editorial

Learning from failures in knowledge exchange and turning them into successes

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While the evidence base on successful practices in knowledge exchange is rapidly growing, much less attention has been given in the academic literature to documenting and reflecting on failures in trying to exchange different types of evidence between academics, practice partners and policymakers. However, learning from failures is just as important, if not more crucial, than celebrating successes. Therefore, in this introduction to the special issue on learning from failures in knowledge exchange, we discuss crosscutting themes across the seven papers. We start by comparing and theorising different definitions of failures, and by exploring the relational barriers and structural stressors underlying these failures. We argue for the creation of a ‘failure culture’ in organisations, in which failures are no longer avoided but actively encouraged. To turn failures into successes, we identify a need for more sharing and publishing of failures, early engagement with stakeholders in the knowledge exchange process, and illustrate the importance of boundary spanners. We conclude with recommendations for future work, related to promising theoretical approaches, such as system thinking, the re-addressing of power imbalances through leadership, and highlight art-based approaches as a mechanism for rebalancing power.

Key words knowledge exchange • failures • mis-implementation • deviation

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‘The only true failure is keeping knowledge you could have shared with others to yourself’ (Baylor Barbee)

Introduction and setting the scene

While the evidence base on successful practices in knowledge exchange is rapidly growing (Castaneda and Cuellar, 2020), much less attention has been given in the
academic literature to documenting and reflecting on failures in trying to exchange different types of evidence between academics, practice partners and policymakers. However, learning from failures is just as important, if not more crucial, than celebrating successes. Allowing partners to reflect in a safe space on knowledge exchange practices and research projects gone wrong, in which communication broke down, partners did not engage or dropped out and evidence was ignored, will provide important lessons on how knowledge exchange practices and research can be improved.

The topic of failures has gained some traction in recent years among academics, sparking blogs (Lantsoght, 2018) and some authors publishing ‘shadow CVs’ with lists of rejected papers, grants and positions. However, systematic reflections and documentation on failures, particularly in knowledge exchange, is almost nonexistent. Although some others have published on the negative effects of knowledge exchange (Kislov et al, 2017) and the dark side of co-production (Oliver et al, 2019), this does not capture failures. A scoping review currently in progress by the Learning Health System Team at the Alberta SPOR SUPPORT Unit (https://absporu.ca/) that looks at failures across knowledge translation and implementation might provide future insights.

At the 5th Fuse conference on knowledge exchange in public health (Fuse, 2022), held in Newcastle, UK, on 15–16 June 2022, over 100 world-leading experts in knowledge exchange and public health met to discuss and share setbacks in knowledge exchange through presentations, interactive posters, fishbowls, gallery spaces, and cabarets of dangerous ideas. This special issue brings together selected papers from the conference and papers that were submitted in response to an open call after the conference to expand the range of contributions.

We asked authors to reflect on the following questions when submitting their papers:

- Where and how does failure occur in knowledge exchange?
- Who notices them and what is the impact for producers, users and exchangers of knowledge?
- How to respond to failures, how can we prepare for them and learn from mistakes?
- How can we research failed knowledge exchange practices and projects to document and reflect on the processes and distil learning from them to improve these practices?
- What frameworks and theoretical concepts could help practitioners, policymakers and researchers to reflect on failures and identify learning from them that could be adopted in future knowledge-exchange processes?
- What is needed to create a ‘permission to fail’ culture in evidence producing, using and sharing organisations?

From 23 original submissions from 14 different countries, and from a range of disciplines and areas of focus, the final selection for this issue comprises four research papers and three practice papers. For the interested reader, you can find out more about the review and selection process, and about the editorial team, in the accompanying blog post (https://evidenceandpolicyblog.co.uk/).

The selected papers provide practical examples of knowledge-exchange failures and how participants dealt with these failures; updates on methodological and theoretical developments in documenting and reflecting on failures in knowledge exchange; and critical commentaries on the research impact agenda.
What's in a name? Defining and theorising failures in knowledge exchange

Reflecting on failures in knowledge exchange is complicated by not having a clear definition of failure. What types of failure are we talking about? A failure of a research project to (co-)produce relevant knowledge? A failure of implementing an evidence-based intervention in a particular context, or perhaps a failure to mobilise relevant knowledge to inform the development and adaptation of service in another context? In short, are we talking about an intervention failure, an implementation failure, or a knowledge exchange failure?

