**Bridging the *Know-Do* Gap Using Integrated Knowledge Translation**

**and Qualitative Inquiry: A Narrative Review**

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**Abstract**

The research-practice gap is an ongoing concern for sport and exercise science researchers. Despite ongoing efforts to ‘bridge’ the gap between research and practice, a *know-do* gap remains. Drawing from alternative fields of research (e.g., healthcare, implementation science), the purpose of this article is to outline an emerging research approach to maximise research uptake in practice. Specifically, this article explains the *what*, *why*, and *how* of integrated knowledge translation (iKT), and how this approach to research is well suited to qualitative researchers. Challenging the traditional way academics have conducted research, iKT proposes that researchers work *with* and not *on* those in practice settings. As an approach to research under which many forms of qualitative inquiry can fall, the article illustrates how the practical nature of iKT aligns with what qualitative researchers from various traditions *do* in action. We discuss how iKT possesses three synergies with qualitative inquiry: meaningful researcher *engagement*, understanding *context*, and tolerating *flexible* research designs.

**Keywords:** collaborative research, context, engagement, flexibility, research uptake.

**Introduction**

A growing number of sport and exercise science researchers have suggested a *know-do* gap to be an ongoing concern, whereby research is created, but not used in practice (Fullagar et al. 2019; Tee, McLaren, and Jones 2020). Reasons for the know-do gap, include the lack of research relevance (Winter and Collins 2015; Jones et al. 2017) and limited practice setting considerations (Keegan et al. 2017). Furthermore, Malone et al. (2019) suggested these problems occur alongside the inadequate dissemination of research, whereby researchers predominantly focus on journal articles and conferences as outlets for their work (Malone et al. 2019). To address the know-do gap, sport and exercise science researchers have recently looked to the lessons that can be learned from implementation science (Tee, McLaren, and Jones 2020; Czosnek et al. 2020). Yet, one approach to research that has received limited attention in this field is knowledge translation (KT), which offers a solution to addressing the multiple reasons for the know-do gap. Whilst KT is of emerging interest in sport and exercise sciences, we suggest that one paradigm of KT, known as integrated KT (iKT) aligns with what qualitative researchers *do* in action. Thus, the purpose of this narrative review was to outline the *what*, *why*, and *how* of iKT. Specifically, the aim of this narrative review is fourfold: a). to outline what iKT is (and is not), b). to discuss why iKT should be considered, c). to outline suggestions for how to *do* iKT, and d). to discuss what makes qualitative researchers well-suited to the practice of iKT.

**What is Knowledge Translation?**

Popularised in healthcare (Straus, Tetroe, and Graham 2013), KT is defined by the Canadian Institute of Health Research (CIHR) as:

A dynamic and iterative process, that includes the synthesis, dissemination, exchange and ethically sound application of knowledge to improve health, provide more effective health services and products and strengthen the health care system. This process takes place within a complex system of interactions between researchers and knowledge users which may vary in intensity, complexity and level of engagement depending on the nature of the research and the findings as well as the needs of the particular knowledge user (CIHR, 2016).

Despite this proposed definition, there remains conceptual ambiguity in the literature regarding the meaning of KT and its related terms. A plethora of terms have been used to refer to KT including knowledge exchange, implementation, dissemination, and diffusion (McKibbon et al. 2010). In contrast to these terms which each reflect a *verb* (e.g., dissemination, implementation), the CIHR define KT as a process, and thus, a *noun* (Graham et al. 2006). Whilst the verbs used to refer to KT comprise parts of the multifaceted and iterative process, it is important to recognise that they do *not* represent the entire process of KT. For example, dissemination is referred to in the CIHR definition, but used singularly; it does not represent the entire KT process. In short, the practice of KT (as opposed to KT science which advances and informs KT practice; CIHR 2016; Straus, Tetroe, and Graham 2013) is an iterative process formed of multiple actions. Building upon this conceptual foundation, KT has been further refined into two distinct paradigms (Straus, Tetroe, and Graham 2013): end-of-project KT (or end-of-grant KT) and integrated KT.

