institutionalization is made hermetic by the stress on a quantitative evidence-based approach. Nursing, as a profession, is aware of this; in recent years, EBP has emerged as a specific approach to build a scientifically informed language and nursing knowledge base to foster nurse's position in the field of healthcare. Critical nursing studies, however, highlight how such technical knowledge repertoires perform a lack of inclusivity with the potential to overshadow other forms of knowledge that inform nursing work and expertise (Allen, 2014; Baumann et al., 1998; Betts, 2009; Ernst and Tatli, 2022; Triantafillou, 2013), with repercussions for nurse professionalization processes and epistemic politics in the field.

Earlier research has suggested that deep entanglements between EBP and nurse leadership and professionalization may create a precarious situation (Timmermans et al., 1998). While EBP can strengthen nurses' clinical, technical, and scientific knowledge, it may only give them more professional jurisdiction in established areas of their work. Timmermans et al. (1998) show that for nurses to account for the full complexity of their professional skills and knowledge and to take jurisdiction over them is limited by evidence-based approaches as these cannot capture the deep creativity and imagination involved in socially integrated nursing work as a complex assemblage of skills.

Furthermore, our findings empirically highlight how everyday practices of healthcare improvement, as observed locally, are shaped by broader epistemic frameworks institutionalized in the field of healthcare. In healthcare, traditional, and mainstream approaches to improvement, grounded in a positivist approach to research and innovation, are hegemonic. Quantitative evaluations and evidence-based decision-making have conviction in a way that interpretative understanding does not (Allen et al., 2016). Consequently, alternative strategies and methods concerning learning and innovation, such as improvisational experimenting, face difficulties in gaining acceptance (Bate and Robert, 2002).

Returning to the minister's call for nurses to act and take responsibility, our study underscores a discrepancy between such a call made by those overseeing change programs and the actual participation and leadership of change at the local level. In the implementation of reform efforts, the politics of improvement and healthcare change are often overlooked. Reform is not easy; not only must it counter the

opposition of those that dominate organizations and systems; the knowledge that seeks to enter decision-making arenas must be accepted as legitimate, which means acknowledging the epistemics of that knowledge.

Our findings highlight that, in local practice, alongside navigating power differences and professional hierarchies, the work of change agents becomes entwined with and influenced by conflicts stemming from competing institutional ideologies and epistemic paradigms within the context of quality improvement and healthcare innovation (Bate and Robert, 2002; Waring et al., 2016). Importantly, while our findings underscore EBP's role as a front stage political strategy for facilitating or impeding actions and learning, further empirical research is needed to explore the dynamic interplay and translation between different knowledge systems (Bal, 2017).

The implications for policy and management are evident. Nursing workforce shortages are widely recognized as a significant challenge in healthcare systems globally, with the Covid-19 pandemic further highlighting this crisis. Epistemic politics and injustice are firmly intertwined with the inability of healthcare systems to sustain healthy and resilient workforces. A major task and challenge for organizations is to legitimize different knowledges that inform nursing work and activate critical nurse leadership, to expand nurses' opportunities to contribute to healthcare decision-making and establish themselves as critical and authoritative change agents.

CRediT authorship contribution statement

Syb Kuijper: Conceptualization, Formal analysis, Investigation, Methodology, Writing - original draft, Writing - review & editing. **Martijn Felder:** Conceptualization, Formal analysis, Investigation, Methodology, Writing - original draft, Writing - review & editing. **Stewart Clegg:** Conceptualization, Formal analysis, Methodology, Writing - original draft, Writing - review & editing. **Roland Bal:** Conceptualization, Formal analysis, Methodology, Writing - original draft, Writing - review & editing. **Iris Wallenburg:** Conceptualization, Formal analysis, Methodology, Writing - original draft, Writing - review & editing.

Data availability

Data will be made available on request.

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