The authors in this special issue have focused on all three types of failure, but most papers focus on knowledge-exchange failures: failures in the exchange of knowledge and resources between different stakeholders involved in the development and implementation of health practices and policies, at a local, national, or international level. This foregrounds the importance of knowledge and the linking of stakeholder groups to facilitate exchange (Shewchuk and Farley-Ripple, 2022), with implementation science positioned as an area of knowledge-exchange research focused on the adoption and sustained delivery of healthcare interventions in different contexts (Kilbourne et al, 2020).

Our authors have used different terms to describe and define failures, ranging from mis-implementation (Dopps et al, 2024), to setbacks (Mourits et al, 2024), pitfalls (Cheetham et al, 2024), unproductive interactions between stakeholders (Tellmann and Gulbrandsen, 2024), conflicts in co-production (Warwick-Booth et al, 2024), and deviations from expected and desired results (MacGregor, 2024). At one end of the scale are interventions that have been discontinued, while, at the other end, are deviations that include interventions that have been implemented but do not always produce the desired outcomes (which is often the case for health interventions).

The scope of failures can be small and even positive: a deviation from expected results can lead to unexpected results or to longer-term benefits through individual and organisational learning. Many of the papers in this issue look at both large and small failures in knowledge exchange and demonstrate that they are interconnected: small failures lead to bigger ones, and spectacular failures can show up in small ways. To quote one of our authors, MacGregor (2024) writes: ‘A core challenge in learning from failure results from a misplaced focus on large catastrophic failures whereas small failures are often “the early warning signs”, which if detected and addressed, may be key to avoiding catastrophic failure in the future’ (Cannon and Edmondson, 2005; 303, quoted in MacGregor, 2024).

In their attempts to define these different terms for failures in knowledge exchange, our authors have used various theoretical frameworks. For example, MacGregor (2024) used a combination of the i-PARIHS framework (Rycroft-Malone, 2004) and Edmondson’s (2011) Spectrum of Reasons for Failure (ranging from blameworthy to those that are praiseworthy). He positions different types of failure within the three main domains of the i-PARIHS framework that facilitate knowledge brokering for successful implementation: failure in innovation, recipients, and context.

Similarly, Alex Dopp and colleagues (2024) adapted another popular implementation framework, the Consolidated Framework for Implementation Research (CFIR) (Breimaier et al, 2015) and its Outcomes Addendum, into an analytical tool for studying mis-implementation in three pragmatic trials of behavioural health
interventions (Evidence-Based Practices) in US Federally Qualified Health Centers. With the help of this adapted framework, they identified various mis-implementation outcomes, and associated determinants (barriers and facilitators). They also make a helpful distinction between intervention failure and implementation failure.

Other authors have focused more on the relational dimension of knowledge exchange and applied stakeholder and co-production theory to make sense of failures. For instance, Gulbrandsen and Tellmann (2024) explore unproductive interactions with stakeholders in research by applying stakeholder theory on the distribution of salience, such as power, legitimacy, urgency (Reed et al, 2009), and interest among stakeholders in a problem area, linked to dimensions of proximities (Boschma, 2005). Using this framework, they asked themselves the question: what are the cognitive, organisational, social, cultural, and geographical gaps between stakeholders that need bridging for these relationships to become more productive?

In a similar vein, Warwick-Booth and colleagues (2024) explored obstacles to co-producing evaluation knowledge with Voluntary Community and Social Enterprise (VCSE) organisations in the UK by looking at five key features of co-production, as outlined by Marshall et al (2019) for the NHS: 1) ownership, understanding and support of co-production by all; 2) a culture of openness and honesty; 3) commitment to sharing power and decisions; 4) clear communication in plain English; and 5) a culture in which people are valued and respected.

However, other authors have deliberately shied away from using theories and framework. For instance, Mourits and colleagues (2024) argue that scientific frameworks are often ineffective for knowledge exchange in policy development and that alternative sources of knowledge are required to address failures, such as knowledge about the context (interests of individual parties), process (correct timing), and practice of decision making (continuity of persons and courageous administrators).

What these different theories and frameworks demonstrate is that failures in knowledge exchange are complex problems, involving many different actors at different levels across multidimensional organisations and networks. These networks are in turn influenced by multilevel determinants, ranging from workforce instability, leadership challenges, and lack of adequate funding (Dopp et al, 2024) to practical, everyday issues, such as logistical, technical, and buy-in considerations (Boyd et al, 2024).

Crosscutting themes

Despite the complexity surrounding failures in knowledge exchange explored in this special issue, the authors point collectively to overarching themes, leading to emerging insights around failures in knowledge exchange.