Historically, the know-do gap has been conceptualised as a problem of knowledge transfer, a paradigm known as end-of-project KT (Bowen and Graham 2013). For example, knowledge is deemed sufficient, but efforts made to translate it to practice are inadequate (Bowen and Graham 2013). In contrast, contemporary perspectives have evolved to consider the know-do gap as a problem of knowledge production, whereby knowledge created does not address real-world problems and priorities faced in practice settings, and by those ‘on the ground’ so to speak (Bowen and Graham 2013). Coined as a second paradigm of KT in 2007 (Nguyen et al. 2020) and described as a “recognised and accepted tenet of knowledge translation” (Boland et al. 2020, p.2), iKT can address the knowledge production problems inherent with traditional ‘top-down’, academic-led research methods and knowledge production (Bowen and Graham 2013).

Unlike end-of-project KT, iKT represents an alternative way of doing research. It is described as involving “active collaboration between researchers and research users in all parts of the research process, including the shaping of the research questions, decisions about the methods, involvement in the data collection and tools development, interpretation of the findings and dissemination and implementation of the research results” (Graham and Tetroe, 2007, p.21). Thus iKT is fundamentally a collaboration between communities (e.g., academics, athletes, coaches, practitioners), utilising a range of available expertise to produce useful, relevant knowledge (Straus et al., 2013). In doing this, each community in iKT should recognise their own values and norms, yet respect others’ unique expertise and practice-based experiences (Kothari and Wathen, 2017). In iKT, individuals from practice settings who are “likely able to use the knowledge generated throughout research to make informed decisions about health policies, programs and/or practices” are termed ‘knowledge users’ (CIHR, 2016). In recognition of knowledge users’ expertise and experience, knowledge in iKT is comprised of evidence-based (e.g., research) and practice-based information (e.g., lived experience) (Kothari et al. 2011).

Although iKT has been likened to other collaborative research approaches (e.g., community-based participatory research [CBPR], co-production, patient public involvement, engaged scholarship), it is important to recognise how it differs (Jull, Giles, and Graham 2017; Nguyen et al. 2020). First, unlike other approaches, the primary purpose of iKT is to minimise the know-do gap (Nguyen et al. 2020; Straus, Tetroe, and Graham 2013). Enhancing knowledge uptake in practice is the main aim of iKT, with subsequent or resultant behaviour change of secondary importance (Jull, Giles, and Graham 2017). Second, unlike other approaches which originate from civil rights and social care (e.g., co-production), iKT originates from healthcare, and was developed specifically for the translation of knowledge in health contexts (Nguyen et al., 2020; CIHR, 2016). A third difference is that decision maker involvement (those with authority in the practice setting) is integral to iKT (Jull, Giles, and Graham 2017). Whilst decision makers might be involved in other collaborative approach partnerships, this is not an explicit necessity (Nguyen et al. 2020). Finally in iKT, the power relationship between researchers and knowledge users is negotiable, although equal or equitable power is the most desired (Nguyen et al. 2020). This differs to other approaches which seek to empower collaborators during the process (e.g., CBPR; Jull, Giles, and Graham 2017; Nguyen et al. 2020). These differences illustrate that whilst iKT draws upon collaborative research principles (e.g., engaging users in research), it is unique, with the primary purpose of bridging the know-do gap and working with those who can authorise knowledge use in practice.

**Why use Integrated Knowledge Translation?**

iKT might appeal to sport and exercise science researchers for several reasons. First, it ‘opens the door’ to those in applied professions with more ‘real-world’, user-led research questions (Sibbald et al. 2012; Kothari and Wathen 2013). Thus a collaborative approach is fostered from the start of the research process, engaging users in research and therefore providing greater democracy and transparency (Camden et al. 2015). Consequently, iKT can result in an improved reciprocal understanding of one another’s interests and worlds, resulting in enhanced methodological feasibility (Lawrence, Bishop, and Curran 2019) and “more relevant and actionable research findings, and increased use of the findings in policy or practice” (Kothari, McCutcheon, and Graham 2017, p.299). Second, it can benefit knowledge users. Collaboration in the iKT process can enhance their research skillset (Gagliardi et al. 2016) and provide them with the opportunity to feel valued and appreciated by the academic community and peers (Camden et al. 2015). In summary, the use of iKT can ensure knowledge and research has greater relevance, and is shaped into practical, accessible, knowledge products for users (Lawrence, Bishop, and Curran 2019; Gagliardi et al. 2016).

