

Some Thoughts on the Field of KTE

Réflexions sur l'échange et le transfert de connaissances



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Abstract

This paper offers a practice-oriented critical analysis of the scientific literature on knowledge transfer and exchange (KTE) derived from the results of a large-scale systematic review of knowledge exchange at the organizational and policy levels. Analysis is structured around four questions that must be answered to get a proper understanding of the KTE process and KTE intervention design and implementation, and of two core dimensions of context.

Résumé

Cet article présente une analyse critique, axée sur la pratique, de la littérature sur le transfert et l'échange de connaissances (TEC) tirée des résultats d'une vaste revue systématique sur l'échange de connaissances aux niveaux organisationnel et politique. L'analyse s'articule autour de quatre questions qui doivent trouver réponses afin d'avoir une meilleure compréhension des processus, des interventions, de la conception et de la mise en œuvre du TEC ainsi que de deux aspects centraux liés au contexte.

KNOWLEDGE TRANSFER, TRANSLATION, EXCHANGE AND RELATED TERMS DESCRIBE efforts to modify practices or decisions to make them coherent with current scientific evidence. The scientific literature on the conceptualization, design and evaluation of such interventions is growing by the day. While those cumulative developments have definitely contributed to our understanding of knowledge transfer and exchange (KTE) processes, the sheer size and level of sophistication of the scientific literature on the subject can be overwhelming and disheartening, both for practitioners – persons aiming to modify behaviours and thoughts through information transfer – and targets of KTE interventions.

This paper presents, from a practice-based perspective, some lessons from a recently completed large, broadly focused systematic review on knowledge exchange processes at the organizational and policy levels. The review used a systematic bi-directional snowball approach to identify relevant documents. Several thousand documents were identified, and 205 were selected for an in-depth narrative synthesis. The detailed methodology and results are reported elsewhere (Contandriopoulos et al. 2010). The present paper does not aim at summarizing those results, but rather at offering a critical analysis of the current state of knowledge on KTE processes.

The first discrepancy between KTE guides and scientific evidence is that no method, strategy or structure *per se* has been convincingly shown to increase the exchange, use or uptake of scientific evidence. Even in the field of clinical practice guidelines (CPG) implementation – where hundreds of randomized controlled trials (RCTs) have focused on implementation strategies' efficacy – evidence on any given strategy's intrinsic efficacy is ambiguous. Results vary greatly (Grimshaw et al. 2004; King's Fund 2006; Oxman et al. 1995; Prior et al. 2008), and there is growing consensus that although RCTs aim to eliminate contextual influences, this goal may be ill-advised when dealing with interventions as context-dependent (Grimshaw et al. 2006) as KTE efforts. In other words, even if we could design a perfect study whose results showed that a given strategy (educational material, conferences, outreach visits and so on) had an intrinsic efficacy of X% as measured from the uptake of a given CPG, it would require a disclaimer that real-life efficacy (effectiveness) could range from nil to very high, depending on contextual conditions and the strategy's implementation, a disclaimer that would apply to all available strategies. From a practice-oriented perspective, this means that when designing an intervention, practitioners are on their own. Using CPG implementation as an example is not entirely innocent, as it is by far the field where the evidence on efficacy is the most robust and well developed. Regarding more organization-based strategies (for example, creation of a knowledge broker position), the evidence is much less developed and the quest for context-independence (such as Dobbins et al. 2009) more doomed.

No Recipes

This does not mean we have learned nothing about KTE processes in recent decades. First, there is the core conclusion that context matters and cannot be ignored or circumvented.