Creating a ‘failure culture’ in organisations

First of all, we need to talk more about failures and create a culture where talking about and sharing of failures is more accepted and, even better, actively encouraged. For many professionals and organisations, failure is something to avoid. The concept predictably invokes a host of negative associations, because at worst it signifies a loss of
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resources and time that could have been more productively allocated, as mentioned by MacGregor (2024). Other authors, such as Dopp et al (2024), highlight the potential reputational impact to researchers and community members of sharing details of challenges and failures; the limited remaining resources in projects that have already made extensive efforts for implementation to succeed; and the bias in the peer-review process for scientific publication toward positive findings.

However, researchers who study failure and professionals who reflect on their practice recognise that failure is not just an unwanted byproduct of change efforts; it is ‘as generative as it is deteriorating; propulsive to future success, while also inspiring new cycles of failure to continuously remit’ (De Keyser et al, 2021: 236, quoted in MacGregor, 2024). In other words, failure might present chances for realisations and encounters that serve as the cornerstones of ongoing learning and transformation (Grey and Cooper, 2010).

The social, economic, and political systems that people and organisations live in and jointly create have a significant impact on the opportunities to learn from failure. Warwick-Booth et al (2024) show a brave example of this in their paper by reflecting on three evaluations that constituted the most challenging evaluations experienced by the researchers over a decade of work on collaborative research with community organisations.

Relational barriers and structural stressors

Secondly, the findings across different papers suggest that barriers for successful knowledge exchange are often relational and dynamic (dynamics of stakeholder and funders power, the networked/ multidimensionality of organisations, low buy-in from overburdened providers, lack of alignment between providers and leadership), and influenced by external/ structural stressors (funding and impact pressure, COVID-19-related stressors). In other words, barriers to knowledge exchange manifest themselves most often in the ‘inner setting and individuals’ domains’ of knowledge exchange, as argued by Dopp and colleagues (2024), but are initiated and amplified by factors outside an individual’s control. For example, Gulbrandsen and Tellmann (2024) conclude that impact (from knowledge exchange) relies often on factors that may be beyond researchers’ control, such as the configuration of stakeholders in the topic/ problem area and their interest in committing to change.

To unpick these different levels, MacGregor (2024) makes a distinction between barriers at the individual level and organisation levels. At the individual level learning from failure is impeded by emotional barriers (for example, calling one’s competence into question) and cognitive barriers (for example, seeking only confirmatory evidence of one’s efforts; Eskreis-Winkler and Fishbach, 2022). Failure at the organisational level arises from technical systems (that is, the ‘know-how’ of working in a system and the challenges inherent in understanding elements of that system) and social systems (that is, relationships, structures, policies, and procedures; Cannon and Edmondson, 2005).

Our authors devote considerable attention not only to describing failures but also to understanding whose failure it is. Some of our authors argue that funders hold academics to ransom over narrow impact measures (Gulbrandsen and Tellmann, 2024) or lack of time and space for reflection on practice (Cheetham et al, 2024), while other authors point the finger at senior staff in commissioning organisations.
who hold power over the resources for research, the data that get accessed, and what results get published (Warwick-Booth et al, 2024). Academic researchers are also accused of failing to appreciate the need for emotional engagement in research (the value of mobilising anger), and politicians are blamed for failing to admit mistakes or the unintended consequences of their decision making (Cheetham et al, 2024). The point about emotional labour in knowledge exchange and research is further developed (and flipped) by Warwick-Booth and colleagues (2024), who highlight the emotional costs and labour involved for researchers.

**Turning failures into successes**

To turn these failures into successes, our authors suggest various solutions.

**Sharing and publishing failures**

Firstly, MacGregor (2024) argues for more deliberate experimentation in organisations and partnerships to allow for failures, or more specifically, *intelligent* failures that provide rich insight and learning. A good example is the Dutch Institute of Brilliant Failures, which was founded in 2010 by Paul Louis Iske from the University of Maastricht, one of the keynote speakers at the 5th Fuse conference. The foundation aims ‘to promote a climate for entrepreneurship by learning to manage risk and to appreciate and learn from failures’ (Iske, 2018). In collaboration with the Dutch Ministry of Health, Welfare and Sport, the foundation hosts an annual presentation of the Brilliant Failures Award for the healthcare sector. Failing intelligently requires a shared commitment from individuals and organisations when exchanging knowledge. It also requires leadership, according to MacGregor (2024), to make this environment possible.

