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### **IKT for Research Stage 4**

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An Integrated Knowledge Translation  
Toolkit for Open Research

# IKT for Research Stage 4: Study Design



## IKT for Research Stage 4: Study Design

### Background

In 2020, the University of Dundee initiated the development of an Open Research strategy. As part of this initiative, in February 2021 the University's Library and Learning Centre together with Open Research Champions from the Schools of Health Sciences and Dentistry, formed an Open Research Working group. To build on the University's open research policy and infrastructure, the purpose of the group was to facilitate ongoing research and development of best practice approaches for our interdisciplinary environment to make outputs, data and other products of our research publicly available, building on University of Dundee's Open Research policy and infrastructure.

Through informal consultations with academic staff and students, the Open Research Working Group found that:

- access and reach of research findings can be amplified through effective knowledge mobilisation, and stakeholder and patient and public involvement; and
- there was a need for guidance and resources on how-to implement knowledge mobilisation activities with and for stakeholders throughout the entire research process – *from proposal development to project completion*.

In June 2021, the Open Research working group, in partnership with Simon Fraser University's Knowledge Mobilization Hub began the development of an Integrated Knowledge Translation (IKT) Toolkit, with funding support from the University of Dundee's Doctoral Academy and Organisational Professional Development. IKT is an approach to knowledge translation that emphasises working in an engaged and collaborative partnership with stakeholders throughout the research cycle in order to have positive impact.

The aim was to co-produce evidence-informed, best practice learning materials on how-to:

- maintain ongoing relationships between researchers, community stakeholders and decision-makers in research development and implementation; and
- facilitate an integrated, participatory way of knowledge production whereby researchers, practitioners and other knowledge users can collaborate to co-generate new and accessible knowledge that can be utilised in contexts ranging from supporting community development to policy guidance for practice.

The IKT Toolkit was informed by a focused evidence review and synthesis of published peer-reviewed and grey literature and consists of 8 knowledge briefs and a slide deck co-produced for use in any discipline or sector. Each knowledge brief provides practical guidance and resources to support an IKT process in each of eight key research stages: (i) Partnership Building; (ii) Generating Priorities and Ideas; (iii) Proposal development; (iv) Study Design; (v) Data Collection; (vi) Data Analysis; (vii) Reporting and (viii) Dissemination.

**The current knowledge brief provides IKT guidance on Research Stage 4: Study Design**

## What does it mean to co-design the study methodology with diverse stakeholders?

Typically, research methodology is seen as the responsibility and a task for researchers given their background and training in conducting research. However, there can be great value in developing the study design with the academic team and non-academic partners, such as those who live and work in the community. People who live and work in the community understand local challenges, needs, expectations and their environment. For example, they can provide important insight on how best to recruit participants as gatekeepers of the community, the types of methods that are feasible, accessible, and acceptable for engaging with participants, and how to enhance public reach when disseminating the findings. Principles of community-based and participatory action-oriented research have been cited as highly effective for engaging diverse stakeholders throughout all stages of the research and can be particularly useful as a guide for co-designing research methodology. Boxes 1 and 2 present key principles and a checklist for how to do effective IKT in Research Stage 4: Study Design.

### BOX 1: IKT Principles for Research Stage 4 - Study Design

- 1 Ensure an iterative process of co-designing the research methodology with non-academic partners (Powell et al., 2015).
- 2 The study design should be grounded in addressing the “big” challenges identified and experienced by the community (Bertone et al., 2013).
- 3 Implement a research approach (i.e. community-based, participatory, action-oriented) that facilitates a collaborative learning community (Campbell, 2010).
- 4 Consider using multiple models and methods from across disciplines and sectors to study the research problem (Boger et al., 2017).
- 5 Make certain that data collection and analysis methods are feasible within local contexts, and accessible for participation by individuals outside of academia (Campione et al., 2021).
- 6 Account for the increase in time and resources required for doing community-engaged research in the study design (Bjork et al., 2013).
- 7 Disciplinary methods adopted may vary and should also involve perspectives of the community; qualitative and quantitative methods are often used in conjunction but should serve to adequately address the research questions (Bertone et al., 2013).
- 8 Apply a series of engagement activities (e.g., workshops, knowledge cafés, design dash, co-creation camps) to enable co-design of the research methods and activities with non-academic partners (Bird et al., 2019; Sixsmith et al., 2021).
- 9 Researchers should reflect upon their assumptions about methods used and the roles of the academic team and non-academic partners for carrying out the study (Barge et al., 2008)