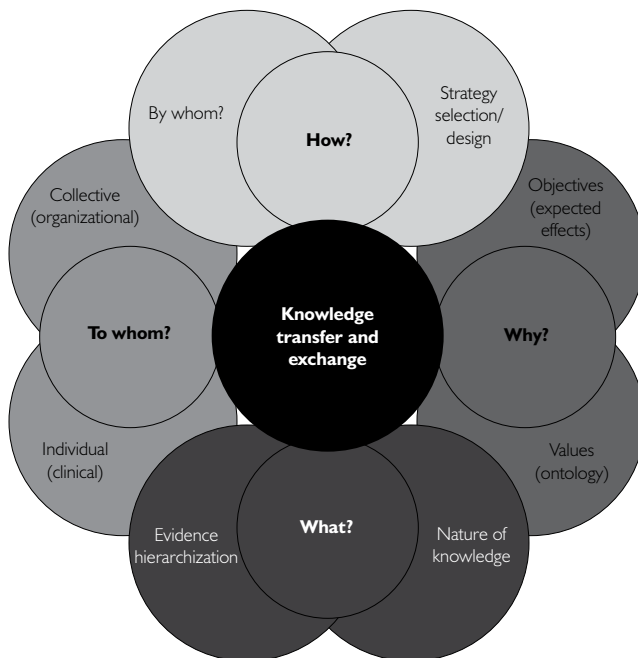
Second, there is a large body of evidence on the relationships between contextual dimensions, the nature of KTE processes and the success of KTE interventions. This evidence is the most promising source of practical advice, which we will return to later. First, however, a general observation on the state of knowledge is in order.

The terms *knowledge transfer*, *knowledge exchange* and *knowledge translation* have entered common language, especially in healthcare, but the conceptual foundations of what is described by those terms are still moot. There are dozens of published, well-known and mutually incompatible definitions of such core concepts as *knowledge* or *use*. As long as there is no consensus on what this “knowledge” is that we are exchanging, on what it means to “use” it and on the values and principles underlying the purpose of the whole enterprise, it will remain the practitioner’s responsibility to find sound (internally and externally coherent) answers. Given the generic nature of KTE processes, it is extremely unlikely that any external consensus will emerge to relieve practitioners of this responsibility.

Four Core Questions

A starting point to guide practice in such a conceptually problematic field is to develop locally and contextually relevant answers to concrete questions about the KTE intervention (Lavis et al. 2003; Ward et al. 2010). Four core questions structure the definition of KTE and, by extension, the nature of relevant practices (Figure 1).

FIGURE 1. Four questions to understand KTE interventions



Why?

The first question, *Why?*, calls for answers on two levels. The most obvious is that of specific objectives (or expected effects). Why is a given KTE intervention conducted? Because such interventions imply an investment – at least of time and attention – from someone, it is reasonable to assume this someone has specific goals, which need to be explicitly stated. But the “why” question also needs answering at a broader level. What is the role of science in society? What are the relationships between science and practice? Is the role of science mainly to provide actionable answers to practical questions, or is science a relatively autonomous human endeavour to be protected from direct policy pressures?

What?

The second main question is: *What?* What is this knowledge being transferred or exchanged? Answers range from strong scientific evidence derived from RCTs to tacit practical knowledge developed through experience. And, parenthetically, it is not obvious that knowledge in itself can be exchanged or transferred (Polanyi 1974). Perhaps only information can be shared, knowledge being appropriated information. In any case, what makes a given piece of information worth diffusing? Its scientific value? Its relevance for practical questions? Its simple existence? The fact that someone is willing to invest energy in its diffusion?

This raises another contentious but inescapable issue related to the principles for organizing evidence or information hierarchically. We should discard the idealistic notion that someone “out there” is waiting for our message. The world is saturated with information. Our intended recipient of information transfer will have no spare room for “more” information. KTE processes are thus, by nature, competitive processes in which it is crucial to understand what information will be taken in and what will be ignored. This is where principles of hierarchization come into play. Available evidence shows that information recipients will triage information they receive according to idiosyncratic rules (Albaek 1995; Bardach 1984; Beyer and Trice 1982; Weiss 1983; Whiteman 1985). The KTE literature is rife with cautions to recipients to heed only scientifically sound advice. Perhaps in an ideal world this would be feasible; in the real world, however, such advice is of little use to anyone trying to increase the effectiveness of a given KTE intervention. Clearly, recipients will hierarchize information they receive, but their criteria in doing so remain obscure in each case. Despite important research efforts, there has, as yet, been little evidence that internal validity and evidence strength are significant criteria.

The results of the systematic review suggest that part of the problem may be due to a seminal bias in the KTE literature. Even if the phenomenon is known as “knowledge” translation, exchange or transfer, in practice, what is exchanged is a specific kind of message, called an “action proposal.” Action proposals are assertions that employ rhetoric to embed information into arguments to support a causal link between a given course of action and anticipated consequences (Majone 1989; Van de Ven and Schomaker 2002). By nature, action proposals cannot be limited to objective facts, but will use rhetoric to inextricably embed facts, arguments and values in order to modify the behaviour or opinions of the message recipient. Though this

view may border on Machiavellian, it is nevertheless crucial to take into account the interdependence of rhetoric, values and facts at the core of the “what” question.