In addition, we need more researchers and practitioners to share their failures bravely in publications, enabled by academic and professional journals reducing their bias towards positive findings. A growing trend in publishing confessional tales by researchers (Douglas and Carless, 2010) is a good start but still sounds too apologetic and does not celebrate intelligent failures. We need to enable more reflection (space and time) between evidence producers, brokers, and users to share this learning and support them in turning failures into successes.

**Early engagement with stakeholders**

Secondly, by understanding better what causes failures in knowledge exchange and implementation, as identified across the papers in this special issue, specific implementation strategies and knowledge mobilisation plans can be developed to address these causes. According to Dopp and colleagues (2024), formalised knowledge-exchange activities are needed to overcome the barriers that cause mis-implementation, tailored to different audiences, such as providers, patients, and/or leadership. This includes early engagement, using different types of knowledge and using teams of boundary spanners.

Many authors point to the importance of early engagement of stakeholders in knowledge-exchange activities. For example, Dopp et al (2024) argue for more
attention to the pre-implementation process of trial, by establishing a community-engagement stakeholder workshop from the outset of trials. Mourits and colleagues (2024) demonstrate the value of a longer-term strategic network of a range of stakeholders across municipal organisations to counter short-term policy views and decision-making processes. They also highlight the importance of other types of knowledge in decision-making processes, which often trump scientific knowledge, and focus more on information about the context (interests of individual parties), process (correct timing), and practice of decision making (continuity of persons and courageous administrators).

At the same time, Boyd and colleagues (2024) warn against taking established trusting relationships as given and the answer to all knowledge exchange concerns. They illustrate painfully how overconfidence in high-level support within their university-police partnership and a history of collaboration between leading members led to assumptions and errors and, ultimately, the failure of the project. Knowledge exchange and partnership require constant attentions and reflection.

**Boundary spanners**

Many authors, including Boyd et al (2024) and Mourits et al (2024), emphasise the importance of boundary-spanning roles, such as knowledge brokers and embedded posts (double appointments) to facilitate knowledge exchange and navigate around common causes of failure. Mourits and colleagues (2024), who work as boundary spanners themselves, illustrate how these roles can help in practice to expand collaborations, focus networks on shared discussion, and search for suitable knowledge.

Knowledge brokers are skilled in ‘the complex ways in which research is understood, taken up and adapted for local use but also resisted’ (Cooper et al, 2019). While research into knowledge brokers has generated insights into their professional competencies and activities (for example, Chew et al, 2022; Bayley and Phipps, 2018), the failures encountered in their daily practice have been largely neglected. As premised by MacGregor (2024) in his article, there exists ‘a persistent over-emphasis on the characteristics that can make knowledge brokers successful, and concomitant under-conceptualisation of the influences that can constrain their boundary-spanning efforts’ (Chew et al, 2022: 2, quoted in MacGregor, 2024). What is needed is more research into the consequences of knowledge brokering, not merely the competencies and actions of knowledge brokers.

The complexity of the knowledge brokering/ boundary spanning roles is highlighted in several papers, with Boyd and colleagues (2024) arguing that knowledge exchange activities entail attempts to realise complex ‘socio-technical networks’ and ‘assemblages’, in which hardware, software, procedures, people, and much more need to align together. This means, according to Boyd et al (2024), that those seeking to successfully coordinate knowledge exchanges need to possess a range of technical, administrative, and substantive know-how in order to hold together the varied elements that constitute collaborations.

Warwick-Booth and colleagues (2024) add risk management to this skill list: knowledge-exchange processes are underpinned by risk, and risk management is therefore needed by knowledge brokers in relation to reputations, relationships, and compromises, in terms of which findings are presented publicly and all that remain hidden.
Existing research on the ‘dark side’ of knowledge brokering has already demonstrated how these different requirements can cause various tensions in their work (Kislov et al., 2017). MacGregor (2024) therefore suggests the need for more collective knowledge brokering; teams of knowledge brokers comprising individuals with different skill sets and links to networks and organisations. These teams need to be supported in turn through mentoring and a wider support network. This aligns with previous research suggestions (Wye et al, 2019).

Future work

This special issue sheds a light on failures in knowledge exchange, how these failures can be defined, what their underlying mechanisms are, and how failures can be turned into successes. This provides a start for exploring this topic; the contributing authors highlighted various gaps in the current knowledge base and suggested various questions and areas for future exploration.