These benefits have recently been found to transfer to the sport and exercise sciences (e.g., Holt et al. 2018; Ma, West, and Martin Ginis 2019; Richmond et al. 2021). For example, after developing an injury prevention resource using iKT, Richmond et al. (2021) found that over 90% of participants (parents, coaches, and athletes) found the resource useful, easy to use, and educational, increasing their awareness of prevention recommendations. Likewise, Holt et al. (2018) drew upon iKT principles and engaged stakeholders in the development of resources (e.g., magazine, infographics, website) to promote positive youth development in sport. These resources were found to have the desired reach and engagement with the target audience. Although other authors have stated the use of iKT to develop resources and interventions in sport and exercise sciences (Tomasone et al. 2020; Bird et al. 2019; Suderman et al. 2020), they did not explore the outcomes of the process.

Beyond the appeal of iKT, academics have argued that iKT can also be “time-consuming, ethically complex, emotionally demanding, inherently unstable, vulnerable to external shocks, and subject to competing demands and expectations” (Flinders, Wood, and Cunningham 2016, p.266). Thus, Flinders et al. and other authors (e.g., Oliver, Kothari, and Mays 2019) provide warnings of the potential practical, personal, and professional costs to academics and knowledge users. Whilst it is important to acknowledge such warnings, we suggest that qualitative researchers may already be well versed in navigating some of these challenges. For example, Oliver, Kothari, and Mays (2019) question whether findings that are meaningful to practice can also be generalizable. Yet, such critiques have been well-debated in the qualitative literature (Smith and McGannon 2018), with qualitative researchers able to consider more suitable alternatives to statistical generalisability.

**How do you do Integrated Knowledge Translation?**

While the aim of this section is to provide an overview of how iKT can be done, it is important to acknowledge that this is not a prescription, nor a step-by-step guide. There is no ‘right’ way to undertake iKT as it is dynamic and flexible in nature (Bowen and Graham 2013). By outlining different processes and phases derived from KT science, we provide the opportunity for researchers and knowledge users to craft their own pathways. We outline two key phases and components here: the initiation of iKT and the application of theory.

***The Initiation of iKT***

When exploring the prospect of iKT, individuals should understand that relationships are a core component, with success described as “a function of the quality of relationships” (Rycroft-Malone et al. 2016, p.222). Specifically, initiating relationships with decisions makers is crucial (Zych, Berta, and Gagliardi 2020), due to their authority in practice. Given the time commitments often needed to ‘break the ice’ (Gagliardi et al. 2016; Zych, Berta, and Gagliardi 2020), the utilisation of pre-existing relationships has been recommended to expedite the process (Bowen et al. 2017). However, this is not always possible and in order to build new relationships for iKT, academic immersion in practice is recommended (Roberge-Dao et al. 2019; Gagliardi and Dobrow 2016). Indeed, immersion or time in the field can support relationship building by promoting regular communication, which can build trust, respect, and commitment between the various different communities (Bowen et al. 2017; Nystrom et al. 2018; Rycroft-Malone et al. 2016; Williamson et al. 2019). It can also lead to a more nuanced understanding of the cultures and provide familiarity with local terminology (Gagliardi et al. 2016; Zych, Berta, and Gagliardi 2020). In order to foster the iKT process, knowledge users and decision makers may also be encouraged to undertake training or education on iKT and research skills (Gagliardi and Dobrow 2016; Zych, Berta, and Gagliardi 2020), thus enhancing reciprocal understanding between parties.

During the initiation stage of iKT, the researcher(s) should work with the decision maker to seek out a representative group of individuals who possess a variety of expertise in the setting and express a desire to be involved, exercising caution that this group is not to be comprised of the ‘usual suspects’ (Bishop, Elliott, and Cassidy 2018; Banner et al. 2019). Once formed, clear roles, responsibilities, and goals should be discussed, outlined, and agreed upon by the group (Gagliardi et al. 2016; Sibbald, Tetroe, and Graham 2014; Zych, Berta, and Gagliardi 2020; Bowen et al. 2017), although these may alter over time. To facilitate iKT, and prevent power imbalances (Zych, Berta, and Gagliardi 2020), leadership structure formation and role designation should be discussed (Gagliardi et al. 2016; Zych, Berta, and Gagliardi 2020). The group should also jointly construct the goals of iKT, allowing knowledge users to share opinions and gain ownership of the objectives (Gagliardi et al. 2016; Rycroft-Malone et al. 2016; Zych, Berta, and Gagliardi 2020). During this stage it is important to recognise that the environment should be safe and supportive, promoting trust and the sharing of expertise (Bowen et al. 2017; Gagliardi et al. 2016).