To whom?

Debates about the nature of evidence also depend on answers to the third central question: To whom? The answers should distinguish between individual and collective levels of intervention. Individual-level interventions describe situations where targeted individuals are sovereign in their reaction to the intervention. Individual reactions will still be extremely contingent on contextual conditions, but the intervention’s goal can be thought of as the sum of several individual modifications in opinion or behaviour. Most KTE interventions to modify clinical practice belong here. On the other hand, collective-level interventions describe situations where the persons targeted are interdependent and where none of them can, on their own, achieve the intervention’s goal, because this goal is not the sum of individual actions but a single outcome resulting from the interaction among actors.

An obvious example is a policy or organizational-level decision that depends on consensus, influence and coalition building among several interdependent actors. This distinction may appear to be academic hair-splitting, but it nevertheless has important practical implications. First, the nature of the knowledge and the hierarchization criteria are very different. Where individual-level interventions can focus their message on relatively context-independent information of high scientific internal validity (for example, synthesis of RCT results), the collective-level context requires contextually valid information (Dobrow et al. 2004; Peterson 1995). Second, actors’ interdependence in collective settings adds another layer of complexity to the process. Finally, the capacity to measure and monitor interventions’ effects will vary dramatically depending on their level, as will the methods to do so (Contandriopoulos et al. 2008).

How?

The operationally oriented question, How?, is last because its answers are contingent upon answers to the three others. KTE practice guides focus mostly on the operational selection and implementation of specific strategies. However, as stated earlier, the intrinsic value of KTE strategies is dubious. At best, it will be contingent on contextual dimensions; at worst, the complexity of contingency relationships will make it almost impossible to anticipate effectiveness at the strategy selection phase. In practice, strategy selection will usually require making the best of what is available: scarce resources, unpredictable attention levels, rapidly evolving time frames and so on.

Finally, there is strong evidence that structures, values (culture) and resources have a tremendous impact on use (however it is defined). Yet, in the short term, those dimensions are generally hard to modify and must be taken as givens. The second component of the “how?” question – by whom? – then becomes central. The skills of those operationalizing KTE interventions in the field will largely determine the interventions’ level of use and effectiveness. These skills encompass such qualities as leadership, rhetorical abilities, cultural proximity to the

intervention targets, knowledge of the shape of the existing social network and more in order to adapt the intervention to the existing context and evolving conditions. The KTE literature has mostly turned a blind eye to the importance of individual characteristics in KTE intervention effectiveness, even though, through the selection of who is in charge of a given KTE intervention, these are probably the most central modifiable determinants of KTE intervention success.

Diagnosing the Nature of the Context

As emphasized above, context matters. Though it is impossible to define all potential contextual characteristics and their effects on KTE interventions, the results of the systematic review suggested that two broad dimensions of context have a central influence: the level of polarization and the cost-sharing equilibrium.

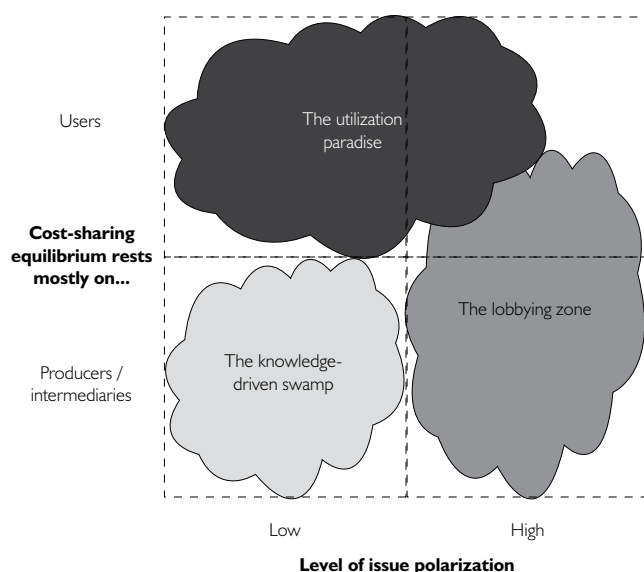
According to this framework, contexts are said to be characterized by low issue polarization when potential users share similar opinions and preferences regarding (a) the problematization of the issue (consensus on the perception that a given situation is a problem and not the normal or desirable state of affairs), (b) the prioritization and salience of the issue (as compared with other potential issues) and (c) the criteria against which potential solutions should be assessed. This dimension's centrality stems from the broad consensus in the literature that discussions within knowledge exchange systems can take the form of technical debates based on rational processes only in low issue-polarization contexts. Conversely, as the level of consensus among participants drops, polarization increases, and the potential for resolving differences through rational arguments diminishes as debates tend towards a political form wherein the goal is not so much to convince others as to impose one's opinion (Bourgeois and Nizet 1993).