Promising theoretical and conceptual issues

On a conceptual level, failures can be better understood as a complex problem and, therefore, systems thinking can help to theorise and map some of this complexity in more detail. Systems thinking approaches enhance socio-ecological models by encouraging work across multiple levels of these models, through feedback loops and time delays, to identify effective intervention points. These approaches emphasise the ‘whole’ and the importance of interactions between components. Systems thinking approaches are increasingly popular in population health, especially in community health and wellbeing. For example, Whelan et al.’s (2023) recent systematic review looked at the evidence on how systems thinking approaches and implementation science constructs can be combined within community-based prevention. They found few studies exploring the synergies between both fields of sciences, but noted a clear potential for system thinking to enhance the implementation of interventions. The authors also recognised the importance of social relationships for knowledge sharing and practice change within these approaches.

While this special issue has identified several definitions for failures in knowledge exchange, we were not able to venture out to related concepts, such as de-adaptation and de-implementation. Exploring failures can support improvements of projects and services; however, they can also inform decisions to stop delivering these interventions. This is a relatively new but growing field of science that will become more important with ongoing public sector cuts, which force policymakers to look at existing programmes that can be cut instead of what new services are needed. This requires new methods and frameworks, with current knowledge-exchange models being poorly adapted to supporting these decisions. For example, Halligan reviewed the current literature on de-implementation in her PhD thesis at the University of Leeds (2023) to support identifying, understanding and stopping low-value safety practices. She concluded that the majority of research exploring the process of de-implementation has focused on specific clinical areas, and often focuses on applying existing implementation frameworks and strategies to
de-implementation barriers, while some of these strategies were not applicable for de-implementation purposes.

**Power balance issues and leadership**

Many authors in this issue have raised issues around power imbalances and lack of leadership in dealing with failures in knowledge exchange. For example, Gulbrandsen and Tellmann (2024) demonstrated how power imbalances between stakeholders can cause unproductive interactions, and Warwick-Booth and her colleagues (2024) showed how a lack of commitment to sharing power and decisions between researchers and third-sector representatives can lead to conflict and high emotional costs for researchers in knowledge exchange. Future research could explore how changing research practices can enhance power sharing and facilitate more transparent and honest knowledge exchange. When viewing knowledge-exchange failures through the lens of complexity and systems thinking, different leadership actions and styles could be examined to assess how they contribute to developing cultures for learning from failure in organisations. Recent papers suggest that more distributed forms of leadership are needed to facilitate power-sharing between partners and strengthen structural conditions for knowledge exchange (Kislov et al, 2023). These new models of leadership are more focused on engaging stakeholders and taking account of local contextual factors, and they require the individual leader to relinquish some of their control to other senior leaders in partnerships.

**Specific approaches and innovative practices**

Some authors have highlighted creative and art-based approaches as effective mechanisms for levelling power imbalances. Cheetham and colleagues (2024) demonstrate that participatory creative practices can involve people routinely marginalised from decision-making processes who have the least access to policymaking, echoing the findings from the All Party Parliamentary Group on Arts, Health and Wellbeing Inquiry (APPG, 2017). Art-based approaches enable knowledge exchange about the social determinants of health to be culturally relevant, equitable and geographically specific (Parkinson and White, 2013). However, while preliminary studies suggest benefits to individuals and communities facing disadvantage, such as reducing discrimination, the evidence on the effects of the arts on social inequalities remains underdeveloped (Fancourt et al, 2020), and future research could explore in more detail the impact of art-based approaches on reducing power imbalances and reducing failures in knowledge exchange.

Finally, several authors in this special issue illustrate the importance of boundary spanners for overcoming failures in knowledge exchange. They identify a need for more research into the consequences of knowledge brokering, not merely the competencies and actions of knowledge brokers. In addition, MacGregor (2024) suggests a need for more research into how different local organisations and wider political contexts enable or constrain opportunities of learning from failure in knowledge brokering. Following MacKillop et al’s (2020) call for more research into
the organisational and structural dimensions of knowledge brokering, he points to the multidimensional nature of knowledge-brokering contexts. This brings us back to the earlier point about the usefulness of a systems-thinking lens in studying failures in knowledge exchange.

Notes
1 Poor implementation outcomes that result in an EBP’s discontinuation during or following organised efforts to implement it (Dopp et al, 2024).
2 By identifying and analysing failure, followed by deliberate experimentation (Cannon and Edmondson, 2005).

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The authors of this paper have declared that research ethics approval was not required since the paper does not present or draw directly on data/findings from empirical research.

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