Finally, it is recommended that those undertaking iKT explore, allocate, and prepare the necessary resources before the project commences. For instance, given that geographical distance between communities (Bishop, Elliott, and Cassidy 2018; Gagliardi et al. 2016), time (Bowen et al. 2017; Gagliardi et al. 2016; Zych, Berta, and Gagliardi 2020) and financial support (Bowen et al. 2017; Gagliardi et al. 2016; Roberge-Dao et al. 2019) can act as barriers to iKT, these should be considered before the process is initiated. Feasibility assessments (e.g., Fullagar et al. 2019) and timetabling (e.g., Williams et al. 2020) have been recommended to ascertain if iKT is practically achievable.

Despite these recommendations in iKT initiation, their importance throughout the whole iKT process should be noted. The maintenance of relationships throughout the duration of the project can require time and energy from all involved (Nystrom et al. 2018), especially given any changes in group personnel (Nystrom et al. 2018; Zych, Berta, and Gagliardi 2020). Engagement activities and opportunities for collaboration should also be undertaken throughout the whole iKT research process, although there is little guidance on the most effective type, frequency, or duration of activity for collaboration in iKT due to poor reporting in the literature (Gagliardi et al. 2016). Consequently a flexible approach is necessary that accounts for the needs of the project and the collaborative relationships (Rycroft-Malone et al. 2016).

***Application of Theory***

When practically doing iKT, theories, models, and frameworks derived from KT science, have been used at various stages of the process. Within the broader field of KT, a wealth of theoretical approaches have been utilised in recent years, with 61 in 2012 (Tabak et al. 2012) rising to 159 in 2018 (Strifler et al. 2018). Theories, models, and frameworks in KT can be primarily distinguished by their purpose (Nilsen 2015) and the phases of the KT process they encompass (Esmail et al. 2020). Three key purposes of theories, models, and frameworks exist: to describe and/or guide the KT process, to understand and/or explain factors influencing implementation outcomes, and to evaluate implementation (Nilsen 2015). With regard to phases of the KT process, theoretical approaches which include the phases of planning/design, implementation, evaluation and sustainability are termed ‘full-spectrum’ (Esmail et al. 2020). Full spectrum approaches reflect the whole KT process in comparison to approaches which may focus on a singular action (e.g., implementation). The Knowledge-to-Action (KTA) framework (Graham et al. 2006) is one theoretical approach which has received vast empirical support (Field et al. 2014).

Recognised as the accepted framework by the CIHR (CIHR 2016; Straus, Tetroe, and Graham 2013), the KTA framework is one of the most commonly cited process models, with the purpose to describe and/or guide the KT process (Strifler et al. 2018; Nilsen 2015). It is also classified as full-spectrum; able to guide academics, decision makers, and knowledge users through the entirety of the KT process (Esmail et al. 2020). The framework is comprised of two components: a knowledge creation funnel and an action cycle (see Table 1; Graham et al. 2006). The knowledge creation funnel, formed of three phases, aims to refine and tailor knowledge to the needs of knowledge users and the practice problem. In contrast, the action cycle, composed of seven phases, aims to assist in the application of knowledge, to knowledge users and practice (Graham et al., 2006). Although two distinct components, both are described as dynamic and interchangeable with fluid boundaries, whereby stages in the knowledge funnel may occur in conjunction with stages of the action cycle as the cycle spins (Graham et al. 2006; Straus et al., 2013). While the components and respective phases are presented in a sequence, each informed by research findings, and the expertise of knowledge users and decision makers, the framework is not a prescriptive process (Graham et al. 2006). It is merely a guide to navigate the otherwise ‘messy waters’ of the iKT process.