The second dimension is what we call the cost-sharing equilibrium. Literature rooted in political science rests on the idea that knowledge has both a cost and a value. Bardach suggested that knowledge will reach those "for whom the utility of having it exceeds the disutility of obtaining it" (1984: 126). Although this statement is highly rationalist, there is a widely shared broader assumption in the literature that actors (both receptors/users and emitters/producers) will invest energy and resources in KTE processes to the extent that they perceive this investment to be profitable.

If we accept the principle that KTE activities imply costs (e.g., time, money, attention) both for receptors and emitters, it follows that some within the knowledge exchange system will have to incur those costs. This suggests that any operational system of knowledge exchange and use will be characterized by a given cost-sharing equilibrium between users, on the one hand, and producers or intermediaries (brokers, lobbyists), on the other. One well-known user-centred equilibrium is consultancy, in which users assume most of the costs, as they hire and pay the consultant and usually devote attention to the results. At the other end of the continuum, another well-known equilibrium is the push model, in which the results of research funded by a third party are more or less actively brought to the attention of potential users. In this model, it is either the producers or interested intermediaries who will devote time and resources to catch users' attention.

The two dimensions defined above can be used to draw a matrix in which each quadrant describes contexts with specific characteristics of the nature and impacts of KTE interventions (Figure 2). One conclusion from the scientific literature on knowledge use assessment is that when users are willing to bear most of the costs, the potential for use increases dramatically. This suggests there is a utilization “paradise” in the matrix. There is also much robust evidence, mostly from political science, that high levels of polarization are associated with situations in which some stakeholders are willing to invest significant resources and energy to be heard. This investment takes the form of lobby-like activities where “amenable” information may be used as ammunition. The literature offers convincing theoretical demonstrations, as well as empirical evidence (Bryant 2003; Hall and Deardorff 2006; Heaney 2006), that this translates into potentially significant levels of use. The lobbying zone will intersect somewhat with the utilization paradise when users are prepared to invest significant resources in a given KTE intervention with the purely tactical aim of supporting their own view against divergent information. Finally, there is a third zone, the “knowledge-driven swamp.” Here we find low-polarized contexts in which producers bear most of the KTE intervention costs and which are associated with very little potential for use. Results produced in this quadrant are likely to join the ever-growing pile of ignored advice and shelved reports.

FIGURE 2. A matrix to analyze a KTE intervention's context



This typology has two practical implications. First, it offers predictive hypotheses on the probability of an intervention's success (level of information use) depending on the intersection of both dimensions. Second, it offers a framework to understand how the nature of the KTE intervention will be modified by contextual dimensions.

Conclusion

The remarkable imbalance between the number of questions and actual answers in this paper hints at the first conclusion: KTE is not well defined. Because the term can describe radically different interventions resting on different values and conceptual dimensions, the practitioner, in building a practice, is left to find his or her own answers.

The second, related conclusion is the importance of bringing the discussion beyond debates on methods and techniques. Technique is useless and trivial without a broader understanding of the fundamental questions underpinning KTE processes.

Finally, the review of the scientific literature in the field suggests that many models upon which KTE interventions are based rest on logically and conceptually weak foundations. For example, much energy is still spent on trying to develop mechanisms to match practical problems one-on-one with the results of specific research. This quest is doomed by design: Usable and relevant knowledge is much broader than what is being produced today. If the literature on KTE is to be more than a passing fad of questionable usefulness, we need to abandon the comfort of normative models describing our ideal world, and start drawing models of how knowledge exchange processes actually work in real life.

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