### BOX 2: IKT Checklist for Research Stage 4 - Study Design

- |   |   |                                 |                                |
|---|---|---------------------------------|--------------------------------|
| 1 | Is there a protocol with engagement activities in place for how to work collaboratively when developing the study design?                       | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 2 | Is the study design adequate for addressing the ‘big’ research question(s)?   | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 3 | Have you sought input from non-academic partners to ensure that the research methods are feasible and appropriate for local community contexts? | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 4 | Have you sought to integrate or apply principles of a community-based participatory action research (PAR) approach?                             | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 5 | Have you considered using models and methods from across different academic disciplines and community, government or industry sectors?          | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 6 | Have you accounted for the time and resources necessary for doing community-engaged research?   | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 7 | Have you considered how best to use the different quantitative and qualitative methods in conjunction with input from non-academic partners?    | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |
| 8 | Is there a process in place for reflection and reflexivity of the research approach, theories and methods?                                      | Yes<br><input type="checkbox"/> | No<br><input type="checkbox"/> |



## How can the study design be enhanced by applying IKT mechanisms and activities?

Determining the research approach and methods with non-academic stakeholders can be very effective for ensuring that the right type of information is collected for addressing the research aim and questions in a meaningful and impactful way. Informed by ideas of co-design, designing the study methodology with a broader range of people of different backgrounds and skills requires understanding and recognising each team member's expertise. This might include how to harness their knowledge in useful ways, and ensuring an inclusive and accessible process where everyone can contribute (Astell & Fels, 2021). Boxes 3 and 4 offers case examples of effective IKT implementation in Research Stage 4: Study Design. Key messages from each case example are highlighted in bold.

### BOX 3: Case Example 1 – Co-creating Intergenerational and Age-friendly Spaces and Places

Fang and colleagues' (2022) co-creation project was co-led by a group of researchers from the University of Dundee in equal partnership with the Intergenerational National Network (a grass roots community organisation of like-minded people with the goal of creating intergenerational and inclusive communities). A key project goal was to bring together researchers, industry professionals, policymakers, health and housing practitioners, and multigenerational members of the community along with NGOs, universities and collaborators from across eight countries. The goal was to generate a research programme and policy and practice solutions for developing an intergenerational and age-friendly living ecosystem (AFLE) of places that facilitate intergenerational working across communities and sectors. The AFLE project used a community-based participatory, people-centred multimethod approach that emphasised the importance of: **1) communal learning and collective knowledge co-creation; 2) development of collective efficacy through mutual affirmation; 3) the need to foster intergenerational leadership; and 4) working jointly across disciplines and sectors – transcending ideational boundaries.** The work programme prioritised seldom heard voices and enhanced participation from all stakeholders throughout the entirety of the study design process: in setting the aims and objectives; conceptual development; rules of engagement during sessions, shaping the research design, policy, and practice recommendations. To enable study co-design, six co-creation events were held. Six virtual interlinked Co-creation Camps (CCs) were designed, each with an intended aim, outcome, and output held monthly across six months. CCs stem from the **camp model of creative-working where participants are moved to temporary camps and tasked to work intensely within multidisciplinary groups to generate ideas and/or propose innovative concepts and solutions which involved the co-development of a study design for a project.**

### BOX 4: Case Example 2 – Knowledge to Generate Action Using a Community-Based KT Framework

Campbell's (2010) research was centered on improving understandings and health outcomes of children living in a rural community in East coast Canada. A participatory action research approach was used to enable and prioritise the co-creation of local knowledge concerning children's health and to empower the community of Souris to determine a healthier future for their children. The Ottawa Model of Research Use (OMRU), a knowledge translation framework, was used to enact the generating of knowledge into action. The knowledge-to-action conceptual framework was used alongside the OMRU to provide the rationale and facilitate a process of research engagement with local community members throughout the entire research process. According to Campbell the purpose of using **Participant Action Research (PAR) was about enabling the community to take necessary action that would determine their realities. The data collection methods were carefully selected and determined with community stakeholders to ensure feasibility, accessibility and empowerment.** Data collection consisted of five phases of community engagement using diverse methods spanning across different disciplines. The data consisted of: historical documentation of newspaper headlines; photographs of the community infrastructure, signage, and landscape; field notes; minutes from meetings with town administration and the advocacy group; and focus-group interviews. This study demonstrated the practicality and usefulness of PAR for IKT research not only for use in the health field but across disciplines and sectors such as urban planning and design, land use development, and policy and program planning.

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## Resources

- 1 Maximising Research by Involving Your Stakeholders.  
[medium.com/tokopedia-design/maximizing-research-by-involving-your-stakeholders-be1a727e8683](https://medium.com/tokopedia-design/maximizing-research-by-involving-your-stakeholders-be1a727e8683)
- 2 Stakeholder consultation on involving young people in health research  
<https://cms.wellcome.org/sites/default/files/2021-02/stakeholder-consultation-on-involving-young-people-in-health-research.pdf>
- 3 How to engage stakeholders in research: design principles to support improvement  
[qs-gen.com/how-to-engage-stakeholders-in-research-design-principles-to-support-improvement](https://qs-gen.com/how-to-engage-stakeholders-in-research-design-principles-to-support-improvement)

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## Further information

For more information about the IKT Toolkit and University of Dundee's Open Research Working Group please contact Dr Mei Fang at [mlfang@dundee.ac.uk](mailto:mlfang@dundee.ac.uk)

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