[INSERT TABLE 1]

Specifically within iKT, the KTA framework has been referred to as “an example model” ( Ma, West, and Martin Ginis 2019, p.118). However, the KTA framework is particularly suited to iKT for multiple reasons. Firstly, the process privileges social interaction and the adaptation of knowledge through the consideration of local context and culture (Graham et al. 2006). The framework recognises that knowledge is more than just academic research published in journal articles (Straus, Tetroe, and Graham 2013). Knowledge can also include tacit, practice-based knowledge, local data, and grey literature (e.g., unpublished materials) which is obtained by or familiar to knowledge users involved in the iKT process. The framework further supports the application of additional theoretical approaches (Graham, Kothari, and McCutcheon 2018). For academics and knowledge users new to iKT, “multiple approaches may offer a more complete understanding” of the process (Nilsen 2015, p.9). For instance, drawing upon a determinant framework when assessing barriers and facilitators could provide further understanding on factors likely to influence knowledge use. Furthermore, the framework is flexible and can increase knowledge use at an individual, organisational, or policy level, with both professional and public knowledge users (Esmail et al. 2020; Strifler et al. 2018). This suggests that the framework can cater for changes in goals or objectives which evolve as part of the iKT process. Finally, unlike other theories and models, the KTA framework has been applied in, and resulted in effective outcomes in settings beyond health care. For example, although few in sport and exercise have used the process in its entirety (e.g., Ma, West, and Martin Ginis 2019; Richmond et al. 2021), it has been used to underpin parts of iKT processes. For example, Bird et al. (2019) drew upon the framework for knowledge implementation, while other authors have used it to develop knowledge tools and interventions. Smith et al. (2015) drew upon the framework when seeking to communicate physical activity information to disabled adults and Tomasone et al. (2020) when seeking to communicate movement guidelines to the general public. Taken together, these reasons illustrate the potential for the framework to guide the iKT process in sport and exercise science.

**Why is Integrated Knowledge Translation well-suited to qualitative researchers?**

Although described as epistemologically neutral (Nguyen et al. 2020), iKT practice has numerous synergies with qualitative inquiry. We propose three characteristics that make iKT practice well suited to what qualitative researchers *do*: engagement, context, and flexibility.

***Engagement***

Dubbed the ‘engagement’ paradigm of KT (Bowen & Graham, 2013, p.15), iKT promotes interaction and communication between different communities of people, developing productive relationships in order to minimise the know-do gap. To facilitate iKT there is a requirement for regular communication in multiple forms (e.g., face-to-face contact; (Sibbald, Tetroe, and Graham 2014; Bowen et al. 2017; Zych, Berta, and Gagliardi 2020), open attitudes towards listening and learning (Zych, Berta, and Gagliardi 2020), and a respectful, trusting, and safe environment for interaction (Gagliardi and Dobrow 2016). Alike iKT, qualitative inquiry is also characterised by extensive engagement and participation, with a focus “on the way people interpret and make sense of their experiences and the world in which they live”(Sparkes and Smith 2014, p.14)*.* To achieve such an understanding, qualitative researchers typically place themselves in direct contact with those being studied to understand how people live within their social world (Smith and Caddick 2012), and the personal and contextual stories which circulate (Williams 2020). As a result, qualitative academics may refer to themselves as *passionate participants* within the process of interaction, as opposed to *disinterested scientists* (Sparkes and Smith 2014). As Gubrium and Holstein (1997, p.4) note, in qualitative research,“you’ve got to get out there…get your hands dirty. See it up close, for yourself*”*.

To encourage engagement, both iKT and qualitative inquiry rely on the interpersonal skills of researchers. These skills include active listening, creating safe interaction spaces, and minimising power imbalances (Gagliardi and Dobrow 2016). To expand on this suggestion, Braun and Clarke (2013) refer to good interpersonal skills, such as having a warm and friendly manner, as part of what they term qualitative sensibility. As such, qualitative researchers are well-suited to iKT because of the way they can foster trust and respect in interactions. As Charmaz (2004) describes:

Respecting our research participants means acknowledging and honouring their fundamental humanity. It means treating people with dignity when we do not condone their beliefs and actions. It also means searching for their meanings and understanding their actions as they see them, not according to our philosophical or professional perspectives. It can mean temporarily abandoning our researcher role (p.985).

For qualitative researchers who occupy this stance, the importance of treating other knowledge users with dignity, and appreciating their expertise on the lived experience will likely facilitate relationships in iKT (Sibbald, Tetroe, and Graham 2014; Zych, Berta, and Gagliardi 2020; Rycroft-Malone et al. 2016), and thus, the iKT process. Yet it is also important to consider that both qualitative researchers and those engaging in iKT will at times need to carefully balance the need to answer conceptual questions and the need to maintain relationships with the research participant or knowledge users. Charmaz’s suggestion that the researcher role may sometimes need to be abandoned is echoed in Josselson's (2013) work in which she suggests that the researcher is holding two ropes. She notes that when holding both ropes become challenging, the researcher should ‘always let go of the conceptual question rope and hold on to the rope of your relationship with the interviewee…” (Josselson 2013, p.78). Thus, it is engagement of others that is paramount in both qualitative inquiry and iKT, with each acknowledging that conceptual questions can only be answered once relationships are secure and built upon trust.

In striving for engagement, iKT and qualitative researchers may both draw on the use of multiple methods with the aim of understanding different views and perspectives on practice problems and phenomena. Importantly, as Culver, Gilbert, and Sparkes (2012) highlight, rapport and relationships cannot always be forged in one off interactions. Qualitative methods offer a wealth of ways in which to foster engagement and understand materiality, experiences, meaning making, and multisensory lives (McGannon et al., 2019). Yet despite this range of available methods, it is also important to note that McGannon et al.’s recent review highlights that interviews remain the ‘go-to’ data collection method for qualitative researchers. Engaging in iKT may provide qualitative researchers with a platform to expand on their repertoire of methods. For instance, encouraging them to engage and undertaken iKT practice with knowledge users in various ways over time, or tailor research methods to ensure methodological feasibility when undertaking a phase of the KTA framework, therefore opening up multiple ways of knowing.

***Context***

Arising from a need for more relevant research (Bowen and Graham 2013), the context of the know-do gap (e.g., the setting, knowledge users in the setting) and the practice problem play an important role in iKT. Based upon the notion that, if knowledge users are involved, “the research will be more solutions focused” (Straus, Tetroe, and Graham 2013, p.6), practice problems are sourced from knowledge users to ensure they are contextually grounded. The KTA framework further emphasises context with dedicated phases to tailoring and adapting knowledge (Graham et al. 2006), while the use of additional theory to explore context has been recommended (Nilsen and Bernhardsson 2019). Context-specific barriers and facilitators to the iKT process have also been noted (e.g., language barriers, setting-specific knowledge; Zych et al., 2020). In short, Straus, Tetroe, and Graham (2013) summarise, “… we find the doing of KT requires a unique skill set including an understanding of the health care context ” (p.9).

Context is equally important in qualitative research. As Smith and Sparkes (2020) outline, “qualitative research often seeks to incorporate context into analysis as contexts shape experiences, talk, emotions and so on” (p.1004). Therefore, qualitative researchers often adopt an ideographic as opposed to a nomothetic approach, “to better understand how events, actions, and meanings are shaped by the unique circumstances in which they occur” (Sparkes and Smith 2014, p.16). To understand context, qualitative researchers often prefer to engage with individuals in their environments, favouring naturalism, and learning from the ‘inside’ during data collection, as opposed to manipulated social settings (Avis 2005; Sparkes and Smith 2014). Such contextualisation can enable researchers to “feel it and sense it” (Day and Humphrey 2020, p.145) and differentiate between what is said and what is actually done (Smith, Caddick, and Williams 2015). As Charmaz (2004) explains “we can know about a world by describing it from the outside. Yet to understand what living in this world means, we need to learn from the inside. Starting from the inside is the initial step” (p.980), while “intimate familiarity with the phenomenon means gaining a level of knowledge and understanding that penetrates the experience” (p.984).

To understand context and immersive experiences in fieldwork, qualitative researchers construct reflexive accounts. For example, Sanders et al. (2019) note the experiences of integrating into a medical rehabilitation setting and becoming part of the environment. Through immersion, Sanders et al. (2019) described having the opportunities to ask clinicians and patients questions, and develop knowledge enhancing contextual understanding which also “proved to be an effective way of building relationships” (p.116). Given the immersive, contextual iKT recommendations, and its synergy with qualitative research, qualitative researchers will likely appreciate and embrace the context in iKT. Through such appreciation, qualitative researchers will likely be able to co-develop more practical, user-friendly, context-friendly knowledge products for use in practice and enhance knowledge uptake, while also able to shed more insight into the process for researchers and advance the practice of iKT in the future.

***Flexibility***

In iKT, a researcher’s ability to be flexible and adapt, accommodating the expertise of knowledge users and the evolving contexts of practice settings is necessary for navigating the iKT process. As Rycroft-Malone et al. (2016) state:

Given this type of research takes place in the real life world of practice, there are some general transferable qualities that might be embodied in researchers, such as being: able to wear more than one hat (being generalists), comfortable in the field, tolerant of messiness, a good communicator with different audiences, able to go with the flow and be adaptable whilst maintaining the standards of research rigour, able to manage conflict, be tenacious and creative (to name a few) (p. 222).

Given what Rycroft-Malone et al. (2016) illustrate, the art of conducting iKT can be found in the ability to balance the needs of knowledge users and the priorities of the research (Gagliardi et al. 2016; Gagliardi and Dobrow 2016). Each knowledge user and each community will see the practice problem differently, shaped by their experiences and their interests, which may change throughout the iKT process (Rycroft-Malone et al. 2016). Consequently, it is important researchers and decision makers incorporate flexibility into iKT planning; the needs, priorities, resource availability and changes in responsibility may conflict with a rigid timetable. The KTA framework has further been described as iterative, dynamic, and complex (Straus, Tetroe, and Graham 2013). Given that each phase “can be influenced by the phases that precede it” and “there may also be feedback between the phases” (Graham et al., 2006, p.21), the need for a flexible, adaptable attitude towards the iKT process is paramount. With different ways to conduct each phase, collect knowledge (e.g., undertake research), work with knowledge users, and develop interventions (Wensing, Bosch, and Grol 2013; Gagliardi et al. 2016), dependant on evolving settings and knowledge users preferences (Graham et al. 2006), iKT involves a balance of both *art* and scientific practice.

Qualitative researchers undertake research with similar flexibility, using research designs and methods which allow attention to be paid to data-driven ideas, categories, and theory (Veltri, Lim, and Miller 2014; Sparkes and Smith 2014). As Tamminen et al. (2021) describe:

The flexible, iterative, and curiosity-driven nature of qualitative inquiry makes it impossible and inappropriate to ‘lock in’ predetermined specific operational variables, state testable hypotheses, or finalise either instrumentation or sampling schemes ahead of conducting the study (p.7).

With iterative processes and inductive analyses often features of the qualitative research process, “qualitative researchers have to tolerate complexity and resist the impulse to gloss over troublesome uncertainties, anomalies, irregularities and inconsistencies” (Gubrium and Holstein 1997, p.13). Qualitative research can fruitfully evolve using flexible designs to explore what is of importance to those with the lived experiences (Sparkes and Smith 2014). For example, qualitative researchers rarely construct rigid protocols. Instead, they start with a broad plan which is developed and adapted as peoples’ experiences are heard, and hunches are developed (Avis 2005). This means qualitative researchers can “be sensitive to unanticipated factors or puzzling features that arise in the field” (Sparkes and Smith 2014, p.29) and “follow the study wherever it takes you” (Berry 2011, p.328). Indeed, some researchers (e.g., Eklund et al. 2011) have suggested that qualitative data will be strengthened (rather than compromised) by mid-process modifications, allowing the researcher to follow interesting leads, complexities, and alternatives. Typically then qualitative research gives precedence to methods which allow open, often unstructured interaction, over extended periods of time, so they can flexibly respond to the ideas of participants (Avis 2005). Thus qualitative academics may ‘feel at home’ in designing iKT projects for two reasons; they will likely be at ease with the iterative data and knowledge user driven process, aware that mid-process changes can improve the process, yet also, able to craft exploratory research designs to undertake phases of the KTA framework and capture the broad contextual picture.

**Conclusion**

Over the past decade, researchers have criticised the field of sport and exercise sciences for the know-do gap, attributing this to poor relevance and dissemination (Fullagar et al. 2019; Malone et al. 2019). In this article, we outline how iKT provides one potential solution to this problem and suggest that this approach is well-suited to qualitative researchers. Through engaging specific populations, understanding the context of practice settings, and maintaining flexible research approaches, we highlight three synergies between iKT and qualitative inquiry. By undertaking iKT, and maximising the ability to draw upon these synergies, there is potential for research uptake which could lead to positive change for individuals and practice settings. The use of iKT as an impactful approach to doing research, could enhance the lives of those who participate (e.g., athletes, coaches, medical staff), and govern sport and exercise (e.g., policy makers, national governing bodies). While the benefits of iKT may be plentiful, these must be weighed up against pertinent costs which may be unsurpassable without organisational support (e.g., time, resources). Consequently, we not only urge qualitative researchers in applied settings to consider the use of iKT, but academic institutions to consider what support might be required for such impactful work to be undertaken.

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**Table 1: Description of the Knowledge to Action (KTA) Framework** (Graham et al. 2006)**.**

|  |  |
| --- | --- |
| Phase | Description |
| Knowledge Funnel |  |
| *Knowledge Inquiry* | The gathering of knowledge (e.g., empirical research) relevant to the practice problem. Knowledge should be gathered from all sources deemed relevant by researchers, knowledge users and decision makers (e.g., unpublished/tacit knowledge). |
| *Knowledge Synthesis* | The synergy of knowledge to form a more specialised knowledge base on the practice problem. Reviews (e.g., narrative) may be sought or undertaken at this stage. If knowledge on the practice problem is missing, additional knowledge gathering may be sought (e.g., prepare and conduct empirical research with knowledge users). |
| *Knowledge Products/ Tools* | The development of user-friendly materials (e.g., guidelines, videos, websites, handouts, creative representations) whose purpose it is to represent the synthesised, useful knowledge to the practice problem. Collaboration with knowledge users is vital to determine what knowledge and format is most useful in the setting. |
| Action Cycle |  |
| *Identify Practice Problem/ Determine the Know-do Gap/ Select & Review Knowledge* | The practice problem is recognised by knowledge users and/or decision makers and brought to the attention of researchers. The gap between what is known about the problem, and the problem itself is determined, and knowledge to address the problem is selected and reviewed for use. |
| *Adapt Knowledge to Local Context* | Selected knowledge is tailored to the demands of the setting (e.g., sport, population etc.). This may be particularly pertinent if suitable knowledge already exists but in a contextually different form (e.g., a different sport/medical condition). Knowledge users may identify what knowledge is helpful and how it can be adapted. |
| *Assess Barriers & Facilitators to Knowledge Use* | Factors likely to influence the use of the knowledge in practice are identified. These include factors relating to the knowledge itself, knowledge users (e.g., target population), and the setting. Use of a determinant framework (Nilsen 2015) may enhance the exploration of these factors. |
| *Select, Tailor & Implement Intervention/s* | Interventions to promote the uptake of the knowledge in practice are developed and executed (e.g., implemented). To maximise desired outcomes, interventions may be developed using additional theories (e.g., behaviour change theories) or derived from barriers and facilitators identified (e.g., intervention mapping approaches) with knowledge users’ input. Piloting of the intervention may occur in this phase. |
| *Monitor Knowledge Use* | Use of the knowledge and intervention is determined. If the intervention has brought about a less than desired uptake of knowledge, previous phases of the cycle should be revisited. Collaboration with decision makers is necessary to determine what level of knowledge uptake is desired. |
| *Evaluate Outcomes* | Un/intended outcomes of knowledge uptake in practice are ascertained (e.g., behaviour change). Evaluations of the iKT process may be conducted using evaluation frameworks (Nilsen, 2015) and the perspective of collaborators be sought. |
| *Sustain Knowledge Use* | Should the intervention outcomes be deemed desirable by decision makers, efforts are made to support the continued use of the knowledge in practice. The spread and the scalability of the knowledge beyond the context may be considered. |